ARE and Investor

2030 Protein Transition Vision and Goals

Via expected disclosures for responsible and sustainable proteins

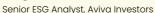






F Fidelity

Eugenie Mathieu



"We are very pleased to collaborate on this pioneering platform, which aims to inspire a 2030 vision and goals for companies who supply or source protein in Asia. We also hope the disclosure checklist spotlights the key themes and disclosures that investors are anticipating from companies with regard to sustainable protein, given the significant impact this sector has on both biodiversity and climate change."

Bruce Jackson



Responsible Investment Senior Analyst, Stewardship, Universities Superannuation Scheme

"USS looks forward to food companies in Asia working towards these expected disclosures. Along with other important sustainability themes, the expected disclosures set out an integrated pathway for companies to reduce their supply chain reliance on antibiotics and risks of antimicrobial resistance by improving farm animal welfare standards and systems."

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Jane K Ho

Head of Stewardship APAC, BNP Paribas Asset Management

"We are delighted to collaborate on this Asia Protein Transition Platform aimed at Asian companies' protein transition journey. This step up in our engagement on protein in Asia complements the Stewardship team's work globally, as well as our existing focus on energy transition and environmental sustainability, since the food system accounts for over 30% of GHG emissions. We look forward to a constructive dialogue with focus companies on this urgent issue that is increasingly front of mind for consumers and all stakeholders."

Jenn-Hui Tan



Global Head of Stewardship and Sustainable Investing, Fidelity International

"Climate change and biodiversity loss pose a significant global challenge for society. Food systems are estimated to account for around a third of global greenhouse gas emissions, while the agricultural sector is responsible for a substantial proportion of global biodiversity loss. At Fidelity International, we believe that engaging with sectors is essential to driving positive change. Rethinking the way we feed the planet, especially in the protein sector, has become both an environmental and a social imperative. Businesses, investors, and other key stakeholders must do their part to help reverse biodiversity loss and ensure global food security."



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This document sets out investor expected disclosures and recommended goals for 2030 to guide Asian food businesses towards a just, humane, and climate-safe protein transition - i.e., a balance of responsible animal proteins and more sustainable proteins. The vision, goals, and expected disclosures are a product of collaboration between ARE and a group of leading institutional investors representing USD3 trillion.

Together we developed a 2030 vision and goals for the protein system in Asia, ensuring an aspirational approach to help motivate and signpost companies towards best practice. We then considered numerous disclosure frameworks, guiding principles and sector–specific reports to agree the disclosures that investors expect to see on a pathway towards this 2030 vision. We aim not to duplicate or ignore existing reporting frameworks, but rather prioritise interconnected indicators which will reinforce and anticipate future frameworks for company disclosure. We framed the 'expected disclosures' based on material risks, strategy, policy, process, targets, and progress. We then socialised draft outputs with key companies and other stakeholders.

Why should companies care and what are the benefits to them?



- 1. Opportunities to generate new or greater revenue, increase supply chain resilience, and access increasingly sustainability conscious and/or export markets. Examples include protein innovation and diversification, encouraging positive consumer consumption patterns, selling carbon credits with manure biodigesters, higher welfare products, credible product certifications and a range of cost savings for reducing GHGs, antibiotics, chemicals, water and waste.
- **2.** Opportunities for companies to mitigate a range of business, environmental and social material risks, including dependency and impacts on natural capital.
- 3. The ability for companies to meet verified GHG reduction targets, as a protein transition will be essential to a climate-safe strategy. Various technological opportunities and protein diversification at scale enable significant GHG reductions, along with reduced carbon tax or ETS costs.
- **4.** Sustainability verification and disclosure will increasingly be needed for product or raw material export to EU and the US or your business in the EU.
- **5.** Robust disclosure increases investor confidence, and helps combat increasing allegations of greenwashing and green-hushing.



We strongly encourage companies to develop their own aspirational 2030 goals and pathway with concrete interim milestones. Simultaneously, disclosure needs to be underpinned by good governance and transparency, supply chain traceability and supplier engagement. Accessible context and timelines are strongly encouraged as they are essential to driving high-quality disclosure. The 'expected disclosures' apply to protein producers, traders, and buyers, unless noted otherwise. We hope companies will also find the rationale and business relevance useful,

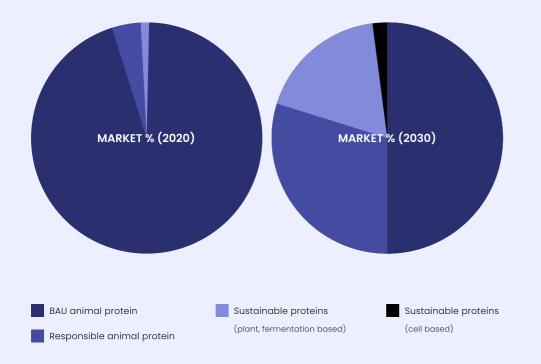
noting alignment with existing frameworks and "win-win" opportunities. A list of acronyms and related Sustainable Development Goals are in the appendices. There is a separate Self-Assessment Questionnaire (SAQ), which is a tool with guidance for companies to assess and advance their position on their sustainability journey. **Critical issues at the end of this document should establish initial priorities for companies, along with SAQ identified gaps.**



Numerous major scientific reports have highlighted the need to reduce the impacts of and reliance on animal proteins.

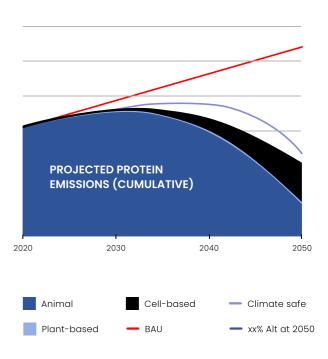
They define a 'protein transition as rebalancing between animal and alternative proteins', for a more climate-safe, equitable and compassionate protein system. This transition requires strategic transformation and respectful processes to support the development of more sustainable proteins while strengthening policies and processes to address material risks associated with conventional animal proteins. Such a transition is increasingly driven by consumers, civil society, investors, shareholders, academics, regulators, policy makers, and other stakeholders, and can bring important dietary health, environmental and social benefits. The two figures below aim to demonstrate the protein transition concept. ARE research is pending to quantify the GHG reduction pathway necessary for a climate-safe transition in Asia.

Protein transition estimation*: rebalance responsible animal proteins and increasing sustainable proteins (2020-2030)



^{*}The above figures are estimates only, aiming to convey the Protein Transition concept, and will be updated after pending research by ARE.

One theoretical scenario of a climate-safe protein transition in Asia.



A just protein transition is also fundamentally required to align with the following, but not limited to:

The Paris Agreement 1.5°C target.



Various UN and related declarations and principles for human rights and business (see section 3 - Labour and Just Transition)



The Glasgow Leaders' Declaration on Forest and Land Use for halting deforestation and land use changes.



The Convention on Biological Diversity to halt biodiversity loss and conserve natural systems, and contribute to One Health.



World Health Organisation recommendations for reducing antimicrobial use and resistance, pandemics & other public health concerns.



UN Environmental Programme report and recommendations for pandemic prevention, and the Quadripartite for One Health.



World Health Organisation review on plant-based diets, and the EAT-Lancet Commission report on healthy diets from sustainable food systems.



Business Benchmark for Farm Animal
Welfare and World Organisation for Animal
Health technical codes for animal
diseases and health.



Resolution of breaches of the planetary boundaries, embracing a sustainable protein system, better for people, animals and the planet.



It is critically important to manage these issues in Asia, as it is the largest and fastest-growing protein bowl in the world.

To read more about the above drivers and transition benefits, see our reports, fact sheets or additional references. To learn how Asian-listed food businesses are performing as a baseline, see ARE's baseline report (2022). Follow future benchmarks for future performance against the following expected disclosures.

The 2030 Vision

Asian food companies contribute to regional and global protein security by growing the share of sustainable proteins and limiting the share of animal proteins from industrial farming and fisheries. Sustainable proteins and responsible animal proteins are verified to meet:

¹ Up until 2030, 'sustainable proteins' are expected to predominantly be regeneratively farmed proteins, traditional plant-based diets, and 'alternative' plant or fermentation-based proteins aiming to substitute animal proteins, acknowledging that cultivated meat proteins may commercialise in the coming years and are expected to reach price parity by ~2030. The production processes have been demonstrated via Life Cycle Analyses (LCA) to have significantly less land, water and energy use along with neither antibiotic use nor mass use of animals and waste production, when compared to all animal meats. This assumes renewable energy use in the scale up of cultivated meats as shown by various LCAs.

² As part of a climate-safe, just and humane protein transition business strategy, companies allocate capital away from additional industrial animal farms which can last another 20-25 years.



Full traceability and transparency in the value chain, and appropriate product labelling for consumers.



Fair labour, recruitment, working conditions, payment, and other support, enabling a just transition.



No prophylactic antibiotic use, minimal incidence of antimicrobial resistance, & other related worker & public health impacts.



Animal welfare that meets Responsible Minimum
Standards from the FARMS Initiative, that ensures
elimination of cages and overcrowded, barren systems.



GHG emissions reduction in line with the Paris Agreement 1.5°C target.



Zero deforestation & other adverse land use changes across all relevant commodities, including animal feed raw materials.



Responsible use of natural capital (including fish stocks, no use of fishmeal fish oil) that halts biodiversity loss and allows for natural ecosystem regeneration.



Minimal chemical use during the production of feed and other raw materials. Circular or regenerative systems with responsible processing of all wastes, soil regeneration and avoidance of water-stressed locations and hazardous chemicals.

Expected Disclosures and 2030 Goals For Asian Listed Food Companies

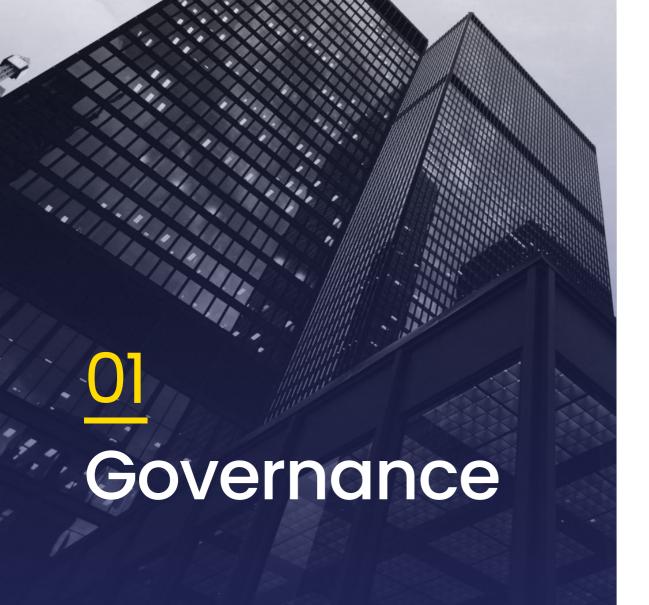












- Boards set the long-term strategic direction and risk appetite for a company, while overseeing the execution of the business and its value to shareholders including institutional investors.
- Boards are well placed to consider longer-term horizons, risks, dependencies, and strategic opportunities.
- Boards need to support management to drive sustainability, signing off the 2030 and interim sustainability vision and targets.

- Drive awareness of business resource dependencies and impacts, innovation and opportunities for new markets and revenue, as well as interlinked strategies for risk mitigation.
- Enable a Board to be sustainability 'fit' by promoting training on protein sustainability, increasing capability for oversight and accountability.
- Garner Board support for management and the execution of responsible sourcing and supply strategies, policies, and disclosure.
- Strengthen transparency with evidence of Board strategic decision making, alignment and accountability for protein sustainability.
- Prompt strategic allocation of capital, futureproofing the company towards a strategic protein transition and avoiding stranded assets and dependencies of BAU growth. See also section 10 – Alternative proteins

Item	Expected disclosures – reported annually Recommended 2030 and interim goals	Units / Output expected	Aligned frameworks reflected or rationale
1.1	Board discussion or approval of a detailed 2030 strategy for a just, humane, and climate-safe protein transition, aligned with the company climate strategy, setting 2030 and interim targets for sustainable proteins. By 2025: Board approves a just, humane, and climate-safe protein transition strategy and also demonstrates that company memberships of industry associations and lobbying activities are consistent with this strategy. By 2030: Board ensures the company provides clear disclosure on the achievement of the strategic targets adopted to realise a just, humane, and climate-safe protein transition, and that company memberships of industry associations and consumer education and marketing are consistent with this strategy.	Y/N + description of discussion, plans or weblink with strategy and targets.	CDP Climate, CDSB, GRI, SASB
1.2	Relevant board training and skills. Directors with specific expertise and experience in sustainability and food. Board has clear duties including accountability for protein sustainability.	Y/N + description, of relevant Board / Director skills, knowledge and experience and duties.	GRI, WFE. SDG 12, 2, and others below.
1.3	Board oversight for company execution of a responsible and sustainable protein supply/sourcing policy that is risk comprehensive and reviewed frequently, at least on a biennial basis. By 2024: Board ensures the company has a responsible and sustainable protein sourcing or supply policy.	Y/N + evidence in reports, and weblink for policy.	GRI, WFE, ARE baseline benchmark findings. Contributes to SDG 12, and others below.
14	Board discloses the decision making around capital expenditure for new industrial farms, in relation to their climate safe and/or protein strategy. By 2030: Board oversees capital allocation to realise the company's just, humane, and climate-safe protein transition.	Description of evidence, process. Transition risk metrics.	Prompts full risk assessment and strategic alignment, reflected in future CAPEX allocation and reduced risk of stranded assets.



- Traceability is fundamental to food safety, resilient supply chains and underpins transparency, sustainability, and company or brand reputation.
- Traceability provides initial confidence to investors, customers, and consumers. It is also needed to meet new EU and US supply chain due diligence or legal compliance.
- Minimum standards for protein sourcing/supply provide clear direction for producers, suppliers and sourcing staff, enabling consistency and monitoring.

- Provide an overall measure of traceability, related risks, and systemic performance.
- Require minimum standards that provide a clear direction for producers, suppliers, and sourcing staff.
- Encourage improvement of traceability, and compliance with company standards, enabling internal monitoring and external verification.
- Strengthen transparency, trust, and company reputation, as a basis for food safety, and the following sustainability disclosures.

Item	Expected disclosures – reported annually Recommended 2030 and interim goals	Units / Output expected	Aligned frameworks reflected or rationale
2.1	Evidence that a comprehensive digital traceability system is established.	Y/N + description of the system or plans for progress.	GRI, SASB, WFE
2.2	Percentage of total protein suppliers or raw materials/products sourced that are digitally traced. Prioritise via a risk-based approach. By 2030: 100% traceability of protein supply chains, ideally beyond tier one.	Percentage of total. We encourage a material risk-based approach to prioritise key protein raw materials/ products or supply chain traceability.	GRI, SASB, WFE
2.3	Published company minimum sourcing/production standards or detailed Code of Conduct (CoC) covering all material risks. By 2025: Company publishes a comprehensive sourcing/production minimum standard or CoC.	Y/N and weblink to standards (or CoC).	Implicit to most frameworks; leading companies have detailed standards published and regularly reviewed.
2.4	Percentage of total suppliers, or raw materials/products sourced in compliance with comprehensive company minimum standards (or comprehensive CoC). By 2030: 100% raw material compliance with detailed standards, ideally verified by third parties.	Percentage of the total, supplied or sourced in compliance with comprehensive company standards.	GRI, SASB, WFE.



- Transparent and ethical recruitment, good working standards and management of people in company supply chains is fundamental and assures continuity, consistency, and resilience of a workforce and supply chain.
- Compliance with legal, international principles and customer standards are
 necessary, and increasingly required for trade, especially with countries with
 Modern Slavery and/or supply chain due diligence legislation. Failure to meet the
 necessary verification has, with precedent, halted trade.

- Require companies to commit to good labour principles and establish minimum standards to assure ethical recruitment, decent conditions, and a living wage, valuing the workforce and minimising fundamental business, reputational, and lead risks.
- Establish due diligence and grievance processes, along with compliance especially of high-risk supply chains. A policy or commitment without any process for implementation and disclosure of outcomes and assurance is inadequate and may also have legal or trade implications.
- Emphasise the importance of supplier engagement, and demonstration of responsible prevention and management of breaches of compliance.
- Emphasise the importance of engaging all affected to establish a strategic plan
 for a just transition, which enables worker retention, supports skill development,
 supply chain resilience, revenue, and reputation, and reduces business risks and
 disruption.

Item	Expected disclosures – reported annually Recommended 2030 and interim goals	Units / Output expected	Aligned frameworks reflected or rationale
3.1	Published commitments and CoC incorporating the specific principles of one or more below, as most relevant to cover all protein production/sourcing labour risks: - UN Guiding principles for business and human rights - UN Global Compact - Dhaka principles for migration with dignity - ILO core labour standards, Forced labour indicators, Declaration on Fundamental Principles and Rights at work, International labour standards on Fishers. - Responsible Business Alliance code of conduct - OECD due diligence for responsible business conduct	Y/N + CoC or policy disclosed citing principles.	PRI, GRI, SASB, WBA. S&P include this as a living wage approach. Contributes to SDG 8.
3.2	Frequency of due diligence conducted by the company, particularly for high-risk suppliers, description of grievance mechanisms, publishing annual incidence of non-compliance, and outcomes of non-compliance (resolution, remediation, other). By 2025: Annual due diligence assessment conducted for high-risk suppliers, and publishing timely resolution of non-compliances.	Frequency (number/year), mechanism, and processes for supplier due diligence. Incidence (cases / year) and outcomes of supplier non-compliance.	PRI, GRI, SASB, WBA and WBA human rights. Contributes to SDG 5, 8.
3.3	Percentage of annual production / sourcing (by volume) independently verified to meet the above labour principles – against annual, 2030 and interim targets. Verification must ensure monitoring of highest risk supply chains to identify or ensure: - No child, forced or illegal labour - Collective representation, respect for rights - Dignified migrant recruitment - Gender equality, empowerment - Fair working conditions, pay and safety - No discrimination of any type By 2030: Towards 100% of sourcing monitored for labour risks, highest risk supply chains independently verified.	% verified against an 2030 and interim target. Discuss any key challenges. Transparency.	WFE, PRI, GRI, SASB, WBA. FAIRR. Contributes to SDG 5, 8.
3.4	Senior management acknowledgement or plans to enable a Just Protein Transition, highlighting the most critical parts of the supply chain and the need for social dialogue with those potentially impacted. By 2025: Detailed time plan for worker retention or upskilling, alternative livelihoods and any other just transition support.	Y/N + description of plans with evidence of social dialogue.	FAIRR, ILO and Action Aid Principles of Just Transition (climate, proteins/agriculture). Contributes to SDG 8, 12, 13.

Workplace Health And Safety And Responsible Antibiotic Use

Why are these expected disclosures important to an Asian food business?

- Supply chain workers are at the frontline of health and safety risks, and provide a
 proxy for nearby communities, consumer and wider public health.
- A healthy and safe workplace along the supply chain optimises staff performance, retention and business, helping to minimise company cost and public health risks.
 Asian consumers are increasingly driven by health imperatives and retailers in and beyond Asia are emerging with best practice.
- Globally the animal protein sector uses around 75% of all antibiotics. Asia is the largest producer and user of antibiotics in animal farming.
- Reducing routine use of any antibiotics in animal supply chains is key to reducing
 the risk of antimicrobial resistance to workers, consumers, the environment and the
 wider public. This contributes to sector and national targets for reduced antibiotic
 use, as well as contributing to company cost savings and better animal health and
 welfare. Request the ARE fact sheet for more information, and note section 5 and 7
 for interlinkages.

- Drive monitoring and mitigation of health and safety risks, aiming to reduce incidents and related costs, and risks to management and Boards.
- Enable companies to demonstrate implementation and progress, against targets.
 Trigger thresholds can further assist a cycle of improvement.
- Focus companies to optimise animal welfare to prevent the need for routine antibiotics, while enabling treatment for sick animals.
- Prompt companies to set clear targets for antibiotic reduction and commitment to phase out routine use of antibiotics for prophylaxis, while any antibiotic use for growth promotion needs to be prohibited.
- Progress performance and encourage verification of responsible antibiotic use which may also be needed for trade.
- Encourage sourcing companies to set clear direction and engage with suppliers to monitor performance.

Item	Expected disclosures – reported annually Recommended 2030 and interim goals	Units / Output expected	Aligned frameworks reflected or rationale
4.1	Company assessment, monitoring and mitigation of acute and chronic workplace health conditions or risks in production / sourcing, including: - respiratory, skin, other disease from dust, manure, resistant bacteria, chemicals, heavy metals, pesticides and fertilisers - zoonotic disease - injuries and death By 2025: Detailed process for practical monitoring, and resolution of underlying causes of Worker Health and Safety (WHS).	Description of efforts & process with reference to staff & workers in supply / sourcing	SASB, GRI, S&P. Contributes to SDG 3.
4.2	Annual rate of WHS incidents in production/supply chains/sourcing. Relevant WHS incidents should include: - respiratory, skin, other disease from dust, manure, resistant bacteria, chemicals, heavy metals etc - zoonotic disease - injuries and death By 2025: Disclosure of incidence rates against 2030 and interim thresholds. By 2030: Ongoing decline of the incidence of acute and chronic WHS cases per year.	Incidence rates (# incidents /year) or annual % relative to total workforce. Incidence rates can be aggregated but separate rates (especially for acute and chronic disease) provide insight for resolution.	WFE, GRI sector specific. Contributes to SDG 3.
4.3	Position or commitment to phase out routine use of antibiotics in the supply chain by 2030 to reduce AMR risks, specifically including: - Prohibiting any antibiotics used for growth promotion - Reduction or avoidance of any antibiotics for group prophylaxis - Basic plan / opportunities to resolve underlying risks of animal husbandry and welfare etc. By 2025: Establish the above commitments and interim antibiotic reduction target.	Y/N + comment on which elements included, a time plan for implementation, including resolution of underlying risks.	SASB, S&P, GRI sector specific, FAIRR, BBFAW, WHO. Contributes to SDG 3.
4.4	Percentage of production, supply or sourcing (volume) that is free from antibiotics used for group prophylaxis (i.e., medicated feed, water or powders, dry cow therapy etc.) By 2025: Set mid-term and 2030 targets. Report progress against baseline (yoy). By 2030: Achieve 100% products or supply chains free from prophylactic antibiotic use (i.e. antibiotic use in supply chains is for animal treatment only).	% products / total (by volume, or unit) against set targets. As a guide: prophylactic antibiotics need to be less than 30% of all farm antibiotic treatments, and eventually just 15% or less.	Focus on the main risk now (group prophylaxis) to drive antibiotic reduction. SASB, S&P, WHO, WBA, FAIRR, EPHA, GRI. Contributes to SDG 3.



- The World Organisation for Animal Health defines animal welfare as 'the physical
 and mental state of an animal in relation to the conditions in which it lives and
 dies.' Animal welfare includes and goes beyond animal health. Request the ARE
 fact sheet or a call for more information.
- Optimising animal welfare can optimise production, food quality, consumer and staff satisfaction. Good animal welfare may also reduce the physical risks and impacts of climate change, avoid stranded equipment/capital assets, minimise disease and food safety risks, routine use of antibiotics and various labour risks.
- An animal welfare policy and annual performance are now required for the new GRI sector-specific framework (the most used framework in the region), and S&P framework which enables consideration for the Dow Jones Sustainability Index (DJSI).
- Asian food companies are increasingly phasing out cage confinement, overcrowded and painful farming systems, providing group housing, effective enrichment and ensuring pre-slaughter stunning including for fish. Such measures also enable EU trade and other market access.
- Several producers and retailers in the region have already set animal welfare commitments, and third-party animal welfare certification is emerging to meet retailer and consumer demand. Categorisation of welfare certification schemes can be found with the SAO tool.

- Encourage futureproofed new/replacement farms with modern, higher welfare systems to avoid stranded assets, climate and consumer concerns.
- Meet sustainability framework policy and performance requirements, and align to progress Business Benchmark for Farm Animal Welfare scores.
- Enable good animal welfare standards, commitments, and progress, attracting investors and reduced interest loans, or sustainability linked loans.
- Encourage good certification and labelling, increasing transparency for procurement, consumers and investors, value added products and revenue.

Item	Expected disclosures – reported annually Recommended 2030 and interim goals	Units / Output expected	Aligned frameworks reflected or rationale
5.1	Published commitment to minimum* welfare when allocating future capital to new or replacement farms (including fish farms) before 2030. - *Enough space and group housing (not cages/crates) - *Welfare balanced genetics - *Effective environmental enrichment - *Avoiding all cages, painful procedures, and early weaning - *Humane handling, transport, pre-slaughter stunning, including for fish By 2030: New or replacement farms meet * aspects of FARMS (Farm Animal Responsible Minimum Standards initiative). NB: Aim for no new industrial farms after 2030.	Y/N + scenario projections and description of welfare policy related to new farms.	SASB, GRI. Contributes to SDG 2, 3, 6, 12, 13, 15.
5.2	Published policy or position on farm animal welfare that considers all species, geographies and products (including cultivated meat products). By 2025: A policy towards meeting all *aspects of species-specific FARMS, good aquatic welfare standards, best practice for the live animal extraction of animal cells or media when producing cultivated meat products.	Y/N + details with respect to species, geography, products. Note: a policy should cover both company and contract farms.	SASB, BBFAW, IFC, GRI, WBA, FAIRR. S&P for DJSI. Contributes to SDG 2, 3, 6, 12, 13, 15.
5.3	Presence of time-based commitments and annual progress reporting for phasing in higher welfare. As a minimum: commitments and progress disclosure: % group housed sows of total sows (or % pork products without use of gestation crates) % cage-free hens of total hens, % cage-free of total meat chickens (or % eggs of total, % cage-free chicken of total) % animals that are pre-slaughter stunned (by species, including fish) By 2025: Announce time-based commitments and initiate annual progress reporting. By 2030: Demonstrate robust progress towards commitments. Aim towards 100% of all products meet * species aspects of FARMS and reporting at least 2 welfare outcomes for each species from Assurewel)	Time-based targets. Annual performance reporting against commitments. Note: reporting should cover both.	BBFAW, IFC, SASB, GRI, WBA, FAIRR, S&P for DJSI.
5.4	Percentage of global animal protein products (supplied/sourced) that is independently certified for animal welfare. By 2025: Set 2030 and interim targets By 2030: Report robust progress against animal welfare certification targets. (Aim for > 25% meeting 'good welfare' certification - request the ARE table of categorised certifications)	% by species/products and by scheme name (See ARE certification ranking matrix in the SAQ tool).	GRI, SASB, FAIRR, BBFAW, WBA



- Animal protein production and consumption is the second largest driver of global GHG emissions. Without assessment, planning and integration of more sustainable proteins by 2030, food companies are unlikely to achieve their net zero targets with refinements of animal systems alone.
- Animal protein production contributes 16.5% of global GHGs, with feed production
 and manure contributing the majority of GHGs, and those of greatest potency.
 Leading retailers are signalling and accounting their scope 3 emissions. Request
 the ARE fact sheet or a call for more information.
- GHG reduction strategies and targets for a pathway to net zero emissions by 2050 (or 2060 in China) need to include all GHG emissions of protein produced or sourced. Companies are increasingly employing the Science Based Target initiative (SBTi) process to validate their target and pathway.

- Ensure that climate assessment and plans are comprehensive, including protein production or products sourced, and consider options to mitigate dependencies and impacts. (Also refer to 1.1 and section 10).
- Require validated climate commitments, with interim 2030 and other milestones, to meet investor confidence and any regulatory requirements.
- Encourage use of CDP climate (IFRS) and TCFD frameworks to report scope 1,2,3
 emissions, future proofing companies for mandatory reporting.
- Ask for demonstration of operational plans towards their 2030 target, with
 mitigation case studies, strategic CAPEX allocation, and preparing for upscaling or
 piloting new revenue opportunities (e.g., where considerable GHG savings can
 occur, including with scaled protein diversification).

Item	Expected disclosures – reported annually Recommended 2030 and interim goals	Units / Output expected	Aligned frameworks reflected or rationale
6.1	Strategy with climate scenarios and broad plans considering all material protein production/sourcing risks, dependencies, impacts and aligned with a 1.5oC pathway. By 2025: Identify all material protein related climate risks and outline concrete strategy and plans to reduce all GHGs (including for scope 3). Identify protein diversification opportunities.	Y/N + weblink. Expect scope 1,2, & 3. Scenario analysis and planning. Risk assessment and mitigation needs to include the most relevant and significant physical, economic and transition risks. Note: considering internal carbon pricing alone is inadequate.	TCFD, CDP, GRI, plus ISSB / pending IFRS climate framework. Contributes to SDG 2, 7, 12, 13.
6.2	Commitment to net zero GHG emissions by 2050, with interim target for 2030, updated every 5 years thereafter, aligned to a 1.5oC pathway and validated via the SBTi process. By 2025: Publish emission reduction target, validated by SBTi and including scope 1, 2 and 3.	Y/N + weblink for targets / commitments. Animal production - targets need to include farms, contract farms, feed, manure management plus transport, slaughter, processing facilities. Scope 1,2,3 emissions.	TCFD, SBTi, CDP climate, also SASB, CDSB, GRI, S&P, IFRS etc. FAIRR, Climate Action 100+. Contributes to SDG 7, 9, 13.
6.3	Annual reporting against targets via CDP or TCFD frameworks. By 2025: Streamline reporting via CDP or TCFD frameworks (including scope 3 emissions).	Y/N + web link disclosure, include scope 3 emissions disclosure against targets. Also note any challenges for reporting scope 3 emissions.	CDP, TCFD also aligns with SASB, GRI, WFE, S&P, IFRS, FAIRR, Climate Action 100+. Contributes to SDG 7, 9, 12, 13.
6.4	Case studies, capital expenditure allocation, and/or lobbying examples demonstrating implementation of protein related climate risk mitigation strategy towards 2030. By 2025: Upscale mitigation and protein diversification.	Y/N + description of mitigation activities undertaken, and results achieved.	CDP climate, TCFD – complete metrics, Climate Action 100+. Contributes to SDG 7, 9, 12, 13.

Deforestation & Biodiversity

Why are these expected disclosures important to an Asian food business?

- Animal protein production in Asia is a major driver of deforestation and biodiversity loss globally. Identification and acknowledgement of all material risks requires inclusion of protein supply chain dependencies and impacts linked to deforestation and biodiversity loss.
- Commitments (or targets) build confidence for investors, consumers, and other stakeholders, working towards national commitments for zero deforestation and land use changes by 2030, as well as GHG reduction targets. Request the ARE fact sheet or a call for more information.
- Commitment sets direction for suppliers and will build greater supply chain resilience, while reducing dependency on finite natural capital.
- Verification of deforestation-free supply chains will soon be required for EU imported products and biodiversity is now a major investor focus.
- Reforestation projects are of additional benefit and contribute to some GRI and Forest 500 criteria, but do not replace supply chain disclosure.

- Expect companies to assess and disclose soy and other animal feed components
 at risk of deforestation in and beyond Asia (maize, palm meal, other), as well as
 beef (or other meats imported from at risk supply chains in Latin America), palm,
 coffee, cocoa, timber, paper. Highest risk supply chains to be prioritised.
- Require companies to commit to zero-deforestation and other land use changes in supply chains, and then drive annual progress disclosure.
- Encourage supplier engagement, implementation, and traceability verification, to remove highest risks first and strengthen transparency and trust.
- Expect disclosure of a growing list of verified feed suppliers (or mills) to increase confidence in implementation and transparency.
- Provide a placeholder for a biodiversity related 2030 goal after pending TNFD and Convention for Biological Diversity targets are set.

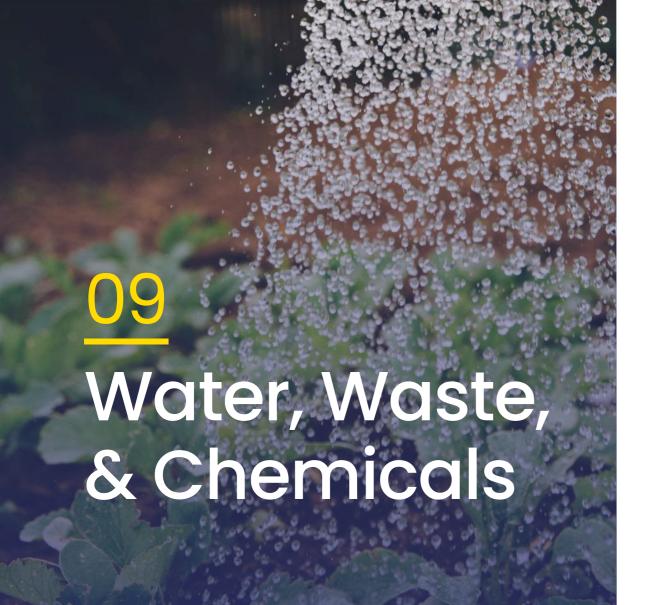
Item	Expected disclosures – reported annually Recommended 2030 and interim goals	Units / Output expected	Aligned frameworks reflected or rationale
7.1	Assessment of all natural resource risks i.e., dependencies and impacts relevant to their supply chain*. By 2025: Assess all deforestation and related biodiversity risks (general). * Seafood may be covered in section 8.	Y/N + description of commodity scope* included, resource dependencies and impacts. Prioritise deforestation and broader land use changes, and then acknowledge any related biodiversity loss. Highlight the natural resource dependencies and impacts of greatest risk.	S&P, GRI, CDP Forest, Contributes to SDG 12, 15. Consider also indicators from Global Canopy Forest 500 index and FAIRR criteria for soya and beef, SPOTT tool for palm oil, timber.
7.2	Published commitment to zero deforestation and other land use changes in supply chains. By 2025: Publish commitments to zero deforestation and land use changes.	Y/N + weblink. Note if certification relates to actual sourcing or impact credits.	CDP Forest, WFE, SASB, S&P, FAIRR. TNFD pending. Contributes to SDG 12, 15.
7.3	Annual progress towards the above commitments – i.e., percentage of supply chains or protein products produced/sourced are verified as deforestation-free. We strongly encourage the use of reputable certification or supplier verification programmes. We also encourage CDP Forest reporting, with full disclosure of feed and beef origin, and any deforestation-free claims should be verified. By 2030: Verify 100% of supply chains and products are deforestation-free. (By 2030: Placeholder for a biodiversity related goal after pending TNFD and Convention for Biological Diversity targets are set.)	% protein products / supply that are verified deforestation-free. We advise the company prioritise the highest risk supply chains, but also encourage companies to disclose their supply chains that are already verified as deforestation-free. Carefully consider the scope and indicators of the various verification or certification schemes.	GRI, WFE, CDP Forest, FAIRR, S&P and SASB if any US production). Pending TNFD, WBA Nature benchmark, Nature 100+ Contributes to SDG 12, 15.
7.4	List of beef, soy, and palm feed suppliers (or feed mill list) to strengthen confidence on traceability. By 2025: Report a growing list of deforestation-free suppliers, among all suppliers.	List of suppliers, and % of total suppliers disclosed (estimate).	Traceability, transparency. CDP Forest, FAIRR. Contributes to SDG 12, 15.



- Sustainable management of seafood stocks is fundamental to a seafood business, directly impacting a range of financial indicators.
- Transparent risk disclosure is essential to company reputation and investment, as is transparent labelling to consumers.
- Company policy and standards demonstrate clear principles to investors, and not sole reliance on certification schemes which vary greatly.
- Sustainable seafood or its sourcing intersects with several of the other topics in
 this guide, particularly labour, antibiotic use, animal welfare, deforestation and
 biodiversity, water, and waste, with fast growing opportunities and Asian examples
 of alternative seafood products.
- Responsible aquaculture must avoid known or inadvertent impacts. (See ARE baseline report for coverage of certification schemes, also the SAQ).

- Enable companies to consider current and longer-term horizons, and develop a strategy to mitigate dependency and impacts of declining fish stocks, bycatch and phase out fishmeal and fish oil (FMFO) in animal feed.
- Encourage companies to identify and mitigate challenges in supply chain traceability and increase transparency. Resolving many of these risks can positively impact revenue and other financial indicators. Request the ARE fact sheet or a call for more information.
- Require accurate labelling of species, source and any certification schemes used.
 This value adds and helps build consumer confidence.
- Advance the business sustainably, graduating to robust certification, which needs to be carefully assessed, and disclosed on a global sourcing basis by species, geography, or product.

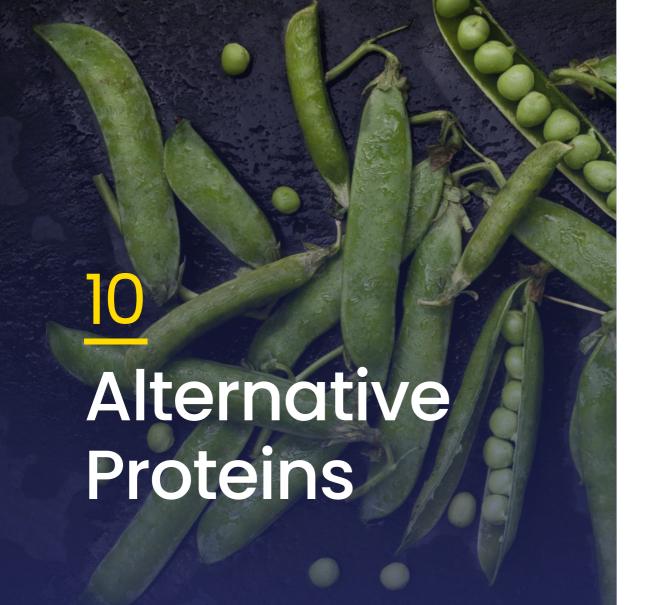
Item	Expected disclosures – reported annually Recommended 2030 and interim goals	Units / Output expected	Aligned frameworks reflected or rationale
8.1	A mitigation strategy based on estimated risk (medium and long-term) of declining fish stocks as part of an overarching transitional strategy from natural capital dependency. By 2025: Set a transitional strategy and goal to eliminate FMFO. By 2030: Confirm progress against company transitional strategy to reduce wild caught seafood dependency. Eliminated FMFO from supply chains.	Y/N + description. Strategy includes estimation of dependency and impact risks, and mitigation - including consideration of responsible aquaculture and alternative proteins. Clarify fish stocks of dependency, threatened & any related disclosure challenges.	S&P, MSC, Friends of the Sea. Contributes to SDG 12, 14, 15.
8.2	Responsible seafood sourcing/supply policy (wild caught, mariculture, aquaculture). In addition to 8.1, responsible fisheries, aquaculture and mariculture includes as relevant: - no bottom trawling, dynamite fishing, no IUU, no shark finning - *good human labour and animal welfare, minimal bycatch - closed or circular systems, no escapes. - *minimal wastes, antibiotic, chemical use. - * no mangrove destruction, and working towards no sourcing/use of FMFO By 2025: Publish comprehensive standards.	Y/N + description or weblink to policy/standards. (*see recommendations above / below for more guidance)	GRI, FAIRR, UN FAO, WBA, Friends of the Sea, MSC and ASC. Contributes to SDG 12, 14, 15.
8.3	2030 and interim targets published for the global volume of seafood supplied / sourced that meets independent wild caught or aquaculture certification, or is in a Fisheries Improvement Programme (FIP). By 2025: Publish 2030 and interim targets (towards 100% certification encouraged).	% certified of total global volume, & by species, geography. % in a FIP by species and geography. Weblink to targets.	Ocean Disclosure Project, Friends of the Sea, ASC, BAP, Global GAP, Seafood Watch – see SAQ for farmed fish welfare. Contributes to SDG 12, 14.
8.4	Annual progress against the above targets for responsible seafood sourcing. By 2030: Achieve the 2030 and interim targets (towards 100% certification).	Y/N + % certified, % in FIP	S&P, GRI. Ocean Disclosure Project. Contributes to SDG 12,14.



- Animal feed and protein production contributes the most nitrogenous and phosphorus waste, polluting air, soil, rivers, and oceans.
- It uses the most water, and exposes chemical, heavy metal, aerosols and antibiotic resistant bacteria to workers and the environment.
- Reducing waste and preventing pollution supports protection for natural capital and biodiversity.
- Protecting natural capital can translate to cost and GHG reductions, via
 efficiencies and circularity of water and waste. Voluntary carbon credits may be
 realised with manure biodigesters which also may enable legal compliance. Soil
 regeneration for productivity.
- Labelling opportunities for reduced water and waste footprint products, provide information and value add to conscious consumers.
- Diversify proteins for new revenue streams, which have significantly reduced water use and waste, and no use of antibiotics

- Aim to protect natural capital via responsible water and soil use, minimising chemicals and waste in the animal protein supply chain.
- Prompt companies to futureproof, by mitigating related climate risks and impacts related to feed crops, fertilisers, manure, wastes.
- Reinforce worker, public and animal health with minimisation of chemicals and wastes, and avoidance of harmful chemicals.
- Encourage target driven water and waste performance, based on highest risk areas first, and innovation and application of the 4Rs.

Item	Expected disclosures – reported annually Recommended 2030 and interim goals	Units / Output expected	Aligned frameworks reflected or rationale
9.1	Presence of a public policy to manage risk-based water dependency which implements efficiency and avoids existing or future water-stressed locations. By 2025: Publish a policy or commitment.	Y/N +policy content, weblink to policy. For suppliers/producers this includes all direct water use for animal protein production. For sourcing companies, policies encourage water efficiency and responsible sourcing.	CDP water, SASB. S&P. Contributes to SDG 6, 12, 15.
9.2	Performance in water use efficiency in high risk and water stressed locations. Ideally report via CDP water framework. Producers & suppliers only. By 2030: Reporting via CDP that demonstrates significant water efficiency and reducing total water use (based on risk and location), and via alternative proteins. Circular systems in place.	Quantitative indicators on water intensity, efficiency or use reduction. Plus mention and mitigation of any locations of high water-scarcity.	CDP water, SASB, GRI, S&P, SDGs, EU Commission, WBA. Contributes to SDG 6, 12, 15.
9.3	A published policy for responsible chemical use, packaging, and waste management, that identifies sustainable raw materials and minimises or avoids all persistent and hazardous chemicals, and wastes. (Harness the 4Rs – reduce, reuse, recycle, restore). By 2025: Publish a strategic policy for chemical use, packaging, and waste management.	Y/N + policy content, weblink to policy. For suppliers / producers this includes packaging and all wastes related to animal protein production. For sourcing companies, policy provides procurement guidance.	CDP water, SASB, S&P, GRI, SDGs, EU Commission. Contributes to SDG 3, 6, 12.
9.4	Percentage reduction of chemical use, waste, and packaging. Application of the 4Rs (reduce, reuse, recycle, restore) for: - Packaging materials (including avoiding single use plastic) - Feed and other raw materials, including fertiliser, pesticide use - Maintaining soil quality - Farm animals, processes - Slaughter and processing By 2030: Embed 4Rs, regenerative or circular systems to minimise chemical use, final waste and prevent pollution. Significant % reduction of chemical use, wastes, plastics, and packaging.	% reduction. Description + quantitative indicators of 4Rs ideally. Wastes include: waste water, crop runoff, chemicals, heavy metals, manure, antibiotic residues and resistance elements, nitrates, ammonia, phosphorus, aerosol wastes / pollutants (except GHGs), packaging and processing wastes.	SASB, FAIRR, GIIN, GRI, S&P, EU Commission, WBA. Contributes to SDG 3, 6, 12.



- Alternative proteins at scale can help alleviate a range of sustainability challenges
 faced by protein businesses as they involve significantly less energy, land, water
 use, waste and GHG, and no antibiotics nor live animals. Alternative proteins can
 contribute more efficiently to food security.
- Manufacturers can diversify readily with existing equipment and knowledge, producers can innovate and adapt better to climate and supply disruptions, and retailers and other buyers can respond with new offerings and agility to the growing Asian consumer interest.
- Protein diversification creates new revenue streams in and beyond Asia, and the ability to upscale and help offset a range of sustainability risks.
- Cultivated meat can be better protected from climate impacts, with the integrated use of renewable energy and sustainable plant media.
- Asia is already an 'alternative' protein hub with key governments leading in the policy and regulatory space, supporting innovation and investment.

- Enable strategic allocation of capital and grow their protein portfolio, revenue streams and markets, while reducing sustainability risks.
- Encourage aspirational targets for sales, revenue, and volumes to incentivise innovation and drive cost-efficient growth.
- Optimise sustainability disclosure via the first dedicated framework for diversified companies to reinforce responsible sourcing or supply.
- Enable companies to better demonstrate sustainability credentials of products, label, position, and price them for accelerated consumer uptake.

Item	Expected disclosures – reported annually Recommended 2030 and interim goals	Units / Output expected	Aligned frameworks reflected or rationale
10.1	Incorporation of alternative proteins in the company sustainability and business strategy. By 2025: Include protein diversification in their business strategy. Demonstrate robust understanding of the benefits, current and future market potential and reducing reliance on animal protein, noting any materials risks, challenges and sustainability opportunities. Overarching plans for a just transition, and any capital expenditure are also needed.	Y/N and description of diversification or displacement (over time). Discussion of relevant trends, data, marketing, CAPEX and forecasts, and just transition.	FAIRR. Contributes to SDG 2, 3, 7, 8, 9, 12, 13, 14, 15.
10.2	Presence of aspirational target(s) for supplying or sourcing alternative proteins – related to any capital expenditure plans, revenue forecasts and growth. By 2025: Set 2030 and interim target(s) for protein diversification and / or replacement.	Y/N, describe targets (various options) e.g. X percentage of total protein sales from plant-based products by 2030,7% growth yoy (or displacement).	SASB, FAIRR, Clear Current Capital, GFI, Plant Based Foods Association (labelling standards), WBA.
10.3	Percentage of alternative protein of the total protein supplied or sourced – by sales or revenue or volume – and in the context of annual growth (or initially by investment, R&D etc). By 2030: Demonstrate robust progress towards ambitious alternative protein targets as a percentage of total proteins sourced/supplied.	Quantitative % as per target e.g. percentage of total protein sales that come from plant/fermentation -based proteins. Discuss progress in context of growth, any challenges, re-forecasts etc.	Quantitative % as per target e.g. percentage of total protein sales that come from plant / fermentation-based proteins. Discuss progress in context of growth, any challenges, re-forecasts etc.
10.4	Company reports sourcing or supply of alternative proteins via the GFI & FAIRR Alternative Protein ESG reporting framework for diversified companies. By 2025: Company starts reporting alternative proteins in the above framework. By 2030: Company is comprehensively reporting its alternative proteins in the GFI & FAIRR Alternative Protein ESG reporting framework for diversified companies.	Y/N and weblink to this reporting.	SASB, Clear Current Capital, GFI & FAIRR Alternative Proteins ESG Reporting Diversified Company Framework, Plant Based Foods Association (labelling standards)

Critical Issues

Critical issues are those that severely undermine the company's ability to address and assure responsible protein supply or sourcing. Investors expect priority, proportionate and high-level attention, as well as timely implementation of an action plan to resolve these issues. The encouraged approach is a timely 'find it, fix it and prevent it' strategy and discussion of the barriers and solutions to resolve these issues. Management of critical issues should also be facilitated through discussion of company strategy, processes, practices and engagement of suppliers and sourcing staff to reduce and resolve these risks at every possible opportunity.

Deforestation & Biodiversity Loss



Company lacks disclosure of a zero deforestation target for soya & beef after 2025. Any new mangrove deforestation.

Alternative Proteins



Company lacks disclosure of an alternative protein target by 2025.

Governance



Persistent lack of Board capability, consideration and accountability for protein risks. Lack of a detailed responsible and sustainable protein policy published by the company.

Public Health



Company lacks a clear prohibition of antibiotics for growth promotion, use of beta agonists or other growth-related hormones.

Water



Company conducts new or additional water extraction at known water-scarce locations.

Animal Welfare



Company builds new farms with sow gestation stalls or caged layer hens. Ongoing slaughter without prior stunning in any terrestrial species.

Labour



Company lacks a public policy and process for feasible mitigation of child, forced or illegal labour.

Seafood



Company lacks prohibition of IUU, dynamite fishing, shark finning, new mangrove destruction, new bottom trawlers or their use in new areas.

Waste



Company lacks safety management and phase out plan for heavy metals, toxic chemicals, unprocessed manure, known zoonotic pathogens in effluents or run off

Climate Impacts



Company has not disclosed a net zero emissions target after 2025. Production companies not reporting scope 3 targets after 2025.



AMR - antimicrobial resistance

ASC - Aquaculture Stewardship Council

BAU - business as usual

BAP - Best Aquaculture Practice

BBFAW – Business Benchmark for Animal Welfare

CDP - Carbon Disclosure Framework

CDSB - Climate Disclosure Standards Board

DJSI - Dow Jones Sustainability Index

ETS - Emission Trading Scheme

FAIRR - Farm Animal Investment Risk & Return

FARMS – Farm Animal Responsible Minimum Standards

GFI - Good Food Institute

GHG - Green House Gas

GIIN - Global Impact Investing Network

GRI - Global Reporting Initiative - (for Agriculture, Aquaculture and Fishing, 2022)

IFC - International Finance Corporation

ILO - International Labour Organisation

ISSB / IFRS- International Standards Setting Board now International Finance Reporting Standards Foundation

LCA - Life Cycle Assessment

MSC - Marine Stewardship Council

PRI - Principles for Responsible Investment

SASB - Sustainability Accounting Standards Board - Standards

for meat, poultry and dairy (now under IFRS)

SBTi – Science Based Targets initiative

S&P - S & P Global Corporate Sustainability Assessment (DJSI

2021) - Food Products, Food and Staples Retailing

TCFD - Task force for Climate related Financial Disclosure

TNFD - Task force for Nature related Financial Disclosure

UN FAO – United Nations Food and Agriculture Organisation

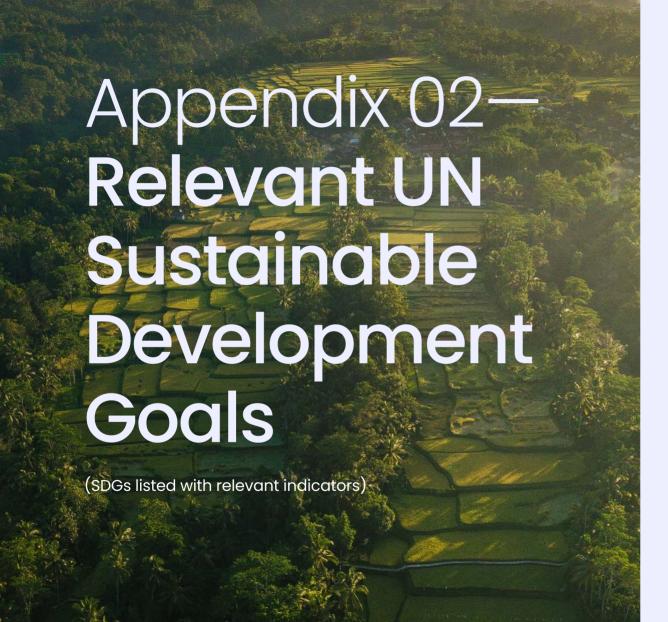
WBA - World Benchmarking Alliance

WFE – World Federation of Exchanges

WHO – World Health Organisation

WHS - Work Health and Safety

WOAH - World Organisation for Animal Health



- End hunger, achieve food security and improved nutrition and promote sustainable agriculture.
- 3. Ensure healthy lives and promote well-being for all ages.
- 5. Achieve gender equality and empower women and girls.
- Ensure availability and sustainable management of water and sanitation for all.
- Ensure access to affordable, reliable, sustainable and modern energy for all.
- Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
- Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
- 12. Ensure sustainable consumption and production patterns.
- 13. Take urgent action to combat climate change and its impacts.
- 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
- 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

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*In addition to the above, a full list of the standards and frameworks reviewed, and sustainability topic factsheets are available from ARE

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