

IMPACT BOND ASSESSMENTS

RATING METHODOLOGY

The logo for MARC Ratings, featuring the word "MARC" in a bold, red, serif font, centered between two horizontal blue lines.

OVERVIEW

This report outlines MARC Ratings' methodology for assessing green, social and sustainability bonds. Green, social and sustainability bonds, hereafter collectively referred to as impact bonds, are fixed-income financial instruments that mobilise private sector capital to generate positive environmental and/or social benefits. MARC Ratings' impact bond assessments (IBA) are not an evaluation of a bond's credit quality and should not be confused with the agency's credit ratings. These criteria are applicable to impact bonds or sukuk on which payment of principal and interest or profit is independent of environmental and/or social outcomes. Social impact bonds, which are essentially pay-for-success obligations are excluded from the scope of these criteria.

The global green bond market has expanded rapidly since 2014, driven by political and regulatory pressure to transition towards greater environmental sustainability as well as increased climate-conscious investor appetite, assisted more recently by a concerted push by policy-makers to bring green finance into the mainstream. The acceptance of green bonds has helped pave the way for sustainability-conscious investors and issuers to extend the remit of the impact bond market beyond climate finance to sustainable development finance. The increasing recognition of the impact bond market's importance from policymakers and regulators is evidenced by the formulation of country and regional standards such as Malaysia's Sustainable and Responsible Investment (SRI) Sukuk Framework and the ASEAN Green Bond Standards (AGBS).

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Contents

OVERVIEW.....	1
THE IMPACT BONDS ANALYTICAL FRAMEWORK	3
IMPACT SIGNIFICANCE ANALYSIS	4
Impact Significance Analysis of Green Projects	6
Impact Significance Analysis of Social Projects	9
Impact Significance Analysis of Sustainability Projects	11
ANALYSIS OF COMPLIANCE WITH RELEVANT PRINCIPLES	13
ANALYSIS OF SUSTAINABILITY PERFORMANCE	15
ASSIGNING THE IBA.....	18
APPENDIX 1 GREEN BONDS	19
APPENDIX 2 SOCIAL BONDS.....	20
APPENDIX 3 SUSTAINABILITY BONDS.....	21

Continued from page 1

Over the past several years, a worldwide consensus has emerged on the need for a more inclusive growth and development model. The essence of sustainable development is sustained progress in living standards, a broad concept that extends beyond economic prosperity to include economic opportunity, security and quality of life. This broad definition of sustainable development is reflected in the 17 Sustainable Development Goals (SDG) as defined by the United Nations (UN). Social bonds and sustainability bonds represent promising means by which private capital may be mobilised towards the significant investments in social projects and green projects needed to accomplish the 17 goals.

While the impact bond market began as an issuer-labelled market, standards and best practices have emerged over time to protect the integrity of the impact bond market in the form of the Green Bond Principles (GBP), the Climate Bonds Standard, Social Bond Principles (SBP) and the Sustainability Bond Guidelines (SBG). Impact bonds are differentiated from their unlabelled equivalents by issuers' pre-issuance commitments regarding the use of proceeds, the process for project evaluation and selection, management of proceeds and reporting. Currently, the expectation is for issuers of impact bonds to observe the voluntary process guidelines to facilitate standardisation and credibility within the market.

Importantly, it has also become a mainstream practice for issuers of impact bonds to seek an independent external review on the alignment of the bonds with the GBP, SBP and/or SBG, as applicable, prior to issuance. The growing interest in green bonds and the general consensus around the potential of impact bonds to play a larger role in funding sustainable development are behind MARC Ratings' decision to provide IBA alongside its bond credit ratings. These assessments may also be referred to individually as green, social or sustainability assessments (or second opinions), as the case may be.

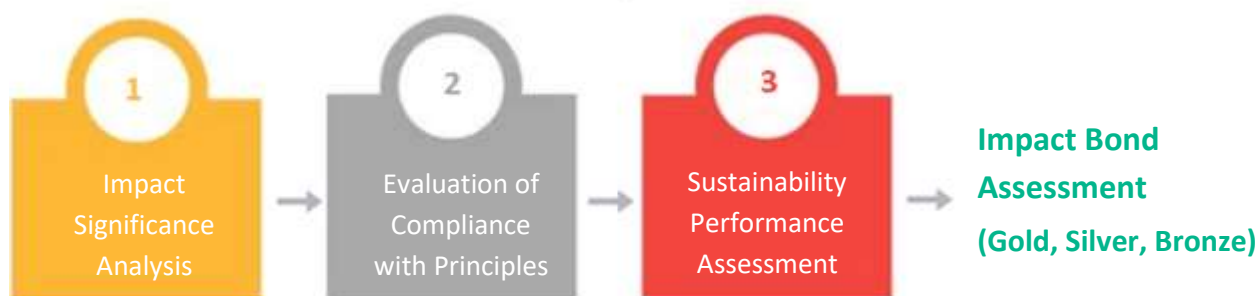
ANALYTICAL FRAMEWORK

MARC Ratings' analytical framework for evaluating the sustainability credentials of impact bonds (green and/or social) consists of three components: (1) an impact significance analysis or benefit assessment of the underlying funded project(s); (2) an assessment of compliance with the AGBS and the International Capital Market Association's (ICMA) GBP or SBP and/or SBG, as applicable; and (3) an evaluation of the issuer's sustainability performance.

MARC Ratings' IBAs are assigned on a descriptive scale and are expressed using a "Gold-Silver-Bronze" grading system. The assessment is largely pass/fail; impact bonds will have to meet the minimum thresholds in each of the specified analytical components to be graded Gold, Silver or Bronze. Impact bonds that are unable to demonstrate that they meet the minimum thresholds will not receive an IBA grade. The minimum grade and score thresholds for each of the three analytical components of MARC Ratings' IBA are set relatively high in order to maintain the value and integrity of each MARC Ratings-assigned IBA. Our methodology references market guidelines as well as sector-appropriate sustainability standards and practices as the baseline of performance.

MARC Ratings undertakes impact assessments using a sequential analysis. In the first stage of analysis, MARC Ratings will perform a benefit assessment or impact significance analysis of the funded projects. In the next stage, an analysis of the issuer's commitments on the allocation, management and administration of bond/sukuk proceeds made prior to issuance, as well as post-issuance reporting commitments to investors will be undertaken. Finally, we evaluate the issuer's sustainability implementation capacity and performance to incorporate our expectation of its compliance behaviour with regard to its sustainability framework for the bonds or sukuk issuance.

Exhibit 1: Impact Bond Assessment Analytical Process



Unlike our credit ratings, MARC Ratings' IBAs will not be monitored continuously nor updated at least annually unless expressly requested by the issuer. While market guidelines do not mandate monitoring and verification of the green and/or social credentials of impact-oriented bonds on an ongoing basis, we would highly recommend issuers to maintain and refresh the assessments over the life of the bonds. While our IBAs are intended to be forward-looking, there could potentially be changes in the sustainability performance of funded projects and compliance with individual impact-oriented bond issuance frameworks.

IMPACT SIGNIFICANCE ANALYSIS

The purpose of MARC Ratings' impact significance analysis (ISA) or benefit assessment is to identify the sustainability benefits, environmental and/or social, of funded projects, and where practical, quantify the expected benefit(s) arising from these projects. The ISA represents an important component of MARC Ratings' IBA, since it sets a ceiling on the final "Gold-Silver-Bronze" grading that an impact bond may obtain. The analysis underpinning the ISA can be used to complement investors' analysis and evaluation of sustainability claims of different labelled impact bonds. It is intended to help address investors' need for assurance that funds will genuinely be deployed to projects and solutions that deliver meaningful impact.

We anticipate that our impact significance analyses might be necessarily general and qualitative in the early stages of implementation of IBAs. Our evaluations are likely to draw heavily on qualitative and descriptive measures. Finer granularity in the assessments may be introduced over time with the availability of comparable performance information and benchmarks to support more precise comparisons between underlying projects. MARC Ratings considers a qualitative approach to analysing sustainability benefits to be the most pragmatic approach in instances where sustainability benefits may not be amenable to quantification. Sustainability benefits are always more identifiable in qualitative terms relative to quantitative terms.

The impact evaluation of social bond projects is generally more challenging than that of green bond projects because the most important indicators of social change are often not quantifiable. At the same time, we recognise that a qualitative approach to identifying project benefits may provide sufficient credibility for social bond investors, notwithstanding its limitations. In assessing the benefits of funded projects qualitatively, MARC Ratings reviews the description of expected benefit(s), the affected locations or regions, sectors and social groups, as furnished by the issuer. The sustainability objectives and key sustainability performance indicators will be ordinarily conveyed in a bond's green, social or sustainability bond framework. Where suitable quantitative data is available, MARC Ratings will also analyse the expected benefits quantitatively to obtain a more comprehensive aggregate picture of expected benefits arising from funded projects.

MARC Ratings recognises that due to foreseeable differences between impact bonds in terms of size, themes, funded projects and expected sustainability outcomes, each impact significance assessment requires careful consideration of the project's or projects' economic, social, environmental and institutional context. MARC Ratings is mindful that the marginal benefit of a project that provides access to clean and affordable energy, basic services and education is higher in countries or regions that are in an early stage of sustainable transition than countries or regions that have made more progress toward sustainable development. Generally, MARC Ratings focuses on four categories of benefits: environmental, economic, social and health. Health benefits are essentially a subset of social benefits but will be assessed as a separate category for the purposes of MARC Ratings' benefit assessment. In arriving at its assessment of impact significance, MARC Ratings will consider the extent to which the underlying project or projects support a bigger-picture global perspective to environmental, social or sustainability issues, as reflected in global sustainability goals such as UN's SDGs.

Exhibit 2 : ISA Scale

Descriptive Grade	Description
Very Significant	This level of impact significance is assigned where underlying projects are expected to generate very visible positive ground level impact. Projects at this level support the realisation of long-term integrated visions of sustainable development that are consistent with global sustainability goals, as well as national sustainable development goals and priorities.
Significant	This level of impact significance is assigned where underlying projects are expected to generate a visible positive ground level impact. Projects at this level have the potential to facilitate adjustments towards a more sustainable development trajectory and to meaningfully advance national level sustainable development goals.
Fairly Significant	This level of impact significance is assigned where underlying projects are expected to generate a ground level impact which, although at a lower magnitude than that expected for higher assessment levels, is still considered noteworthy.
Marginal	This level of impact significance is assigned where underlying projects are expected to generate a positive but limited ground level impact.
Not Significant	This level of impact significance is assigned where underlying projects are expected to have negligible ground level impact.

The outcome of MARC Ratings' ISA is expressed on a five level "significance" scale. By design, this ordinal scale is able to accommodate impact bonds of various sustainability themes and secondary sub-themes. (Sustainability themes such as water, waste, sustainable use of natural resources, etc. can be broken

down further into sub-themes such as water infrastructure and water as a natural resource). MARC Ratings relies on its ISA to position the bond's IBA.

It should be noted that actual impacts may vary substantially from intended positive impacts. Future events or conditions that cannot be anticipated at the time an assessment is carried out may affect sustainability benefits realised post-issuance. Pre-issuance benefit assessments which are largely forward-looking will ordinarily incorporate sustainability assertions that cannot be verified as facts. For this reason, MARC Ratings considers post-issuance impact reporting an important means by which an impact bond may demonstrate its achievement of its sustainability objectives and mitigate the risk of its green and/or social credentials being challenged.

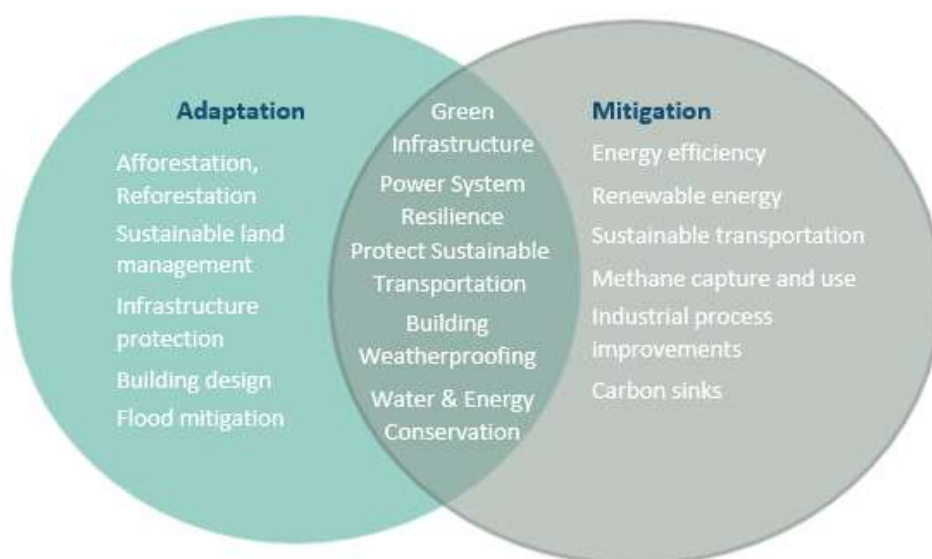
Impact bonds must achieve a minimum impact significance assessment of "Fairly Significant" to achieve an IBA grade.

Impact Significance Analysis of Green Projects

The green project universe ranges from pure climate change-focused projects to those that provide climate change benefits as one part of an overall development programme, and those with only incidental indirect effects. The focus of MARC Ratings' ISA on green projects will be on identifying the potential environmental improvement or climate change adaptation benefit. Reducing climate change vulnerability may be achieved by reducing exposure through specific measures or increasing adaptive capacity through activities that are closely aligned with development priorities.

MARC Ratings' approach to assessing the green impact of a bond considers the continuum of actions that can be taken from reducing emissions of greenhouse gases (GHGs) (mitigation) at one end to very explicit measures targeting distinct climate change impacts (adaptation) on the other. In between lies measures which possess elements of mitigation and adaptation, some weighted more towards mitigation and others, more towards adaptation.

Exhibit 3: Interactions between Adaptation and Mitigation Synergies



Adapted from "Green Resilience: Climate Adaptation + Mitigation Synergies", April 2014, Uvardy S and Winklema S

Both adaptation and mitigation can reduce and manage the risks of climate change impacts. While mitigation projects aim to limit future climate change, adaptation projects address particular climate change effects (e.g. heat, flooding) in order to either minimise or avoid damage.

Green projects span a wide range of sectors, including energy, buildings, transportation, agriculture and forestry. Examples of the major sectors and types of projects financed by green bonds are given as follows.

Exhibit 4: Green Projects and Quantifiable Benefits

Sector	Examples of Eligible Projects	Quantifiable Environmental Benefit	Environmental Impact Metrics
Renewable energy	Wind, solar, small scale hydro and biomass projects and their associated components	Alternative energy generated	Installed capacity (MW) Electricity produced from renewable sources (MWh) Tonnes of CO ₂ equivalent (tCO ₂ eq) avoided
Energy efficiency	Cogeneration plants, installation, development or manufacture of energy efficiency products, transmission, distribution and smart grid projects	Energy savings	Energy saved per year (kWh/year) Percentage energy efficiency achieved Grid losses reduced Grid emissions savings as measured by tCO ₂ / MWh
Green buildings	Development or construction of buildings with green building certificates	Energy savings	Annual primary energy consumption in kWh/m ² Annual carbon emissions in kg/m ² compared to local average
Low carbon transportation	Development and operation of electric public transportation infrastructure and systems, and electric public transport vehicles production	Carbon and climate resilience	GHG emissions savings/tCO ₂ eq avoided (total and per passenger km travelled)
Sustainable forestry	Forest management activities that comply with international standards on sustainable forest management	Carbon and climate resilience Resource management	CO ₂ emissions avoided through planted forests Total land area under sustainably certified forests
Water efficiency	Development or construction of infrastructure, technology or equipment designed to conserve water resources and/or increase water use efficiency	Water resource conservation	Amount of water saved
Waste Management	Recycling projects Re-use of waste projects	Pollution prevention Carbon and climate resilience	Annual amount of hazardous waste reduced/avoided Estimate of annual GHG emissions reduced/avoided (tCO ₂ eq) [for waste-energy technologies]

Our ISAs recognise a trade-off between short-term and long-term mitigation and adaptation solutions in a changing environment. Other relevant considerations include the potential for trade-offs between different mitigation and adaptation solutions.

Mitigation projects are evaluated in terms of their expected or actual contributions to the target of a global temperature rise below 2°C this century, as agreed at the Paris Summit. Adaptation projects are evaluated on the basis of the resilience benefit they provide to a geographical area or asset base. Unlike mitigation, adaptation tends to be more affected by the uncertainty associated with future climate outcomes. In the case of projects designed explicitly to address climate concerns, MARC Ratings' ISA is informed by the project's specific climate change-linked objectives and the issuer's quantification of resilience benefits. The reduction in future damages attributable to a project could possibly be estimated using current information on mortality or property damage trends and this would be viewed in the context of the country's long-term climate change strategy. The approach will be identical for projects that have a clear adaptation component within a broader development agenda as well as projects that have incidental climate change benefits.

MARC Ratings takes all of the aforementioned considerations into account insofar as possible to place underlying green project(s) on a five-level significance scale. MARC Ratings' intention in providing some granularity in its assessment of underlying green projects is to assist impact investors in identifying the projects with the highest expected "environmental leverage" ratio, e.g. the amount of environmental benefit on invested capital. MARC Ratings' impact significance assessment sets a ceiling on the final "Gold-Silver-Bronze" grading that a green bond issuance may achieve. ISA grades of "Very Significant" and "Significant" are prerequisites for achieving "Gold" and "Silver" green bond assessments respectively.

The "Very Significant" designation is reserved for green project(s) which present climate change solutions consistent with the Paris Summit's vision of a low-carbon economy and offer the best opportunities for a low emission pathway and climate change adaptation. Green projects which signify progress being made towards the long-term mitigation and adaptation objectives may be rated "Significant". Mitigation projects in this space play an interim role in transitioning to a low carbon world. The "Fairly Significant" designation will be used for projects that offer lesser, but still noteworthy climate change mitigation and adaptation benefits. Mitigation projects that provide meaningful environmental savings but do not contribute to the transition to lower carbon energy sources will be graded "Fairly Significant".

MARC Ratings is mindful of the need to consider the negative and positive environmental impacts of a project relative to an appropriate baseline. For example, a project-level baseline inventory of emissions is critical in assessing the effectiveness of a mitigation project in that it provides a reference point from which a counterfactual scenario can be created and compared with post-project emissions levels to determine impact. In the case of mitigation projects where such information is not available, MARC Ratings will likely rely on available and credible published studies on life cycle environmental impacts of the same technology or similar projects. Our analysis of lifetime impacts of a renewable power project, for instance, will consider the environmental effects associated with the production, operation and dismantling of facilities, applicable environmental regulations as well as mitigation measures adopted to limit adverse environmental side effects.

MARC Ratings recognises the importance of understanding the environmental impacts specific to different renewable energy technologies, in particular the different impacts that different renewable energy technologies can have on the environment at distinct phases of their life cycles. MARC Ratings'

impact significance analyses will also be informed by environmental impact assessments, where available. Typically mandatory for large projects, environmental impact assessments can identify and help mitigate inadvertent negative impacts to the environment.

Impact Significance Analysis of Social Projects

To date, a number of national development banks and international banks have developed social and/or sustainability bond frameworks under which proceeds of issued bonds have been used to support projects that offer broad social benefits aligned to selected UN SDGs. These social and sustainability bond frameworks provide examples of eligible assets and activities across a fairly wide range of SDGs. Recurring impact themes of social bond issuances to date include, among others: 1) employment generation; 2) affordable basic infrastructure; 3) essential services; 4) affordable housing; 5) food security; and 6) socio-economic advancement of women and members of disadvantaged communities.

An example of a fairly recent issuance of a social bond with a gender equality theme is National Australia Bank Limited's (NAB) gender equality social bond in March 2017. The bond proceeds were earmarked to finance lending to organisations that were leaders in fostering workplace gender equality in Australia. This was followed in the same year by Australian insurer QBE's gender equality US\$ denominated Reg S perpetual fixed rate Additional Tier 1 (AT1) bond which linked financing eligibility to multiple criteria of leadership in gender equality.

MARC Ratings' analysis of social projects incorporates issuers' estimates of social value created with respect to opportunity, income, security, and quality of life, as applicable. Clear and measurable social value indicators relevant to project objectives should be reported where feasible and tracked to facilitate assessment of social performance. Some projects will not have immediate targeted social impact, hence medium/long-term effects (such as intergenerational social mobility) need to be distinguished from short-term effects, and direct impacts from indirect impacts. The assessment of impact is complicated by undisputed yet difficult to quantify impacts. For example, impacts from improved access of disadvantaged communities to healthcare, social housing and training extend beyond direct positive individual outcomes to longer term outcomes such as increased workforce participation and reduced likelihood of involvement with the justice system.

Generally, diverse types of impacts can be anticipated from social projects, ranging from access to affordable basic infrastructure, social housing or essential services to financial inclusion and employment creation for marginalised communities and households. The positive benefits of employment generation and improvements in access to higher education, female labour force participation and income equality include not only sustained growth but also more inclusive growth and intergenerational mobility. Enhanced access to essential services such as energy, mass rapid transit systems, telecommunications, postal services, water supply and waste management, meanwhile, increases social and economic cohesion. Financial institutions that issue social bonds to facilitate the access of micro, small- and medium-sized enterprises (SMEs), start-up companies and enterprises with no assets against which to secure loans to financing contribute to improved financial inclusion, a universally acknowledged prerequisite for economic participation and productivity.

Exhibit 5: Social Projects and Quantifiable Benefits

Sector	Examples of Eligible Projects	Quantifiable Social Benefit(s)	Social Impact Metrics
Energy	Rural electrification	Access to energy	Number of households connected to the electric grid in rural areas Number of localities electrified
Agriculture and food security	Small-scale irrigation and agriculture value chain development; provision of farm infrastructure and agricultural inputs for rural farmers; soft commodity finance facilities	Number of farmers brought into sustainable supply chain; access to finance; cultivated area benefiting from more sustainable production	Length of roads rehabilitated and/or constructed Number of smallholder farmers supported Hectares of land cultivated in respect of which use has improved Amounts loaned to farmers
Agri-business, industries and services	SMEs and value chain financing	Access to finance for market segments underserved by traditional commercial banks	Number of agri-businesses established
Information and Communications Technology (ICT)	Last mile connectivity for rural farmers	Access to essential services	Number of rural dwellers with increased access to ICT
Water supply and sanitation	Sustainable water supply and sanitation delivery	Access to adequate sanitation facilities and safe drinking water	Number of rural dwellers with new or improved access to water and sanitation Length of drinking water transmission and distribution pipes constructed Reduction rate in the incidence of sanitation-related diseases
Housing finance, financial inclusion, financial sector development	Social housing; providing access to payment platforms to the low-income segment	Access to formal financial services and affordable housing	Number of rural users with access to financial services Number of affordable housing units Number of housing loan beneficiaries
Education and vocational training	Skills development for employability and entrepreneurship; teaching facilities	Access to quality education and vocational training	Number of students enrolled Number of classrooms and educational support facilities constructed/rehabilitated Number of teachers and other educational staff recruited/trained
Health	Construction of hospitals and healthcare centres	Access to essential healthcare	Number of people with access to better health services Number of health centres constructed and/or equipped

Impact Significance Analysis of Sustainability Projects

In allowing issuers to use the proceeds for both environmental and social projects, sustainability bonds can accommodate a much broader range of projects. A common element of sustainable bonds issued to date is the alignment of the supported social and environmental initiatives with the UN SDGs as shown in the Exhibit 6.

Exhibit 6: UN Sustainable Development Goals



Source: United Nations, 2015

Global sustainability goals advanced by eligible projects under issuer sustainability bond frameworks witnessed to date include SDGs 1 (No Poverty), 3 (Good Health and Well Being), 4 (Quality Education), 5 (Gender Equality), 6 (Clean Water and Sanitation), 7 (Affordable and Clean Energy), 9 (Industry, Innovation and Infrastructure), 10 (Reduced Inequalities), 11 (Sustainable Cities and Communities), 12 (Responsible Consumption and Production), and 13 (Climate Action). Projects aligned to the aforementioned SDGs are widely recognised as impactful project categories under GBP 2017, SBP 2017 and SBG 2017.

MARC Ratings will assess the impact of green and social components of sustainability projects separately. The environmental and social components will vary considerably depending on the nature of the project and its particular circumstances. MARC Ratings will assign both components equal importance in its impact assessment.

MARC Ratings' evaluation of environmental and social impact will reflect the nature of the funded project(s). Many sustainability projects have important social spin-offs in addition to environmental benefits. Water and wastewater treatment projects fall within this category. The environmental benefits of such projects include reversed environmental degradation of surface water and conservation of underground water resources while primary social benefits include improved public health arising from better sanitation. Eco-efficient farming projects that promote sustainable food production systems and resilient agricultural practices also offer both environmental and social benefits. These projects benefit

ecosystems and strengthen capacity for climate change adaptation, as well as address SDG 2 (Zero Hunger).

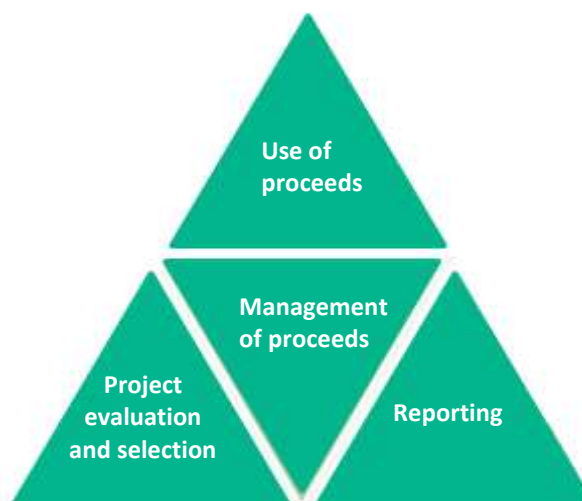
Exhibit 7: Examples of Sustainability Projects and Qualitative Benefits

Project Categories	Examples of Eligible Projects	Targeted Groups	Sustainability Benefits
Access to Essential Services	Investment in public education, culture, leisure, sports and health infrastructure such as schools, libraries, social facilities, hospitals, etc.	Families in general including: Low-income families Youth Elderly people Individuals with disabilities Homeless individuals	Increased social inclusion and inequality Access to quality public education Enhancement of leisure and sports opportunities
Socioeconomic advancement	Facilities for drug addicts, elderly people, etc.	Dependent people Drug addicts Elderly people	Access to essential services Increased social inclusion and inequality
Affordable Housing	Construction and renovation of affordable housing units	Low-income families Elderly people Women victims of domestic violence Homeless individuals	Access to housing for targeted groups Reduced homelessness Improved social cohesion
Employment generation	Entrepreneurship development Improvement of dedicated facilities Development of information systems	Unemployed People working in SMEs	New job creation and increased job security Increased social cohesion Enhancement of employment opportunities
Energy efficiency	Buildings: construction or renovation works integrating energy efficiency solutions Maintenance of public spaces based on environmental criteria Installation of electrical consumption meters	General population	Climate change mitigation Increased energy efficiency and energy savings
Clean transportation	Public transport Alternative transport: increasing bicycle use Electric vehicles infrastructure	General population	Climate change mitigation Reduced health effects Improved social cohesion Improved quality of life
Pollution prevention and control	Construction and development of waste treatment centers	General population	Improved ecosystem condition Reduction of polluting waste Reduced health effects

ANALYSIS OF COMPLIANCE WITH RELEVANT PRINCIPLES

MARC Ratings undertakes an analysis of the issuer's compliance with the GBP and/or SBP (also the SBG in the case of sustainability bonds), as applicable. We assess the issuer's commitments on the allocation, management and administration of bond/sukuk proceeds made prior to issuance, as well as post-issuance reporting commitments to investors.

Exhibit 8: Core Components of the GBP and SBP



Use of proceeds

A defining characteristic of impact bonds is the use of bond proceeds to support assets and activities identified as contributing to environmental sustainability and/or social objectives. Proceeds from an impact bond issuance may be used to finance different stages of a green and/or social project, from the acquisition or development of assets to the operation of underlying project assets and/ or refinancing of such assets. Where all or a proportion of the proceeds are to be used for refinancing, issuers will be expected to provide information on the share of financing versus refinancing and the investments or project portfolios which may be refinanced in accordance with the GBP and/or SBP.

Generally, MARC Ratings looks to see that qualifying green projects provide clear environmental benefits and that the benefits have also been assessed and quantified at the pre-issuance stage. A similar review is undertaken with respect to qualifying social projects under a social bond framework. MARC Ratings will make note of any ambiguities in the documentation of the use of proceeds and draw attention to the same in its IBA.

Process for project evaluation and selection

MARC Ratings examines the process by which projects or programmes are nominated under an issuer's impact bond framework. The aforementioned process should be documented in reasonable detail. The focus of MARC Ratings' review will be on the clarity, comprehensiveness and transparency of eligibility criteria as defined in the issuer's respective bond framework and/or legal documentation for the issuance of the bonds.

The specific environmental and/or social objectives of funded projects should be clearly communicated to investors, as required under the GBP and SBP respectively. Funded projects must fall within eligible green and/or social project categories that are recognised by the GBP and/or SBP, as applicable and meet the bond's documented objectives. Bond frameworks that demonstrate a transparent project selection and evaluation process are viewed favourably by MARC Ratings.

Management of proceeds

The spending of bond proceeds and related investment earnings must be tracked to ensure they are directed towards eligible projects. MARC Ratings evaluates the adequacy of the process that will be put into place for the tracking of the allocation and the use of the bond's proceeds as outlined by the issuer's impact bond framework. MARC Ratings will consider the internal process in place to periodically reconcile the tracked proceeds to allocations made to eligible projects and to inform investors of the administration of proceeds and unallocated proceeds.

Reporting

MARC Ratings assesses the appropriateness of commitments made by the issuer in terms of reporting on the allocation and use of issuance proceeds as provided under the issuer's impact bond framework and bond documentation. This addresses the risk that the bond will be used to finance projects other than the types of projects that it set out to fund at the point of issuance. MARC Ratings will review the reporting commitments to determine whether the following pertinent disclosures will be made: list of projects, progress of the project, environmental and/or social benefits as applicable, the amount of the unallocated proceeds and how the unallocated proceeds will be managed. MARC Ratings expects issuers to maintain readily available up-to-date information on the use of proceeds until full allocation and as necessary thereafter, as warranted by material developments.

Apart from confirming with the issuer whether annual verification of proceeds will be performed by its auditor in appointment for any particular year, MARC Ratings will also consider the issuer's use of metrics to measure and capture positive outcomes from funded projects. These include qualitative performance indicators and, where feasible, quantitative performance measures. External assurance or third-party reviews of the reported information constitutes current best practice based on observed impact bond reporting to date.

MARC Ratings uses a scoring approach to evaluate the bond's conformance with each of the four aforementioned principles. MARC Ratings will assign one of the four following grades based on its evaluation of the bond's adherence to each of the four aforementioned principles: "High", "Good", "Satisfactory" and "Low". Each assigned grade is converted to a numerical value based on the scale below.

Exhibit 9: Compliance with Relevant Principles: Assessment Scale

Assessment Grade	High	Good	Satisfactory	Low
	3	2	1	0

Equal weighting is given to each of the four principles in arriving at the total score which will then be expressed on a four-point descriptive scale which ranges from High Standards (highest) to Low Standards (lowest).

Exhibit 10: Relationship between Compliance Evaluation and IBA

Overall Assessment	Total Score	Scorecard Indicated IBA
High	10- 12 points	Gold
Good	7 -9 points	Silver
Satisfactory	4 – 6 points	Bronze
Low	Below 4 points	Not Graded

Consistent with the minimum hurdle approach mentioned earlier, the evaluated impact bond must attain a minimum grade of “Satisfactory” in each of the four assessed dimensions to qualify for an IBA grade.

ANALYSIS OF SUSTAINABILITY PERFORMANCE

MARC Ratings views documented frameworks and processes as a necessary but not sufficient condition to ensure the issuer's post-issuance compliance with the sustainability framework for its bonds or sukuk issuance on an ongoing and continuous basis. Accordingly, the final component of IBA analytical framework is a qualitative assessment of the issuer's sustainability performance which considers the issuer's reputation for and commitment to environmental and/or social sustainability. This qualitative assessment is combined with the ISA and the assessment of compliance with the GBP and/or SBP in arriving at the final IBA, guided by the rating definitions for each of the three IBA grades.

Corporate sustainability reports or corporate social responsibility (CSR) reports would be an important primary source of information on the issuers' sustainability performance metrics. For some issuers, sustainability reporting may take the form of a simple statement in their annual reports while for others, this would entail a more detailed account of their economic, environmental, social and governance performance. In recent years, there is a growing trend among companies worldwide to integrate traditional financial reporting with sustainability reporting in response to increasing regulatory and stakeholder demands for transparent and accurate sustainability reporting. The integration of third-party verification into sustainability reporting currently constitutes best practice in CSR reporting. MARC Ratings also evaluates the effort that an issuer makes to disseminate information on its sustainability performance. The adoption of existing sustainability reporting standards and frameworks such as the Global Reporting Initiative is viewed favourably.

MARC Ratings relies on management and employee interviews to help assess and substantiate its sustainability performance evaluations. The interviews can also help provide an overview of sustainability risks and challenges which have either manifested historically or could materialise at present. These conversations can also provide an in-depth view of the business and assist in the benchmarking of the issuer's sustainability performance. MARC Ratings' bespoke review of the issuer's sustainability policy and its sustainability performance allows the agency to reach the confidence level desired for a forward-looking assessment of a bond's sustainability credentials.

In its analysis of an issuer's sustainability performance, MARC Ratings takes into account the environmental and social issues identified by the issuer as most material to its business and the measures it has adopted to mitigate key sustainability risks. MARC Ratings' analysis of sustainability performance

in an infrastructure project, for instance, would address nature protection, health impacts and community engagement. Potential performance dimensions for corporates include renewable energy, energy efficiency, resource conservation, waste reduction and human capital management, adapted as necessary for individual issuers. MARC Ratings will assess the issuer's sustainability performance in the context of industry best practice.

In assessing the extent to which sustainability is embedded throughout an organisation, its strategy and operation, MARC Ratings considers: (i) the extent to which the issuer's Board of Directors assesses and benchmarks the organisation's environmental, social and governance (ESG)/sustainability governance practices, (ii) the delegation of accountabilities for sustainability-related issues, (iii) the extent to which sustainability issues, risks and opportunities are managed and integrated into key business processes, and (iv) whether sustainability reporting is integrated into the issuer's business activities and long-term strategy.

MARC Ratings believes that adequate documentation (written policies, processes and procedures to support the identification, assessment, management and reporting of material sustainability risks and opportunities) and clear accountability at all levels are essential elements of an effective sustainability programme. We are of the view that an integrated and holistic approach to identifying and managing material ESG risks, especially those affecting a rated bond or sukuk and associated key performance indicators (KPI), will significantly reduce compliance risks with regard to the issuer's documented green, social or sustainability bonds framework.

The potential for gaps between an issuer's actual sustainability performance and its plans or commitments makes the consideration of any negative press coverage or ESG controversies which may be of public knowledge an imperative necessity. The knock-on effect of ESG controversies on an issuer's reputation and sustainability credentials can be serious, as illustrated by Volkswagen's "dieselgate" emissions scandal.

MARC Ratings' assessment of the issuer's sustainability implementation capabilities and performance is expressed on a five-level descriptive scale that runs from "Excellent" to "Poor" which corresponds to five levels of assurance (Highest, High, Medium, Basic and Weak). The assurance level can be interpreted as a measure of MARC Ratings' confidence in the issuer's continuing performance of its sustainability obligations in line with marketplace expectations and in compliance with its sustainability framework for the bonds or sukuk issuance.

Intuitively, the stronger the issuer's governance and accountability mechanisms to manage enterprise or project ESG risks are, the higher the level of assurance that can be derived with regard to the governance and transparency of the assessed green, social or sustainability bonds and sukuk. "Green-wash" and/or "social-wash" risks, defined as the risk that proceeds are directed towards projects that have no meaningful environmental and/or social impact, are likely to be negligible where an issuer's sustainability performance is assessed to be "Good" or higher.

Exhibit 11: Sustainability Performance Assessment Scale/Assurance Levels

Descriptive Grade	Assurance Level	Description
Excellent	Highest	The issuer positions itself as a sustainability leader in its industry, ranking in the "top tiers" of performance across multiple categories of engagement, ranging from supply chain management to environmental performance. Sustainability-related risks and opportunities are integrated with the business strategy. Well-defined sustainability policies and practices are augmented by strong accountability systems which allow for a benchmarking of the issuer's performance against stated objectives and the incorporation of external assurance in its sustainability reporting framework.
Very Good	High	The issuer has integrated risk-based sustainability considerations in its operations and has a robust process for assessing significant sustainability risk exposures to minimise adverse impacts on its business. The focus of the issuer's sustainability performance monitoring and evaluation is on managing risk exposures to minimise downside risk. Globally-recognised best practice reporting frameworks guide the issuer's sustainability reporting.
Good	Medium	The issuer has adopted a CSR-centric sustainability strategy that prioritises stakeholder engagement and goodwill building. Sustainability is a small part of the issuer's business strategy, nonetheless there is evidence to suggest that its sustainability performance has progressed beyond maintaining regulatory compliance. The issuer has implemented general sustainability reporting to investors.
Fair	Basic	The issuer has a policy of regulatory compliance but has yet to incorporate sustainability considerations into its business operations. At this performance level, the goal of sustainability management is to achieve and maintain compliance with health, safety, and environmental requirements mandated by government laws and regulations.
Poor	Weak	The issuer has a record of poor sustainability performance or operates in unsustainable industries.

ASSIGNING THE IBA

In determining a bond's IBA, MARC Ratings considers the outcomes of the three analytical components combined with judgements provided by members of the rating committee, guided by the definitions for each of the three assessment levels.

MARC Ratings requires an issuer to achieve a minimum sustainability performance assessment of "Fair" for its bonds to be assigned an IBA. Where material concerns exist with respect to the issuer's ability to achieve and maintain a satisfactory level of sustainability performance going forward, the Rating Committee may employ its judgment of the specific circumstances in question to deviate from the scorecard-indicated IBA. MARC Ratings believes that monitored IBAs would be a valuable supplement to investor's individualised initial and ongoing due diligence under such circumstances.

Exhibit 12: IBA "Gold-Silver-Bronze" Assessment Scale

Grade	Description
Gold	Bonds assessed at this level are judged to offer very significant environmental and/or social sustainability impact based on the projects supported or expected to be supported by the bond issuance. The processes used or to be used for the allocation and administration of proceeds, decision-making process of eligible projects and the reporting of performance indicators are consistent with the core principles of the GBP and/or SBP and applicable market guidance or standards and should support high standards of accountability and transparency.
Silver	Bonds assessed at this level are judged to offer significant environmental and/or social sustainability impact based on the projects supported or expected to be supported by the bond issuance. The processes used or to be used for the allocation and administration of proceeds, decision-making process of eligible projects and the reporting of performance indicators are consistent with the core principles of the GBP and/or SBP and applicable market guidance or standards and should support good standards of accountability and transparency.
Bronze	Bonds assessed at this level are judged to offer fairly significant environmental and/or social sustainability impact based on the projects supported or expected to be supported by the bond issuance. The processes used or to be used for the allocation and administration of proceeds, decision-making process of eligible projects and the reporting of performance indicators are consistent with the core principles of the GBP and/or SBP and applicable market guidance or standards and should support satisfactory standards of accountability and transparency. Minor shortcomings exist in the areas assessed but none of major concern.

Appendix 1: Green Bonds

The GBP explicitly recognise several broad categories of eligibility for green projects but does not prescribe material requirements for the type and nature of activities or a certain threshold of environmental benefits. Generally, green projects address key areas of environmental concern such as climate change, natural resources depletion, loss of biodiversity, and air, water or soil pollution.

The main forms of green bond issuances to date are:

- Green "use of proceeds" bonds: standard recourse-to-the-issuer debt obligations aligned with the GBP. Issuers of this category of bonds to date have included corporates, international financial institutions, sub-sovereign national development banks and agencies (e.g. export-import banks).
- Green revenue bonds: non-recourse-to-the-issuer debt obligations aligned with the GBP in which the credit exposure in the bond derives from pledged revenue streams such as user fees or taxes and proceeds are used to fund related or unrelated green project(s).
- Green project bonds: project bonds in respect of which bondholders have direct exposure to the risk of projects with limited or without potential recourse to the issuers, and that are aligned with the GBP.
- Green asset-backed securities (ABS): bonds collateralised by one or more specific green project(s), including but not limited to covered bonds, ABS, mortgage-backed securities (MBS), and other structures and aligned with the GBP. The primary source of repayment is generally the cash flows of the assets. In the case of covered bonds, the secondary recourse is to an underlying cover pool of assets in the event of default by the issuer. Securitisations of portfolios of residential, commercial and industrial (C&I) and utility-scale solar photovoltaic (PV) assets are examples of green ABS.
- Green sukuk which comply with Islamic finance principles.

To date, green bond issuers include national and local governments or their agencies and financial institutions. The bond proceeds are used to fund projects, activities or assets that have an environmental purpose.

Appendix 2: Social Bonds and SBP

Social bonds are any types of bond instruments the proceeds of which are used exclusively for financing social projects. At present, four types of social bonds can be identified:

- Standard social “use of proceeds” bonds: a standard recourse-to-the-issuer debt obligation aligned with the SBP.
- Social revenue bonds: non-recourse-to-the-issuer debt obligations aligned with the SBP in which the credit exposure in the bonds derives from pledged issuer revenue streams such as user fees or taxes and proceeds are used to fund related or unrelated social projects.
- Social project bonds: project bonds in which bondholders have direct exposure to the risk of projects with limited or without potential recourse to the issuer, and that are aligned with the SBP.
- Social securitised bonds: bonds collateralised by social project(s), including but not limited to covered bonds, ABS, MBS, and other structures; and aligned with the SBP. The first source of repayment is generally the cash flows of the assets.

Social bonds should not be confused with social impact bonds or social benefit bonds, essentially a type of pay-for-success financing, which typically involves the government (or any other outcome funder), private investors and a service provider. Social bonds differ from traditional social impact bonds as they offer financial returns independent of social outcomes. In the case of social impact bonds, governments pay back investors their initial investment plus an additional return on that investment only if the funded social projects achieve a defined social outcome, which in turn gives rise to public sector avoided costs.

The social projects funded should seek to achieve socio-economic benefits for targeted populations, for example, persons living below the poverty line, excluded/marginalised communities and disabled persons. The SBP provide an indicative list of the most commonly used types of projects supported or expected to be supported by the social bond market number. Specified categories include but are not limited to affordable housing, access to essential services such as healthcare and education, and job creation. A clear description of the social projects to be funded is emphasised under the SBP. Ideally, the social benefits of the projects should be indicated, assessed, and where practicable, quantified.

Issuers of social bonds are expected to be transparent about the process that is used to determine the eligibility of nominated projects and assets, and to have this explained within the context of its social strategy and objectives. In similar to the GBP, the SBP provide recommendations as to how the net proceeds of the bond issuance could be managed, for example by moving into a sub-account tracked by the issuer. Issuers are encouraged to engage auditors or independent third parties for the purpose of tracking the allocation and the use of funds raised and to employ both qualitative as well as quantitative indicators to measure performance.

Appendix 3: Sustainability Bonds

Sustainability bonds allow issuers to use the proceeds for both environmental and social projects in various sectors including agriculture, education, energy, finance, health and social services, transportation, water/sanitation, as well as gender and environment themes. Sustainability bonds comply with the four core components of both the GBP and the SBP.

Sustainability bonds allow investors to directly support the issuer's sustainability agenda, as is the case with the first corporate sustainability bond issuance in the United States. The issuer, Seattle-based coffee chain Starbucks Corporation raised US\$500 million of senior unsecured notes with a 10-year tenor to fund projects in 2016 to bolster its sustainability and ethical sourcing programs. Eligible sustainability projects funded included coffee purchases from suppliers verified as ethically sourced, the development and operation of farmer support centers in coffee-growing regions and financing smallholder loans through the company's global farmer fund. With the exception of Starbucks' sustainability bond issuance, sustainability bonds have mostly been issued by development banks and financial services firms.

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