



CityAdapt Policy Brief #1 – Macro Focus Delivering on the Promise of Sustainable Jamaican Cities

The Case for Urban EbA as a Policy Priority for Achieving National
Adaptation & Sustainability Goals



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Abstract: Jamaica’s adaptation and sustainability goals are mapped across a wide range of urban planning, environmental management and climate change laws, policies and plans. These range from the constitutional commitment to the right to a healthy environment, to the development orders, adaptation plans and policy frameworks that guide municipal and sectoral decision-making on a daily basis. Together, they outline a legal and regulatory mechanism that seeks to improve the country’s resilience to the multi-layered effects of climate change. Globally, Urban EbA is being recognized as a method of achieving similar goals in an urban setting that is more cost-effective and sustainable than traditional man-made solutions. This Policy Brief outlines a policy and regulatory approach that can leverage the advantages of Urban EbA in meeting Jamaica’s macro goals and building more sustainable cities.

1. A Vision for Jamaica’s Cities

Jamaica’s Climate Projections

Like many small island developing states (SIDs), Jamaica’s risks from climate change can be tracked in a number of indicators that highlight the impact of such change on the weather, on the scope and impact of natural hazards and on environmental conditions. The 2019 edition of the State of the Jamaican Climate projects:

- Mean temperature increases (in °C) of 0.65°– 0.84°C by the 2030s; 0.86-1.10 °C by the 2050s, 0.82°- 3.09°C for 2081- 2100, above a 1986-2005 baseline.
- The 2030s will be up to 4% drier, the 2050s up to 9% drier, while by the end of the century the country as a whole may be up to 21% drier, relative to a 1986-2005 baseline.
- Mean sea level rise of 0.58 - 0.87m by the end of the century
- Median change in the proportion of very intense storms (categories 4 and 5) of +13%.

This means more severe droughts, floods and hydrometeorological disaster events, and will have an impact on the loss of both land and coastal biodiversity¹. These risks will increasingly result in economic and social losses, and other effects on human life and well-being.

The Legal and Policy Response: A Vision of Healthy, Sustainable Urban Ecosystems

When Jamaica’s Constitution was updated in 2011 to incorporate a Charter of Fundamental Rights and Freedoms, ***the right to a healthy environment*** was included among the fundamental rights guaranteed to every citizen. The network of laws, policies and plans that seek to preserve various aspects of environmental sustainability and community resilience may be seen as contributing towards fulfilling this fundamental right.

At the policy level, Vision 2030 articulates both regulatory and programmatic strategies for fulfilling the right to a health environment. **Vision 2030** is the country’s National Development Plan, against which all other

¹ Climate Change Policy Framework for Jamaica, 2021

plans, policies and programmes are measured. It outlines a planning framework, including targets indicators, under four broad development goals that together cover all social, economic and fiscal plans and programmes. The fourth of these goals is ***'Jamaica has a healthy natural environment'***, the outcomes under which are:

- Sustainable Management and Use of Environmental and Natural Resources
- Hazard Risk Reduction and Adaptation to Climate Change
- Sustainable Urban and Rural Development

Vision 2030 interweaves cross-cutting issues of hazard mitigation, environmental resource management and sustainable development, all of which are fundamental to sound adaptation and planning policy. Additionally, Vision 2030 calls for an integrated approach to addressing adaptation in social and economic plans and programmes. It includes such national strategies as:

- Integrate environmental issues in economic and social decision-making policies and processes
- Develop measures to adapt to climate change
- Contribute to the effort to reduce the global rate of climate change

More specifically, Vision 2030 forefronts the imperative of planning reform by setting the following national strategies (among others):

- Create a comprehensive and efficient planning system
- Create an appropriate framework for sustainability planning
- Create sustainable urban centres, including urban renewal and upgrading.

These are further broken down into more actionable and measurable sector strategies that address issues such as integrating sustainability principles into land use planning and design, establishing a cohesive spatial planning framework or national physical plan and creating green urban centres with ecological friendly buildings, construction and transport systems.

2. Jamaica's Climate Commitments

Jamaica is a signatory to the two main international conventions that govern climate change adaptation: Jamaica ratified the United Nations Framework Convention on Climate Change in 1995 and ratified the Paris Agreement in 2017. Under these agreements, the country has a responsibility to make voluntary commitments to reduce carbon emissions and take other adaptation and mitigation actions. This complements other international environmental and disaster risk related treaty obligations, including those under the Convention on Biological Diversity (ratified in 1993), the Sendai Framework for Disaster Risk Reduction (2015-2030). They are complementary to the UN New Urban Agenda (2016), which adopts an integrative approach to planning, managing and maintaining sustainable urban development and outlines a Call for Action towards sustainable and inclusive urbanization. Underlying these complementary, but distinct international policy and planning instruments are the Sustainable Development Goals, which identify common goals, targets and indicators for national and global development, and include goals that are synchronous with Urban EbA.

At the regional level, Jamaican national policy is influenced and informed by the policies and programmes developed at the regional level. These include the outputs or guidelines issued by CARICOM instituted agencies and programmes, including:

- The Caribbean Community Climate Change Centre (CCCCC) is a regional organisation commissioned to develop models and practices for Caribbean-specific climate change adaptation and mitigation actions and conducts research on the projected impact of climate change on the region.
- The Caribbean Regional Climate Centre provides meteorological and forecasting services, including research and development on drought and precipitation and climate data products and services.

In 2020, Jamaica updated **its Nationally Determined Contributions (NDC)** under the Paris Agreement, committing to an unconditional 25.4% reduction in metric tons of carbon dioxide equivalent (MTCO_{2e}) emissions by 2030, relative to business-as-usual (BAU) scenarios. This target increases to 28.5% with international support. This is up significantly from the 7% and 10% commitments made in the previous iteration of the NDC. The country has identified land use change and forest policy as significant contributors towards these more robust and ambitious NDC targets. This reflects an emerging acknowledgement of the importance of ecosystem usage in strengthening community and national resilience and responding effectively to climate change.

3. Urban EbA: a Comprehensive and Cost-Effective Approach to Building Sustainable Cities

Ecosystem-based Adaptation (EbA) is defined by the Secretariat of the Convention on Biological Diversity as using biodiversity and ecosystem services in an overall adaptation strategy. It includes the sustainable management, conservation, and restoration of ecosystems to provide services that help people adapt to the adverse effects of climate change².

EbA falls under the wider umbrella of **nature-based solutions (Nbs)**, which have been defined by the International Union for Conservation of Nature (IUCN) as actions to protect, sustainably manage and restore natural or modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity effects.

Urban EbA can therefore be described as a holistic approach to adaptation in urban and peri-urban areas, where the ecosystem, its assets and services are integral to how cities, including the most vulnerable communities within them, build their resilience to the effects of climate change. The Urban EbA approach is designed to address environmental, social and economic issues in an integrated way. It involves using inclusive and participatory methodologies to empower vulnerable urban communities to address the multi-layered impact of climate change, while sustaining ecosystem assets and the mutual benefits they provide to human well-being and biodiversity. The resulting strategies can address a number of adaptation and sustainable development targets, including improving the living conditions and aesthetic appeal of a city, reducing the cost of energy, increasing carbon sequestration, improving the health, wellness and livelihoods of its residents and their resilience to extreme weather events, while having a net positive impact on biodiversity.

EbA solutions are estimated to save governments between US\$3,000.00 and US\$18,000.00 per hectare per annum in carbon storage, stormwater reduction and reduced pollution (UNEP, 2021 p.11). Solutions can include a combination of:

- **Green Infrastructure**, which refers to utilizing natural and semi-natural ecosystems to mitigate the impact of climate change or enhance the protective role of nature, for example through the increased or enhanced use of vegetation.
- **Blue Infrastructure**, which places the focus on natural water systems, and enhancing the ecosystem services provided by healthy lakes, rivers, ponds, oceans and their related network of drainage systems.
- **Hybrid Solutions**, which integrate both natural (Green and/or Blue infrastructure) and man-made approaches, or **Grey Infrastructure**. Grey infrastructure includes using building systems and physically engineered solutions to mitigate or adapt to the effects of climate change. They can include drainage systems, building technologies, seawalls, levees and similar structures, and represent a

² Adapted from IUCN Ecosystem Management information portal, accessible at <https://www.iucn.org/theme/ecosystem-management/our-work/ecosystem-based-approaches-climate-change-adaptation>

more traditional – and more costly – approach to adapting cities to the realities of climate change. Hybrid solutions integrate the use of ecosystem assets or services with manmade structures, often with more cost-effective and sustainable results than grey infrastructure can deliver on its own (UNEP 2021).

4. Global Standards for Urban EbA Policy

The specific challenges and opportunities presented by urban spaces warrants the extrapolation of unique and specialized principles addressing urban EbA (Kabisch et al, 2022). In this regard, recommendations are emerging from Urban EbA programmes and research activities around the globe on how to strengthen the effectiveness, sustainability, and replicability of Urban EbA solutions. Some policy-level best practices that have emerged include the following:

- Embed the use of green infrastructure expressly and systematically in urban planning policies and guidelines, as an essential step towards making a long-term transition to sustainable and resilient cities (Zwierzchowska et al, 2019).
- Utilize an interdisciplinary approach and partnership between urban planners and ecologists, and both social and environmental scientists to articulate and include the benefits in urban EbA programmes to both human systems and communities as well as biodiversity.
- Integrate private sector partnership through incentives, loans or other schemes, and ensuring that there is a defined role for greening institutional spaces, such as schools or community centres (UNEP, 2021).
- Document and promote the range of ecosystem benefits and services that are provided by green (or blue) infrastructure to urban communities and ensure that the social, cultural, economic or health benefits that urban communities may derive from certain EbA initiatives are adequately captured. In this way, the expansion or enhancement of those services and benefits can be viewed as a positive outcome of the protection or expansion of those ecosystems (Balzan et al, 2021).
- Introducing equity in the distribution of ecosystem benefits is essential for ensuring that the most vulnerable and disadvantaged groups within society benefit from green infrastructure. Urban spaces often include sub-populations with diverse needs and therefore the governance framework for Urban EbA programmes should be inclusive and participatory.

Additionally, UNEP has identified core recommended components of nature-sensitive urban design strategies (UNEP, 2021). The graphic below summarises these recommendations.



5. Jamaica's Legal and Policy Framework for Sustainable Cities

a. Key Laws and Policies

Jamaica's regulatory framework makes no specific mention of urban EbA. However, there are laws and policies that support approaches to urban planning, environmental resources or ecosystem asset management and climate change, which, when read together, create a starting point for using Urban EbA as a methodology for developing sustainable and resilient cities.

Under urban planning laws and policies, existing design and building approval processes involve an integrated approach through which municipal authorities, environmental resource management, urban planning, water resource management and other technical services engage are all integrated. These include new and emerging building codes and urban renewal policies that are beginning to prioritise a green approach to urban planning. Environmental and natural resource management laws outline the parameters to be used by authorities in ensuring that infrastructure and housing developments, as well as factories and major industries, are implemented in a manner that protects natural ecosystems. This is accomplished in part through protection measures applied to certain areas (e.g. peri-urban forests or watershed areas) as well as to certain species. More recently, climate change and disaster risk reduction plans and policies that address resilience and adaptation in a more systemic and comprehensive manner.

Among the range of laws and policies that could influence Urban EbA, Jamaica's **Climate Change Policy Framework (CCPF)** is the primary policy document outlining adaptation-related goals, strategies and targets. The CCPF was first approved in 2015 and subsequently updated in 2021 to reflect changes in national capacity and commitment to implement adaptation and mitigation actions. It is framed around the three core goals outlined below:

- Strengthening of Jamaica's adaptive capacity and resilience to reduce its vulnerability to climate change.
- Pursuit of low carbon development and enhancement of access to and mobilization of climate finance.
- Promotion of public education and awareness raising, research and technology transfer towards ambitious climate action.

The updated CCPF takes into consideration Jamaica's obligations under the Paris Agreement, which the country ratified in 2017.

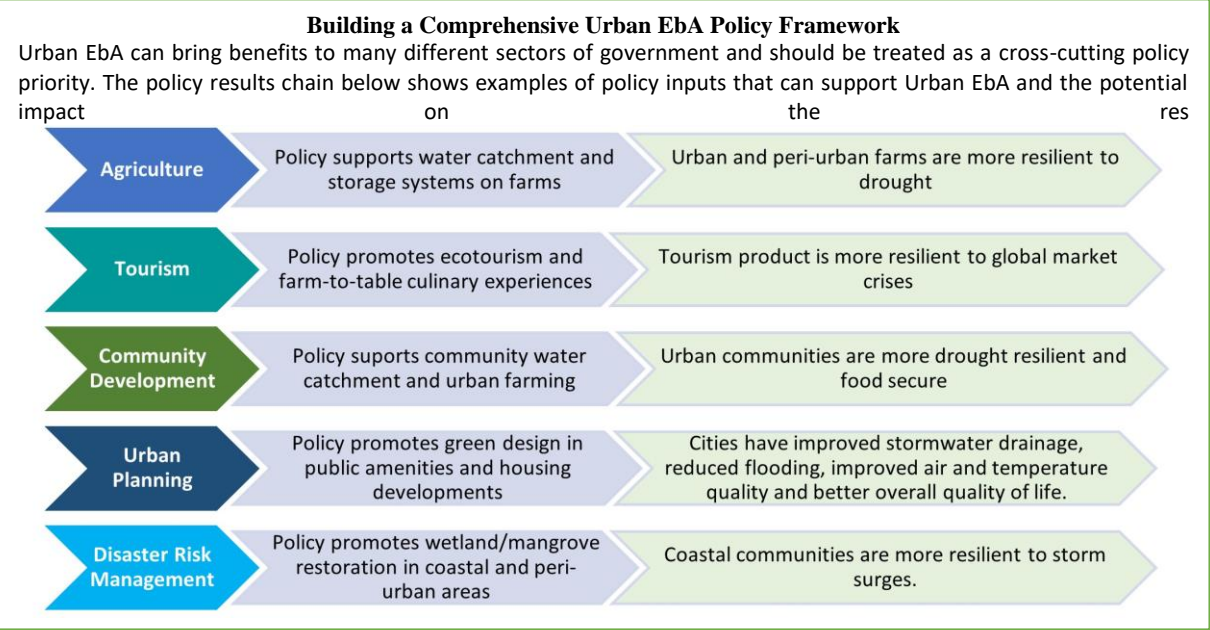
One of the key adaptation strategies identified in the CCPF reads,

Develop a framework for mainstreaming climate change into ecosystem protection, spatial planning and budget processes (CCPF, 2019, 60).

This is linked to further policy and planning reform, through the introduction of key policies on National Land Use, Agricultural Land Use, Spatial Planning and Disaster and Hazard Risk Management, as well as a comprehensive National Environment Policy and updated Development Orders.

The **Development Order** is a tool used by municipal and sectoral authorities as well as developers, building professionals and communities in determining appropriate plans for developing urban areas. Any development to be constructed within the geographic region covered by a given Development Order would first have to be approved by the relevant local authority as being consistent with the scope and regulatory content of the applicable Development Order. The Development Order may be used to regulate the process of the local authority's decision-making, for example prescribing the other authorities or entities that must be consulted before the local authority grants final approval. Through these mechanisms, the state is able to direct and control the character of towns and communities as they develop over time.

The **Kingston and St. Andrew Municipal (Provisional) Development Order** was last updated in 2017. It contains a wide scope of restrictions regarding the erection of permanent or temporary structures within these areas, including limitations for the purposes of aesthetics, zoning, safety and security (e.g. placement and use of security cameras or height of buildings proximate to aerodromes) and environmental protection (e.g. minimizing risks to ground water contamination). The Order makes general reference to the impact of climate change on the parishes of Kingston and St. Andrew and requires all development activities to address climate change adaptation considerations. The requirements of ecosystem management are not highlighted in a way that may lead to the prioritization of EbA. However, the Order includes a number of strategies that can be economically and viably addressed through EbA systems, including natural stormwater management, optimized access to open, green and recreational areas and the preservation of watershed areas, protected species habitats, reefs, cays and wetlands.



b. Law and Policy Gaps and Challenges

These legal and policy commitments set the policy framework for urban EbA-friendly policies and strategies. However, while Jamaica's adaptation plans could support urban EbA and other forms of NbS, these terms are not specifically mentioned, defined or mapped at the policy level. There are other gaps and challenges in the content and scope of laws and policies that can limit their effectiveness in achieving the ideal of sustainable and resilient cities.

- Climate change adaptation concepts are relatively new to the policy and legal landscape. With most of our urban planning and environmental laws exceeding three or more decades in age, they lack the language and comprehensive approach to adaptation that is required for effective adaptivity to the wide range of climate change effects.
- Jamaica has a collection of conservation, environmental protection and natural resource management laws and policies and plans. Many of the laws in this area are 30 or more years old, reflecting an era of law-making in which the linkages between environmental conservation and climate change adaptation were not explicitly expressed. Additionally, their punitive measures and fines have become outdated and ineffective.
- Newer plans and policies are more comprehensive in their consideration of climate change adaptation issues, however they often lack implementation authority. Notably, the implementation framework for New Building Codes, Development Orders etc. not yet fully operationalized. This absence of or delay in developing enforcement mechanisms can have the unwanted effect of making the CCA requirements that they include appear optional.
- There is no single entity that assumes responsibility for integrating CCA or EbA into all new urban development projects. CCA is driven at a high-level and is dependent on decision-making bodies and technical teams making adaptation a priority. This can leave gaps and inconsistencies in the implementation of jointly held commitments, such as those expressed in the Kingston and St. Andrew Municipal Development Order.
- The Development Order provides the most ambitious regulatory document that addresses adaptation, conservation and ecological biodiversity goals and does so in tandem with enforceable mechanisms that can influence how planning and building permits are issued and the conditions imposed on such permits. However, the length and complexity of these documents are a barrier to the level of public education and community ownership that would ensure their comprehensive, holistic and consistent implementation.
- Land use planning is driven at the sectoral level and there is no overarching vision of an urban ecosystem to guide practical decision-making.
- Decision-makers have limited access to the data required to guide their adaptation priorities, including limited data on the cost implications or long-term benefits of green design and limited capacity to apply a gender lens, address concerns of vulnerable groups, or integrate community perspectives in planning or decision-making.
- Once a development has been completed, there are limited regulatory options for binding private landowners to taking actions that are consistently supportive of EbA or the protection of biodiversity.
- Not only are there inadequate sanctions or enforcement mechanisms, but there are not enough legally entrenched incentives to drive action.
- These limitations are exacerbated by the absence of a CCA law, which limits the enforceability of CCA commitments made by both public and private sector stakeholders.

6. Recommendations for Strengthening Jamaica’s Laws and Policies to Mainstream Urban EbA and Achieve the Goal of Sustainable Cities

Urban EbA can provide a relatively low-cost and community-inclusive approach to attaining a range of high-level policy goals, including:

- increasing carbon sequestration,
- improving resilience to floods and major weather events,
- reducing energy costs
- increasing access to sustainable water resources among urban communities,
- providing opportunities for the most vulnerable communities to improve livelihoods and food security.
- enhancing biodiversity
- improving the health and wellness of urban community members.

In order to achieve these aims, Urban EbA should be identified as a policy priority and a preferred approach to addressing climate change adaptation considerations in a manner that is cost-effective and sustainable.

Recommendations for Law and Policy Change:

The statements below are examples of broad policy commitments that can be made to support the use of EbA solutions, wherever feasible, as the preferred approach to adaptation. The list on the right are examples of the some of the policies and plans currently slated for development that can be amended to include this language.

“EbA solutions are a cost-effective means of adapting to the effects of climate change. They involve sustainably managing, conserving and restoring ecosystems to provide services that help people to adapt to the adverse effects of climate change.”

“Wherever feasible, planning and development strategies should prioritise the use of nature and ecosystem services to meet adaptation goals. Adaptation solutions that include the use of nature - including blue or green infrastructure - and that have a positive effect on biodiversity should be prioritized over grey infrastructure. ”

- Climate Change Policy Framework
- National Adaptation Plan
- KSA and other Development Orders
- Local Sustainable Development Plans
- Urban Renewal Policy
- Town and Country Planning Act

In addition, the following specific changes to Jamaica’s laws and policies are recommended:

- a. Integrate CCA requirements in the proposed **Climate Change Bill** to strengthen their enforceability.
- b. Integrate Urban EbA provisions in the **Local Sustainable Development Plans**, including reference to the use of EbA as a preferred modality for addressing climate change, wherever feasible.
- c. Add provisions to the **Local Improvement (Amenities) Act** requiring all new or newly refurbished public amenities to integrate EbA strategies, such as permeable pavements, and promote a net-gain to biodiversity.
- d. Promulgate **Building Regulations** to aid in the enforceability of the National Building Code and adapt the international **Building Code for Green Design**, integrating EbA-related engineering codes, guidelines and requirements where feasible. The Building Codes and regulations should mandate requirements for housing or commercial developments to integrate ecosystem services, preservation of biodiversity and climate change adaptation in architectural and engineering plans and designs,

where feasible, and provide technical guidelines for engineers and architects seeking to implement these requirements.

- e. Strengthen and expand the use of renewable permits for subdivisions and privately owned properties, to facilitate a continuous approach to compliance under the **Natural Resource Conservation Authority Act**. This would require private landowners to renew their environmental permits periodically and could be used to sustain green infrastructure and protected elements in landscape and building design. Additionally, mainstream the use of other ongoing compliance mechanisms for private landowners, including restrictive covenants, Tree Preservation Orders and endorsements on land titles, to create statutory mandates for private landowners.
- f. Mandate the development and use of Forestry Department's **Urban and Peri-Urban Forestation Guidelines** in the development planning and approvals process. These can be used to protect urban habitats, for example mandating the use of certain native (not invasive) species in urban landscaping projects.
- g. **Increase statutory penalties** for misuse or destruction of forest resources.
- h. In developing the **National Adaptation Plan**, prioritize the analysis of the impact on ecosystem assets and biodiversity in all CCA plans and programmes.
- i. Update and extend the **National Strategy and Action Plan on Biological Diversity**, with specific references to the ecosystem services and social, ecological, financial or other benefits to be derived from protecting biodiversity.
- j. Integrate EbA strategies in **Disaster Risk Management Policies and Plans**, including the restoration of mangroves and reefs to reduce damage caused by storm surges, supporting rainwater catchment as a preferred strategy for managing drought risk, and promoting forestation and protection of rivers, riverbanks and gullies to provide sustainable protection from flooding.
- k. Strengthen legislative requirements for participation, inclusivity and gender responsiveness in the development and implementation of urban design policies, guidelines and plans.

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