



Stockholm  
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# Bonds beyond green

Results of the scoping study on  
sustainable city bonds

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# 1. Introduction

**This chapter describes why we focused on sustainable finance and cities, and the content of this report.**

## The need for finance in the 2030 Agenda

Large amounts of private capital will be needed to achieve the Sustainable Development Goals (SDGs). Currently, the global gap is estimated to be US\$ 2.5 trillion per year (UNDP 2019). In Europe, an additional €180 billion is needed each year to achieve the 2030 climate- and energy-related targets alone (European Commission 2018). European Union (EU) policymakers are working to stimulate the sustainable finance market. The European Commission's action plan for financing sustainable growth, for example, lists as its aims "reorienting capital flow towards sustainable investment, managing financial risks stemming from climate change, environmental degradation and social issues; and fostering transparency and long-termism in financial and economic activity" (European Commission 2018). In Sweden, the challenges linked to increasing sustainable investment have been discussed at government level (Swedish government 2017) and the Swedish 2030 Agenda delegation has noted that "new forms of collaboration between the public sector, business and research should also be encouraged to promote innovation and mobilise resources" (SOU 2019:13 2019, 7).

## The role of municipalities

Municipalities play a central role in achieving the SDGs. In 2019, 55% of the world's population was living in urban areas and the urban population is forecast to increase to 68% by 2050. Combined with population growth, this will put additional pressure on water resources, the provision of energy and sanitation services, and the management of solid waste, while urban air quality is already a major problem in many cities (UN DESA 2019). If city development is carried out in a sustainable way, however, cities can "create jobs and offer better livelihoods; increase economic growth; improve social inclusion; promote the decoupling of living standards and economic growth from environmental resource use; protect local and regional ecosystems; reduce both urban and rural poverty; and drastically reduce pollution" (SDSN et al. 2013, 2).

Sweden faces serious challenges to meeting its SDG commitments, including in cities and urban areas where 85% of the Swedish population lives. Overcrowding and segregation, air pollution, overstretched public transport, and the accessibility and usability of cities are just some of the challenges, as is the need to become more resilient to climate change and reduce overall carbon emissions linked to consumption (Swedish government 2017). In 2017, around 600,000 people lived in economically disadvantaged suburbs, and several of these areas experienced high levels of violence and organized crime (Nilsson Lundmark and Nilsson 2018). Overall, 18% of Sweden's population is at risk of poverty and social

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exclusion (EAPN Sweden 2018). The consequences of climate change are also substantial. A full list of effects has been documented by the Swedish Meteorological and Hydrological Institute (SMHI), setting out responsibilities for municipalities, regional authorities and national government (SMHI, n.d.).

## Sustainable bonds in Sweden

Macomber (2011) argues that there is a largely unrecognized opportunity for the private sector to selectively invest in order to help cities limit the effects of the above trends. Investors and entrepreneurs can make money in ways that achieve more productive use of scarce “public goods”, and in so doing make cities more economically competitive as well as more livable.

Access to finance is one of the most significant barriers to cities delivering on their climate change plans (C40 n.d., 40). To fund infrastructure capable of withstanding disasters, the generation of renewable energy, support for decent work, housing, and access to clean water and sanitation, and schooling, the United Nations Department of Economic and Social Affairs (UN DESA) highlights different potential sources of funding for projects, from taxation to land leases, short-term debt, investment funds, cross-subsidies from public utility companies and bonds (UN DESA 2013). A bond is a fixed income instrument used by organizations (companies, municipalities and states) to finance or refinance projects. Like a loan, there is an end date for the bond, when the capital is paid back, and an interest rate that is paid to the investor(s). In order to support investments in sustainable urban solutions, the C40 group has set up two initiatives: the Financing Sustainable Cities Initiative (FSCI n.d.), which aims to set up a peer-to-peer learning community and an online engagement platform to provide technical assistance, and the Cities Finance Facility (C40 n.d.), which aims to facilitate “access to finance for climate change mitigation and resilience projects in urban areas by providing technical assistance to develop cities’ sustainability priorities into bankable investment proposals”.

Several Swedish municipalities have launched green bonds to finance their green projects. Green bonds are bonds where the proceeds have been earmarked for environmental or climate change-related projects, such as clean transportation, climate change adaptation, energy efficiency, renewable energy and green buildings or pollution control and prevention. The City of Gothenburg launched the first ever municipal green bond in 2013, using its proceeds to finance low-carbon and climate-resilient transition projects (UNFCCC n.d.). Since then, other municipalities – including, but not limited to, Stockholm Läns Landsting, Skåne region and the cities of Malmö, Lund, Västerås and Örebro – have launched 40 green bonds worth US\$ 4 billion (Environmental Finance n.d.).

Green bonds have become very popular – between 2015 and 2018, the global green bond market grew from US\$ 41.8 billion to US\$ 167.3 billion (S&P Global 2019) – and Sweden is leading the market. Sweden currently ranks fifth in terms of the number of green bonds issued globally and sixth in terms of volume (Climate bonds initiative 2018). The Swedish government has announced that it will launch a green bond in 2020 (Ministry of Finance 2019).

However, whereas Sweden is a key player in the green bond market, the country lags behind in other sustainability-related or social bonds: there are currently only three sustainability-related bonds listed in the Environment Finance database and no social bond. Social bonds are bonds where the proceeds are destined for projects with social outcomes such as education or livelihood creation, while sustainable bonds are bonds where the proceeds support projects with both environmental and social sustainability-related outcomes, such as affordable, energy-efficient housing or sustainable value chain creation. The two sustainable bonds listed in Sweden have been issued by property companies (Hemsö Fastighets AB and Trianon) and focus on affordable and energy-efficient housing. France, the United Kingdom and Japan, by contrast, have a number of social and sustainable bonds, and at the same time are also active in green bonds.

**“The two sustainable bonds listed in Sweden have been issued by property companies and focus on affordable and energy-efficient housing.”**

## Scoping sustainable city bonds

The Stockholm Sustainable Finance Centre has recognized a growing interest among financial actors in Sweden in social and sustainable bonds. This report is a scoping study focused on assessing best practice in the issuance of municipal sustainability-related bonds. This work will feed into a larger project examining how financial actors and cities can best collaborate to finance the achievement of the sustainability-related goals of Swedish cities.

The study involved a review of the sustainable finance literature and an appraisal of the use of proceeds, impact reports and second party opinions on bonds labelled as sustainable in the Environmental Finance database using a sustainable city framework to understand how the proceeds were being allocated. As of 2 August 2019, the database contained 3916 labelled bonds, of which 3616 were designated green (93%), 134 social (3%) and 166 sustainable (4%).

In addition, given its importance in the transition to low-carbon, resilient societies, as highlighted by OECD in its report on financing climate futures (OECD, the World Bank and UNEP 2018), research was undertaken on the topic of sustainable cities.

Chapter 2 provides an overview of the barriers to the uptake of sustainable bonds. Chapter 3 reviews what defines city level sustainability and assesses whether the structure of existing city level sustainable bonds meets these criteria. Chapter 4 outlines the next steps in our work, which will be carried out in a project funded by the Viable cities programme.

## 2. The sustainable bonds market

This chapter contains a brief analysis of the current level of sustainable bonds issued before August 2019 and a review of the barriers to the uptake of sustainable bonds.

“166 bonds with a sustainable label in the Environment Finance database were issued by 82 organizations: 50 were issued by municipal organizations, 37 by financial institutions, 34 by supranational organizations, 29 by corporations, 14 by agencies and 2 by sovereign states.”

### Current sustainable bonds

The global sustainable fixed income market continues to grow. The green bonds market grew by US\$ 174.9 billion in 2018. There were sustainable bond issues worth US\$ 18 billion and social bonds worth US\$ 13.9 billion were issued in the same year (Environmental Finance 2019). Like the social bonds market, the sustainable bonds market was expected to continue to grow in 2019. In comparison, however, the global bond market was worth US\$ 102.8 trillion in 2018 (SIFMA 2019), which means that the sustainable bonds market accounts for less than 1% of the global bond market.

The 166 bonds with a sustainable label in the Environment Finance database were issued by 82 organizations: 50 were issued by municipal organizations, 37 by financial institutions, 34 by supranational organizations, 29 by corporations, 14 by agencies and 2 by sovereign states. Their total value was US\$ 57.2 billion. The smallest bond, issued by the International Bank for Reconstruction and Development, was for US\$ 1 million. The largest, worth US\$ 2547 million, was issued by the Federal State of North-Rhine Westphalia, Germany. Figure 1 shows the issuing state and value of the sustainable bonds issued to date.

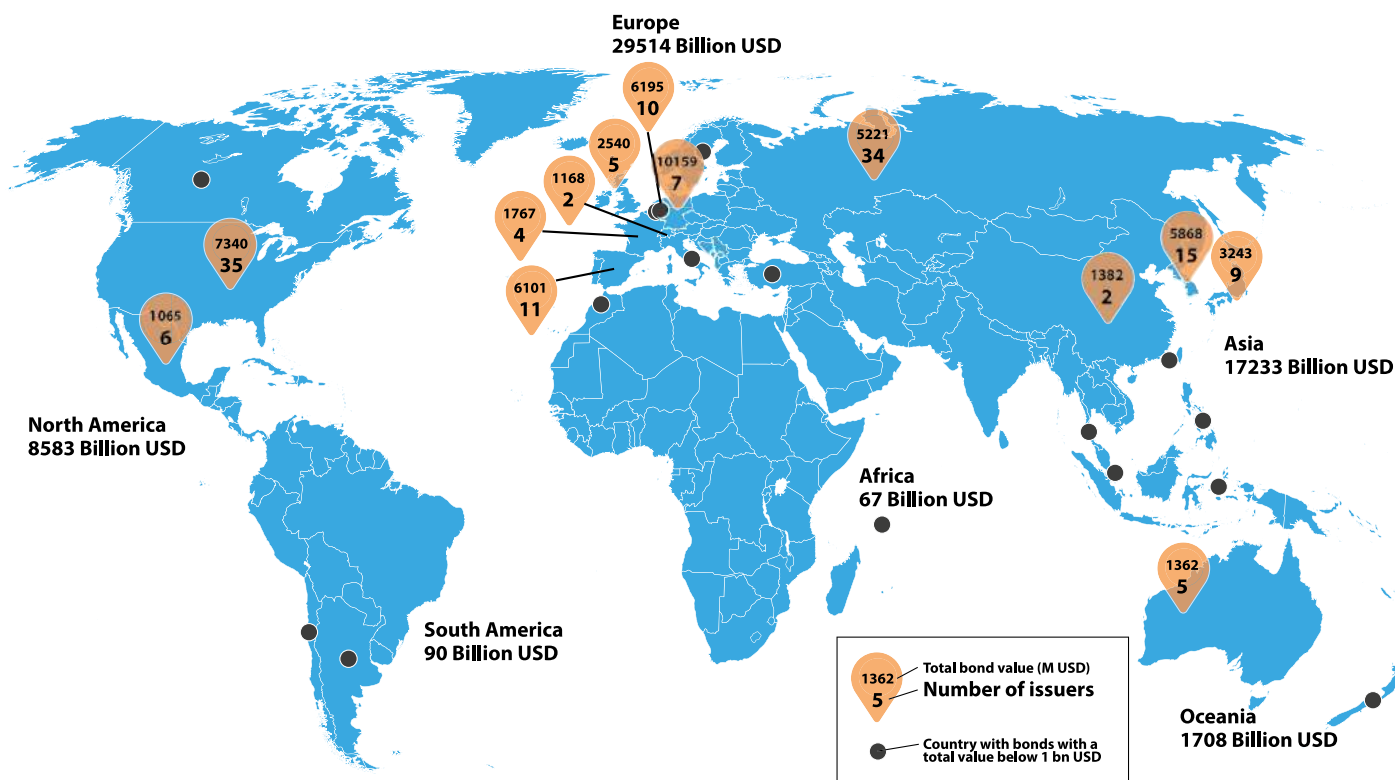


Figure 1: overview of sustainable bonds

## Barriers to the uptake of sustainable bonds

There is a growing appetite for sustainable investment instruments but barriers remain. These have been summarized for the One UN Climate Change Learning Partnership (GIZ, SEB and Page 2019): First, short-term financial goals prevail, as investors focus on financial returns instead of longer term environmental and social returns. Second, there has been a lack of adaptation and harmonization of guidelines on sustainable investment, in part because the sustainable investment market is relatively new. Third, the financial market is complex, and stakeholders have different interests, knowledge and understandings of what sustainability entails. Fourth, there is only limited understanding among investors and issuers of Environmental, Social and Governance (ESG) risks – both physical and transition risks – and greater transparency and better reporting on such risks will be needed. Finally, market misconceptions persist of the risks and opportunities linked to sustainable investment.

The sustainable bonds market is relatively new and work is continuing on standardizing definitions and the allocation of proceeds. Sustainability bond principles (standards), for example, were developed in June 2018 to guide investors and evaluators on analyses of bonds and provide assurance (ICMA 2018). However, 55 of the 166 (33%) sustainable bonds downloaded from the Environmental Finance database on 2 August 2019 had no specified standards (Environmental Finance n.d.). In addition, there are difficulties in connection with quantifying social and environmental impacts, interactions between impact areas, and impact reporting on innovative solutions.

**“The sustainable bonds market is relatively new and work is continuing on standardizing definitions and the allocation of proceeds.”**

## Quantifying social and environmental impacts

Quantifying social and environmental impact has been found to be particularly challenging (Pickstone 2020). The tools for measuring social impact, such as Social Return on Investment, are difficult to apply. UNEP (2002) and Vanhuyse (2006) review these methods. The lack of robust impact assessments that are comparable with those available for green bonds, such as the avoided emissions framework (for more information see Mission Innovation 2018), could prevent investors from allocating their funds to sustainable bonds (KPMG 2015; OECD 2015).

## Interaction between impact areas

Trade-offs can arise between environmental and social benefits, and the pursuit of social goals often affects the environment in a negative way. Scherer et al. (2018), for example, found that the pursuit of social goals is often accompanied by increased environmental impacts and higher carbon emissions overall. McShane et al. (2011) conclude that conserving biodiversity while improving human well-being has been almost impossible to achieve. The first green bond issues in Sweden raised concerns about the additionality of environmental impacts and the lack of consideration of social equality and justice (Ullström 2019). Current or emerging practice on green bonds is to carry out impact reporting at the post-issuance phase focused on energy

**“A further concern is impact washing, where results are labelled sustainable even though they are not.”**

and greenhouse gas emissions, but there is an absence of broader spectrum SDG impact criteria and thinking on how such criteria might relate to each other (Tolliver, Keeley and Managi 2019).

## **Impact reporting and innovative solutions**

There are currently no common standards for reporting on the use of the proceeds secured through the issuance of sustainability labelled bonds or on the sustainability of the impacts of these uses. In addition, the rigour of social and environmental impact assessment at the project review or selection phase can vary (UN Habitat 2016). Sustainability reporting frameworks are often undertaken by firms with a vested interest in the result and have not been applied consistently to sustainable investment products. A further concern is impact washing, where results are labelled sustainable even though they are not. If the impact assessment is not rigorous enough, decision makers and investors are likely to prioritize investment in thematic areas such as renewable energy and oceans and less innovative technologies, as well as solutions with low risk and a high degree of familiarity. The International Finance Corporation's Green Bond Eligible Project Commitments for 2019, for example, comprised mainly wind and solar energy projects, and projects on improving the energy efficiency of buildings (IFC 2019), which have been identified as more traditional, low-risk investments.



## 3. Sustainable city bonds

**This chapter reviews current definitions of a sustainable city, which guide our analysis of the gaps in current city budgets and priorities of municipalities and assesses the sustainable bonds captured in the Environmental Finance database, and how they support sustainable cities**

Because of the importance of cities in achieving the SDGs, we focused on sustainable city bonds as part of this scoping project. There is interest in the market. Skandia, SEB Life & Investment Management, Handelsbanken Fonder and the Church of Sweden, for example, had invested SEK 2.5 billion in World Bank Bonds with a special focus on sustainable cities as of October 2018 (Sida 2018). In addition, the Nordic network supports Social Impacts Bonds issued by the city of Norrköping (Social Innovation 2015). It is therefore relevant to assess the extent to which sustainable city bonds could be issued in Sweden.

### Defining the sustainable city

The literature on what being a sustainable city might entail dates back to the 1990s (e.g. Pugh 1996; Satterthwaite 1999). Frameworks have evolved to encompass all the functions of a city, such as social and economic development, environmental management and urban governance (UN DESA 2013). Among the most recent frameworks are SDG 11 on Sustainable Cities and Communities (UN 2018) and the sustainable city vision (see Figure 2), an urban sustainability framework with four outcome areas – urban economies, natural environment and resources, climate action and resilience, and inclusivity and quality of life – and two enablers, governance and integrated urban planning, and fiscal sustainability (Global Platform for Sustainable Cities and World Bank 2018).

Urban economies	Attain sustainable economic growth, prosperity and competitiveness across all parts of the city
Natural environment and resources	Protect and conserve ecosystems and natural resources into perpetuity
Climate action and resilience	Mitigate greenhouse gas emissions while fostering the overall resilience of cities
Inclusivity and quality of life	Create inclusive cities and improve cities' ability, focusing on reducing poverty levels and inequality throughout cities
<b>Enabler 1: Governance &amp; integrated urban planning</b>	
<b>Enabler 2: Fiscal sustainability</b>	

**Figure 2. Sustainable city vision**

Source: Global Platform for Sustainable Cities and World Bank (2018)

New terminology has also emerged, such as “smart cities”. Albino et al. (2015) propose four broad common characteristics of smart cities: networked infrastructure; an emphasis on business-led urban development; social inclusion in urban development; and the inclusion of the natural environment as a “strategic component of the future”. Wataya and Shaw (2019), on the other hand, define smart city development as “a combination of smart infrastructure, innovative technologies and the use of ‘soft assets’ to create more effective integration of the changes within each urban community”.

## Sustainable bonds geared to sustainable cities

McGranahan and Satterthwaite (2014) suggest that urbanization provides opportunities to make progress in all three dimensions of sustainable development: economic, social and environmental.

We reviewed the 166 sustainable bonds in the Environment Finance database against the sustainable city vision developed by the Global Platform for Sustainable Cities to assess the bonds frameworks, their second opinion reviews and the impact reports on how the proceeds of the bonds had been used in previous years. We first examined whether the bonds were set up to support urban sustainability. Next, of those that did have an urban focus, we analysed which urban issues they targeted. We interpreted bonds with a holistic city vision as bonds that were underpinned by a strategy for improving a city, had defined which projects the bond would support and supported at least three outcome areas in the sustainable city vision.<sup>1</sup> Of the 166 sustainable bonds, 139 (84%) were not underpinned by a holistic city vision. Their use of proceeds, for example, aimed to provide affordable, energy efficient housing but did not tackle the natural environment or the resource use of urban economies. Others supported the development of the value chain of a corporation. These 139 bonds had a total value of US\$ 35.2 billion, or an average values of US\$ 253 million.

The 27 bonds that did support a holistic city strategy had been issued by 14 different organizations: one by a corporation,<sup>2</sup> nine by four different financial institutions and 17 by nine different municipal governments (see Figure 3). Interestingly, the four financial institutions are all state-owned banks (Banco Nacional de Obras y Servicios Públicos in Mexico, Bank BRI in Indonesia, Bank Nederlandse Gemeenten (BNG) in the Netherlands and the China Construction Bank). These 27 bonds have a total value of US\$ 22 billion, or an average value of US\$ 815.5 million. All 27 bonds support outcome 4 on inclusivity and quality of life, as all have allocated proceeds to affordable housing, education and/or transportation, and outcome 3 on climate action and resilience, given that their housing projects all have an energy efficient/ renewable energy component. Only one bond does not support outcome 2 on natural resources and environmental protection. All the others use their proceeds for projects focused on reducing pollution, enhanced waste management and the preservation and restoration of ecosystems and biodiversity.<sup>3</sup> Five of the 27 bonds (18%) do not have an explicit focus on urban economies. The remaining 22 have earmarked funds for improving livelihoods, improving businesses and innovation and/ or broadband connectivity within the city.

1) Except for the bond issued by the Battery Park City Authority (value: US\$ 76 million). The use of proceeds is for new infrastructure as well as improvements to existing buildings, facilities and infrastructure such as open space enhancement, pedestrian safety, energy efficiency, improvements to LEED certified buildings and community playgrounds. Given its focus on the community, we included it as a bond supporting a city vision.

2) The corporation is Yorkshire Water, a UK-based water and waste company that was privatized in 1989.

3) The bond that does not explicitly mention natural resources and environmental protection was issued by the Battery Park City Authority (value: US\$ 76M).

Almost half of these bonds (13 of the 27), and all of the largest of them, were issued by the federal state of Nord-Rhine Westphalia, Germany, the Community of Madrid and BNG in the Netherlands. Table 1 assesses the use of proceeds of some of the largest bonds against the sustainable city vision framework.

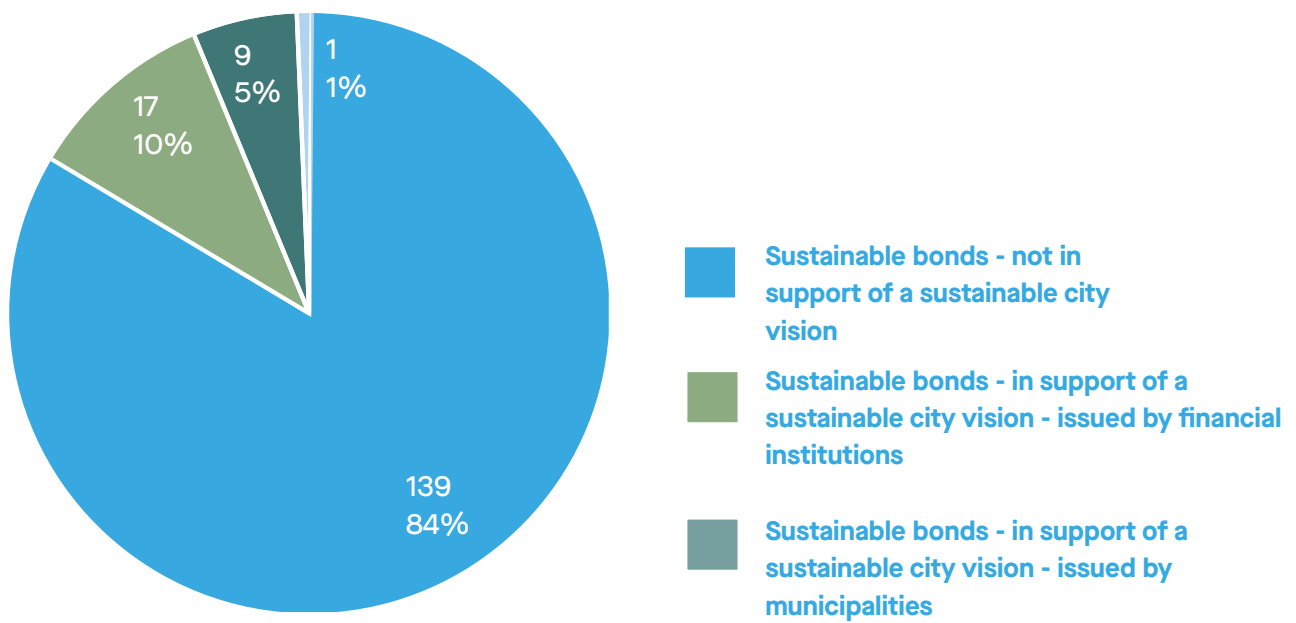


Figure 3: Sustainable city bonds: analysis against sustainable city vision

**Table 1. Use of proceeds: how the largest sustainable bonds support a holistic city vision**

Issuer	Number of bonds (total value)	Use of proceeds, by city vision framework
German federal state of North-Rhine Westphalia	5 bonds (total value US\$ 9655 million)	<p>Outcome 1: urban economies</p> <ul style="list-style-type: none"> <li>· excellence strategy, innovation and sustainable development, consumer protection, broadband expansion</li> </ul> <p>Outcome 2: natural environment and resources</p> <ul style="list-style-type: none"> <li>· responsible agriculture and rural development</li> <li>· protection of nature, landscape and biodiversity</li> </ul> <p>Outcome 3: climate action and resilience</p> <ul style="list-style-type: none"> <li>· climate protection and renewable energy, resource efficiency, flood protection and river restoration</li> </ul> <p>Outcome 4: inclusivity and quality of life</p> <ul style="list-style-type: none"> <li>· enlargement and modernization of universities, additional training facilities</li> <li>· language skills in early childhood, family centres and non-contributory day care, inclusion, integration and qualification projects, school social work, social city projects</li> <li>· geriatric care and demographic change, modernization of university medical clinics</li> <li>· transportation: public transportation for low-income citizens, pupils and students</li> <li>· transportation infrastructure for cyclists and pedestrians</li> <li>· city planning: urban reconstruction in the west</li> </ul>
Bank Nederlandse Gemeenten (a Dutch bank, 50% owned by the national government and 50% owned by local authorities)	5 bonds (total value US\$ 3607 million)	<p>These bonds are underpinned by the Dutch municipalities' framework for sustainability. The proceeds are used to finance or refinance expenditure by "best-in-class" sustainable municipalities. The focus is on:</p> <p>Outcome 2: natural environment and resources</p> <ul style="list-style-type: none"> <li>· public utilities, network companies, waste management</li> </ul> <p>Outcome 3: climate action and resilience</p> <ul style="list-style-type: none"> <li>· energy transition</li> </ul> <p>Outcome 4: inclusivity and quality of life</p> <ul style="list-style-type: none"> <li>· affordable housing – social housing with a focus on deprived areas</li> <li>· health care institutions</li> <li>· education</li> </ul>
Community of Madrid (one of 17 autonomous communities of Spain)	3 bonds (total value US\$ 3459 million)	<p>Outcome 1: urban economies</p> <ul style="list-style-type: none"> <li>· economic inclusion and the financing of small and medium-sized enterprises (SMEs): reducing unemployment and financing SMEs</li> </ul> <p>Outcome 2: natural environment and resources</p> <ul style="list-style-type: none"> <li>· prevention: reduce the volume of waste generated</li> <li>· increased recycling and waste treatment rates</li> </ul> <p>Outcome 3: climate action and resilience</p> <ul style="list-style-type: none"> <li>· reduction of CO2 emissions in the transport sector by 15%, and a 15% reduction in the real estate sector, compared to 2005;</li> <li>· a 10% reduction in global CO2 emissions compared to 2005.</li> </ul> <p>Outcome 4: inclusivity and quality of life:</p> <ul style="list-style-type: none"> <li>· affordable housing</li> <li>· education</li> <li>· health care</li> <li>· social inclusion: provision of goods and services to support victims of gender violence, the mentally and/or physically disabled, and the elderly; programmes to promote integration, education and the employment of groups at risk of social exclusion; financial assistance (minimum income) to ensure that people at risk of social exclusion have their basic needs met</li> </ul>

## 4. Next steps

**This chapter provides a brief overview of the focus of the Viable cities' project on sustainable city finance which will run until end 2022.**

Further analysis is needed to understand the different characteristics that underpin sustainable bonds. While there is an emerging literature on the critical design features of Social Impact Bonds (see e.g. Dear et al. 2016; and Gustafsson-Wright et al. 2015)) and Social Investment Funds in Sweden (Hultkrantz and Vimefall 2017), there is no literature on the critical success factors of sustainable bonds. Following on from the scoping study, work will continue over the next three years with funding from the strategic innovation programme Viable Cities (reference: 2019-019865). This work will focus on:

### **Exploring how cities and the financial markets can encourage finance, and support city planning, access to information, the participation of citizens and business involvement**

Our research will aim to better understand the need for Swedish cities to become more sustainable and assess any financing gaps. Our work will also help to understand the priorities and needs of the different market players, map their appetite for risk and assess whether it will be possible to further develop the sustainable bond market in Sweden. The aim will be to assess, among other things, whether urban governance frameworks can be improved to accelerate the sustainability agenda, as discussed in Hölscher et al. (2019). The aim is also to get a better understanding of how bonds that support the holistic city view (see above), issued by among others Spanish and German municipalities and a Dutch bank, have been set up.

### **Improving the consistency of definitions and how evaluation frameworks are applied**

An independent, robust assessment for the Swedish market of the metrics and evaluation frameworks applied to sustainable bonds could encourage uptake and better adherence to sustainable development principles. Our review will include an assessment of the strengths and weaknesses of various avoided emissions frameworks and social impact frameworks, while also stimulating the debate around the possibility of introducing simpler avoided emissions and social impact assessments at the project evaluation and selection phase. This will support the financial sector and governments in their implementation of high quality, standardized reporting. ■

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