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Principles On Financing Cities of Tomorrow: Inclusive, Resilient and Sustainable

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Principles on Financing Cities of Tomorrow

Inclusive, Resilient and Sustainable

Preamble

Cities are the engines of economic growth worldwide, home to over half of the world's population¹, and contribute to over 70% of global GDP. In recognition of their impact on billions of people, governments worldwide have dedicated significant resources towards upgrading the quality of life in urban settlements. While global efforts stay focused on further progress, an understanding of 'Cities of Tomorrow' is required so that international urban financing solutions address future needs.

Cities² of Tomorrow can be visualised as action-oriented spaces which focus on bringing a positive and lasting impact on the lives of their citizens and maximising the creative potential of their resources. With data at the base of evidence-backed governance, cities should aspire to bring in implementation efficiency and promote universal accessibility. Further, given the vagaries of climate change, cities should weave environmentally resilient practices into urban design of both existing and new cities, and leverage energy-efficient practices for a sustainable tomorrow. This will require challenging long-standing ideas through a combination of top-down and community-planned approaches and fostering goal-oriented decision-making. The global goal is to boost the growth of both new and retrofitted cities that will emerge as equitable, energy-efficient, climate-resilient, socially, and financially sound and environmentally sustainable economic spaces.

G20 Members recognise the importance of urban infrastructure development for economic growth, job creation and productivity, as well as for improving social well-being and environmental quality. The following set of voluntary and non-binding 'Principles on Financing Cities of Tomorrow', prepared during G20 Indian Presidency in 2023, aims to promote effective and efficient use of financial resources to support urban development that is socially inclusive, environmentally responsible, and economically sustainable. This set of voluntary principles acknowledge the inherent heterogeneity across cities and the many country-specific circumstances cities are embedded in.

These principles are built upon the considerable work undertaken by national and international organisations and the Infrastructure Working Groups (IWG) under preceding G20 Presidencies, such as Roadmap to Infrastructure as an Asset Class, Principles for Infrastructure Project Preparation Phase, Principles for Quality Infrastructure Investment (QII), InfraTech Agenda, Policy Agenda on Infrastructure Maintenance, Guidance Note on Diversification of Financial Instruments for Infrastructure and SMEs, and Policy Toolkit to Mobilise Funding and Financing for Inclusive and Quality Infrastructure Investment in Regions and Cities. The document highlights strategies that may help develop a country's course of action with customised policy and fiscal approaches to finance inclusive, resilient, and sustainable Cities of Tomorrow.

¹ United Nations Statistics Division. — [SDG Indicators](#).

² As per OECD "A city consists of one or more local units with at least 50% of their population in an urban centre. A local unit can be either administrative (municipality, a district, a neighbourhood, or metropolitan area) or statistical (enumeration areas, census blocks, census tracts, wards, super output areas)."



Principle 1: Planning and making Cities of Tomorrow inclusive, resilient and sustainable

Cities in developing and developed countries are at different stages of evolution. Therefore, each city would need to undertake a unique vision setting and robust and transparent project preparation, to arrive at its preferred direction of growth. The promotion of long-term integrated urban planning approaches that align infrastructure investments with sustainable development goals, and consider social, economic, and environmental factors, while considering context-specific circumstances, will be crucial to achieving global and local ambitions. The widespread variation among cities necessitates identifying context-specific challenges and context-suitable developmental goals. Accordingly, the chosen strategy would require mindfulness around the needs and aspirations of its citizens, patterns of urban planning already in place, social and environmental challenges faced, and goals set, focus on financial and business case of envisaged projects, and the resources required to achieve the vision and ensure citizen accountability. Key elements of vision setting could include:

- 1.1 Promoting sustainable cities with energy and resource efficiency policies for a low-carbon future.** Most developed and developing countries have carbon neutrality and Net Zero goals which are directly linked to emissions produced in cities. Given the role cities play as drivers of the transformation to Net Zero, they should strive for a low-carbon footprint through incorporation of renewable energy, decarbonised solutions and energy-efficient measures within the design and delivery of urban public services through the adoption of different energy-efficient measures in alignment with their national & regional priorities and nationally determined contributions (NDCs).
- 1.2 Promoting circular economy approaches to minimize waste generation, enhance resource efficiency, and promote reuse and recycling within cities.** Cities of Tomorrow can focus on resource efficiency, which means '*doing more and better with less*' by maximising value from existing resources such as water. Additionally, cities may adopt Nature-based Solutions (NbS) such as afforestation to prevent biodiversity loss and pollution, green roofing, sustainable drainage systems to help manage excess rainfall, rainwater harvesting for addressing water needs, greenways for the promotion of active lifestyles, and bioremediation for cleaning lakes. Accordingly, methodologies for valuation of ecosystem-services and cost-and-benefit analysis of NbS be undertaken more accurately, capturing wide range of long-term environmental, economic, and social benefits. Further, contributing to a shift in citizen engagement with the environment is also critical by encouraging sustainable resource consumption at the user level.
- 1.3 Making cities resilient to disaster-led shocks and adopt disaster risk reduction into urban policies and practices.** Infrastructure lies at the heart of climate change adaptation. Encouraging systemic resilience in planning, designing, implementing, and maintaining urban projects would enable cities to be agile, endure and recover from disaster-led shocks particularly those associated with climate change and help protect their citizens against loss of lives and livelihoods. Cities need to develop risk assessment frameworks that would guide consequent risk monitoring and mitigation and need a comprehensive, evidence-based understanding of disaster risks to assist in risk avoidance, risk reduction, and



management of residual risk. An integrated approach towards risk reduction and increase in disaster resilience in urban infrastructure would promote cost efficiency through optimal use of resources and foster long-term sustainability of urban projects.

- 1.4 Building economically, socially, and spatially inclusive infrastructure** that addresses the varied needs of its citizens including vulnerable populations, irrespective of but not limited to, gender, race, age, and physical ability, such as age-ready and child-friendly neighbourhoods, or barrier-free design for persons with disabilities etc. Cities will encounter several inclusivity challenges in urban spaces depending on their specific circumstances, including their demographics, cultural dynamics, and socioeconomic factors. Therefore, cities should build infrastructure consciously to accommodate their respective social inclusivity challenges. Enabling spatial equity through universally accessible spaces will go a long way in bringing together diverse skills, experiences, educational capabilities, and social backgrounds. This includes promoting the development of affordable housing and improve access to education, healthcare, and cultural facilities. This is expected to give rise to strong complementary economic externalities.

Principle 2: Maximising investment efficiency in cities by optimising both public and private sources of finance

Achieving a city's specific vision requires sustained capital investment. Traditionally, development of cities has been undertaken substantially through public funding, relying heavily on federal grants and transfers. However, to address future requirements, cities should adopt strategies that leverage alternative financing sources and a stronger enablement of public-private collaboration to bridge the growing infrastructure financing gap. Based on context-specific circumstances, cities should identify the right mix of public and private financing options and help available funds perform more.

- 2.1 Striving for the right balance among devolved funds, Own Source Revenues (OSR) and resource generation for financing urban development.** Financial sufficiency enables creative planning. With devolved transfers as base for sustenance, cities should prioritise revenue augmentation through Own Source Revenues (OSR) and resource mobilisation so that structural budget shortfalls can decrease, and city governments can progress towards a financially healthy future. The assessment of total funds available with city will benefit from preliminary evaluations of impact of city-projects on quality of life of citizens and help in prioritising fund deployment towards maximum value-generating projects.
- 2.2 Improve financial health of cities by increasing the share of own source revenue (OSR) to total revenue.** City governments mainly rely on revenue streams generated by service fees, fines, taxes, and assets like buildings and properties. Own source revenue (OSR) can be maximised by increasing existing revenue streams and creating new revenue



opportunities. Technology interventions (e.g., GIS³ & SCADA⁴) to increase tax volume coverage without raising user fees and decrease leakages can also contribute to increasing OSR. User-funded models and other mechanisms such as congestion pricing and linkages of vehicle type-road tax for incentivising greener transport are also good practices. Other interventions include betterment levies, adequate water pricing (considering social aspects) and property tax reforms with increased land and property registrations.

- 2.3 Public funds can be channelised into projects that are economically important but financially less viable.** When both public and private funds are available, investment decisions should strive to aim for fund efficiency. This means that public funds should be directed towards projects that are essential for economic development, such as schools and hospitals while projects with commercial potential, such as convention centres, tourism infrastructure etc. can tap private investment. Additionally, public funds may be leveraged for projects (e.g climate adaptation/ social or green infrastructure) that focus primarily on reducing economic losses through mitigation of negative externalities.
- 2.4 Urban Infrastructure of tomorrow should be increasingly user-funded while not compromising upon affordability and accessibility.** Quality, sustainable, and resilient urban infrastructure will require cities to explore funding options that do not burden the taxpayers exclusively but monetise externalities through user-pay-principle. City governments could assess willingness-to-pay (WTP) for different utilities and explore options for dominant and ancillary revenues such as user fees, parking charges etc. Sub-national governments may employ a policy of differentiated tariffs for different user bases depending on type and volume of utility uptake to enable cross-subsidization. While respecting constraints around affordability and social inclusion at the user level, tariffs should strive to reach cost-recovery over time.
- 2.5 Diverse and innovative resource mobilisation options to raise private investment are to be explored by cities.** Cities should explore market-based solutions⁵ such as public-private partnerships (PPPs), standalone and pooled bonds, blended finance, institutional funds, asset monetisation, long-term debt issuances, innovative land-based financing etc., to raise additional financial resources and increase private investment in urban development in accordance with the respective regulatory systems of member countries. Since countries have different types of financial restrictions around raising debt by local governments, borrowing by cities will depend upon the regulatory and approval relationship between the different levels of government in the country. Similarly, depending upon the financial maturity of the city, PPPs can also be used to help infrastructure projects improve their capital and operational efficiency apart from channelling private investments in infrastructure. Cities can also benefit from inter-municipal cooperation as a means of mobilising additional resources or sharing costs of large projects. Innovative options such as co-financing of community and livelihood

³ GIS is Geographic information system is a spatial system used for generating maps from analysis of large amounts of data.

⁴ SCADA stands for Supervisory Control and Data Acquisition, is a computer-based system for monitoring physical processes such as transmission of electricity, water distribution, traffic lights etc.

⁵ All such instruments are covered in detail in the G20 OECD report on 'Financing Cities of Tomorrow'(2023).



development projects may also be explored especially for provisioning social infrastructure.

- 2.6 Land can be leveraged as a financing solution.** Urban planning concepts such as Transit Oriented Development (TOD), Land Value Capture (LVC), Transferable Development Rights (TDR), functional tenure security and restoration, and high-density incentives, leverage real estate components to enhance the financial self-sufficiency of cities. The monetisation of wastelands, vulnerable areas, unused land parcels and locked-up assets can be explored through ‘creative redevelopment’⁶ and ‘urban regeneration’.
- 2.7 Making Carbon Finance more accessible to cities.** Cities naturally have climate-suitable projects in areas such as water, waste, electric vehicles, public transport, and green infrastructure. Since cities differ on their climate adoption principles, an array of customisable financing solutions should be available depending on their respective social and economic maturity, including transition finance. Accordingly, urban projects may leverage suitable financial mechanisms such as impact investing and sustainable financing instruments such as climate bonds, sustainability bonds, transition bonds, green and blue bonds. For this purpose, cities should prepare a pipeline of investible sustainable projects, preferably on a searchable online platform.
- 2.8 Cities in developing countries should also be able to use lending facilities by Multilateral Development Banks (MDBs).** Assistance from multilateral institutions would additionally help cities address their social and environmental needs. Public Development Banks (PDBs) could also be an important driver in attracting and complementing private sector investment.

Principle 3: Creating a conducive environment for attracting private investments in urban development

A city’s financial self-sufficiency is heavily dependent on facilitative factors that include its creditworthiness, extant financial health, policy for investment facilitation and the maturity of the regulatory and institutional framework in the city. Clear and transparent regulation is important to provide certainty and stability for private investors. Improvement in investment climate will enable cities to leverage limited public sector resources to crowd-in private sector funds.

- 3.1 Assessing the revenue-generating ability of projects is a key cornerstone of urban financing strategy.** By evaluating the inherent ability of projects to generate revenue and its financially sound business case, cities can make informed financing decisions. In cases where projects have partial revenue-generating potential, government or multilateral agencies may provide support through subsidised loans and grants or blended finance options. Conversely, projects with high revenue-generating capabilities can be financed using a mix of loans, transfers, and private financing instruments such as equity finance, debt financing with pooled arrangements or municipal bonds. For this, ring-fencing of the

⁶ Creative redevelopment refers to reorganization of the urban land from low-density residential use to high-density commercial development. It involves upgradation of the existing infrastructure to support up-zoning with an objective to restore economic viability through commercial activities. A detailed policy brief is provided separately.



project revenue stream must be ensured. Monitoring project performance and outcomes is also important for incentivizing maintenance of assets in the long-term.

- 3.2 **Striving to enhance city creditworthiness to leverage debt financing.** Cities with higher creditworthiness scores can tap wider funding options and derive considerable leverage in the capital markets, along with being able to secure concessional & non-concessional assistance from Development Financing Institutions, Multilateral Development Banks (MDBs) and local banks. National governments can play an important role in specifying prudent principles for city borrowing through specification of uniform audit standards, debt management, fiscal marksmanship, city-relevant multi-year expenditure frameworks etc. Cities with extensive expertise in debt finance, can leverage their experience to tailor customised solutions for cities in emerging and lower-income countries.
- 3.3 **Investment in Research and Development for technology requirements of the future.** Cities with highly built infrastructure and surplus funds, can endeavour to earmark a certain percentage towards R&D, technology and incentivising its adoption, in addition to initiatives by national and sub-national governments.
- 3.4 **Adequate diversification of project financing sources to cover financial risks** arising due to global vagaries in prices, geo-political events, or pandemics/ epidemics, which may impact the performance of financial markets. Cities can leverage de-risking instruments such as insurance, hedging, guarantees, provision of contingencies and deployment of credit enhancement techniques to protect the interest of investors and lenders.

Principle 4: Strengthening institutional preparedness for urban infrastructure financing

The lack of bankable, viable projects is recognised as one of the reasons for low infrastructure investment by the private sector. Well-planned projects are inherently investment-friendly due to their ability to optimise risk allocation and deliver returns expected by investors. Local governments may draw up a list of bankable projects to encourage private investment. Additionally, to bring in acceptability of and consensus towards urban development plans and projects, intra-city discussions with city councils and civic actors may also be undertaken in the project preparation phase.

- 4.1 **Data-driven insights to be used in project and policy development across sectors.** Investment decisions will benefit greatly from technology enablement for data analytics and the generation of predictive insights regarding sector trends, project uptake and related information. However, data must be leveraged in keeping with the tenets around data privacy, protection and use in accordance with national and international regulations.
- 4.2 **Improving project preparation and project appraisal to enhance the viability of urban projects.** Uninterrupted revenue streams should enhance the bankability of projects. Project preparation should include a comprehensive investment plan that includes key metrics of financial due diligence that should be well assessed during project appraisal stage. Advanced project structuring and evaluation tools and financial and economic appraisals will aid in preparing viable projects. Well-structured projects can be developed



using the indexed revenue escalation model that considers the time value of money along with project longevity. There should be adequate mechanisms built into the project to address the operations and maintenance requirements of the asset. Additionally, sustainable projects can access a wider source of funding options from environmentally conscious MDBs and bilateral lenders through improvement in project preparedness quality. Initial funding is often needed to prepare a quality infrastructure project that can be attractive to the private sector. Project Preparation Grants (PPGs) provided by either the city or national or sub-national authorities can be useful to prepare technically sound and sustainable projects and are used, for example, to finance feasibility studies and the preparation of design and construction documents. Furthermore, capacity building for project preparation such as knowledge resources, tools and training must be strengthened to ensure that urban infrastructure projects are prepared effectively and efficiently, minimizing the risk of delays and cost overruns.

- 4.3 Greater standardization of sector-specific contractual documents to streamline project structuring, development, and reporting, without giving up contractual flexibility.** Guidance frameworks like model concession agreements made context-relative, would ensure transparency and consistency in procurement processes. Moreover, the contractual document ecosystem may include renegotiation mechanism for dealing with uncertainties that may arise down the line since infrastructure development is long-tenured in nature.
- 4.4 Developing strategies for managing various risks emerging throughout a project's lifecycle.** Cities can formulate risk assessment frameworks to appropriately classify and monitor risks during the conceptualisation, procurement, development, and operations stages. This will require a forward-looking, life-cycle-oriented risk assessment that generates predictive insights regarding the root causes of risks expected in the later stages of the project and incorporating risk management strategies into the early-stage planning.

Principle 5: Augmenting technical and institutional capacities of city administrations to address the present and future needs

While urban administrations are often at the forefront of project implementation, expertise varies significantly, and some administrations will need additional financial and technical capacity to deliver the intended project outcomes.

- 5.1 Modern city administration requires technical and financial capacity building.** Given the myriad considerations at the city level, especially around developing bankable projects, accessing financial markets, and raising investments, technical and financial capacity building is a *sine qua non* for sub-national governments. This is especially relevant for investment-heavy urban sectors, such as energy, transport, and solid waste management. Additionally, both public and private infrastructure operators also need to be brought under the capacity building mandate since their expertise is directly responsible for outcome quality.
- 5.2 Enhanced collaborations with multilateral development banks, national investment and development banks,**



international organisations, academia, industry, city networks, city councils and civic bodies are required to address capacity building needs of city administrations. This will enable all levels of governments to cross-learn and access the existing knowledge pool of committee recommendations, policy advisories and financial market guidelines. National investment and development banks should also be leveraged as they play a crucial role in transferring know-how from multilateral development banks and international organisations to local authorities. City-to-city exchanges (e.g Sister City concepts) and further international cooperation including at the multilateral level should also be encouraged to benefit from mutual exchange of ideas. Sharing of successful experiences and development trends among cities in developing and developed countries, peer nations or international organisations or international institutions, especially on digital intelligence and technology should be encouraged. Access to relevant data on infrastructure and associated public services should be made more widely available.

5.3 Embrace digital technologies and promote digital transformation of urban infrastructure. Cities should foster digital connectivity, ensure equitable access to digital infrastructure and services, and adopt tech interventions in infrastructure. Such interventions may be encouraged through public policies and incentivising private adoption. As cities become increasingly digitised, e-government initiatives will aid in smoothening access to public administrative services, institutionalising transparency, timely grievance redressal and strengthening monitoring network of public utilities, thus enabling greater citizen engagement and equitable access to urban services.

Way Forward

G20 envisions Cities of Tomorrow that are socially inclusive, environmentally responsible, and economically sustainable. To achieve this, India proposes that G20 focuses on (i) robust project preparation for urban Infrastructure (ii) making varied financing solutions available and accessible for cities (iii) efficiency in use of financial resources and raising private investment in urban development (iv) data-backed project monitoring (v) financial capacity building of city governments (vi) creative redevelopment through urban planning.

Throughout this year, we will work with member countries, international organisations, and relevant stakeholders to advance these principles. We will also work with incoming presidencies to develop the principles and take forward actionable aspects under the G20 Finance Track. The G20 troika mechanism shall maintain the momentum of efforts to finance Cities of Tomorrow that are inclusive, resilient, and sustainable.



Creative Redevelopment in Cities of Tomorrow

Challenges in the urban landscape

- Rapidly increasing urban population – global urban population expected to expand from existing 55% to over 68⁷% by 2050
- Finite resources in the face of growing urban demand
- Limited capacity of national and subnational governments, particularly for effective land management, urban planning, project preparation, financial management and urban financing
- Unregulated urban sprawl and fragmented land ownership
- Increasing challenges around inclusivity and inequality
- Large parcels of land locked up in underutilized and decaying urban areas

What is creative redevelopment



‘Creative redevelopment’ is a concept that aims to revitalize city development by replacing archaic physical, economic, or functional structure(s) with innovative approaches. As a concept this has been borrowed from the principle of ‘creative destruction’, which postulates that when a structure or a group of structure has outlived its usefulness in terms of functional arrangement, it needs to be reinvented with new changes in policy, technology design or approach that would act as key catalysts for economic growth.



Cities today, sit on a goldmine of land and resources. However, there are parcels of underutilized land and locked up decaying urban areas that weaken a city’s image, liveability, and productivity. These land parcels in cities offer a great opportunity to start a chain of developmental activities that can be explored through ‘creative redevelopment’.

Creative redevelopment refers to a policy and planning approach that is based on continual process of urban regeneration through use of innovative mechanisms, which enables reorganization of land in terms of its utilization and revenue generation potential. It would lead to improved efficiency in land management within existing cities, while also enhancing the region's attractiveness vis-à-vis economic development.

Creative redevelopment can involve repurposing a building for a new use, like converting an old factory into a mixed-use development with residential, commercial, and cultural spaces, or transforming a vacant land into a community garden or park. This can be achieved through a blend of physical planning and policy interventions such as refurbishment of existing infrastructure systems with enhanced features or technology, and adaptive reuse of existing structures to fit current market use.

The common steps under creative redevelopment would include adaptive planning through citizen consultation, land readjustment (revocation of occupancy rights), displacement and relocation of existing development, site improvement with support

⁷ UN DESA



infrastructure, disposition of improved land and new construction/ development.

Creative redevelopment, if implemented appropriately, can lead to facilitation of

amenities to enhance citizen experience, which can aid in employment generation and boost local economy.

What can the policymakers do at different levels of government?

Creative redevelopment includes many facets, from renewing the urban landscape and restructuring its design, to regenerating civilization, and making an overall concept of local identity.

Policymakers can also leverage the potential of planning, regulatory and fiscal tools to enable standard quality of urban life, such as:

- Unlocking potential for urban development of land using innovative planning instruments such as Transit-Oriented Development (TOD) along with Transferable Development Rights (TDR) and FAR incentives
- Capitalizing Land Value Capture (LVC) as a policy instrument to capture a portion of the increase in land value resulting from public investments or planning decisions
- Utilizing land to encourage investments, such as planning industrial corridors and business districts
- Leveraging private sector resources and expertise through public private partnerships
- Establishing policy frameworks to encourage mixed-use development, urban renewal, retrofitting and adaptive re-use
- Removing regulatory barriers through periodic review and updating of regulations such as restrictive zoning laws or cumbersome permitting processes

- Formulating statutory frameworks for urban land titling and record management
- Building a conducive legal environment for landowner, tenants, and contract rights to be recognized and enforced
- Harmonizing environmental, social, and cultural interaction of urban spaces
- Ensuring that projects reflect community needs by meaningfully engaging and involving citizens in the planning and implementation of creative redevelopment projects, and ongoing urban management.
- Promoting sustainable design practices such as promoting energy efficiency, green roofs, and urban agriculture.

Conclusion

The creative redevelopment aims to breathe new life into urban spaces, creating economic opportunities and enhancing the quality of life for residents. This can be particularly important in urban areas where vacant lots, abandoned buildings, and neglected neighbourhoods can contribute to economic stagnation. By creatively reimagining and repurposing these spaces, cities and communities can foster innovation, creativity, and a sense of community pride.