

RIGHT TO CLEAN ENVIRONMENT WITH SPECIAL REFERENCE TO THE ROLE OF MUNICIPALITIES VIS A VIS GREEN BONDS

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ABSTRACT

Right to clean environment is an important fundamental right and has been well-established through various case laws. The march towards protection of environment in India started in 1976 when 42nd Constitution (Amendment) Act was passed and Articles 48A and 51A were inserted in the Constitution of India. But the justiciability of this right was only ensured after it was interpreted to be part of Article 21 of the Constitution. The variety of rights within this broader domain of right to healthy and clean environment has evolved over the past years depending upon the concerns of the prevalent time. The hon'ble Supreme Court then accordingly fixed the liability of the concerned stake holders. But in today's time the environmental concerns have shifted more towards issues like poor waste management, unplanned urbanisation, urban heat islands and increase in temperature for which resolution must be sought at ground level. This necessitates the re-evaluation of the role of municipalities, the linchpins of local governance towards achieving sustainable development. It is needless to say that the significance of sustainable development has grown more than ever.

In the light of the above, the present article aims to trace the constitutional and judicial evolution of right to clean environment in India. It will then focus on the emerging role of municipalities in India in advancing sustainable progress with special emphasis on strategic use of green bonds as a financial instrument. The article will also look into some of the areas where municipalities can have a significant impact such as infrastructure development, green spaces, waste management, urban planning, etc. Examination of these aspects will result into a better understanding of how Indian municipalities are striving to create a more liveable environment for the public. In conclusion, this article will give a comprehensive understanding of the pivotal role that municipalities play in advancing sustainable development and underscores the potential of green bonds as a transformative financial instrument in this endeavour.

Keywords: Environment, sustainable development, municipalities, green bonds, waste management.

1. INTRODUCTION

A key component of global development in the twenty-first century is sustainable development, which calls for coordinated efforts at all governmental levels. Municipalities, the cornerstones of local governance, are leading this initiative and have a major impact on determining the

course of sustainable growth. In the Indian setting, where rapidly increasing urbanisation, a variety of socioeconomic environments, and urgent environmental issues coexist, municipalities play a vital role in directing the path towards sustainable development. With a focus on the strategic use of green bonds as a financial tool, this study undertakes a thorough investigation of the diverse role that Indian municipalities play in promoting sustainable development.

As per the latest report published by Statista Research Department “The global issuance of green bonds has witnessed a significant surge in recent years. Specifically, in 2014, the value of green bonds issued amounted to 37 billion U.S. dollars. However, by 2021, this figure reached its zenith at approximately 582 billion U.S. dollars, experiencing a marginal decline in 2022, with the issuance of green bonds totalling 487 billion U.S. dollars.”¹ In the year 2022, China led the global market in green bond issuance, surpassing 85 billion U.S. dollars, followed by the United States, which recorded 64 billion U.S. dollars in green bond issuance.² Green bonds represent fixed-income securities strategically tailored to mobilize funds for initiatives focused on climate and environmental endeavours. In 2022, the global issuance of green bonds totalled 3,480. Within that period, 1,696 green bonds were allocated to fund projects within the building construction sector. The water sector constituted the second largest category in terms of the volume of green bonds issued, accounting for 1,092. In the past ten years, the issuance of green bonds has experienced a substantial surge, culminating in an approximate global value of 500 billion U.S. dollars in 2022. This development underscores the pivotal role of green bonds as a significant tool in mitigating the impacts of climate change.

Sustainable development, an amalgamation of economic prosperity, social equity, and environmental resilience, demands proactive participation at the grassroots level. The municipality, as the fundamental unit of local governance, emerges as a pivotal actor in translating global sustainability goals into tangible actions.³ This article will focus on the evolution of municipal strategies and initiatives, illuminating the central contributions made by these local bodies in the realization of national and international sustainability objectives.

Green bonds, a financial mechanism earmarked for environmentally sustainable projects, have emerged as a potent tool in mobilizing capital for initiatives such as renewable energy, energy efficiency, and waste management. The evolution and application of green bonds within the Indian municipal framework form a compelling subject for investigation. This article endeavours to dissect the conceptual underpinnings of green bonds, assessing their adaptability and effectiveness within the unique socio-economic context of India. In summation, this article endeavours to delineate the intricate interplay between municipalities, sustainable development, and the innovative financial instrument of green bonds within the Indian paradigm. By elucidating the evolutionary trajectory, challenges, and opportunities, this article

¹ Value of green bonds issued worldwide from 2014 to 2022, Statista, Available at <https://www.statista.com/statistics/1289406/green-bonds-issued-worldwide/#:~:text=The%20value%20of%20green%20bonds,to%20487%20billion%20U.S.%20dollars> (last visited on 16-03-2024).

² “China Sustainable Debt”, State of the Market Report, 2022, Available at https://www.climatebonds.net/files/reports/cbi_china_sotm_22_en.pdf (last visited on 15-03-2024).

³ Gustafsson, S., Wihlborg, M., 2016, “Reflecting on collaborative networking and the roles of municipalities in local sustainable development”, *International Journal of Sustainability Policy and Practice*, 12(2), pp 13-23.

aims to provide valuable insights for policymakers, practitioners, and stakeholders engaged in the domain of sustainable finance and local governance in India.

2. Constitutional and Judicial Development of Right to Clean Environment in India

Before diving into the evolution of right to clean and healthy environment in Indian context, a brief understanding of linkage between this right and sustainable development is essential.

2.1.1 Link between Right to Clean Environment and Sustainable Development

The first United Nations conference on Human Rights (UNCHE) which focussed on the issue of international environmental politics was Stockholm Conference in 1972. It holds a significant position as it initiated international efforts towards the protection of ecosystem and put it on the agenda of international policy and law. One of its key features was that it linked environmental protection with sustainable development. Later in 1983, World Commission on Environment and Development (WCED) also known as the Brundtland Commission was established by the United Nations to unite the countries all over the world for achievement of the common goal of sustainable development. The Brundtland report of 1987 laid the foundation for Rio de Janeiro Conference in 1992, also known as the “Earth Summit” which led to the establishment of the UN Commission on Sustainable Development. Similar efforts towards sustainable development happened when the international community agreed to a plan of action for sustainable development in the 21st Century known as ‘Agenda 21’. It resulted in the establishment of a legally non-binding document on conservation and sustainable development of forests which is known as “forest principles.”

Other than this the principle of inter-generational equity is also seen as the foundation of sustainable development. In Indian scenario, hon’ble SC in the case of *G. Sundarrajana v. UOI*⁴ stated that Sustainable Development and CSR are inseparable twins, integrated into the principles of Inter-Generational Equity which is not merely human-centric, but also eco-centric. In this background, a detailed description of evolution of environment related rights can now be understood in the Indian context.

2.2 Constitutional and Judicial Aspect

The original text of Constitution of India, 1950 did not have any provision which specifically dealt with protection of environment, forests, wildlife, lakes, and rivers. It was in the backdrop of the Stockholm declaration, 1972 and growing environmental awareness, that 42nd Constitution (Amendment) Act, 1976 was passed. This amendment, inserted Articles 48A and 51A in the Constitution of India. While Article 48A occupies space in Part-IV, thereby imposing duty on the State to conserve the environment, wildlife and forests, Article 51A finds mention in Part-IVA which provides for fundamental duties. Article 51A(g) imposes duty on every citizen to take steps for conservation of environment, wildlife, lakes, rivers and show empathy for living creatures. The Amendment Act, 1976, also transferred certain entries from List II (State list) to List III (Concurrent list)⁵ such as entry 17A, 20A, 33A, but in the present context, entry 17A is relevant. Since, Entry 17A⁶, 17B⁷ find mention in List III, it enables Parliament to make laws on environment related issues such as forests and wildlife.

⁴ 2013 (6) SCC 620.

⁵ See Seventh Schedule, Constitution of India.

⁶ Entry 17A-forests, Constitution of India.

⁷ Entry 17B-Protection of wild animals and birds, Constitution of India.

Right to clean, pollution free and healthy environment is a fundamental right. Principle 1 of the Stockholm Declaration, 1972 also stresses upon this point. The survival of humanity is dependent upon such clean environment. It therefore becomes crucial to study the Constitutional origin and development of this right. It must be noted that there is no explicit provision in Part III of the Constitution which provide for environment protection. But the judgements of Indian Courts have been instrumental in the evolution of environmental jurisprudence and bringing it within the ambit of the Constitution. In *Shobana Ramasubramanyam v. Chennai Metropolitan development authority*⁸, the Madras High Court, referred to environmental rights as “third generation rights” which includes right to have a noise-free environment, with political rights being first generation rights and social & economic rights being the second-generation rights.

The courts have considered Articles 14, 21 and 19 (1) (g) for developing a relationship between right to healthy environment and fundamental rights. Articles 21, 48A and 51 A (g) constitute the Constitutional scheme for protection and preservation of environment as it includes fundamental right to a healthy environment, State’s obligation to protect environment and fundamental duty of citizens to conserve the environment. In *Bombay Dyeing & Mfg. Co. Ltd. (3) v. Bombay environmental action group*⁹, court observed that this constitutional scheme is based upon the concept of sustainable development which must be implemented and while stressing upon the need to consider ecological impact, a balance between development, ecological balance and intergenerational interest must be found. In short, while adopting sustainable development, a balance between developmental needs and environmental degradation must be found¹⁰. In *Intellectual Forum v. State of Andhra Pradesh*¹¹, the Supreme Court emphasized on State’s responsibility to conserve natural resources. To accentuate, the court mentioned Stockholm Conference, 1972 and held that State responsibility is an accepted notion under international law. Doctrine of sustainable development, public trust doctrine and principle of inter-generational equity were also discussed. It was held that under the public trust doctrine, State is under a legal duty to protect natural resources in the capacity of a trustee.

In *Amarnath Shrine, re*,¹² court on the similar lines held that if any developmental work is undertaken then it should not affect forest cover and environment. In *Samaj Parivartan Samudaya v. State of Karnataka*¹³, court declared that intergenerational equity and sustainable development have now become an integral part of Article 21.

The Courts, in various judgements, have analysed the relationship between right to equality¹⁴ and environment protection. The relation between social justice and equality was held to be complementary to each other and a part of Article 21 in the case of *Consumer Education & Research Centre v. UOI*.¹⁵ On several occasions, court has struck down arbitrary official

⁸ AIR 2002 Mad 125.

⁹ (2006) 3 SCC 434.

¹⁰ *Intellectual Forum v. State of Andhra Pradesh*, (2006) 3 SCC 549.

¹¹ (2006) 3 SCC 549.

¹² (2013) 3 SCC 247,276.

¹³ (2013) 8 SCC 154, 193.

¹⁴ Guaranteed under Article 14 of the Constitution of India.

¹⁵ (1995) 3 SCC, SCC (L & S 604).

sanctions on grounds of being violative of Article 14¹⁶. In *Chaitanya Kumar v. State of Karnataka*¹⁷, court considered, that in certain cases, arbitrary grant of lease and indiscriminate operation of mines may affect wildlife and other natural resources. It was held that in such cases courts must issue the writ to advance public interest over public mischief. In *Kisan Bhagwan Gawali v. State of Maharashtra*¹⁸, court held that exclusion of some gazers and inclusion of others on the ground that excluded ones were engaging in illegal gazing was violative of Article 14 and therefore invalid. In *D.S. Rana v. Ahmedabad Municipal Corporation*¹⁹, Gujarat High Court held that imposition of restriction on melting of gold and silver ornaments by running furnaces is not unreasonable as it was causing nuisance. Such restriction was held to be not violative of Article 14.

Further, courts in India have also addressed the relationship between right to carry on trade, occupation, or business and environment protection. In recent times, certain trade and businesses have become the main cause of pollution. Industries, tanneries, distilleries, acid factories, and hotel industries are significantly affecting the environment by causing pollution. Such pollution affects the vegetation, lives of animals, humans, and impacts the aquatic life as well. In the light of environmental pollution caused by industries and business activities, courts have considered the scope of right guaranteed under Article 19 (1) (g) of the Constitution. It has been observed in various cases, that, no right to carry on trade or business can be asserted if it endangers the environment and life of human beings. This approach reflects in the case of *M.C. Mehta v. Kamal Nath*²⁰, where Supreme Court held that hotels which are discharging untreated effluent into river Beas and are thereby injuring aquatic life and causing water pollution, cannot be permitted to operate. Further, it was held that, court is empowered to award damages on industries/hotels at fault, while exercising its jurisdiction under Article 32. In *Jackson & Company v. UOI*²¹, court dealt with an issue where petitioners were manufacturing certain diesel generators which produced noise beyond the permissible limits. It was held that, where State made provision of “acoustic enclosure” mandatory with the diesel generator, such a rule will not amount to restriction on right to carry on occupation, trade, or business, if the aim is to prevent noise pollution.

Lastly, the interpretation made by the Apex court in a catena of cases, led to the development of relationship between right to life and right to clean and healthy environment. Right to life is guaranteed under Article 21 of the Constitution but it does not expressly confer right to clean and unpolluted environment. It is by judicial interpretation that the scope of Article 21 was expanded to include variety of rights relating to environment. In *Rural Litigation & Entitlement Kendra v. State of U.P.*²², court addressed the issue of unregulated limestone quarrying activities which were being carried in the Mussoorie hill range of the Himalayas. Such uncontrolled quarrying took a toll on nature and destroyed the vegetation cover, natural

¹⁶ *Ajay Hasia v. Khalid Mujib Sehravadi*, (1981) 1 SCC 722, *Kinkri Devi v. State of Himachal Pradesh*, AIR 1988 HP 4, *Sachidanand Pandey v. State of West Bengal* (1987) 2 SCC 295.

¹⁷ (1986) 2 SCC 594.

¹⁸ AIR 1990 Bom 343.

¹⁹ AIR 2000 Guj 45.

²⁰ (2000) 6 SCC 213.

²¹ AIR 2005 Delhi 334.

²² (1985) 3 SCC 614. Observed in *T. Damodar Rao v. Municipal Corporation of Hyderabad*, AIR 1987 AP 171. See, *N.D. Jayal v. Union of India*, (2004) 9 SCC 362.

waterfalls, caused ecological damage by causing noise and air pollution. It resulted in shortage of drinking water. The judgement suggests that the Supreme Court entertained the matter as involving violation of Article 21 even though it was an environment complaint. It shows that judiciary adopted a pro-environment approach long time back. Another case to emphasize on this approach is of *M. C. Mehta v. Union of India*²³ (*Ganga Pollution case*) in which Singh J stated that closure of tanneries may result in unemployment and other economic loss to the State but right to a healthy life and ecology is more important for the people.

Later, the ambit of Article 21 was enlarged in the case of *Consumer Education & Research Centre v. UOI*²⁴. In this case, Court gave a wider interpretation to Article 21 and held that “life” does not mean mere animal existence but includes within its ambit right to livelihood, better standards of life, and hygienic conditions in the workplace and leisure. It can be summed up that Article 21 guarantees a right to life which extends beyond mere breathing and proposes to guarantee a life with dignity and quality. This approach was reflected in *Hinch Lal Tiwari v. Kamla Devi*²⁵, where court held that forests, tanks, ponds, mountains are nature’s gift and that they maintain ecological balance. It is necessary to protect these to ensure a healthy environment and consequently a quality life to persons, which is also the essence of Article 21. Taking this into account, Court held that pond’s land cannot be allotted for residential purposes. In various other cases, Supreme Court has held that any disturbance caused to the necessities of life, such as air, water and soil would be considered as hazardous to life under Article 21.

The Hon’ble Supreme Court was often called to resolve a conflict between fundamental right to life on one hand and right to development on the other. One such case was of *N. D. Jayal v. Union of India*²⁶. In this case petitioner sought issuance of guidelines by the court for conducting safety tests on a dam built on Tehri for hydel power. It also requested the court to address the issue of rehabilitation of migrants affected by the construction of dam. Court declared that the concept of sustainable development is to be treated as an integral part of “life” under Article 21. Further, it emphasized that right to clean and healthy environment is a part of Article 21. It has been made clear by the Apex Court that environmental issues are not mere statutory issues but fall within the ambit of Constitution and are an important feature of Article 21²⁷. Therefore, any activity which is injurious to the environment will be a violation of Constitutional provision and the Apex Court will be obliged and justified to step in. Moreover, “living environment” is a necessary condition to support human existence and by implication, it is also guaranteed under Article 21. Thus, activities that pollute the environment, make it unhealthy, cause hazard to human and animal health, and affect the nature will be violative of right to “living environment” guaranteed under Article 21. The ultimate realization of right guaranteed under Article 21 requires protection and preservation of natural resources and other gifts of nature as in the absence of a healthy environment, nothing can thrive and right to life cannot be enjoyed in its essence.

²³ (1987) 4 SCC 463.

²⁴ (1995) 3 SCC 42.

²⁵ (2001) 6 SCC 496.

²⁶ (2004) 9 SCC 362.

²⁷ *Noida Memorial Complex near Okhla Bird Sanctuary, re*, (2011) 1 SCC 744.

In subsequent cases, the Hon'ble Supreme Court has asserted its power to take up cases where no other remedy is available. In *Sterlite Industries (India) Ltd. v. Union of India*²⁸, the Supreme Court stated that it is empowered to order closure of an industry under Article 21, to ensure that it complies with the standards of emission and effluence prescribed under the Environment (Protection) Act, 1986; the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981. It can do so in the absence of any other remedial measure and to ensure a safe and healthy environment. In *Arjun Gopal v. UOI*²⁹, Supreme Court declared that bad air quality is adversely affecting other rights such as right to education, work, and health and ultimately right to life and therefore this court is bound to address these concerns.

The Hon'ble Supreme Court, on the one hand, has affirmed various rights under Article 21 such as right to potable water³⁰, right to health (including medical care to the workmen) and hygienic working conditions³¹, right to sleep peacefully, right to leisure and have a clean environment³². On the other hand, it has prohibited certain activities as being violative of Article 21 such as unregulated exploitation of natural resources³³, failure to maintain sanitation, no steps for conservation of environment, carrying of any other activity which is hazardous to the life of human beings³⁴, animals and plants, use of insecticides and medicines having negative impact on health and are dangerous to life³⁵, and smoking in public places considering its hazardous implications on non-smokers. The continuous effort of Apex Court to guarantee a safe and healthy environment to the citizens has led to many interesting decisions.

3. Role of Municipalities in Sustainable Development

From the above analysis, it is clear that judiciary has actively been upholding variety of rights related to environment and has also emphasised on the significance of sustainable development. Now, other than holding the obvious stakeholders, it becomes important to tackle the problem from a different angle as well. It is with this intention the present article will now explore the role of municipalities in achieving sustainable development.

Municipalities are crucial to the management of the urban transition owing to their role as self-governing entities. In addition to keeping up with infrastructure and provision of essential services, they are also in charge of guaranteeing the general well-being of their residents. But, with the expansion of Indian cities, they have to deal with a number of intricate problems such as shortage of resources, environmental degradation, and socio-economic inequality. In this light, municipalities must consequently prioritize sustainable development. Sustainable development includes a comprehensive strategy for urban expansion that aims to strike a balance between social justice, economic prosperity, and environmental stewardship. It entails making well-informed decisions that protect the planet's natural resources while advancing

²⁸ (2013) 4 SCC 575, 600.

²⁹ (2017) 1 SCC 412, 416.

³⁰ *F. K. Hussain v. Union of India*, AIR 1990 Ker 321.

³¹ *Consumer Education & Research Centre v. Union of India*, (1995) 3 SCC 42.

³² *Burrabazar Fire Works Dealers Assn. v. Commr. Of Police*, AIR 1998 Cal 121.

³³ *Kinkri Devi v. State of H.P.*, AIR 1988 HP 4.

³⁴ *L. K. Koolwal v. State of Rajasthan*, AIR 1988 Raj 2. Also see, *M.C.Mehta v. State of Orissa*, AIR 1992 Ori 225.

³⁵ *Ashok v. Union of India*, (1997) 5 SCC 10. Case relates to S.27 of Insecticides Act,1968.

the welfare of present and future generations.³⁶

This discussion will explore the various ways in which municipalities promote sustainable development. It will cover those sectors where municipalities can make a huge difference such as urban planning, infrastructure development, waste management, water supply, public transit, green spaces, renewable energy, citizen involvement, and the legislative frameworks governing these sectors. By looking into these aspects, a better understanding of how Indian municipalities are working to achieve a more livable, ecologically conscious, and inclusive urban centers can be gained. Moreover, the discussion will throw light on the challenges they face, and the innovative solutions being employed to address them. In an era of increasing urbanization and environmental concerns, the role of municipalities in India's sustainable development journey is more critical than ever.

Some of the areas where municipalities have a significant role can now be discussed. India is facing uncontrolled growth of population which in turn is a contributing factor in rapid urbanization. Municipalities are at the forefront of managing urban growth. This growing urban population must be smartly accommodated with sustainable urban planning, infrastructure development, and housing policies while minimizing environmental impact also. Another challenge that cities are facing is that of waste management. With the prevalence of e-commerce, growing population, slums, and so many other factors, mountains of waste can easily be seen in the outskirts of every city in India. Municipalities can contribute to effective waste management by implementing waste segregation at source, recycling programs, and the responsible disposal of waste to reduce the burden on landfills and incineration. Problems like access to clean drinking water and proper sanitation facilities, which are crucial for public health and environmental sustainability, are another area where municipalities play an important role. They must invest in water treatment plants, sewage systems, and sewage treatment facilities.

Role of municipalities is also important in the management of traffic congestion and air pollution by developing efficient and eco-friendly public transportation systems, such as buses and metro rail, and encouraging the use of non-motorized transport like cycling and walking. In addition to this, air quality can also be improved by developing green spaces within urban areas. It will also provide recreational opportunities and enhance the overall standard of life. Municipalities should prioritize the development and preservation of parks and green corridors. Sustainable development requires encouraging the use of renewable energy sources like solar and wind power within city limits to reduce carbon emissions. Municipalities can incentivize renewable energy installations on rooftops and public buildings. Further, municipalities must implement smart city initiatives to enhance resource efficiency, reduce energy consumption, and improve the delivery of municipal services. These initiatives comprise of technologies for efficient lighting, traffic management, and waste collection. Municipalities may also encourage green building practices, such as LEED (Leadership in Energy and Environmental Design) certification, can help reduce energy consumption and minimize the environmental footprint of construction projects within municipalities. Currently, India is on third spot with more than

³⁶ Sapatnekar, S., Patnaik, I., Kishore, K., 2018, "Regulating Infrastructure Development in India", National Institute of Public Finance and Policy Working Paper Series, Working Paper No. 230, pp. 14-16.

899 LEED-certified projects over an area of more than 24.81 million gross square meters. There are 334 such buildings in Maharashtra, 232 in Karnataka and 157 in Tamil Nadu.³⁷ The above-mentioned strategies can work only with effective engagement of the citizens. Municipalities can educate residents about sustainable practices, involve them in decision-making processes, and encourage community participation in environmental projects. Lastly, a comprehensive legal framework and regulations is needed to bring everything together. Municipalities must align their policies and regulations with national and state-level sustainable development goals and initiatives. It will ensure that the local framework is in consonance with broader sustainable objectives.

4. Green Bonds as a mechanism for furthering Sustainable Development Goals vis a vis Municipal Corporations in India

Green bonds can simply be understood as debt instruments that raise capital to fund environmental infrastructure such as renewable energy, water management, biodiversity, green buildings, etc. The idea to raise funds exclusively meant for green project essentially revolves around the problem of climate change. This global problem with local repercussions caused India to face the hottest February since 1901 in 2023. It is anticipated that these circumstances will worsen even more. The high population density of India has serious impact on carbon emissions. Therefore, India must act immediately to fulfil its environmental obligations. India has taken many initiatives to address these concerns such in 2022, the Finance Ministry unveiled its plan to issue sovereign green bonds to raise capital for green infrastructure. The funds will be utilized for reducing carbon intensity of the economy. In the backdrop of this announcement, many Municipal Corporations raised capital through issuance of green bonds for green projects. The Ghaziabad Nagar Nigam, a civic body in Uttar Pradesh, was the first local body to issue green bonds worth USD 20 million.³⁸ In 2023, Indore Municipal Corporation issued green bonds worth USD 87 million.³⁹ Recently, in March 2024, Vadodara Municipal Corporation issued Asia's first certified green municipal bond and raised 100 crore rupees. The raised capital is intended to be used for building sustainable water infrastructure in the city. It is seen as a watershed moment in sustainable municipal finance across Asia.⁴⁰ Other cities such as Chattisgarh's Raipur Municipal Corporation,⁴¹ Uttar Pradesh's Varanasi, Agra, Prayagraj, and Kanpur Municipal bodies are also planning to raise capital through issuance of green bonds.⁴² These steps will reduce dependency on Central and State Government for finances relating to infrastructure, waste management, and other environmental related matters.

³⁷ "How can one become a LEED certified professional in India?", GBRI blogs, Available at <https://www.gbrionline.org/leed-certified-professional-in-india/#:~:text=LEED%20certification%20in%20India&text=India%20ranked%20third%20with%20more,232%20and%20157%20buildings%2C%20respectively> (last visited on 07-05-2024).

³⁸ *Ghaziabad Municipal Corp Lists First Green Bonds*, The Economic Times, April 8, 2021 [09:52 PM].

³⁹ Podishetty, A., *Indore Municipal Corporation's Green Bonds Oversubscribed 5.91 times on Final Day*, The Economic Times, Feb. 14, 2023 [08:17 PM].

⁴⁰ *India's Gujarat State Civic Body Issues Asia's First Certified Green Municipal Bond*, The Economic Times, March 01, 2024 [03:18 PM].

⁴¹ Das, R., *Chattisgarh's Raipur Municipal Corporation Plans to Issue Green Bonds*, Business Standard, Jan 29, 2024 [5:31 PM].

⁴² Rawat, V., *Uttar Pradesh Government to Tap Capital Markets with Green Bonds*, Business Standard, Nov 17, 2023 [11:13 PM].

4.1 India's approach and vision on green bonds

India is emerging as the leader in terms of environment friendly and sustainable projects and is rapidly achieving its decarbonization objectives. India is amongst those nations that has often chosen to issue green bonds for raising capital for green and sustainable projects. The first set of sovereign green bonds was released in January 2023 by India. Its goals are to produce 5 million tons of green hydrogen and expand non-fossil electrical capacity to 500 GW by 2030. This step of issuing first sovereign green bond signifies India's commitment towards sustainability which is in consonance with its five critical climate action elements known as "Panchamrit" as defined by the Prime Minister during COP26 in 2021. These elements broadly focus on attaining 500 GW of non-fossil energy capacity, generating 50% of energy from renewable sources, reducing anticipated carbon emissions by one billion tons by 2030, reducing carbon intensity by 45%, and achieving net-zero emissions by 2070, in accordance with the Paris Agreement (Framework for SGB, Ministry of Finance).⁴³

Following the bond sale, the 2023-24 Annual Union Budget was released, with fund allotments for a range of environmentally friendly initiatives. It mainly focused on supporting the decarbonization of railways, carbon-intensive industries, and energy generation. The efficacy of these bonds was demonstrated by the fact that the Ministry of Finance was able to raise USD 1 billion between the two bonds, which increased to USD 2 billion following the second sale in February. One important feature was that it was issued in the local currency (Indian rupee). The issuance of bonds in local currency is a rare occurrence for emerging markets and developing economies (EMDE), accounting for only 3% of the global green bond market. India also unveiled a green bond framework that, while not legally obligatory, fosters investor trust and reduces the possibility of greenwashing. But this framework is being viewed as a barrier by some countries for raising capital through green bonds as it will add more time, cost, and effort to the issuance of green bonds and people would prefer to sell conventional bonds in this light. However, by gaining investors' trust in its transparent adherence to the Green Bond Principles (GBP) of the International Capital Markets Association, it may instead promote future issuance.⁴⁴

There are certain similarities between India's Framework and GBP such as:

- a. The law prohibits using financing for projects employing fossil fuels, with the exception of nuclear energy, compressed natural gas for transportation, and large hydropower plants with a capacity of more than 25 megawatts.
- b. The framework requires the establishment of a Green Finance Working Committee, to be composed of representatives from the related ministries, the independently administered knowledge and policy development agency of the Central Government, and the NITI Aayog. Additionally, the raised capital must be distributed within 24 months of issuance.
- c. It mandates keeping of an up to date "green register" with information on the projects

⁴³ Shreeprabha, G., "Sovereign Green Bonds: Fuelling India's Sustainable Revolution", Indian School of Public Policy, Available at <https://www.ispp.org.in/sovereign-green-bonds-fuelling-indias-sustainability-revolution/> (last visited 07-05-2024).

⁴⁴ Hussain, F., Dill, H., 2023, "India incorporates green bonds into its climate finance strategy", World Bank Blogs, Available at <https://blogs.worldbank.org/climatechange/india-incorporates-green-bonds-its-climate-finance-strategy> (last visited on 18-03-2024).

and allocations. Additionally, maintaining the project's degree of readiness is a requirement for ministries. Depending on whether the project is ready for investment, whether it is under development, or whether it is just in the ideation stage, the level of preparedness might range from 1-3.

- d. The reporting process comprises of yearly external third-party post-issuance evaluations in addition to self-reporting by the Indian government. This procedure that comes at an additional cost minimises the risk of greenwashing and gives assurance to the investors about correct use of their money.

India has been working on bringing more foreign investors for which it has devised incentives also. In this move, the Reserve Bank of India provides exemption to the foreign investors from the investment cap which is otherwise applicable to foreign participation so that the market is readily accessible to them. Further, if taxes on green bonds are reduced or eliminated, it may encourage foreign investment. It is implied by the fact that the 2016 tax-free bond issued by the Indian Renewable Energy Development Agency Limited which was more than five times oversubscribed. Gaining credit worthiness for long-term investments in environment sustainability may help make up for the short-term tax revenue loss. Making it simple to settle and clear bonds through international clearing institutions like Euroclear, providing clarity on taxation, and lifting restrictions on foreign investment are among measures that could help the Indian green bond market grow.⁴⁵

4.2 International Perspective on Sustainability of Green Bonds

As per Green, Social, and Sustainability (GSS) 2023 edition Newsletter issued by the World Bank, the aggregate sum accrued as of December 2022 amounted to USD 3.8 trillion. In the year 2022, a total of USD 948 billion was amassed, representing a decrease of 19% when juxtaposed with the figures from 2021. Sovereign investors exhibit a distinct proclivity for Green Bonds as their preferred debt instrument.⁴⁶ Data disseminated by Bloomberg and Bloomberg NEF reveals that approximately 81% of the overall bond issuances pertain to Green Bonds. The ESG funds (Environmental, Social and Governance) valued at approximately \$40 trillion, have Europe responsible for roughly half of this total. Projections suggest that by 2025, ESG assets will constitute roughly one-third of the overall global assets managed. Within the realm of ESG debt funds, there is a collective value of around \$2 trillion, with “environmental” or green bonds making up over 80% of this total, while the remainder comprises social and sustainability bonds.⁴⁷ There have been numerous instances of green bond utilization globally. Green Bonds were first issued in 2007 under the auspices of the World Bank. In the preceding year, Swedish investors evinced a keen interest in environmentally beneficial undertakings, spurred by a recognition of the imperative to address climatic challenges in light of discernible ecological upheavals. At that juncture, transactions related to green projects constituted less

⁴⁵ Jain, G., Deb, K., 2023, “India Integrates Green Bonds into its Decarbonization Strategy”, Centre on Global Energy Policy, Available at <https://www.energypolicy.columbia.edu/india-integrates-green-bonds-into-its-decarbonization-strategy/> (last visited on 19-03-2024).

⁴⁶ Bangera, S., 2021, “A Study on Green Bonds”, 10 (49), Scholarly Research Journal for Interdisciplinary Studies, pp. 76-81.

⁴⁷ Green, Social, and Sustainability (GSS) Bonds, 2023, The World Bank, Available at <https://thedocs.worldbank.org/en/doc/98c3baab0ea4fc3da4de0e528a5c0bed-0340012023/original/GSS-Quarterly-Newsletter-Issue-No-2.pdf> (last visited on 19-03-2024).

than 1% of the overall market activity. In response, CICERO scientists were enlisted to provide their expert evaluation. Subsequently, upon its launch in 2008, the initiative garnered a substantial infusion of \$13 billion across approximately 20 nations, earmarked for the financing of global environmentally sustainable projects. In 2010, IFC (International Finance Corporation) introduced its inaugural green bonds in response to investor demand for climate-aligned investment instruments offering a fixed income. After this milestone, governments, corporations, and financial institutions worldwide have subsequently issued green bonds.

Lupin Rahman, global head of sovereign markets at Pacific Investment Management Company (PIMCO), explained the advantages of green bonds by saying:

*“Emerging market green bonds are an attractive and growing opportunity for fixed income investors, as issuers are distinguishing their sustainability credentials with enhanced targets and clear frameworks to tackle climate transition and climate risks, as well as broader sustainability goals.”*⁴⁸

For issuers of this bond, it is the banks underwriting their bond programmes that typically initiate the idea of issuing a green bond. The three most widely held incentives to issue green bonds among issuers are: broadening the investor base, lower capital costs, and meeting investor demand for sustainable investment products. Here, financial incentives are more prominent amongst issuers compared to investors.

Green bonds have emerged as an effective financial instrument in the global endeavour to confront environmental challenges and advance sustainability. These instruments encompass debt securities issued by governments, municipalities, or corporations, explicitly designated for financing projects that yield positive environmental outcomes. The international experiences with green bonds have underscored their capacity to mobilize capital for sustainable ventures, stimulate inventive solutions, and instigate favourable transformations across various sectors.⁴⁹

5. CONCLUSION

The article highlights the importance of integrating sustainability principles into the core functions of local governments. By adopting a proactive stance towards green financing mechanisms such as green bonds, municipalities can mobilize substantial financial resources to fund environmentally beneficial projects. This, in turn, can lead to a cascade of positive outcomes, including improved air quality, enhanced energy efficiency, and strengthened resilience to climate change impacts. The article also highlights the need for tailored policy interventions to support municipalities in their pursuit of sustainable urban development. Policymakers should prioritize the creation of an enabling regulatory environment that incentivizes the issuance and uptake of green bonds. Moreover, capacity-building initiatives should be established to equip municipal officials with the requisite knowledge and skills to navigate the intricacies of green finance.

Emphasis should be placed on designing and implementing projects that align with broader environmental objectives including climate change and urban heating. Furthermore, urban

⁴⁸ *Id.*

⁴⁹ Dwivedy, D., Sharma, M., 2023, “Role of green bonds in promoting sustainability and their effects on public policy”, *Journal of Law and Sustainable Development*, 11(6).

planners should actively engage with financial institutions and explore innovative financing models to ensure the viability and success of sustainable initiatives. Financial institutions, on their part, are encouraged to play a more proactive role in supporting municipalities in their green financing endeavours. This may involve developing specialized financial products, providing technical expertise, and offering favourable terms for green bonds. By fostering strong partnerships with municipalities, financial institutions can contribute significantly to the realization of sustainable and resilient cities. In conclusion, it is imperative that all stakeholders work together to pave the way for a more sustainable and resilient urban future in India.