

Session 3: Urban EbA: approaches and opportunities

Case study (Urban EBA project - Jamaica).

CARIBBEAN REGIONAL TRAINING WORKSHOP ON INNOVATION
AND IMPLEMENTATION OF NATIONAL ADAPTATION PLANS,

24-26 APRIL 2019



What is adaptation?

Adaptation refers to adjustments in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects or impacts. It refers to changes in processes, practices, and structures to moderate potential damages or to benefit from opportunities associated with climate change.

In simple terms, countries and communities need to develop adaptation solutions and implement action to respond to the impacts of climate change that are already happening, as well as prepare for future impacts.

Source-UNFCCC



What is Ecosystem-based Adaptation (EbA)?

Healthy, well-functioning ecosystems enhance our resilience to the adverse impacts of climate change.

Coastal habitats provide natural flood defenses, well-protected lakes retain water sources during droughts, and healthy forests reduce the risk of devastating wildfires.

Ecosystem-based adaptation (EbA) is an approach that uses these biodiversity and ecosystem services as part of a holistic adaptation strategy. Often through win-win outcomes, EbA protects communities from the effects of climate change while simultaneously providing a variety of ecological benefits so crucial for human well-being, such as clean water and food.

What is Ecosystem-based Adaptation (EbA)?

Though primarily an *adaptation* approach, EbA can also contribute to climate change *mitigation* by reducing the emissions that transpire from habitat loss and ecosystem despoliation.

The UN Environment's EbA projects span all types of ecosystems, from high mountaintops to the low-lying coasts. The work is delivered through three overarching components:

Assessments and knowledge support

Capacity building and demonstration

Integration of EbA options into national development and adaptation plans



WHY SHOULD CITIES TAKE THE LEAD IN ECOSYSTEM BASED ADAPTATION?

Approximately 70% of the world's population is expected to be urban by 2050.

Urban populations are expected to nearly double, increasing from 2.84 to 4.9 billion between 2000 and 2030.

The total urban area is expected to triple between 2000 and 2030 requiring substantial land, building materials, natural resources and energy with heavy negative knock on effects on biodiversity and ecosystem services globally.

Between 2000 and 2030, it is estimated that the global energy demand may increase up to 80%.

Global water demand is expected to increase by 55% between 2000 and 2050.

60 -70 % of global greenhouse gas emissions come from cities.

Data sourced from Cities and Biodiversity Outlook:
<http://cbobook.org/index.php?r=1&width=1366>

CITY OF KINGSTON

Kingston is the capital and largest city of Jamaica, located on the south-eastern coast of the island. It faces a natural harbour protected by the Palisadoes, a long sand spit which connects the town of Port Royal and the Norman Manley International Airport to the rest of the island. In the Americas, Kingston is the largest predominantly English-speaking city south of the United States.

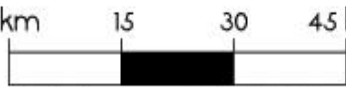
The local government bodies of the parishes of Kingston and St. Andrew were amalgamated by the Kingston and St. Andrew Corporation Act of 1923, to form the Kingston and St. Andrew Corporation (KSAC). Greater Kingston, or the "Corporate Area" refers to those areas under the KSAC;

Kingston Parish had a population of 96,052, and St. Andrew Parish had a population of 555,828 in 2001.

The city proper is bounded by Six Miles to the west, Stony Hill to the north, Papine to the northeast and Harbour View to the east, communities in urban and suburban Saint Andrew.

JAMAICA

0 km 15 30 45 km



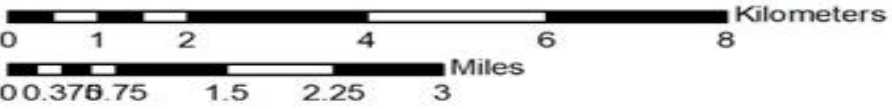
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CARIBBEAN SEA

Jamaica Channel



CARIBBEAN SEA



CLIMATE DATA FOR KINGSTON (Mean/Average)

Climate data for Kingston (St. George's College, Jamaica)													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Average high °C (°F)	30.3 (86.5)	30.2 (86.4)	30.7 (87.3)	31.1 (88.0)	31.6 (88.9)	32.1 (89.8)	32.8 (91.0)	32.7 (90.9)	32.1 (89.8)	31.7 (89.1)	31.2 (88.2)	30.6 (87.1)	31.4 (88.5)
Average low °C (°F)	21.1 (70.0)	21.0 (69.8)	21.6 (70.9)	22.6 (72.7)	23.6 (74.5)	24.2 (75.6)	24.3 (75.7)	24.2 (75.6)	24.0 (75.2)	23.4 (74.1)	22.8 (73.0)	21.8 (71.2)	22.9 (73.2)
Average precipitation mm (inches)	18 (0.7)	19 (0.7)	20 (0.8)	39 (1.5)	100 (3.9)	74 (2.9)	42 (1.7)	98 (3.9)	114 (4.5)	177 (7.0)	65 (2.6)	47 (1.9)	813 (32.0)
Average precipitation days	5	5	5	7	8	7	6	9	11	14	10	6	93
Average relative humidity (%) (at {{{time day}}})	64	64	64	66	68	67	64	66	71	73	69	65	67
Mean monthly sunshine hours	257.3	240.1	260.4	258.0	254.2	237.0	260.4	257.3	213.0	223.2	222.0	235.6	2,918.5
Mean daily sunshine hours	8.3	8.5	8.4	8.6	8.2	7.9	8.4	8.3	7.1	7.2	7.4	7.6	8.0
Source: Meteorological Service (Jamaica) ^[18]													

CLIMATE DATA FOR KINGSTON (Extremes)

Climate data for Kingston, Jamaica (Norman Manley International Airport) extremes 1852–present													
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Record high °C (°F)	35.1 (95.2)	34.8 (94.6)	35.1 (95.2)	35.7 (96.3)	35.0 (95.0)	36.9 (98.4)	37.1 (98.8)	36.1 (97.0)	35.8 (96.4)	35.4 (95.7)	37.1 (98.8)	35.0 (95.0)	37.1 (98.8)
Average high °C (°F)	29.8 (85.6)	29.6 (85.3)	29.8 (85.6)	30.3 (86.5)	30.8 (87.4)	31.2 (88.2)	31.7 (89.1)	31.9 (89.4)	31.7 (89.1)	31.3 (88.3)	31.1 (88.0)	30.5 (86.9)	30.8 (87.4)
Average low °C (°F)	22.3 (72.1)	22.3 (72.1)	22.9 (73.2)	22.6 (72.7)	24.7 (76.5)	25.3 (77.5)	25.6 (78.1)	25.3 (77.5)	25.3 (77.5)	24.8 (76.6)	24.1 (75.4)	23.1 (73.6)	24.0 (75.2)
Record low °C (°F)	18.5 (65.3)	18.0 (64.4)	18.0 (64.4)	19.2 (66.6)	20.0 (68.0)	21.0 (69.8)	20.6 (69.1)	19.9 (67.8)	20.0 (68.0)	19.0 (66.2)	19.0 (66.2)	18.0 (64.4)	18.0 (64.4)
Average precipitation mm (inches)	18 (0.7)	16 (0.6)	14 (0.6)	27 (1.1)	100 (3.9)	83 (3.3)	40 (1.6)	81 (3.2)	107 (4.2)	167 (6.6)	61 (2.4)	31 (1.2)	745 (29.3)
Average precipitation days	10	8	7	9	11	7	6	6	9	12	11	9	105
Average relative humidity (%) (at {{{time day}}})	81	77	76	78	78	75	75	76	78	78	80	81	78
Mean monthly sunshine hours	226.3	211.9	241.8	228.0	229.4	234.0	266.6	254.2	234.0	232.5	225.0	226.3	2,810
Mean daily sunshine hours	7.3	7.5	7.8	7.6	7.4	7.8	8.6	8.2	7.8	7.5	7.5	7.3	7.7
Source #1: Meteorological Service (Jamaica) ^[18]													
Source #2: Meteo Climat (record highs and lows) ^[20]													

Thanks

Ecosystems are complex!

The interaction of ecosystems with built environment, social systems and climate change even more so.