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Green bonds must keep the green promise!

A call for collective action towards effective
and credible standards for the green bond market

WWF

WWF is one of the world's largest and most experienced independent conservation organisations, with over 5 million supporters and a global network active in more than 100 countries.

WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption.

Editor

This report was compiled by Jochen Krimphoff (WWF-France) in close cooperation with WWF's international green bonds task force composed of Sue Charman and Nicole Clucas (WWF-UK), Magnus Emfel (WWF-Sweden), Amandine Favier (WWF-Switzerland), Sebastian Godinot (WWF-European Policy Office), Matthias Kopp (WWF-Germany), Paolo Revellino (WWF-International), Jeanne Stampe (WWF-International, based in Singapore). It is based to a large extent on research commissioned by WWF from a big four professional services firm¹.

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Disclaimer

This report was produced using materials from sources external to WWF, complemented by information provided by CBI. As such, it reflects WWF's current knowledge and understanding of the international green bond market.

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WWF is an observer member of the Green Bond Principles and contributes actively to technical working groups convened by CBI. While WWF is committed to supporting the development of standards for green Bonds, WWF's participation in the Green Bond Principles and CBI may not be construed as an endorsement of principles, standards or the certification schemes currently controlled by these two organisations.

WWF has no plans to develop a proprietary green bond label, to become a verifier or certifier of green bonds or to develop its own green bond standards. WWF will rather seek to work with partners and existing platforms, in particular the Green Bond Principles and CBI, to support and promote the development of such standards through multi-stakeholder dialogue.

This report is dedicated to Philippe Germa, former CEO of WWF-France, who disappeared at sea in tragic circumstances during a snorkelling holiday in French Polynesia in August 2015, just a few days after having launched this project.

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Pascal Canfin
CEO of WWF-France

WWF believes that robust, credible, fully-developed and widely-accepted industry standards for green bonds are urgently needed. Standards can help structure the emerging green bond market and create the trust and confidence that investors need.

Foreword from WWF-France CEO Pascal Canfin

With almost US\$100tn in assets, global debt capital markets are among the largest and deepest financial markets in the world, providing investors with fixed-income investment opportunities that allow them to preserve and increase their financial capital at a relatively low risk.

They could also play a paramount role in financing sustainable development. The challenge is to figure out ways in which we can tap into this pool to raise the financial capital we need to create a sustainable economy for the only planet we have; where natural capital is preserved, restored and enhanced rather than destroyed.

We know very little about what the vast majority of the capital raised on debt markets is used for (as compared to equity markets). But there are some bonds that bear a ‘green promise’ – ‘green bonds’ – which are now commonly defined as fixed-income securities that raise capital for a company or project with specific environmental benefits in mind. Green bonds are attractively simple structures, offering investors additional disclosure and accountability and providing a means to ring-fence funds for investments in sustainable agriculture, energy-efficient buildings, clean energy, industry and transportation, water and waste, even biodiversity conservation, to name just a few investment fields.

Creating a large, liquid market in green bonds – including aggregating small projects – offers a unique opportunity to boost the volume of capital available as well as reduce the cost of debt for projects that drive the transition towards a sustainable economy. Moreover, and perhaps most importantly, the discussion around green standards has a chance to influence the wider market as investors and issuers pay more attention to environmental, social and governance (ESG) issues. As we seek proactive solutions to the environmental challenges we face, green bonds and their associated standards can play an important role for both the finance and conservation communities.

But not everything that is labelled as ‘green’ actually fulfils the green promise, and several green bond issuances in the last two years have been highly controversial among stakeholders². There is a looming risk of ‘greenwashing’. Conversely, some high quality green bonds are not labelled as green and go unnoticed.

This is why **WWF believes that robust, credible, fully-developed and widely-accepted industry standards for green bonds are urgently needed. Only a bond for which the issuer can demonstrate measurable environmental benefits, certified by an independent party according to such widely-accepted, fully developed standards, should qualify as a green bond.** Bonds which do not meet these standards could undermine the credibility of the entire green bond market. WWF recognises that increased transparency represents an additional effort for the issuer but we believe that this is a ‘cost’ well worth incurring for the benefit of reduced risk. In a fully functioning market, such added value will be reflected in premiums and prices.

Some market participants might believe that it is impossible to develop standards defining what is green, what is not, and where the line should be drawn. But we think that these sceptics are wrong: global private sector sustainability standards and certification systems have been developed in many sectors (e.g. in the forestry sector by the FSC, in fisheries by the MSC, and for many other agricultural commodities, etc.) and are now reaching maturity. We believe that the same can be done for the bond market, drawing on existing standards as well as the collective experience and codes of good practice developed by ISEAL, the global membership association for sustainability standards.

Mark Carney's call to “break the tragedy of the horizon” clearly shows that climate change has become a defining issue for financial stability, due to physical risk, liability risk and transition risk.

WWF has partnered with a big four professional services firm to explore how standards for the green bond market can support its sustainable growth, and how such standards can be designed. The research we have commissioned clearly shows that defining clear standards for the greenness of bonds is not an impossible task. It also helped us develop specific recommendations on which elements WWF thinks are critical, taking into account the overarching principles that WWF considers as essential for effective and credible standards (see Annex A).

One of the critical success factors will be greater transparency, in particular stricter requirements and better methodological guidance on voluntary disclosure of environmental information to the public. Better information is needed to allow investors to take a view. Disclosure should take place according to a standardised format based on eligibility standards for each sector. Issuers should be required to provide data annually and at maturity of the bond to demonstrate the environmental impact of its underlying assets over its entire lifetime, as well as an analysis of budgeted vs. actual environmental benefits according to the appropriate key-performance metrics.

We hope that this study will be used by:

- Supply-side market participants in the green bond market – in particular green bond issuers and their partners as guidance to identify key elements that can help ensure the green bonds they issue are as credible as possible;
- Demand-side participants such as asset-owners or their intermediaries as a benchmarking tool for their fixed-income investment strategies or frameworks; and
- Underwriters, advisors, assurance providers, analysts, industry groups, rating agencies and NGOs, as an open-source resource to better understand, and increase the consistency and comparability of the environmental credentials of green bonds.

With the right level of commitment and collaboration among stakeholders, and guided by existing initiatives such as the Green Bond Principles and the Climate Bonds Initiative, it should be possible to define a set of widely-accepted standards, building on some of the existing ones while taking into account scientific evidence.

The time is ripe for a paradigm shift. In 2015, the need for action on climate finance reached another dimension: Mark Carney's³ call to “break the tragedy of the horizon” clearly shows that climate change has become a defining issue for financial stability, due to physical risk, liability risk and transition risk.

Green bonds, if designed properly, could become a tool that can address these risks: they can channel investment into ecologically sound infrastructure to mitigate physical risks, their use-of-proceeds provides information about the underlying assets to help investors assess climate-related business or liability risks. Green bonds can also finance the transition towards a lower-carbon economy. Long-term investments through green bonds can also help investors mitigate policy, technology and physical risks, which could prompt a reassessment of the value of a large range of assets as costs and opportunities become apparent.

Green bonds can help break the tragedy of the horizon by connecting present and future generations. This is also WWF's mission and imperative: to build a future where people live in harmony with nature.

EXECUTIVE SUMMARY

The promise of green bonds as a tool to finance the transition towards a sustainable economy

This report, which is based on research conducted for us by a big four professional services firm, focusses on the booming green bond market and explores the diverse landscape of green definitions, standards, frameworks, and guidelines that are currently used in the market. It seeks to assess how the green bond market can help finance the transition towards a sustainable economy and make significant contributions to addressing the environmental challenges of our time, in particular limiting dangerous climate change and global warming to below 1.5°C, conserving biological diversity, ensuring the sustainable use of renewable natural resources, and reducing pollution and wasteful consumption. It concludes by calling on green bond issuers, underwriting investment banks, investors, and service providers such as rating agencies and assurance providers to work together to ensure sustainable growth in the green bond market that delivers on its green promise.

Green bonds have a financial and an environmental dimension

The term 'green bond' is widely used, mostly by issuers and other stakeholders, to describe bonds that not only encompass financial obligations (e.g. the repayment of principal capital at a given maturity date, regular payments of coupons/interest, etc.), but also incorporate environmental benefits claimed by the green bond issuer⁴. Due to this dual nature, the credibility of its green claims is a critical element of a 'green bond', in the same way that creditworthiness is critical for any bond. Green bonds need to have both of these characteristics. While they need to show how they preserve the investor's financial capital and create financial returns, they also need to demonstrate to society how they preserve, restore and enhance natural capital and provide returns to the environment over the lifetime of the underlying investments.

Effective and credible standards are needed to keep the 'green promise'

WWF believes that only a bond for which the issuer can actually demonstrate measurable environmental benefits according to widely-accepted, fully-developed standards should qualify as a 'green bond'. While solid foundations have been laid by the industry-led Green Bond Principles that offer widely-recognised process-related guidance, and the pioneering work conducted by the Climate Bonds Initiative to define a climate-focussed standard and certification scheme, our analysis shows that there is still more work to be done - in particular on developing criteria around adaptation and climate resilience assets and environmental challenges beyond climate change. Standards for the green bond market that

would meet WWF's principles for effective and credible environmental standards (developed by WWF based on more than two decades of experience with environmental standards, see Annex A) do not yet exist. The research we have commissioned therefore explores four questions (summarised overleaf), suggests potential pathways, and offers guidance on next steps.

Seven critical elements to strengthen the credibility of the green bond market through standards

WWF believes that seven elements are critical in the short term to help the green bond market to maintain and enhance its credibility so that it can keep its 'green promise':

- 1.** Green bond standards should cover and address all critical environmental challenges.
- 2.** They should focus on achieving verifiable 'actual' instead of 'promised' or 'pledged' environmental benefits.
- 3.** They should be science-based, long-term-oriented and resilient.
- 4.** They should apply a sector-by-sector approach to determine what is green.
- 5.** The burden of proof lies with the issuer: in sectors where certification schemes are currently not yet available, standardized disclosure is needed to demonstrate actual environmental benefits.
- 6.** Green bond standards should include independent third-party assurance and accreditation as an essential element to enhance credibility.
- 7.** Existing environmental standards can provide shortcuts and help close the existing gaps.

Today, the young green bond market has yet to show evidence that it has actually already helped preserve, restore and enhance natural capital and shift capital towards a sustainable economy, with the exception of climate-related bonds and their underlying assets. However, for the green bond market to deliver on its 'green promise', the current practice where issuers make self-declared, hypothetical statements on green benefits (with or without second party review/opinions) needs to move towards a model that encompasses certification of actual environmental benefits according to effective and credible standards that are widely accepted.

Collective action by market players is of the essence to develop such a 'next generation' of standards. Without the right level of commitment and collaboration among stakeholders to develop effective, credible and science-based standards for green bonds, the market is running the risk of being 'in default' of its green pledge.

Our report seeks to address the following four key questions

What is the potential of the green bond market to deliver measurable environmental benefits in the future? Does the market already deliver on the promise to provide capital for environmental transitions, and what is its potential for the future?

To keep the global temperature increase below 2°C (or even 1.5°C) and adapt to the impacts of climate change, a transformation of our development patterns is needed in order to shift towards a more sustainable and resilient economy. An estimated annual investment of about US\$2tn over the next 15 years would be required to transform our energy system, preserve ecosystems and ensure sustainable water use. However, there is a large gap between current investment flows and capital needs. Green bonds are one of the several financial instruments that could be used to finance these sustainable transitions. Green bonds are particularly suitable for projects with long-term investment horizons, large capital costs and secured income streams, such as renewable energy infrastructures. But green bonds could steer capital for other urgent environmental transitions such as sustainable water management, low-carbon transport or ecosystem conservation. Green bonds could potentially finance a significant share of the capital needed for these environmental transitions, but the market needs to be more inclusive in order to grow.

Is there a case for green bond standards? From a market perspective, is there a case for building a credible and qualitative market that might help encourage convergence in market practices and conventions?

The research we have commissioned has shown that green bond standards can underpin the trustworthiness of green claims, so that investors can be reasonably confident that the green bonds they invest in actually have a positive impact on the environment. Trust and confidence will be needed to increase deal-flow, reduce transaction costs, streamline transactions and improve liquidity in the market; making it more attractive for large mainstream investors such as pension funds. Standardisation is therefore an important step towards scaling up a green bonds market.

Which standards, guidelines and frameworks do issuers, underwriters and investors currently use to define, assess and evaluate the greenness of bonds? How are environmental benefits demonstrated to society?

The work indicates that the proliferation of standards, frameworks and guidelines and the diversity of market practices in terms of definitions and requirements create complexity and confusion among issuers and investors, which could hamper the confidence needed for the green bond market to thrive in the long term. It also finds that most frameworks and guidelines (with the exception of the Climate Bond Standards) currently only look at the potential environmental impacts prior to issuing a bond, instead of assessing the actual environmental benefits of projects throughout the lifetime of the bond. Yet the purpose and added value of a 'green' bond is to create environmental benefits. Focussing on promised environmental impacts rather than actual performance raises the risk of greenwashing if bonds are issued and perceived as green, while only achieving minor or in fact no actual environmental benefits.

What are the enabling conditions that need to be met for the green bond market to grow in both quality and quantity? What are the pathways towards meeting the enabling conditions and realizing the green bond market's potential?

The report concludes that with the right level of commitment and collaboration among stakeholders, and guided by existing initiatives such as the Green Bond Principles and the Climate Bonds Initiative, it should be possible to achieve standards for green bonds that suit market needs and ensure credibility. WWF believes that standards are urgently needed to ensure that green bonds keep the 'green promise'.

1

THE GREEN PROMISE AND HOW TO KEEP IT!

The credibility of green claims is one of the most critical elements of a green bond, in the same way that creditworthiness is critical for any bond. Green bonds need to have both of these characteristics. While they need to show how they preserve the investor's financial capital and create financial returns, they also need to demonstrate to society how they preserve, restore and enhance natural capital and provide returns to the environment over the lifetime of the underlying investments. Today, the green bond market is still very small and has yet to show evidence that it has helped preserve, restore and enhance natural capital and shift capital towards a sustainable economy. Market growth is thus an imperative. But without the right level of commitment and collaboration among stakeholders to develop effective and credible, science-based standards for green bonds, the market is running the risk of being 'in default' of its green pledge.

WWF has explored how standards can support sustainable growth in the green bond market

WWF has partnered with a big four professional services firm to explore how effective and credible standards for the green bond market can support its sustainable growth of the green bond market.

This report explores the diverse landscape of green definitions, standards, frameworks, and guidelines that are currently used in the market. It seeks to assess the extent to which the green bond market can help finance the transition towards a sustainable economy and make significant contributions to addressing the environmental challenges of our time, in particular limiting dangerous climate change to 2°C or even 1.5°C, conserving biological diversity, ensuring the sustainable use of renewable natural resources, and reducing pollution and wasteful consumption.

Green bonds have a financial and an environmental dimension

The term ‘green bond’ is widely used, mostly by issuers and other stakeholders, to describe bonds that not only encompass financial obligations (e.g. the repayment of principal capital at a given maturity date, regular payments of coupons/interests, etc.), but also incorporate environmental benefits claimed by the green bond issuer⁵.

Only a bond for which the issuer can demonstrate measurable environmental benefits according to widely-accepted, fully-developed standards should qualify as a ‘green bond’

WWF believes that only a bond for which the issuer can demonstrate measurable environmental benefits according to widely-accepted, fully-developed standards should qualify as a ‘green bond’ (see box 1 below).

Therefore the report starts from the assumption that effective, credible, fully-developed and widely-accepted standards can support the development of the green bond market; and explores the following four questions:

1. What is the potential of the green bond market to deliver measurable environmental benefits in the future? Does the market already deliver on the promise to provide capital to environmental transitions, and what is its potential for the future?
2. Is there a case for green bond standards? From a market perspective, is there a case for building a credible and qualitative market that might help encourage convergence in market practices and conventions?
3. Which standards, guidelines and frameworks do issuers, underwriters and investors currently use to define, assess and evaluate the greenness of bonds? How are environmental benefits demonstrated to society?
4. What are the enabling conditions that need to be met for the green bond market to grow in both quality and quantity? What are the pathways towards meeting the enabling conditions and realizing the green bond market’s potential?

Last but not least, this report offers some thoughts on what needs to happen next; as well as detailed recommendations on how green bond issuers, underwriting investment banks, investors, and other service providers such as rating agencies and assurance providers could work together to advance a shared standard-setting agenda.

Box 1: WWF's vision, mission and level of ambition for the green bond market

WWF believes that green bonds – as a first step towards greening the overall bond markets – have the potential to make a unique contribution to a 'One Planet' economy where natural capital⁶ is preserved, restored and enhanced rather than destroyed. In order to achieve this, science-based criteria (see WWF principle #5 – Be science-based in Annex A) should be developed through multi-stakeholder dialogue, and they should be consistent and compatible with WWF's vision, mission and level of ambition for the green bond market (see WWF principle #1 – Be consistent with and support WWF's conservation mission and programme in Annex A).

Green bond standards for a One Planet economy

WWF's vision: A 'One Planet' economy: natural capital is preserved, restored and enhanced rather than destroyed.

WWF's mission: WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption.

WWF's level of ambition: The green bond market has the potential to make a significant contribution to a 'One Planet' economy and the Sustainable Development Goals (SDGs). Only a bond for which the issuer can demonstrate measurable environmental benefits according to widely-accepted, fully-developed criteria should qualify as a 'green bond'.

What is the potential of the green bond market to deliver measurable environmental benefits?

Does the market already deliver on the promise to provide capital to environmental transitions and what is its potential for the future?

The current status of the market and standards

The green bond market grew at an impressive 50% compound growth rate, from close to zero at its inception in 2007 to more than US\$91bn in 2015 (see figure 1 below⁷). Yet this represents less than 0.1% of the total global market for debt securities. While diversification is developing, the green bond market remains dominated by the utility, energy and finance sectors. The issuers are either corporates or sovereign and supranational organisations, mostly from the US and Europe. Governments, and sovereign debt issuances and municipalities are largely absent.

Investors appear to be mainly environmental, social and governance (ESG) investors, while the mainstream investment world has yet to enter the market. Two sets of guidelines and standards have dominated to date: the industry-led Green Bond Principles convened by the International Capital Markets Association (ICMA), and the Climate Bonds Standards and certification scheme promoted by the Climate Bonds Initiative (CBI), a UK-based NGO. Whereas the first focuses on the relatively general process guidelines for green bond issuers, the second adds detailed content criteria and definitions for green claims. In addition to these schemes, index providers have developed tailored green bond products, usually based on CBI criteria; 'second opinion' providers each have

their different assessment methodologies; issuers, underwriters and investors have developed their own frameworks; specialist green funds have differing inclusion criteria; and – more recently – credit-rating agencies have started to develop ‘green bond rating services’ (see Annex B).

While there are many common characteristics across the variety of approaches, that variety reflects a level of confusion in the market about the appropriate standard(s) to use.

Many appear to focus solely on the process of definition, without shedding light on the actual performance of the bond. Furthermore, most approaches address selected environmental impacts only, and do not take a long-term view. Where they do not provide a common methodology for determining the greenness of the bond, and do not connect environmental performance to financial performance, it is challenging for investors to assess the added value of green bonds. Finally, there are no common standards for monitoring and external assurance to support the credibility of the market.

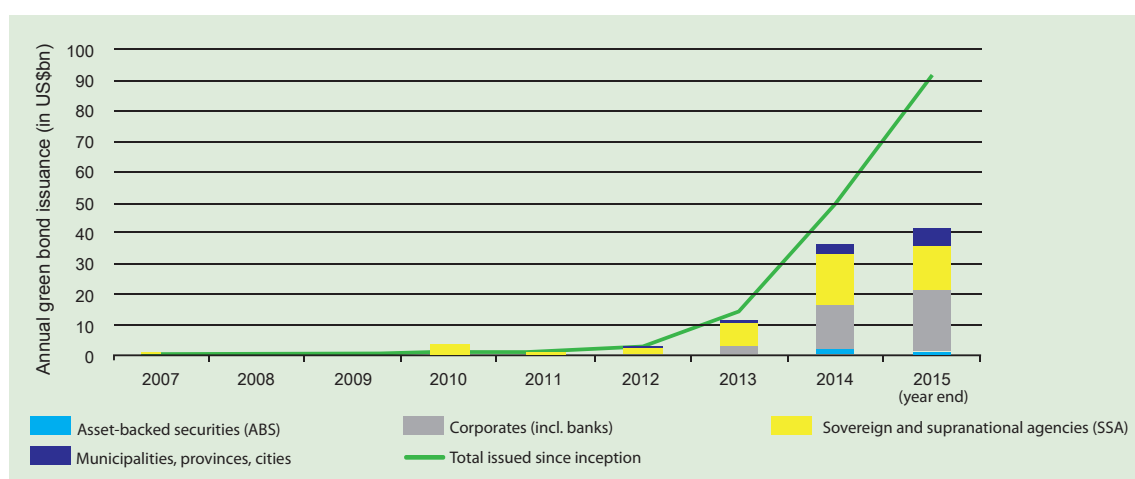


Figure 1: Growth of the green bond market (source: CBI 2016)

Green bond standards should be broad enough to address all major environmental and sustainability challenges, not only climate change. They should focus on ‘natural capital’ and provide issuers with robust frameworks for providing finance to environmental challenges such as ecosystem conservation, sustainable water use and pollution prevention through use of green bonds.

Expectations are high: the green bond market bears a 'green promise' with a great potential for the future

The green bond market, and ultimately greener bond markets, bears great potential for the future. It can help accelerate the transition towards a sustainable 'One Planet' economy while at the same time delivering tangible environmental benefits.

A transformation of our development patterns is needed in order to shift towards a more sustainable and resilient economy, to keep the global temperature increase below 2°C (or even 1.5°C) and adapt to the impacts of climate change. An estimated annual investment of about US\$2tn would be required over the next 15 years to transform our energy system, dramatically reduce global emissions, address climate adaptation and resilience, preserve ecosystems and ensure sustainable water use (see figure 2 below). However, there is a large gap between current investment flows and capital needs. Green bonds are one of several financial instruments that can ensure capital is used to finance these sustainable transitions.

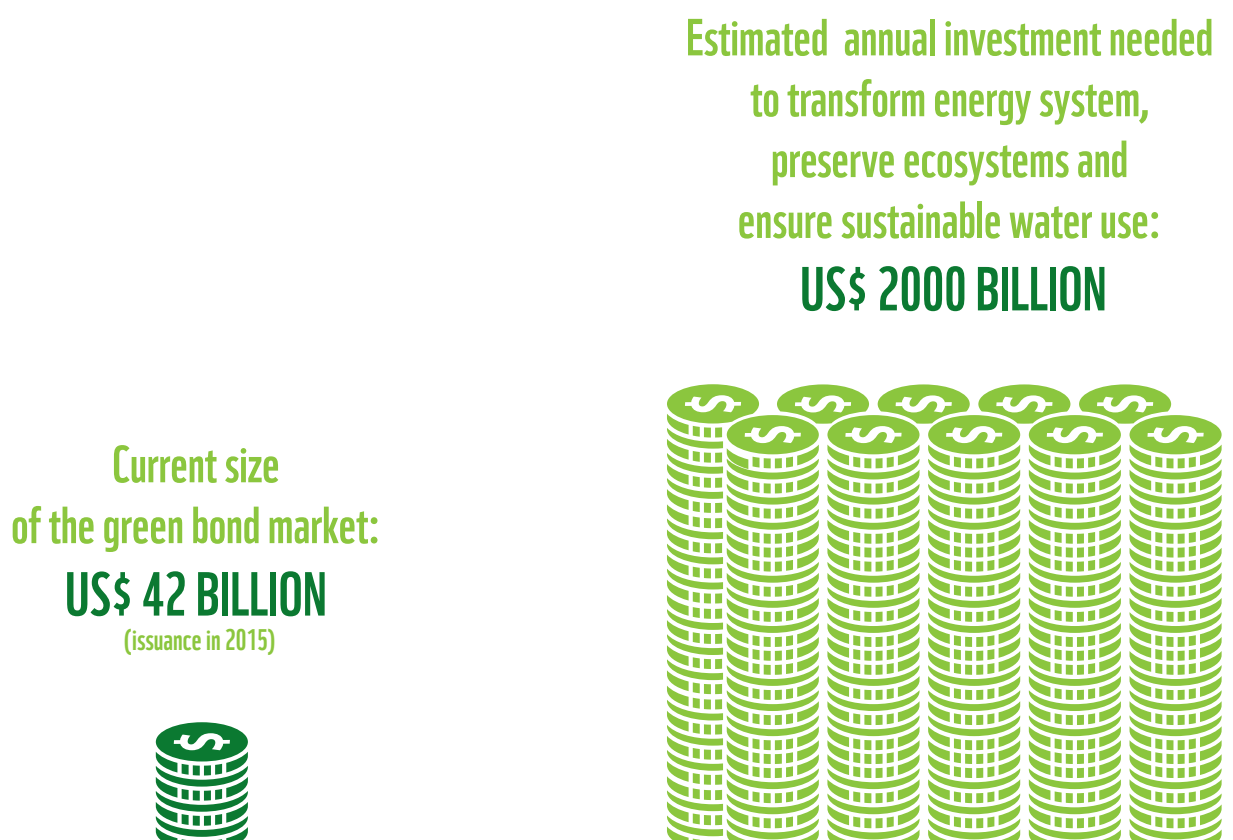


Figure 2: Comparison of the current size of the green bond market and the estimated annual investment needed to transform energy systems, preserve ecosystems and ensure sustainable water use
(see: WWF/KPMG 2016)

The rapid growth of the green bond market is showing that the bond markets provide a promising channel to finance environment-related investments. The speed and size at which the green bond market will develop over the next few years will, to a large extent, depend on market developments and macro-level drivers, such as government support (incentives including tax benefits, domestic policies, national standards and guidelines, increased transparency and disclosures of information related to green bonds, sovereign green bond issuances, etc.) which can significantly impact the supply and demand of green bonds. Of course, the more policymakers are aware that green bonds can support the achievement of environmental targets – such as, for example, the ones stated in the Nationally Determined Contributions (NDC) of the recent Paris Accord on climate change, or their subsequent revisions – alongside their development strategies, the more they will be inclined to support market growth through policy incentives and support robust standards.

In the short term, green bonds can provide a large share of the capital needed for energy transitions

Green bonds are particularly suitable for projects with long-term investment horizons, large capital costs and secured income streams, such as renewable energy infrastructures.

More than US\$40bn of new issuances were registered in 2015, up from US\$36bn in 2014 and US\$11bn in 2013⁸. The size of the green bond market is expected to continue to increase over the next few years, driven by growing interest from emerging economies, institutional investors and governments. China alone is expected to issue RMB300 billion (US\$45.6 billion) annually by 2020⁹. The first quarter of 2016 has seen nearly three times the amount issued in the first quarter of 2015, mainly driven by the publication of government-sponsored Green Bond Guidelines and a Green Bond Product Catalogue developed by the People's Bank of China that opened up the market to a series of green bond issuances by Chinese financial institutions. To date, several studies estimate that green bonds could drive at least US\$ 100-140bn/year of additional investments in clean and efficient energy systems alone^{10, 11}. But market specialists believe the potential of the market is an order of magnitude higher. A forthcoming OECD report¹² will be assessing the future growth of the global green bond market in a 2°C energy investment scenario.

In the medium term, green bonds have the potential to redirect capital flows to help address a broad range of environmental challenges beyond climate change

Green bonds also have the potential to steer capital towards addressing other urgent environmental transitions beyond climate change, such as sustainable water use or ecosystem conservation (even if measurable thresholds and performance standards are yet to be defined for this investment area). Green bonds could potentially finance a significant share of the capital needed for environmental transitions, but the market needs further inclusivity to grow. The development of effective and credible green bond standards that are widely accepted could encourage greater participation and facilitate this growth.

However, without public policies that address the fundamental mispricing of a broad range of ecosystem services (environmental externalities that provide services for free), the underlying business models that help secure stable and predictable revenue streams for the underlying assets of some of the more innovative green bonds might remain fragile, and will continue to be perceived as too risky by the markets (e.g. water bonds, sustainable agriculture notes, blue bonds, landscape, ecosystem services or biodiversity conservation bonds: see Box 2 below).

Box 2 – Innovative approaches to green bonds

Water (pollution-reduction) bonds: WWF and H&M are working with several industrial parks around Taihu Lake near Shanghai, China, to improve water quality and reduce water-related risks for SMEs by installing water treatment facilities. Individual investments (US\$1-2 million per treatment facility) would be too small to justify issuance of green bonds, but with the IP as the main issuer the bond can reach a size of US\$50 million.

Sustainable agriculture notes: Sustainable agriculture notes are debt securities that invest in grower cooperatives and agricultural enterprises promoting agricultural practices that improve environmental performance and build food systems while benefiting small-to-mid-sized farmers. They offer semi-annual contingent interest payments as well as targeting social and environmental returns aimed at alleviating poverty, increasing food production and environmental conservation. Several innovative investment firms have piloted this approach geared towards impact-oriented investors.

Ecosystem services bonds: It is also possible to invest in ecosystem services using funds from a corporate green bond. Some companies operating at a larger scale have shown that bonds with multiple green uses of proceeds can include land-use enhancement or conservation¹³.

Today, the market is still very young but has significant potential for the re-financing of existing portfolios, thus reducing the cost of capital for green projects. However, most market practitioners tend to agree that the vast majority of projects that are currently being financed by green bonds would have found access to finance on the mainstream market anyway, and at a comparable cost of capital. Evidence of so-called ‘additionality’ remains anecdotal – and controversial.

While green bonds are mostly seen as refinancing tools, the potential ‘additionality’ provided by green bonds has yet to be demonstrated

Green bonds are particularly suited for refinancing green projects, once they are built and operating. In the initial phase these projects normally carry high risk and high capital requirements, and are therefore mostly financed through bank debt or equity. However, once the project enters an operational phase, the risks

diminish and there is an opportunity to refinance initial bank loans, providing access to cheaper capital.

Issuers already see benefits through increased investor diversification across regions and types, active engagement with investors, strong oversubscription (in some cases allowing tightened yields) as well as reputational benefits. Investors see opportunities for green investments, in particular for green assets without project construction risks, along with securities that start to trade at premiums on the secondary markets, as well as reputational benefits.

However, today, the market is still very young and most market specialists agree that the vast majority of projects currently financed by green bonds would have found access to finance on the mainstream market anyway, and at a comparable cost of capital. A recent study conducted by Natixis¹⁴, for example, which analysed the impact reporting of almost 60 green bonds above US\$200m, didn't find any bond that wouldn't have been funded through traditional sources of debt finance. While the creation of a specific 'green yield curve' through green bonds certainly adds value in the medium term, evidence of price premiums as well as 'additionality' remains anecdotal – and controversial.

As a result, it does not currently seem feasible to assess the overall environmental benefits brought about by the emerging green bond market. It remains to be seen in the long run whether green bonds can (i) provide access to capital for green projects which would not have found finance in traditional markets; and/or (ii) reduce the cost of capital for green projects.

If well designed, green bonds (in particular asset-backed securities) could offer investors a further tool to take advantage of environmental upside risk and manage downside risk; or possibly to implement 'decarbonisation' and hedging strategies.

However, it is important that as the market for green bonds grows, it preserves its integrity and delivers on its 'green promise', meaning that green bonds need to demonstrate the delivery of actual environmental benefits by the underlying assets. The credibility of the green bond market going forward will depend on its ability to demonstrate just that, and a common understanding of what is 'green' is becoming increasingly urgent. As other standards also face the same challenges, stakeholders should work together to address them. A clear and genuine commitment to ISEAL's Impact Code by the Green Bond Principles could strengthen the market's credibility.

***“To be or not to be green – that is the question!”
Effective, credible, fully-developed and widely-accepted
standards for green bonds, designed to become the ‘new norm’,
are needed***

There is currently no commonly-accepted definition of what does and does not constitute a green bond

While guidelines and emerging standards exist for issuing green bonds, there is not yet an effective, credible, fully-developed and widely-accepted definition of what does and does not constitute a green bond. If the market fails to define clear standards for green bonds there is a risk of 'green-washing', as well as lock-in effects if substantial amounts of capital are spent on insufficiently effective

solutions. These will ultimately undermine the credibility of the market and therefore hamper or worsen its development. While discourse in the green bond market is currently dominated by market innovation and flexibility, a growing number of industry leaders and stakeholders point to the critical importance of standardisation to sustain the recent market trends.

Lessons from other sectors: moving from niche to mainstream

Examples from other sectors show that clear definitions and standards can actually support and underpin the development of young and emerging markets: convergence in market practices makes markets more transparent and less complicated, which can result in greater confidence in the market from mainstream investors and new issuers. The Eurobond derivatives market, for example, took off only when standardised industry terms became available through the publication of Credit Derivatives Definitions by the International Swaps and Derivatives Association (ISDA) in 1999. If history is any guide, this convergence and clear terms and definitions in the green bond market could also lead to greater capital flows, increased transactions and more liquidity in the market.

Over the last two decades, WWF has helped to develop effective and credible sustainability standards and certification schemes for several agricultural commodities. These have matured and are now commercially available. Several have broken the 10% barrier, as they move from niche to mainstream: the Forest Stewardship Council (FSC)'s pulp and paper (recycled) standard now covers more than half of the market, and the Marine Stewardship Council (MSC) has reached a market share of 67%, thus becoming the 'new norm' in the whitefish commodity markets (see Figure 3 below).

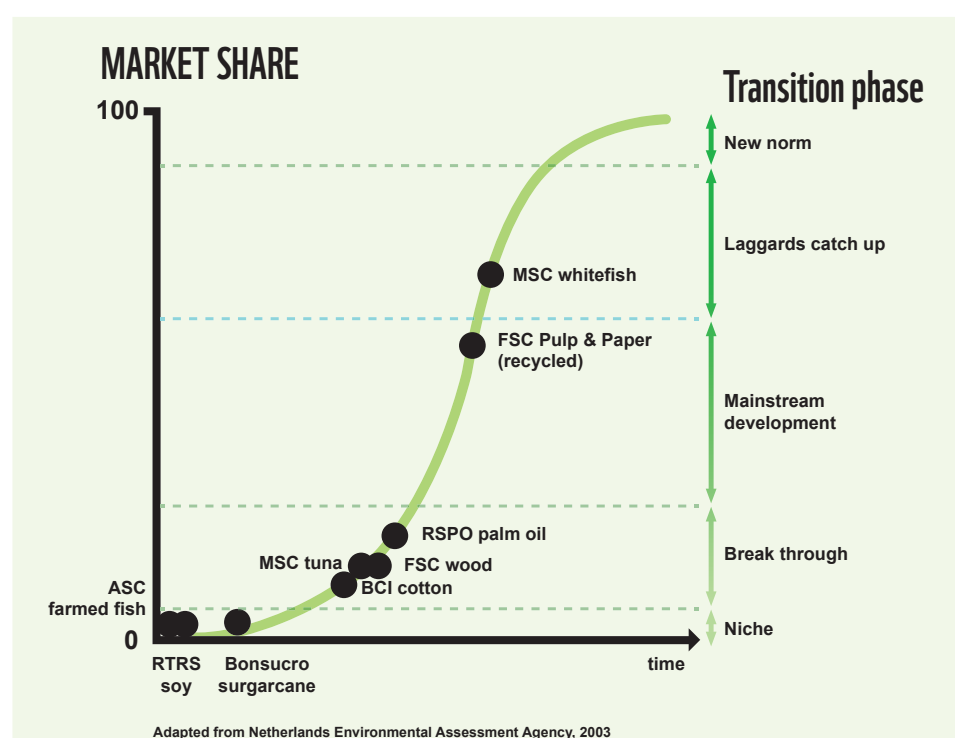


Figure 3: Sustainability standards: moving from niche to mainstream to become the 'new norm'

Green bond standards, designed to become the ‘new norm’

All of these schemes have been developed by bringing stakeholders together to agree on standards – a significant step in sectors that have been riven with conflict. WWF was actively involved in the creation and development of these standards, in many cases as a founding member, and promotes standards that commit to using codes of good practice developed by ISEAL, the international alliance of sustainability standards¹⁶. They have become the leading mainstream sustainability standards, with the goal of driving entire industries toward better performance.

We would like to see a similar development in the green bond market, with effective, credible, fully-developed and widely-accepted standards for green bonds that are designed to become the ‘new norm’, rather than a standard designed for a perfect world that will only be relevant for a niche market.

In the long term, we would like to see sustainability become a pre-competitive requirement in the entire bond market: just as safety certificates are a prerequisite for selling electrical equipment, market access for green bonds will depend on being able to demonstrate and verify that they not only preserve investors’ financial capital and create financial returns, but also preserve and enhance ‘natural capital’ (see box 3 below) and provide ‘returns’ to the environment.

Box 3: What is natural capital?¹⁷

The Natural Capital Coalition is a global platform which brings together the many different organisations and initiatives working on natural capital under a common vision – of a world where business enhances and restores natural capital. The Natural Capital Protocol is a standardized framework to identify, measure and value direct and indirect impacts (positive and negative) and/or dependencies on natural capital. It defines natural capital as “the stock of renewable and non-renewable natural resources (e.g. plants, animals, air, water, soil, minerals) that combine to yield a flow of benefits to people (adapted from Atkinson & Pearce 1995, Jansson et al. 1994).

The Natural Capital Declaration, signed by WWF and many financial institutions, is a global statement demonstrating the commitment of the financial sector to work towards integrating natural capital criteria into financial products and services. From the perspective of the financial sector, natural capital is a subset of environmental, social and governance (ESG) factors that can be material to financial institutions, mainly through their allocations of capital to companies through loans and investments or premiums as part of insurance contracts.

Credibility vs. controversy - is there a solid case for green bond standards?

In the absence of commonly-accepted standards to determine whether a given bond classifies as a green bond, significant controversy has arisen about what a green bond is and is not, and where to draw the line. The credibility of green claims in some green bonds has been called into question, resulting in reputational risks for issuers, underwriters and investors alike. There has even been recent discussion about the need to develop a dispute-resolution mechanism for the green bond market¹⁸.

Attracting mainstream investors into the young green bond market is critical, and trust and confidence are needed for this to happen. More clarity and conformity on the green criteria in a bond could encourage convergence in market practices and conventions, so that mainstream investors and new issuers have more confidence in the green bond market. This could ultimately lead to increased capital flows, reduce transaction costs, increase the number of transactions and thus improve the liquidity of the market.

In short, credible and widely-accepted standards could create simplicity and clarity, and establish the trust and confidence investors, issuers, and other green bond market participants need. This will help the market to grow in size, quality and credibility in order to realise its full potential.

Green bond standards can help underpin the trustworthiness of green claims, so that investors can be reasonably confident that the green bonds they invest in actually have a positive impact on the environment. Trust and confidence will be needed to increase deal-flow, reduce transaction costs, streamline transactions and improve liquidity in the market, making it more attractive for large mainstream investors such as pension funds.

“Issuers need to address standards and accountability for green bonds to gain more credibility. Initiatives such as the Green Bond Principles have helped define the bonds for investors. However, compliance with these principles is voluntary and there are no enforcement mechanisms. This has relegated green labelling to a marketing strategy in the eyes of some market participants.”

Moody's Investor Services, Green Bonds Start to Bloom, May 2015

Which standards, guidelines and frameworks do issuers, underwriters and investors currently use to define, assess and evaluate the greenness of bonds and to report on pledged environmental benefits?

Due to an absence of comprehensive standards, several initiatives and frameworks have been developed to guide the market practices of issuers, investors, underwriters and other market participants; and also to promote accountability, integrity and transparency in the market.

The two most prominent initiatives are the Green Bond Principles convened by the International Capital Markets Association (ICMA), and the Climate Bonds Initiative which has developed a more specific performance-based climate-related standard and certification scheme. They are complemented by green

bond indices, second party review frameworks, issuers' or investors' proprietary green bond frameworks, and guidelines on impact reports that are sector-, country- and/or component-specific. We have reviewed more than a dozen of these in detail (see Annex B), and our analysis has yielded the following results:

- **The Green Bond Principles – a set of well-respected but rather broad process-focused guidelines.** The Green Bond Principles, an industry-led initiative, offers a set of relatively broad and flexible voluntary process-oriented guidelines defining best practice in relation to transparency of the use of proceeds, processes for project evaluation and selection, management of proceeds, and reporting on use of proceeds. The principles enjoy impressive recognition and uptake in the market, with more than 95% of the US\$63bn green bonds outstanding analysed in 2015 pledging alignment with the Green Bond Principles. However, the Green Bond Principles do not yet meet WWF's 16 principles for effective and credible standards. In particular, checks and balances to allow for robust assurance are not in place yet¹⁹ and platforms for stakeholders from outside the industry to participate in meaningful dialogue are limited²⁰. The Green Bond Principles run the risk of failing to reach sufficient credibility with stakeholders from outside the industry. Embracing ISEAL credibility principles²¹ and codes of good practice may help to address this shortcoming.
- **The Climate Bonds Initiative – a climate-focussed standard and certification scheme with performance-based minimum standards for a broad range of sectors.** The development of standards focussing on climate-related environmental challenges is, by far, the most advanced: the Climate Bonds Initiative offers a certification system with performance-based minimum standards defined by science-based eligibility criteria for a growing number of sectors within a predefined taxonomy (see box 4 on the following page). The Climate Bonds Initiative is committed to adherence to ISEAL codes and meets the majority of WWF's 16 principles. The market uptake of the CBI standard is currently relatively limited – with a little over a dozen bonds currently certified²² – but rapidly increasing and has great potential: it is backed by a coalition of global investor associations managing over US\$34tn of assets, and US\$11tn of individual funds who signed the Paris Green Bonds Statement advocating transparency, assurance, and the development of clear industry standards, in order to build a large and robust market and make a real contribution to addressing climate change. In addition, investment banks who have committed to CBI as partner organisations – including HSBC, Citi, Barclays, Deutsche Bank, RBC, RBS and Standard Chartered – are among the leading underwriters of green bonds, representing almost 25% of the green bond market in 2015²³.

They can therefore play a pivotal role in promoting the CBI standard among their underwriting clients and investors.

A coalition of global investors managing over US\$11tn of assets signed the Paris Green Bonds Statement, advocating transparency, assurance, and the development of clear industry standards, in order to build a large and robust market and make a real contribution to addressing climate change.

Energy	Low carbon buildings	Industry & energy intensive commercial	Waste & pollution control	Transport	Information technology & communications	Agriculture, forestry & other land-use (AFOLU)	Adaptation
Solar	New residential	Manufacturing	Recycling facilities	Rail	Power management	AFOLU mitigation	Water
Wind	New commercial	Energy efficiency processes	Recycled products & circular economy	Vehicles	Tele-conferencing	AFOLU adaptation	Energy
Bioenergy	Retrofit	Energy efficiency products	Waste to energy	Mass transit	Resource efficiency	Agricultural products	Industry & waste
Geothermal	Products for building carbon efficiency	Retail & wholesale	Methane management	Bus rapid transport		Lang regeneration	Transport
Marine & coastal		Data centres	Geo-sequestration	Alternative fuel infrastructure		Forest protection	Information & Communication Technologies
Dedicated transmission		Process & fugitive emissions		Water-borne transport		Plantation forestry	Building
Energy distribution & management		Energy efficient appliances					Food security
Hydro Power		Combined heat & power					Coastal

Box 4: Taxonomy provides green definitions for the Climate Bond Standard & Certification Scheme.

Highlighted in black: areas where eligibility criteria have been developed by CBI.

Green: eligibility criteria currently under development (as of May 2016).

In other areas CBI still needs to convene expert committees.

CBI has developed a detailed taxonomy of green definitions (boxes highlighted in light green above). Sector-specific eligibility criteria for climate-related investments in a growing number of sectors included in the taxonomy already exist (highlighted in black in Box 4 above), or are currently under development (highlighted in green in Box 4 above). With a view to the complexities of climate change, however, a number of gaps exist and a significant amount of work is still needed in these areas.

While standard-setting focussing on climate-related challenges is well advanced, other environmental challenges with significant impact on natural capital (see box 3) – such as the depletion of natural resources other than energy, pollution prevention, waste reduction and conservation of biodiversity – are currently not fully addressed in the taxonomies and eligibility criteria of the standard.

CBI has received financial support from the Rockefeller Foundation to address this. However, significant standard-setting efforts will be required to close the gap.

The proliferation of standards, frameworks and guidelines and the diversity of market practices in terms of definitions and requirements create complexity and confusion among issuers and investors, which could hamper the confidence needed for the green bond market to thrive in the long term.

In addition, many organisations have developed their own proprietary standards, initiatives, frameworks and guidelines to assess the green credentials of bonds. All these initiatives have their own objectives and characteristics and are, consequently, difficult to compare. The most relevant currently include:

- **Green bond indices** (e.g. S&P Dow Jones Green Bond Index and Green Project Bond Index, Barclays/MSCI Indices, Bank of America Merrill Lynch Green Bond Index, Mirova) developed by a number of financial institutions in order to help investors understand and benchmark green bonds' performance by taking into account financial considerations such as credit quality, coupon type, amount outstanding and maturity, as well as external assessments of the environmental profile.
- **Second party review frameworks** developed by several mostly European service providers (e.g. CICERO, oekom Research, Vigeo, DNV GL, Sustainalytics) to assess the credibility of self-labelled green claims, based on a variety of approaches: by referring to the Green Bond Principles or the Climate Bonds Standard, the issuer's framework (sometimes developed by the reviewer themselves)²⁴, or defining their own proprietary criteria, methodologies and procedures.
- **Issuers' proprietary frameworks** setting up their own approach to structuring and issuing a green bond, defining their own performance metrics to disclose the environmental impacts of their projects and showcasing different levels of transparency (e.g. HSBC's Green Bond Framework).
- **Investors' proprietary frameworks** defining the investor's performance, reporting and assurance requirements to assess whether a bond can be classified as green or not (e.g. Natixis/Mirova Green Bond Analysis Grid).
- **Sector- or country-specific guidelines** such as the Global Real Estate Sustainability Benchmark (GRESB) guidelines which complement the Green Bond Principles with specific guidance for the real estate and construction sector²⁵; or the Green Bond Guidelines and Green Bond Projects Catalogue, the first country-specific green bond guidelines just released by the People's Bank of China (PBoC)²⁶, later followed by the Indian SEBI's green bond regulations.
- **Other component-specific standards** can be used to develop or assess specific elements, such as the Harmonized Framework for Impact Reporting, developed in December 2015 by 11 international financial institutions²⁷, which offers guidelines and key metrics for impact reporting for renewable energy and energy efficiency.

A more detailed analysis of some of these existing standards, initiatives, frameworks and guidelines focusing on factors affecting trust and credibility – objectives, ownership and governance, range of eligibility, type of standards, scope, level of transparency, and level of assurance – is provided in Annex B.

In addition, the number of guidelines and standards is still increasing: the US-based rating agency Moody's has just released a Green Bonds Assessment tool to evaluate issuers' management, administration and reporting²⁸; and S&P Dow Jones in cooperation with Trucost is currently developing a process for rating the green impact of green bonds²⁹. Such rating systems, if well designed and based on robust criteria, will help streamline investor due-diligence and transaction costs.

In summary, the variety of approaches that exist reflects market confusion over the appropriate standard(s) to use. Many appear to focus on the process only, and do not shed light on the actual performance of the bond or the underlying assets. Furthermore, most standards only address selected environmental impacts and do not take a long-term view. As they do not provide a common methodology and content for the greenness of the bond, and do not connect the environmental performance to the financial performance, it is challenging for investors to assess the added value of green bonds – and there are no common standards for monitoring or external assurance to support the credibility of the market.

Finally, compliance with these principles and standards is voluntary and there are currently no enforcement or dispute resolution mechanisms. This has relegated green labelling to a marketing strategy in the eyes of some market participants. This confusion clearly does not add to the credibility of the young green bond market.

2

EFFECTIVE AND CREDIBLE GREEN BOND STANDARDS ARE NEEDED SEVEN ELEMENTS ARE CRITICAL FOR THE CREDIBILITY OF THE GREEN BOND MARKET

Existing standards, frameworks and guidelines currently mostly look at the potential environmental impacts prior to issuing a bond, instead of assessing the actual environmental benefits of projects throughout the lifetime of the bond. Yet the purpose and added value of a ‘green’ bond is to create environmental benefits. In the short term, WWF believes that seven elements are critical to help the green bond market maintain and enhance its credibility so that it can keep its ‘green promise’.

What types of standards would suit the market best, overcome existing barriers and enhance credibility?

If there is a case for credible, fully-developed and widely-accepted standards, why don't they exist yet? What are the market barriers that currently prevent commonly-accepted standards from being adopted? What types of standards would suit the market best? What are the key characteristics of standards that could help overcome the existing barriers?

While our analysis shows there is significant potential for the market to grow and involve mainstream investors, three barriers still exist to effectively develop green standards. First, issuers believe standards will lead to additional costs in aligning their green bonds with such requirements. Issuers must meet the additional cost while investors reap most of the benefits. Second, the market is still very diverse, with many different types of issuers, many potential categories of eligible projects, and a wide variety of related criteria and potential measures for the environmental impact of the bond among others. Third, standards can be perceived by issuers as being too difficult to meet, as green bond issuance comes with a need for relevant expertise, additional monitoring and reporting among other requirements.

Three market barriers currently exist, perceived or real, that prevent standards from being widely accepted and fully developed: additional costs for issuers, the diversity of the market and market needs, and complexity.

The perfect is the enemy of good – a green bond standard, designed to become the ‘new norm’

In order to ensure convergence of the market while enabling market growth, we believe that standards for green bonds should focus on elements that enhance the effectiveness and credibility of the market.

Effective and credible private sector sustainability standards and certification systems that underpin growth have been developed in many sectors and are now reaching maturity (see Figure 3). WWF has developed a set of 16 principles that provide guidance on how such standards should be developed (see box 4 below).

As already indicated, we would like to see a similar development in the green bond market, with effective, credible, fully-developed and widely-accepted standards that are designed to become the ‘new norm’, rather than a standard designed for a perfect world that will only be relevant for a niche market.

In this respect the green bond market is still in its early stages. The Green Bond Principles are voluntary guidelines and do not position themselves as a standard. The only standard currently available in the market is the Climate Bonds Standard, promoted by the Climate Bonds Initiative, which has done pioneering work to define the technical development of standards focussing on climate-related environmental challenges.

However, it has not yet reached significant market share: even if the market uptake of CBI’s certification has accelerated recently, reaching US\$5bn at mid-March 2016³⁰, the total volume of climate-certified bonds currently available in the green bond market, which in itself only represents a small fraction of the global fixed-income market, is approximately 5% of the outstanding green bonds (the CBI standard would be positioned in the bottom left corner on figure 3).

Box 4: WWF’s principles for effective and credible standards³⁶

Building on two decades of experience in supporting the development of sustainability standards³¹, WWF has developed its own principles for recognizing and endorsing credible sustainability standards³² (see Annex A).

In WWF’s view, credible certifications must demonstrate good practice in terms both of governance and operational effectiveness, which is often a function of the underlying environmental and social criteria. WWF’s 16 principles define the elements that WWF deems critical to support a given standard and certification scheme. WWF has also developed a Certification Assessment Tool (CAT)³³, a formalised methodology to evaluate and compare standards and certification schemes.

Also linked to WWF’s principles is the International Social and Environmental Accreditation and Labelling (ISEAL) Alliance, which was founded in 2002. The ISEAL Alliance is now recognized as a leading global umbrella association for social and environmental standards. It ensures that a certification has sufficiently robust operational systems, such as third-party

auditing/assurance, independent accreditation of certification bodies/auditors (see **WWF Principle #9 – Comply with international frameworks for certification and accreditation**³⁴), supply chain verification systems, and grievance mechanisms. Through its membership policies, ISEAL serves to avoid a ‘race to the bottom’ in the standards and certification arena. ISEAL has also developed ‘Codes of Good Practice’ including the Standard-Setting Code, the Impacts Code, and the Assurance Code, which establish system requirements for credible practices in the social and environmental standards space. These codes can be referenced by all stakeholders and serve as an excellent resource, which WWF broadly endorses.

Within the bond market, CBI has made commitments to apply ISEAL standards, but it is not formally a member. The Green Bond Principles have not taken a public position on ISEAL standards. Of particular relevance to the Green Bond Principles’ work is the ISEAL Code of Good Practice for Setting Environmental and Social Standards (see **WWF principle #3 – Be developed in compliance with ISEAL’s Code of Good Practice for Setting Social and Environmental Standards**³⁵). WWF strongly encourages the Green Bond Principles to further explore the application of the ISEAL standard-setting code.

Green bond standards need to address all key environmental challenges with significant impact on natural capital that societies are facing, including (but not limited to) the depletion of natural resources other than energy, pollution prevention and waste reduction, as well as conservation of biodiversity, which currently are not fully addressed in existing standards and guidelines.

Seven critical elements to strengthen the credibility of the green bond market through standards

WWF believes that seven elements are critical in the short term to help the green bond market maintain and enhance its credibility:

1. Green bond standards should cover and address all critical environmental challenges.
2. They should focus on achieving verifiable ‘actual’ instead of ‘promised’ or ‘pledged’ environmental benefits.
3. They should be science-based, long-term-oriented and resilient.
4. They should apply a sector-by-sector approach to determine what is green.
5. The burden of proof lies with the issuer: in sectors where certification schemes are currently not yet available, standardized disclosure is needed to demonstrate actual environmental benefits.
6. Green bond standards should include independent third-party assurance and accreditation as an essential element to enhance credibility.
7. Existing environmental standards can provide shortcuts and help close the existing gaps.

These elements are described in further detail in the following sections.

Element 1 – Green bond standards should cover and address all critical environmental challenges

The only standards that currently exist in the green bond market are largely focused on climate change. But human society faces many other critical environmental and sustainability challenges. For example, more than two-thirds of the annual value of the ocean relies on healthy conditions to maintain its annual economic output. Collapsing fisheries and mangrove deforestation are threatening the marine economic engine that secures lives and livelihoods around the world³⁷.

To fully unlock the potential of green bonds, beyond climate bonds, it is essential that green bond standards address all key environmental challenges with significant impact on natural capital that societies are facing, including (but not limited to) the depletion of natural resources other than energy, pollution prevention and waste reduction, as well as conservation of biodiversity, which currently are not fully addressed in existing standards and guidelines (see **WWF Principle #1 – Be consistent with, and support, the WWF Global Programme Framework**). In particular, such standards should be aligned, at the very minimum, with nationally and internationally agreed public policy priorities including, for example, the Nationally Determined Contributions (NDC) of the Paris Agreement on Climate Change and their subsequent revisions to reach the 2°C (and ultimately 1.5°C) target, the Aichi targets under the UN Convention for Biological Diversity (CBD) as well as, of course, the Sustainable Development Goals (SDGs).

Moreover, green bond standards should address potential trade-off between competing priorities. Green bond standards should take into account environmental, social and governance safeguard policies through a risk-based approach. Where applicable (and depending on the size of the investments) green bond standards should adopt a risk-based approach and take into account safeguard policies and procedures on environmental and social impact assessments that are currently being applied by the financial services industry – including, inter alia, International finance corporation's (IFC's) performance standards as well as results-based project appraisal approaches piloted by several multilateral development banks. Otherwise, the green bond market runs the risk of having its reputation tainted by issuances that fund controversial assets such as, for example, offshore wind energy production, or those around protected areas, or even UNESCO World Heritage Sites in countries where environmental impact assessments are not necessarily mandatory by law³⁸ (see **WWF Principle #2 – Require compliance with relevant national and international laws and conventions**).

Element 2 – Green bond standards should focus on achieving verifiable 'actual' instead of 'promised' or 'pledged' environmental benefits

Critical criteria to assess green bond performance should concern real, actual change – rather than promised improvements. The actual environmental benefits of the underlying projects/assets should for obvious reasons not be to the detriment of other environmental or social challenges. Bonds therefore should be

able to demonstrate the underlying assets' net positive impact on the environment, and any potential negative environmental and social impacts (current or foreseeable) should be identified and mitigated (see **WWF Principle #4 – Focus on minimizing or eliminating important environmental and/or social negative impacts**, as well as creating environmental, economic and social positive impacts in Annex A). Consistent insight into these environmental benefits will allow investors to start differentiating the pricing of various types of green bonds.

Standards should enable issuers to demonstrate environmental impacts that have been actually achieved, rather than those simply promised. This means that standards should include commonly-accepted outcome-oriented performance metrics and robust methodologies for reporting actual environmental impact (see **WWF Principle #6 – Require minimum measurable performance requirements and be in compliance with ISEAL's Impact Code**³⁹). Issuers will apply these outcome-oriented performance metrics to their specific circumstances, and investors will use them to assess and monitor the environmental performance of bonds in their portfolio.

While guidance already exists for some asset types – such as the Harmonized Framework for Impact Reporting, developed in December 2015 by 11 international financial institutions⁴⁰ – outcome-oriented performance metrics are yet to be developed. Additional guidance is available from corporate reporting standard-setting bodies such as the Global Reporting Initiative (GRI) or the US-based Sustainable Assurance Standards Board (SASB).

Element 3 – Green bond standards should be science-based, long-term-oriented and resilient

The meaning of 'green' changes over time, due to evolving societal expectations and circumstances as well as technological progress. This means that standards, and their future revisions, should not be restricted to the state of green in a certain timeframe (see **WWF principle #16 – Be committed to continuous improvement** in Annex A). Rather, standards should be long-term-oriented, forward-looking and resilient over time: what could be labelled as an eligible project now should remain so in three, five or 10 years, in particular in cases where maturities of green bonds are very long. Science-based approaches, such as the WWF supported Science-Based Targets (SBT) Initiative⁴¹ should be used (see **WWF principle #5 – Be science-based** in Annex A).

Element 4 – Green bond standards should apply a sector-by-sector approach to determine what is green

It appears to be nearly impossible to formulate a common definition of 'green' for all green bonds and all sectors. Nevertheless, standards should provide guidance to encourage more converging practices, as well as terms and conventions in the market. We believe standards could set green criteria at (sub-)sector level for each specific investment area. At this level, it is easier to develop criteria that can be applied to the majority of organizations in each sector. The criteria should contain

detailed green taxonomies, performance metrics and assessment methods. They should also include potential exclusion criteria (see WWF's view in boxed text below). The Climate Bonds Initiative has successfully applied this approach, and we would encourage CBI to continue and accelerate this process and expand to a broader range of sectors. Several issuers (e.g. HSBC's green bond framework, which defines sector-specific exclusions and policies) and second party review providers already use similar approaches. The sector-specific standards should also be adaptable to national/regional conditions and needs (see **WWF Principle #7 – Be adaptable to national/regional conditions and needs** in Annex A).

The sector standards should be developed with a broad range of relevant market actors and allow meaningful and equitable stakeholder participation (see: **WWF Principle #10 – Require meaningful and equitable stakeholder participation** in Annex A). These industry groups should make use of environmental criteria already commonly applied in their sector and use existing codes on environmental standard-setting (for example ISEAL's Code of Good Practice for Setting Social and Environmental Standards, see **WWF Principle #3 – Developed in compliance with ISEAL Codes**).

Box 5: Activities that WWF perceives as being incompatible with a sustainable, 'One Planet' economy

WWF believes that for obvious environmental and risk assessment reasons the activities in sectors listed below are not compatible with a sustainable 'One Planet' economy, and bonds with underlying assets from the following sectors should not qualify as 'green' because they might undermine the credibility of the green bond market:

- Nuclear power production⁴²
- Trade in CITES Appendix 1 flora and fauna
- Animal testing for cosmetic and other non-medical products
- Medical testing on endangered species
- Fossil fuels (specifically oil, gas, and coal), including 'clean coal'⁴³

Furthermore, we also recommend that in addition to the sectors above, activities related to arms, weapon systems and tobacco, as well as adult entertainment and pornography, should be excluded entirely for ethical reasons.

Element 5 – The burden of proof lies with the issuer: in sectors where certification schemes are currently not available, standardized disclosure is needed to demonstrate actual environmental benefits

As shown in box 4, for some types of underlying assets and some sectors effective and credible certification schemes do not exist yet, or are still under development. In these sectors reporting on outcomes and environmental impacts should also become one of the key characteristics of the standards around 'green'. This would enable issuers to focus on the outcomes and impacts of the green investments of the bond, instead of on its intention or aspiration. Again, this could improve the quality of green bonds and their attractiveness for investors.

Moreover, investors themselves report (or are asked to report) on the sustainability impacts – such as the degree to which activities are in line with the required decarbonisation of their portfolios. Innovative regulatory approaches such as Article 173 of the energy transition law adopted by the French government in 2015, as well as voluntary guidelines for disclosure currently being developed by the Task Force on Climate-related Financial Disclosures (TCFD) convened by the Financial Stability Board (FSB), are likely to accelerate this trend towards more and better disclosure. Of course, this can only be done if specific, environmental use-of-proceeds information on the underlying bonds is publicly available in a consistent and comparable format.

Green bond standards should therefore promote standardised disclosure and periodic reporting (e.g. at least annually) on the environmental effectiveness of the projects funded. This should include the actual environmental impacts of the projects (aggregated, if appropriate), the financial consequences of these environmental impacts for the issuer, and the method it applies to measure and monitor them. A Harmonized Framework for Impact Reporting, developed in December 2015 by 11 international financial institutions⁴⁴, offers guidelines and key metrics for impact reporting for energy efficiency and renewable energy. Reporting requirements should be simple and standardized so as to avoid anything that might be perceived as too onerous by issuers. Over time such frameworks should gain common acceptance and should be expanded to cover other sectors.

The uniqueness of green bonds lies in their dual purpose – both generating financial returns and achieving environmental targets, thus creating natural capital. The current market does not price the societal return of the latter, partly because of the different measuring units for environmental performance and because there is no mechanism for dispute-resolution or sanctions for unsubstantiated or false green claims.

This is why we believe it is important to disclose the full financial implications of a green bond: it is a way to demonstrate to mainstream investors its overall return. This could be done in qualitative terms, but preferably (where possible) by monetising the external environmental benefits, which would create a uniform approach for comparing the ‘total return’ of green bonds. Such information would allow potential investors to consider how much scope a bond has to provide greater economic value than simply its monetary returns – such as its environmental benefits, reputational benefits, reduced regulatory risk, etc.

Methodologies that enable issuers to (roughly) estimate natural capital already exist and can be easily applied to green bonds. For example, S&P Dow Jones in cooperation with the consultancy Trucost has recently developed an approach to rate the environmental impact of a green bond, calling for more and better disclosure and using a natural capital accounting framework. The Natural Capital Coalition a global platform which brings together the many different initiatives and organizations working in natural capital under a common vision has members that include many green bond issuers and other market participants including reputable auditing firms⁴⁵. The Natural Capital Coalition has developed the Natural Capital Protocol – a standardized framework to identify measure and value direct and indirect impacts (positive and negative) and/or dependencies on natural capital. A hypothetical example of how such a natural capital framework could be applied to a bond issued by an international energy company is presented in the boxed text on the following page.

“A call for better disclosure: before any comprehensive assessment of the green impact delivered by different bonds can be done, comprehensive disclosure across the board is required.”

S&P Dow Jones/Trucost April 2016

By connecting a green bond’s financial performance (i.e. annual interest paid between issuance and maturity) and the natural capital it reserves, restores or enhances for society (e.g. monetised value of financing and capitalising the transition towards a 2°C world), its total benefits to the investor and society become clearer and more harmonised. This will potentially lead to further participation in the market and better pricing of green bonds. Therefore standards could incorporate guidance on how to report on the financial effects of the environmental performance improvements achieved, and offer methodological guidance for doing so, drawing on frameworks that are currently being tested.

Box 6 – Natural capital accounting – Reporting on natural capital and environmental returns for society

Financial characteristics of the bond:

- Total issuance: €1.4bn (US\$1.52bn) PV, biomass
- Date: November 2013 of 7 TWh
- Annual coupon: 2.25% (US\$34million)
- Expected yield: 2.316%/year
- Maturity: 7,5

Actual allocation of the use-of-proceeds (as of Feb 2016):

- 13 renewable energy projects: wind, solar
- Total capacity of 1.8 GW and total potential
- Over the 13 projects financed, wind infrastructure represents 1724 MW (96% of total capacity)

Natural capital preserved, restored and enhanced by the green bond

- Estimated avoided CO₂ emissions as reported by the issuer⁴⁶: 3.3 Mt/year (gross) / 1.8 Mt/year
 - Natural capital preserved (net)*: US\$330million/year (gross) / US\$180million/year (net)
- This assumes that the CO₂ emissions avoided are the most important environmental impact and that the natural capital preserved, restored and enhanced by the bond each year can be estimated by calculating the total gross/net value of these avoided emissions, valued at their cost to society*.

In conclusion, the monetised value of the natural capital preserved (i.e. CO₂ emissions avoided per year) exceeds the annual financial interest payment generated by the green bond (US\$34 million) by an order of magnitude.

* The natural capital was estimated by monetising avoided CO₂ emissions at a flat rate of US\$100 per ton (a conservative assumption used by several companies and in line with the predictions of the French law on energy transition on the carbon tax in 2030⁴⁷).

(source: KPMG calculations, based on publicly available information⁴⁸)

Element 6 – Independent third-party assurance and accreditation as an essential element to enhance credibility

To minimise the risk of ‘green-washing’, however, claims should reflect the green characteristics of the underlying assets (see **WWF Principle #14 – Require truthful claims, and where applicable traceability** in Annex A). Just as importantly, this means that actual impacts and reported data should be verifiable by a third-party interest. Only a bond for which the issuer can demonstrate measurable environmental benefits over its lifetime, certified by an independent party according to widely-accepted, fully-developed standards, should qualify as a green bond.

This means that through use-of-proceeds procedures and processes, a clear relationship should be established between the underlying eligible projects of a green bond and a measurable positive environmental outcome. In addition, the type of project(s) that are funded by the bond should be clearly defined; and potential negative environmental and social impacts of the project(s) should be identified, assessed, monitored – and mitigated.

Currently, issuers self-label bonds as green and frequently use (optional) second party reviews to enhance the credibility of their green claims. In order to control the integrity and credibility of the market, issuers of a green bond should systematically use independent, third party assurance to confirm their alignment with the key parameters of the (sector-specific) standards. While issuers should be able to decide themselves which type of independent assurance best fits the ambition and purpose of the green bonds, such assurance should be mandatory not optional, and should be conducted in compliance with international standards – i.e. requirements must be independently verified by a certification body accredited to the certification scheme, as the use of third parties for certification and accreditation offers the highest levels of checks and balances. The certification scheme must have several accredited certification bodies to avoid perceived or real conflict of interest (see **WWF Principle #13 – Require independent third-party certification and accreditation** in Annex A).

Green claims must be independently verified by a certification body accredited to the certification scheme, as the use of third parties for certification and accreditation offers the highest levels of checks and balances. The certification scheme must have several accredited certification bodies to avoid perceived or real conflict of interest.

WWF Principle #13 – Require independent third-party certification and accreditation

The two most commonly applied types of assurance are second party reviews and audits by external auditors such as PwC, EY, KPMG and Deloitte. The main difference between these two types of assurance is that second party reviews are carried out by experts who give an ‘opinion’ on whether a green bond meets (their own) green criteria. Problems can arise when this type of second party review is conducted by an organisation that is not fully independent, for example when an ‘independent’ second-party opinion is published by the same organisation

that helped develop the green bond framework, including the project selection criteria⁴⁹. Audit firms and/or accredited verifiers provide an independent verification that certain green bond information complies with specific third-party standards, which have been agreed through multi-stakeholder dialogue. The Climate Bonds Standard already provides a list of approved verifiers that can offer independent assurance based on geography and sector expertise.

Element 7 – Existing environmental standards can provide shortcuts and help close existing gaps

To avoid further confusion and duplication of work, green bond standards should build as much as possible on existing initiatives such as the Green Bond Principles and the Climate Bonds Standard (including its eligibility criteria).

In sectors where sector-specific standards have yet to be fully developed for the bond market, effective and credible sector-specific sustainability standards – in particular standards that are ISEAL members or associate members – should be used when and where they exist. ISEAL members are environmental standards that WWF considers as the most credible in their respective sectors. They could be used as ‘proxy-standards’ for underlying assets of green bonds while robust and credible eligibility criteria for green bonds with underlying assets in these sectors are being developed.

For example, for investments in marine and coastal assets for which standards have yet to be developed, issuers should use certification from the Marine Stewardship Council (MSC), the Forest Stewardship Council (FSC) or the Aquaculture Stewardship Council (ASC), which are ISEAL members and have committed to ISEAL’s standard-setting codes. Investments in infrastructure assets could use the Standards for Sustainable and Resilient Infrastructure (SuRe) overseen by Global Infrastructure Basel (GIB). Future sector standards for hydropower, currently under development by CBI, should be based on the Hydropower Sustainability Assessment Protocol (HSAP) and other standards supported by WWF⁵⁰, including the Alliance for Water Stewardship (AWS) Standard⁵¹.

Some of these standards have gained significant market share in their respective sectors and have moved from niche to mainstream (see figure 4 on the following page). Where these standards have committed to ISEAL Impact Codes⁵² to build a monitoring and evaluation system examining both short-term and long-term outcomes, certification of assets against them could be used as a ‘proxy’ for superior environmental performance, which would help simplify reporting requirements, thus reducing transaction costs.

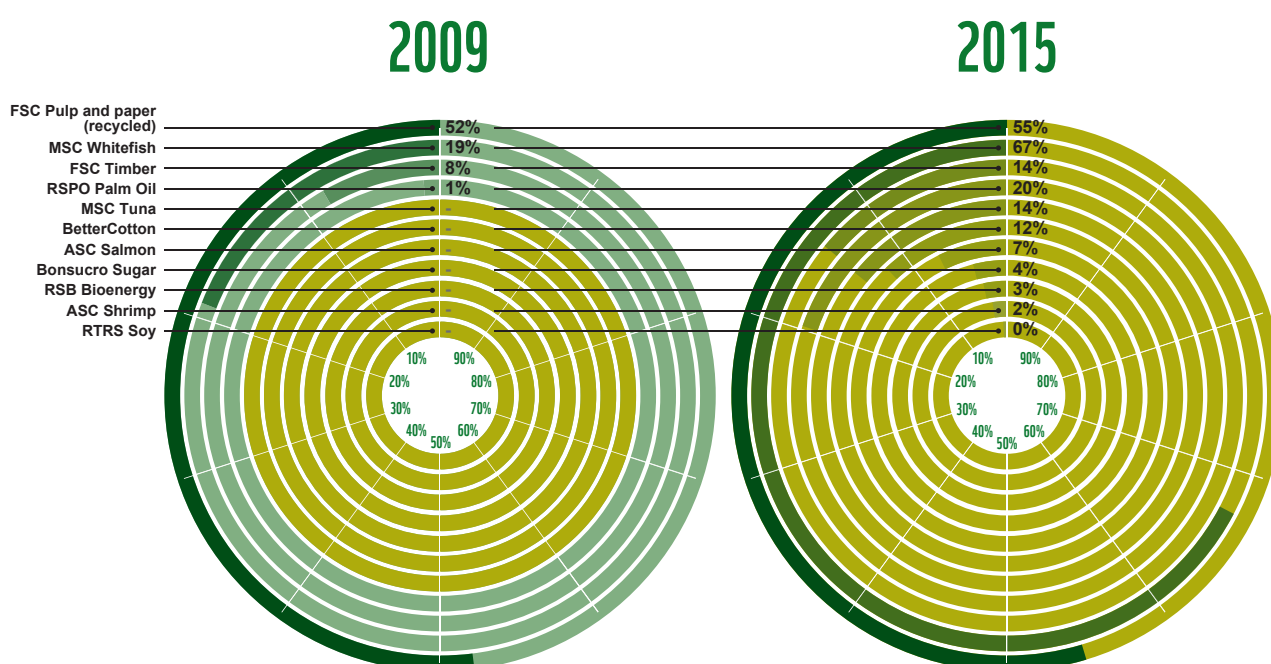


Figure 4: Sustainability standards for agricultural commodities moving from niche to mainstream: increase of market share for selected ISEAL sustainability standards between 2009 and 2015.

Environmental standards that are members of ISEAL, including the Marine Stewardship Council (MSC) and the Forest Stewardship Council (FSC), are environmental standards that WWF considers as the most credible in their respective sectors. They could be used as ‘proxy-standards’ for the underlying assets of green bonds while robust and credible eligibility criteria for these sectors are being developed, so as to reduce duplication of efforts, reduce the burden of reporting and minimize transaction costs.

3

PATHWAYS AND NEXT STEPS

Pathways to green bond standards: moving on from self-declared green benefits

While there seems to be significant momentum to promote standards in the green bond market, and initiatives such as the Climate Bond Standards are well-recognized, there is no consensus yet on their timing and nature.

However, for the green bond market to deliver on its green promise, the current practice where issuers make self-declared, hypothetical statements on green benefits (with or without second-party review/opinions) needs to move towards a model that would encompass certification of actual environmental benefits according to effective and credible standards that are widely accepted.

Building on existing principles and climate-focussed standards

The Green Bond Principles – in particular the guidance on use of proceeds, processes for project evaluation and selection, management of proceeds and reporting – could provide the foundation for such a model, complemented by climate-focussed industry standards developed by the Climate Bonds Initiative. In the medium term, effective and credible fully-developed green bond standards that take into account all major environmental challenges should be agreed.

However, in our view it will not be straightforward in the short term to develop the critical elements described in the previous sections, not least because of the complexity of both the green bond market itself and the dynamics between the key market actors.

Collective action towards the ‘next generation’ of private sector standards and supportive public policies

This is why WWF calls for collective action from market participants, market observers and other stakeholders to support the development of the ‘next generation’ of effective and credible standards for the green bond market.

In addition, government support (including incentives such as tax benefits, domestic policies, national standards and guidelines, increased transparency and disclosure of green bond information, sovereign green bond issuances, etc.) can significantly accelerate and steer the development of such green bond standards.

Of course, the more green bonds actually deliver measurable environmental benefits in support of national or international public policies – such as, for example, the Nationally Determined Contributions (NDC) of the recent Paris Accord on climate change and their subsequent revisions to reach the 2°C (and ultimately 1.5°C) target – the more governments will be inclined to support market growth through policy incentives.

International fora such as the G20 green finance study group (GFSG) provide an appropriate platform to underpin the effectiveness of private sector standards through promoting standardised terms and definitions, standardised disclosures, certifications and credit-rating requirements, as well as credible dispute resolution mechanisms.

Cooperation between market players is of the essence to develop effective standards. Guided by existing initiatives such as the Green Bond Principles and the Climate Bonds Initiative, and with the right level of commitment and collaboration among stakeholders, it should be possible to achieve standards for green bonds that suit market needs and ensure credibility.

4

WWF'S CALL FOR COLLECTIVE ACTION

WWF calls on green bond market participants, in particular members and observers of the Green Bond Principles and partner organisations of the Climate Bonds Initiative, to actively support the development of effective and credible standards for the green bond market.

WWF calls on the members and observers of the Green Bond Principles, in particular the members of its Executive Committee, to...

- **Explicitly acknowledge the need to develop effective and credible standards and to harmonise green bond frameworks.** Even though the Green Bond Principles have so far stated that this task should not be within its current scope, we welcome the launch of dedicated workgroups to define 'what is green', reporting and assurance as a very positive first step in this direction. However, these groups should allow for meaningful and equitable stakeholder participation by members and observers.

- **Actively support the development of clear standards to assess the actual, not only pledged, environmental contribution of a bond.** These standards should include both criteria and guidelines for measurability of the bond's sustainability impact and should be developed through open, inclusive and transparent multi-stakeholder engagement according to ISEAL Codes of Good Practice and based on sound scientific frameworks. We encourage the Green Bond Principles to actively contribute to the development of such standards by supporting and publicly encouraging standard-setting efforts by other stakeholders including, in particular, the Climate Bonds Initiative.
- **Strengthen requirements on disclosure of environmental information to the public.** At a minimum, the information should detail the expected environmental impacts of the bond at issuance, and give actual data annually and at the maturity date. Disclosure should take place according to a specific standardised format to be defined in the eligibility criteria for each sector. Disclosure requirements should clearly distinguish what type of information should be disclosed to the bond-holder and set minimum requirements for disclosure to the public. Claimed benefits to the environment, a public good, should require free disclosure of information through a public website.

We also encourage the ICMA-led secretariat to actively participate in policy dialogue to discuss definitions of the 'green' aspects of green bonds. For example, this can be done by engaging with other green bond standard development committees⁵³ aimed at stimulating consistency and comparability at international level, to avoid unnecessary fragmentation of the global green bond market.

WWF calls on the Climate Bonds Initiative, and its partner organisations in particular, to...

- **Continue the development of sector-specific standards and eligibility criteria through multi-stakeholder engagement** and accelerate the process to expand the range of sectors for which eligibility criteria are available and close the remaining gaps. Existing standards should be taken into account as far as possible, provided they are effective and credible.
- **Expand CBI's standard scheme to address environmental and sustainability challenges, going beyond climate change.** In the medium term, the standard and certification scheme promoted by CBI has the potential to become an overarching framework for all green bonds, not only climate-focused fixed-income products. To achieve this, the CBI standard should include other sustainability challenges with significant impact on natural capital, such as depletion of natural resources other than energy, pollution prevention and waste reduction, as well as conservation of biodiversity, which are not currently fully addressed in CBI's sector standards.
- **Take into account environmental, social and governance safeguard policies through a risk-based approach.** Where applicable and depending on the size of the investments, the CBI sector standard should also adopt a risk-based approach and take into account safeguard policies and procedures on environmental and social impact assessments that are currently being applied by the financial services industry, including inter alia, international finance corporations' (IFC) performance standards as well as results-based project appraisal approaches piloted by several multilateral development banks.

More specifically, we also invite CBI partner organisations, issuers, underwriters and investors alike who pledge support to CBI, to also systematically apply CBI's standards in their green bond business as far as possible and to actively promote the use of effective and credible standards among their clients and partners.

WWF calls on green bond issuers to...

- **Communicate the business case for green bonds, including the relationship between environmental and company value creation from intangibles, as effectively as possible to investors;**
- **Ramp up issuance of high-quality green bonds, taking into account existing standards, and convince other issuers that have not yet issued green bonds to do the same; and**
- **Contribute to the development of industry responses on critical elements of green bond standards,** in particular commonly accepted performance metrics, impact reporting guidance, assessment methods and definitions of green.

WWF calls on underwriters to...

- **Safeguard the integrity and improve the quality of the green bond market via client dialogue on green aspects of bonds with issuers.** In particular, underwriters should integrate ESG considerations into issuer client acceptance processes by applying the ESG risk management policies and procedures such as the Equator Principles; and do likewise for underwriting clients.
- **Develop industry-wide disclosure requirements and documentation frameworks.** Share potential disclosure requirements and documentation frameworks for issuers openly with other underwriters and develop an industry-wide consensus on those market practices (e.g. by building upon and leveraging experience acquired in project finance markets, where dialogues resulted in the development of the Equator Principles). They should also advise their issuing clients on environmental-related disclosures, and provide guidance – and potentially set requirements – with regard to environmental-related disclosures in the prospectus or offering memorandum of the green bond.

WWF calls on green bond investors to...

- **Develop a strategy for green bond investments to better allocate available capital and communicate investors' expectations to the market.** Investors should communicate openly to the market, especially to issuers, about how the investor defines the green aspect of a green bond in general and in selected sub-sectors, including the framework they use to assess green bonds. Engage more frequently with issuers and other investors to share views on what the investor expects from the green aspects of a green bond. For example, share views related to impact reporting, assessment methods to calculate impacts, and performance metrics. This might involve actively participating in working groups/committees at (sub-)sector level that endeavour to define standards and provide an investor perspective on 'green' aspects of a green bond.

- **Join investor coalitions that advocate for transparency, assurance and the development of industry standards (e.g. Paris Green Bonds Statement).** Investors should engage with other institutional investors to spell out their expectations regarding certain aspects of green bonds, and actively advocate for industry standards to be developed.
- **Voluntarily disclose information about their holdings (e.g. percentage of green bonds in fixed-income portfolios) and their environmental impacts (e.g. total CO₂ emissions avoided, natural capital preserved, restored or enhanced), taking into account and anticipating recommendations for disclosure currently being developed by the Task Force on Climate-related Financial Disclosures (TCFD) convened by the Financial Stability Board (FSB).** This information should be made available to asset owners and, as far as possible, the general public.
- **Invest in ESG capacity and knowledge-building among fund managers and investment analysts** to improve the understanding of the investment case for green bonds and the relationship between environmental performance and (overall) financial performance, including upside and downside risks.

WWF calls on green bond assurance providers, in particular second party review providers, to...

- **Develop guidelines and thought leadership on accounting-related topics** (e.g. definitions of green aspects of green bonds) to support the market in developing standards.
- **Align practices and methodologies for second party reviews.** Second party reviewers should look for opportunities to better align their methodologies for reviewing green bonds to promote transparency, both at industry and issuer level.
- **Ensure that compliance with standards and principles is verifiable.** Verification providers should participate in working groups/committees at (sub-) sector level that define standards for 'green', and should provide expertise and experience on the formulation of definitions and principles to ensure the standards become verifiable.

WWF calls on national governments and public policy makers to...

- **Integrate ESG factors in financial sector supervisory instruments,** so they become part of the mandates of public funds such as pension funds and sovereign wealth funds.
- **Use the best available applicable standards in strategic issuances.** Promote convergence of market practices and enhance credibility of green bond standards by applying existing and emerging standards in their strategic issuances (by public or para-public entities, local or regional governments, central banks, and through sovereign green bonds) and purchase programmes (by municipalities, development and central banks and other public agencies).

- **Actively stimulate and arrange global cooperation between national governments seeking convergence of green bond standards through appropriate platforms, in particular the G20.** Governments should seize the opportunity of the Green Finance Study Group (GFSG) convened by the Chinese Presidency of the G20 to promote common standards including standardised terms and definitions, standardised disclosure, standardised certification requirements, the integration of green considerations into credit ratings, and credible dispute-resolution mechanisms.

Industry bodies and non-governmental organisations (NGOs), including WWF, should...

- **Create global knowledge platforms for market actors to bring them together and mutually inform these market actors about the characteristics of a green bond,** its investment/business case and other relevant topics aimed at improving the level of understanding of green bonds in the market.
- **Actively contribute to working groups to define standards for green.** NGOs, information and service providers and other industry expert bodies should actively participate in multi-stakeholder dialogues/working groups/committees at (sub-)sector level to define standards for 'green' and to bring in expertise and experience on environmental topics and standard-setting in general.
- **Ensure comparability and consistency of standard-setting efforts.** Industry bodies such as ICMA could participate in market-based platforms to discuss definitions of the 'green' aspects of the green bonds, for example by engaging with other green bond standard development committees (e.g. SEBI in India), aimed at stimulating international comparability and consistency.

In conclusion: collective action is needed

The right level of commitment and collaboration among stakeholders, and under the leadership of existing initiatives such as the Green Bond Principles and the Climate Bonds Initiative, should enable the creation of standards for green bonds that suit market needs and ensure the right level of credibility.

We recognise that this might not happen overnight, but we believe that collective action is urgently needed.

ANNEXES

ANNEX A: WWF PRINCIPLES ON STANDARD-SETTING

WWF's principles for actively endorsing and recognising effective and credible standards and certification schemes⁵⁴.

Active endorsement and recognition of credible voluntary standards is one of WWF's main conservation strategies. WWF's work on standards and certification aims to lower the footprint of goods and services by helping to address the challenges in the production and capture of natural resources such as seafood, forest products, soft commodities (agriculture and livestock) and hard commodities (extractive industries), as well as promote the production of clean energy and responsible water stewardship.

WWF considers voluntary certification a primary method for improving mainstream production practices. Indeed, a core part of WWF's strategy in the standards landscape is to progressively and continuously strengthen the criteria of these standards, and simultaneously show that better methods are effective at providing benefits for producers while reducing negative environmental and social impacts.

WWF focusses both on the development of credible standards and on their effective implementation in terms of impacts and change on the ground or in the water.

WWF will only actively endorse or recognise standards and certification schemes that satisfy the following 16 principles:

- 1. Be consistent with, and support, WWF conservation objectives and contribute to the Sustainable development goals (SDGs).** Participation in the standard and certification scheme should support WWF's efforts in achieving its vision and mission, considering global, regional and national interests and goals. The standards and certification scheme's contribution to WWF's vision and mission should be clear and effective.
- 2. Require compliance with relevant national and international laws and conventions.** At a minimum, the standard and certification scheme should require the operators to comply with relevant national, regional and international laws and conventions. Indigenous frame rules should also be respected by operators.
- 3. Be developed in compliance with ISEAL's Code of Good Practice for Setting Social and Environmental Standards⁵⁵.** Partial compliance for standards that operate exclusively at national level may be treated as an exception. Compliance does not require ISEAL membership, but means that the standard must be able to show that it was developed in accordance with the ISEAL code.
- 4. Focus on minimising or eliminating important environmental and/or social negative impacts, as well as creating positive impacts in these areas, through the use and processing of the commodity/product/service.** With respect to environmental impacts, the standard will include, where applicable, minimum environmental performance requirements for:
 - High Conservation Values⁵⁶ and priority areas for conservation⁵⁷ including both conservation and restoration of those areas, as well as the reduction of biodiversity loss.
 - Reduction of pollution, including GHG emissions, reduction of soil erosion, soil contamination, pesticide and agrochemical use.
 - Reduction of impacts of water consumption and/or withdrawals on water scarcity, as well as reduction of impacts of water quality on areas experiencing impaired water quality stress.For social impacts, the standard will require, where applicable, respect for internationally proclaimed human rights, land use and tenure rights, property rights, indigenous people and minorities' rights, gender equity, workers' rights and community benefits, and free, prior and informed consent (FPIC). WWF's own Social Policies should be consulted and the standard should also be aligned with WWF Land Use Principles and Agriculture Guidelines.
- 5. Be science-based.** The standard and certification scheme's development and revision procedures should include input from scientists; and, on an ongoing basis, should reflect the newest scientific findings related to the issues the standards address, as well as evolving legislation and human rights.
- 6. Provide minimum measurable performance requirements and be in compliance with ISEAL's Impacts Code⁵⁸.** The standard should provide minimum requirements, which are clearly linked with environmental and/or social performance. The standard or certification scheme should require (when feasible) definition of a baseline, identification of performance and process indicators, and creation of a process to monitor and report on achieved impacts and/or performance and compliance with indicators. Compliance does not require ISEAL membership, but means that the standard must be able to show that it follows ISEAL code procedures.

- 7. Be adaptable to national/regional conditions and needs.** Generic, global principles and criteria for the standard may need to be adapted to national/regional circumstances to reflect diverse legal, social and geographical conditions, and also to be socially acceptable (i.e. fulfilling the norms, culture and religion of any society).
- 8. Not allow GMOs, or, contain a non-GM option.** Standard and certification schemes that include commodities that could include the use of genetically modified (GM) organisms, must offer a non-GM option.
- 9. Comply with international frameworks for certification and accreditation.** The structure and governance of the certification scheme, including standard-setting, certification, accreditation, verification and grievance processes and procedures, should comply with internationally accepted norms, such as those developed by ISO and the ISEAL Alliance⁵⁹.
- 10. Require meaningful and equitable stakeholder participation** considering economic, social and environmental interest groups and provide means to have smaller producers and vulnerable groups engaged in the process. Governance and decision-making procedures should take into account the range of interests relevant to the subject matter either through consensus⁶⁰ or by achieving balanced decision-making.
- 11. Provide transparency in decision-making and public reporting on its certification.** A credible certification scheme must have clearly defined and transparent structures to guide all aspects of its operations. The scheme's requirements and procedures, as well as the results of certification and accreditation reports, should be made available in the public domain.
- 12. Set high levels for scheme rigour.** The certification scheme should include surveillance, monitoring, and consultation standards for certification holders and certification bodies, with clear deadlines for evaluating the conformity assessment processes. The scheme needs to include effective measures for when non-conformity of certification holders and certification bodies is identified.
- 13. Require independent third-party certification and accreditation⁶¹.** Compliance with standard requirements must be independently verified by a certification body accredited to the certification scheme. The use of third parties for certification and accreditation offers the highest level of checks and balances. The certification scheme must have several accredited certification bodies to avoid perceived or real conflict of interest. At the discretion of the WWF Standards and Certification Team (SCT), certification schemes which operate with other forms of verification may be treated as exceptions.
- 14. Require truthful claims, and where applicable, traceability.** To minimise the risk of 'greenwashing', claims should reflect the product's characteristics and should be verifiable. If the certification scheme uses a credit, or mass-balance system, the claim should refer to 'support for better production,' and present the different percentages coming from certified and non-certified, or similar. Until the market share of credibly-certified commodities is enough to support the segregation of products without prohibitive additional costs and consequent negative impacts on market share, mass-balance and credit schemes (e.g. book and claim) will be considered equivalent to segregation as long as the claim on the product is appropriately adjusted to reflect the chain of custody.
- 15. Include accessible complaint and appeal mechanisms.** A credible certification scheme, accountable to its stakeholders, needs to include integrated mechanisms for hearing complaints and resolving conflicts at all applicable levels, i.e. international, national and local. This allows adaptive learning and will lead to improved procedures and performance.
- 16. Be committed to continuous improvement.** The standard or certification scheme must include a periodic review process that allows for the incorporation of lessons learned from monitoring and assessment of impacts, that reflects the newest insights (scientific or other), and that ensures evolving legislation and new discourses are incorporated into its requirements. Note that the ISEAL Standard Setting Code requires a standard review process to take place at least every five years.

WWF's Principles are also available at WWF's website: <http://wwf.panda.org/certification>

WWF has also developed a Certification Assessment Tool (CAT), a formalised methodology to evaluate and compare standards and certification schemes, which has been used and tested in several sectors (e.g. to compare and contrast standards in the forestry sector including FSC and PEFC). In the future, WWF may decide to adapt the CAT to the green bond market.

ANNEX B: COMPARISON OF EXISTING PRINCIPLES, STANDARDS, FRAMEWORKS AND INITIATIVES

	Name	Objectives	Ownership and governance	Range of eligibility	Type of standards/framework
Principles	Green Bond Principles	Define voluntary guidelines for the issuance of a green bond to ensure credibility of the green bond market	Developed by industry body ICMA and governed by an executive committee including issuers, investors and underwriters. Other stakeholders (e.g. NGOs) can participate as observers (no voting rights)	Eight categories of eligible projects: renewable energy, energy efficiency, sustainable land use, biodiversity conservation, transport, adaptation, water management, waste management	Process-based guidelines: use of proceeds; issuance evaluation/selection; management; reporting
Standard	Climate Bond Standards	Develop a large and liquid green and climate bond market	Standard developed by the Climate Bond Initiative (CBI), an international investor-focused not-for-profit organisation, and governed by the Climate Bonds Standards Board	Eight areas of inclusion but five sector-specific eligibility criteria available to date: wind, solar, geothermal, low carbon buildings, and BRT systems. Eligibility criteria for others under development	Standard composed of process- and performance-based certification scheme before and after issuance: process, controls, reporting (aligned with GBP) but also environmental benefits
Green bond indices	S&P Dow Jones Green Bond Index and Green Project Bond Index	Provide transparency and track the green bond market	Run by S&P Dow Jones Indices (developed in partnership with Infrastructure Credit Alpha Group LLC)	No specific types of projects defined: alignment with Thomson Reuters and CBI's green tags	S&P GB Index covers bonds tagged as green by Thomson Reuters and CBI and hence is process- and performance-based. S&P Green Project Bond Index is performance-based (bonds with environmental benefits but not always green label)
	Barclays/ MSCI Indices	Help investors benchmark green bond performance	Proprietary framework jointly developed and governed by Barclays and MSCI ESG Research	Five eligible categories: alternative energy, energy efficiency, pollution prevention and control, sustainable water, green buildings. Only projects targeting net environmental benefits (excl. 'green' by-products)	Process-based, MSCI independent assessment based on GBP: use of proceeds, project evaluation, proceeds management, reporting
	Bank of America Merrill Lynch Green Bond Index	Help investors track green bond market's performance	Proprietary framework operated by Bank of America Merrill Lynch, based on Bloomberg's green tagging system	Bloomberg's tagging system's categories: renewables, energy efficiency, green buildings, agriculture/forestry, clean water, pollution control, waste management, climate change adaptation/mitigation	Performance-based: includes bonds tagged as green by Bloomberg, i.e. which use proceeds within eligible categories
Second party reviewers	CICERO's Shade of Green	Provide second opinion on issuers' framework and guidance for assessing/selecting eligible projects	Proprietary framework developed and run by CICERO (independent, not-for-profit research institute)	No specific types of projects defined: assesses issuers' own procedures	Process- and performance-based: assess issuers' framework and define shade of green based on time-horizon, use of best technologies, avoided fossil lock-in, sound governance and macro-impacts
	Oekom's Sustainability Bond Rating	Facilitate timely investment decisions	Proprietary framework developed and operated by Oekom Research	No specific types of projects defined: follows issuers' own framework	Process- and performance-based: evaluate issuer, transparency and external assurance, sustainability quality/impact of the bond
Issuers/underwriters/investors frameworks	Example of investors' framework: Natixis' Green Bond Issue and Reporting Analysis Grid	Methodology for assessing green bonds, compromising between issuers' current practices and investors' expectations	Proprietary framework developed by Natixis	Eight eligible themes for green/sustainable bonds: energy, energy efficiency, transport, circular economy, energy transition financing, biodiversity, insecurity/poverty, healthcare	Process- and performance-based: assess compliance with GBP (use of proceeds, selection, management, reporting), transparency, link with issuer's strategy, environmental challenges, impact assessment, investor base
	Example of issuers' framework: HSBC's Green Bond Framework	Support investors to meet their objectives	Proprietary framework developed by HSBC (governed by HSBC Green Bond Committee)	Based on eligible sectors/categories proposed by the GBP (renewable energy, energy efficiency, buildings, waste/water management, sustainable land use, clean transportation, climate change adaptation), except biodiversity. Explicitly excludes certain sectors (e.g. nuclear)	Process-based (aligned with GBP): definition of green projects, identification/approval, management/tracking, reporting/disclosure
	Example of issuers' framework: EIB's Green Bond practice	Defined guidelines to select green bonds	Proprietary framework developed by EIB	Focus on renewable energy and energy efficiency, and additional conditions and exclusions for eligibility (e.g. nuclear energy not eligible)	Performance-based: financial, economic, technical, environmental and social project appraisal
National standards	Green Bond Guidelines and Green Bond Endorsed Project Catalogue	Define standards for screening which assets/projects are eligible to be financed via green bonds in China	Government-sponsored and developed by the People's Bank of China's (PBoC) Green Finance Committee	Six eligible categories (energy efficiency, pollution control, resource efficiency and recycling, transport, energy, adaptation and conservation)	Process-based (issuers' qualifications, document submission, procedures, disclosure, timeframe)
	SEBI's Regulations	Help companies raise funds through GB and help investors make informed investment decisions	Developed by the Securities and Exchange Board of India (SEBI)	Based on eligible sectors/categories of Green Bond Principles including (but not restricted to) renewable energy, transport, water/waste management, adaptation, energy efficiency, land use, biodiversity	Process-based: procedures to track GB proceeds including use of proceeds, project evaluation/selection, management of proceeds, reporting

Scope	Level of transparency	Level of assurance	Examples of good practices
Environmental considerations	Annual reporting recommended: amounts disbursed on proceeds, expected environmental impacts (quantitative if possible)	External assurance recommended (not mandatory) to confirm alignment with the GBP features	Widely followed guidelines with strong uptake by the market Industry-driven (and dominated) Multi-stakeholder approach allows non-market participants to contribute as observers (without voting rights)
Environmental considerations (with exclusive focus on climate-related impacts)	Mandatory annual reporting to CBI Standards Board for all certified Climate Bonds across the entire term of the bond	Pre/post-issuance certification granted based on approved third-party verification (periodic certification is optional)	Full taxonomy of eligible projects Science-based eligibility criteria for several sectors/asset classes Certification scheme Commitment to ISEAL standards Full participation of non-industry stakeholders in governance
Environmental considerations and financial eligibility criteria (e.g. coupon type, maturity, investment grade; size and currency; security)	Public disclosure requirements on amounts disbursed on proceeds and expected environmental impacts is one of the eligibility criteria	No specific assurance requirements	Include financial considerations Public disclosure as eligibility criteria
Environmental considerations and financial eligibility criteria (e.g. coupon type, maturity, investment grade; size and currency; security)	Annual reporting requirements: amounts disbursed per project and per category, and expected environmental impacts (quantitative if possible)	Third-party verification is preferred but not mandatory	Includes financial considerations General purpose bonds (>90% revenues from eligible categories) Only projects targeting net environmental benefits
Environmental considerations and financial eligibility criteria (e.g. coupon type, maturity, investment grade; size and currency; security)	No specific reporting requirements	No specific assurance requirements	Includes financial considerations
Environmental considerations, with a focus on climate-related issues	No specific reporting requirements in place: assess issuers' own procedures	No specific assurance requirements in place: assess issuers' own procedures	Science-driven Reference to Best Available Technology (BAT) Long-term perspective ('fit for 2050') Granular approach with 'shades of green'
Environment, Social and Governance (ESG) considerations	No specific reporting requirements in place	No specific assurance requirements in place	Wider ESG considerations
Green Bond Issue Analysis includes financial characteristics (financial rating, coupon, oversubscription, etc.)	Specific detailed Reporting Analysis Grid, including assessment of relevance of impact indicators, accessibility of information, list of projects, amount disbursed, eligibility	External validation is one of the criteria assessed in the Green Bond Issue and Reporting Analysis Grid	Comprehensive analysis framework Detailed reporting evaluation Impact assessment considerations
Environmental considerations	Annual Green Progress Report (amounts allocated, projects funded, alignment with HSBC GB Framework) for each issuing entity and publicly available	External assurance provider to assure the Green Bond Progress Report provided by issuing entities	Certified as 'dark green' (CICERO) LCA and rebound effects Public disclosure and external assurance on annual progress Green business bonds (>90% revenues from eligible sectors) Sector exclusion list Builds upon Equator Principles
Environmental considerations	Reporting on list of projects in CAB Newsletter and annual Sustainability report	Internal tracking method, allocation of the proceeds and the GHG data are audited	Environmental impact measurement and reporting (carbon footprint), based on a harmonised framework.
Environmental considerations	Mandatory quarterly disclosure: project type, green projects selection, use of other standards, environmental performance	Recommendation on independent review/certification on the use of proceeds and environmental performance	Focused on Chinese environmental challenges (e.g. pollution) Based on national as well as international standards (GBP, CBI) Mandatory disclosure (quarterly)
Environmental considerations	Mandatory annual disclosure: use of proceeds, list of projects, environmental performance (quantitative if possible)	Optional independent third-party review/certification for pre-issuance and post-issuance process	Mandatory disclosure requirements

ANNEX C: ENDNOTES

1. Green bonds to keep up the green promise. Pathways towards credible and effective standards (2016), research report produced by WWF in collaboration with KPMG Sustainability.
2. The 2.5 billion euro bond issued by Engie (formerly GDF Suez) in May 2014 was highly controversial, in spite of the fact that a second-review was provided. Engie's bond documentation as well as the second review provided by Vigéo are available here: <http://www.engie.com/en/investors/fixed-income/green-bond-fight-climate-change/> Controversial issues raised by a coalition of NGOs are described in an open letter available here: <http://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/150430-Open-Letter-to-Green-Bond-Principles.pdf>
3. Bank of England (September 2015). Breaking the Tragedy of the Horizon: climate change and financial stability, <http://www.bankofengland.co.uk/publications/Documents/speeches/2015/speech844.pdf>
4. Green Bonds are any type of bond instruments where the proceeds will be exclusively applied to finance or re-finance in part or in full new and/or existing eligible Green Projects and which follow the four Green Bond Principles. Green Projects are defined as projects and activities that will promote progress on environmentally sustainable activities as defined by the issuer (see Green Bond Principle 1.) and in line with the issuer's process for project evaluation and selection (see Green Bond Principle 2.). The management of Green Bond proceeds should be traceable within the issuing organization (see Green Bond Principle 3.) and issuers should report at least annually on use of proceeds (see Green Bond Principle 4.). Different types of Green Bonds exist in the market. Source: Green Bond Principles, March 2015 edition, see: <http://www.icmagroup.org/Regulatory-Policy-and-Market-Practice/green-bonds/green-bond-principles/>
5. See above.
6. Source: The Natural Capital Forum: <http://naturalcapitalforum.com/about/>
7. Source: Climate Bonds Initiative
8. Climate Bonds Initiative (2015): "Bonds and Climate Change, The state of the market"
9. Climate Bonds Initiative (2016): Roadmap for China: Green Bond guidelines for the next stage of market growth
10. SE4All (2015). Scaling up finance for sustainable energy investments
11. Accenture and Barclays (2011). Carbon capital: Financing the low carbon economy, <https://www.home.barclays/content/dam/barclayspublic/docs/Citizenship/Reports-Publications/carbon-capital.pdf>
12. Green Bonds - Mobilising the debt capital markets for a low-carbon transition, OECD/Bloomberg Philanthropies, December 2015, [https://www.oecd.org/environment/cc/Green%20bonds%20PP%20\[f3\]%20\[1r\].pdf](https://www.oecd.org/environment/cc/Green%20bonds%20PP%20[f3]%20[1r].pdf)
13. Levering ecosystems: A business-focused perspective on how debt supports investments in ecosystem services. Credit Suisse, Climate Bonds Initiative & Clarmondial, April 2016, <https://www.credit-suisse.com/media/assets/corporate/docs/about-us/responsibility/banking/levering-ecosystems.pdf>
14. Green Bonds II: Reality check, analysis of green bond issues and reporting, Natixis, November 2015.
15. <http://www.isealalliance.org/tag/iseal-impacts-code>
16. <http://www.isealalliance.org/our-work/defining-credibility/codes-of-good-practice>
17. <http://www.naturalcapitaldeclaration.org/about-natural-capital-and-the-finance-sector/>
18. Mark Carney: G20 to make green finance a 'priority': <http://www.climatechangenews.com/2016/03/24/mark-carney-g20-to-make-green-finance-a-priority/> and http://www.sicm.com/docs/SICM_Weekly_Newsletter_135.pdf accessed 5 April 2016. (See also: WWF Principle #15 – Include accessible complaint and appeal mechanisms in Annex A)
19. See: WWF principle 13 – Require independent third-party certification and accreditation in Annex A
20. See: WWF Principle #10 – Require meaningful and equitable stakeholder participation in Annex A
21. <http://www.isealalliance.org/our-work/defining-credibility/credibility-principles>
22. As of April 6, 2016. Source: <https://www.climatebonds.net/standards/bonds-certified-date>
23. WWF/KPMG calculation based on CBI 2015 league table data.
24. Environmental Finance (November 2015). Advanced topics in green bonds; risks, <https://www.environmental-finance.com/content/analysis/advanced-topics-in-green-bonds-risks.html>
25. GRESB (June 2015). GRESB introduces Green Bond Guidelines for the Real Estate Sector, <https://www.gresb.com/gresb-introduces-green-bond-guidelines-for-the-real-estate-sector>
26. Bloomberg Business (November 2015). China to boost \$100bn green bond market for renewables, www.bloomberg.com/news/articles/2015-11-03/china-to-boost-100-billion-green-bond-market-for-clean-energy
27. AFBD (December 2015). Working towards a harmonized framework for impact reporting, www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/Working_Towards_a_Harmonized_Framework_for_Impact_Reporting_December_2015.pdf
28. Moody's (January 2016). Moody's requests comment on proposed approach and methodology for assessing green bonds, https://www.moody.com/research/Moodys-requests-comment-on-proposed-approach-and-methodology-for-assessing--PR_342351?mkt_tok=3RkMMJWWf9wsRojuaXBc%2B%2FhmjTEU5z16u4kXKG-ogYkz2EFye%2BLIHETpodcMSMJmN7HYDBceEJhgyQJxPr3MKtENodZ3RhLiAA%3D%3D
29. A process for rating the green impact of green bonds, consultation paper by S&P Dow Jones Indices and Trucost, April 2016, http://www.trucost.com/_uploads/insights/SPDJI&Trucost_Green%20Bonds%20Consultation%20Paper_05.04.pdf
30. Roadmap for China: Green Bond guidelines for the next stage of market growth, CBI, IISD and Foreign Commonwealth Office, April 2016: <https://www.climatebonds.net/resources/Roadmap-for-China/April/2016/Paper1>

31. Making better production everybody's business – results of 5 years of WWF's market transformation programme, WWF 2015 http://assets.panda.org/downloads/wwf_markettransformationinitiative2014_finalweb_lores_spreads.pdf
32. Note: WWF has established its own principles for setting and implementing credible sustainability standards (see Annex 1) and on the internet: http://assets.panda.org/downloads/wwf_principles_for_standards_and_certification_schemes__external_version.pdf
33. http://wwf.panda.org/wwf_news/?228430/WWF-Certification-Assessment-Tool-CAT
34. WWF Principle #9: Comply with International frameworks for certification and accreditation, see Annex A.
35. WWF Principle #3: Be developed in compliance with ISEAL's Code of Good Practice for Setting Social and Environmental Standards, see Annex A.
36. WWF. The 2050 criteria: guide to responsible investment in agricultural, forest and seafood commodities, http://assets.panda.org/downloads/2050_criteria_final_low_res.pdf
37. Reviving the Ocean Economy, WWF (2015), see: http://wwf.panda.org/wwf_news/?244770/Ocean-wealth-valued-at-US24-trillion-but-sinking-fast
38. E.g. The Equator Principles recognize countries as 'designated countries' when robust environmental and social governance, legislation systems and institutional capacity designed to protect their people and the natural environment are deemed to be in place.
39. WWF Principle #6: Require minimum measurable performance requirements and be in compliance with ISEAL's Impact Codes.
40. AFBD (December 2015). Working towards a harmonized framework for impact reporting, www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/Working_Towards_a_Harmonized_Framework_for_Impact_Reporting_December_2015.pdf
41. The Science Based Targets initiative is a partnership between CDP, UN Global Compact, WRI and WWF, which helps companies determine how much they must cut emissions to prevent the worst impacts of climate change. See: <http://sciencebasedtargets.org/>
42. WWF's Energy Report 2050, published in 2011 in cooperation with Ecofys and The Office for Metropolitan Architecture (OMA) shows that by 2050, power, transport, industrial and domestic energy needs could be met with only isolated residual uses of fossil and nuclear fuels – vastly reducing anxieties over energy security, pollution and not least, catastrophic climate change. The Ecofys scenario developed for this report relies on using electrical power from clean, renewable sources in place of fossil fuels and nuclear wherever possible. The Energy Report 2050 is available here: http://wwf.panda.org/wwf_news/?199249/Brave-new-world-fuelled-by-clean-economical-energy-possible-and-imperative-by-2050
43. See in: WWF's Energy Report – 100% Renewable Energy by 2050 assets.panda.org/downloads/101223_energy_report_final_print_2.pdf
44. AFBD (December 2015). Working towards a harmonized framework for impact reporting, www.afdb.org/fileadmin/uploads/afdb/Documents/Generic-Documents/Working_Towards_a_Harmonized_Framework_for_Impact_Reporting_December_2015.pdf
45. Developing Corporate Natural Capital Accounts, Natural Capital Committee, produced by eftec, rsfb and PwC: www.naturalcapitalcoalition.org/js/plugins/filemanager/files/CNCA_presentation_7_July_.pdf
46. See: EDF's reporting published in February 2016: <https://www.edf.fr/sites/default/files/contrib/groupe-edf/espaces-dedies/espace-finance-en/financial-information/publications/financial-results/2015-annual-results/fy2015-appendices-edf.pdf> or EDF's website dedicated to Green Bond: <https://www.edf.fr/en/the-edf-group/dedicated-sections/finance/investors-analysts/bonds/green-bond>
47. French government's website, viewed on 2 May 2016: www.developpement-durable.gouv.fr/Le-prix-du-carbone.html
48. EDF's green bond reporting website, viewed on 2 May 2016: <https://www.edf.fr/en/the-edf-group/dedicated-sections/finance/investors-analysts/bonds/green-bond>
49. Environmental Finance, Advanced topics in green bonds: Risks, November 2015. <https://www.environmental-finance.com/content/analysis/advanced-topics-in-green-bonds-risks.html>
50. WWF supports the application of strategic basin hydropower planning such as, for example Rapid Basin-wide Hydropower Sustainability Assessment Tool (RSAT) or the Guiding Principles on Sustainable Hydropower by the International Commission for Protection of Danube River, water stewardship approaches and standards (such as the Alliance for Water Stewardship Standard) . WWF supports the widespread application of the Hydro Sustainability Assessment Protocol (HSAP), and its integrity and independence. WWF will undertake periodic assessments of such practices and protocols to enhance their effectiveness. WWF's global network position on dams, developed in 2014, is available on the internet: http://d2ouvy59podg6k.cloudfront.net/downloads/141205_wwf_dams_position.pdf
51. The AWS Standard is an international standard that defines a set of water stewardship criteria and indicators for how water should be stewarded at a site and catchment level in a way that is environmentally, socially, and economically beneficial. See: <http://www.allianceforwaterstewardship.org/about-aws.html#what-is-water-stewardship>
52. <http://www.isealliance.org/our-work/defining-credibility/codes-of-good-practice/impacts-code>
53. E.g. with the Stock Exchange Board of India, the Green Finance study group of the G20 convened under the Chinese presidency, etc.
54. See: http://assets.panda.org/downloads/wwf_principles_for_standards_and_certification_schemes__external_version.pdf
55. <http://www.isealliance.org/ourwork/codesofgood1practice/standard1setting1code>
56. High Conservation Values, see: <http://www.hcvnetwork.org>
57. Priority areas for conservation include marine protected areas ecosystems with high biodiversity or high sensitivity to impacts, freshwater resources, areas of rare, threatened or endangered species, and other areas that are considered to be of local, regional or global importance for conservation activities.
58. ISEAL Alliance. Impacts code: <http://www.isealliance.org/our-work/defining-credibility/codes-of-good-practice/impacts-code>
59. ISEAL Alliance. Assurance code: <http://www.isealliance.org/our-work/defining-credibility/codes-of-good-practice/assurance-code>
60. The International Standard Organization's definition for consensus is 'General agreement, characterized by the absence of sustained opposition to substantial issues by any important part of the concerned interests and by a process seeking to take into account the views of interested parties, particularly those directly affected, and to reconcile any conflicting arguments. Consensus need not imply unanimity.' It is not necessary to reach consensus prior to the period when draft standards are posted for public comment. In cases where decisions are taken by a voting procedure, the latter should prevent major economic, social and environmental interests from being overruled.
61. Accreditation is when an organization that provides certification has a third party to test and inspect services against internationally recognized standards. It demonstrates the organization's competence, impartiality and performance capability and is the key to reducing risk and ensuring that consumers, suppliers and purchaser can have confidence in the services provided. Source: <http://www.accreditation1services.com/about/accreditation>

GREEN BONDS MUST KEEP THE GREEN PROMISE!

US\$91 bn

The total amount of green bonds outstanding at the end of 2015

>95%

Percentage share of green bond market pledging alignment with the Green Bond Principles in 2015, one year after its launch.

>US\$2tn

The estimated amount of capital needed to fund transitions towards a sustainable economy.

>US\$11tn

Value of assets managed by a coalition of investors, who pledged to work with the Climate Bonds Initiative (CBI) to grow a vibrant green bond market.



Why we are here

To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

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