

FORCES *of* NATURE

Assessment and Economic Valuation
of Coastal Protection Services
Provided by Mangroves in Jamaica

Juliana Castaño-Isaza

jcastanoisaza@worldbank.org



THE UNIVERSITY OF THE WEST INDIES
AT MONA, JAMAICA

Content



Background

**Team
Composition**

Outputs

**Forces of
Nature
Report**

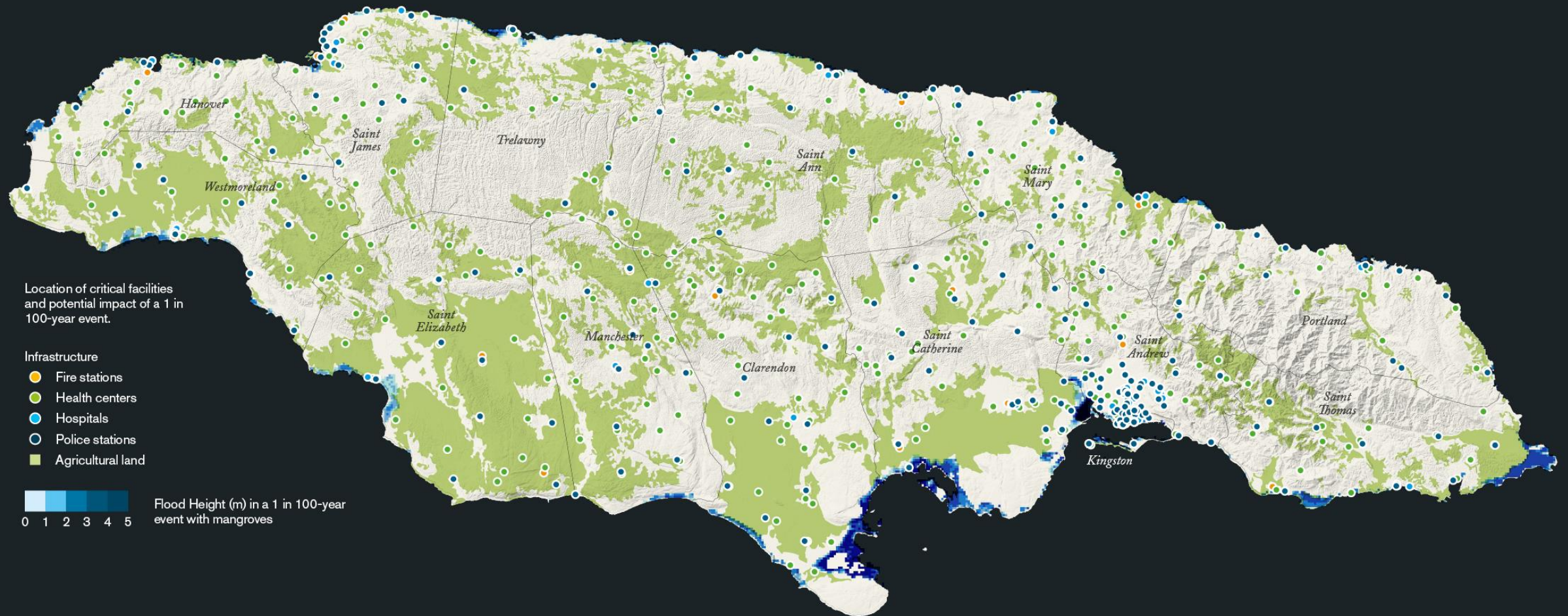
Implications



THE WORLD BANK

Jamaica

Photo: Simone Lee







THE WORLD BANK

DVRP and analytics

Photo: Simone Lee



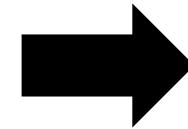
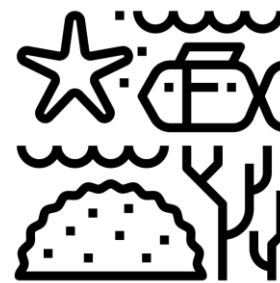
Jamaica Disaster Vulnerability Reduction Project (DVRP) 2016

Component 1: Understanding Risk

- NRIP
- Coastal Risk Atlas*
- Multihazard risk assessments



ACP EU Grant 2017:
"Coastal Management and Beach
Restoration Guidelines"





PROFOR Grant

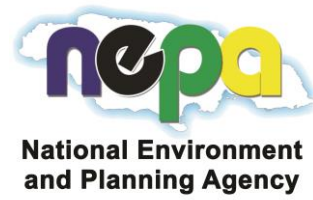
FORCES *of* NATURE

Assessment and Economic Valuation
of Coastal Protection Services
Provided by Mangroves in Jamaica

Objective: To provide and evaluate the ways in which mangrove ecosystems are protecting coastal communities from natural hazards such as storms, coastal inundation and shoreline erosion

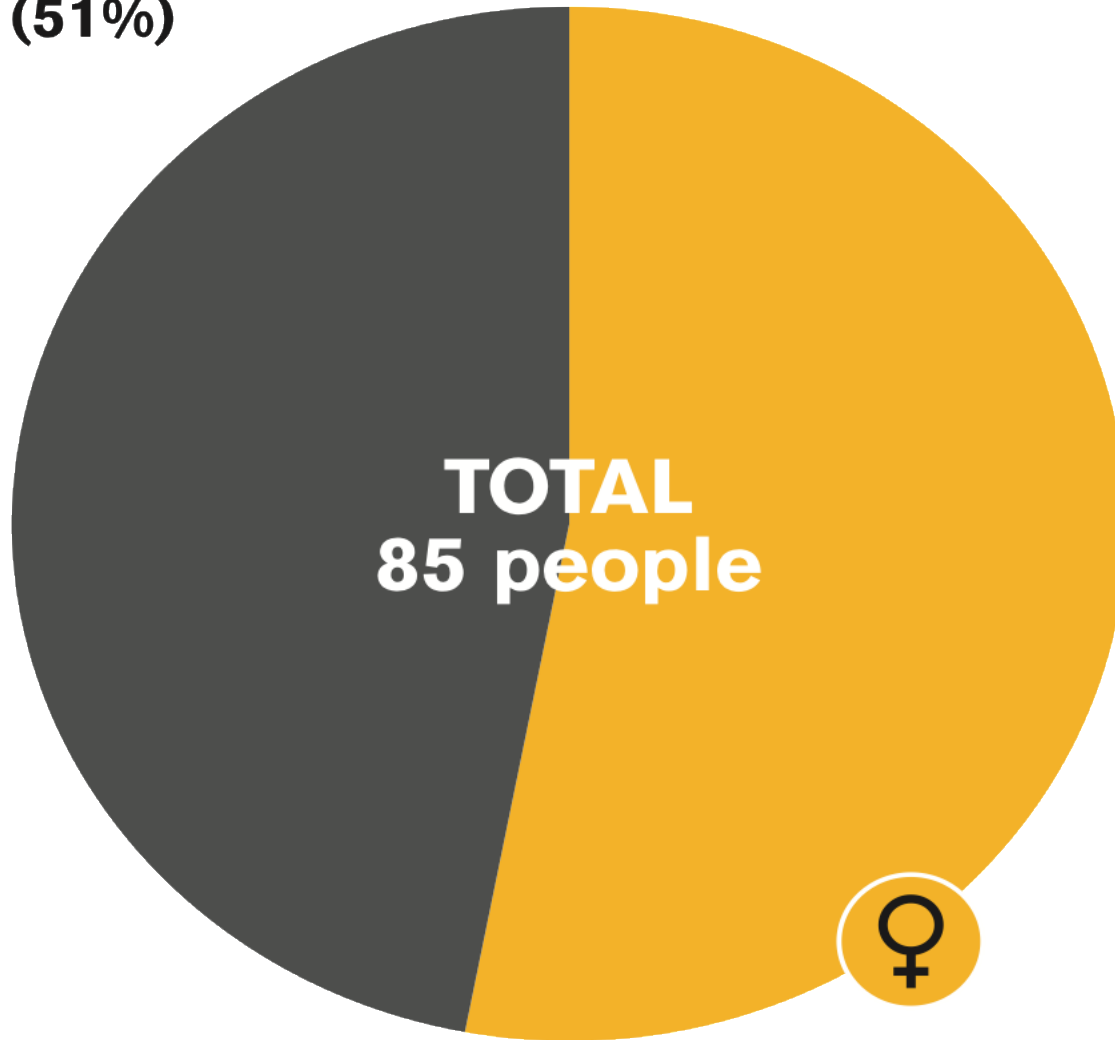


**Team
Composition**



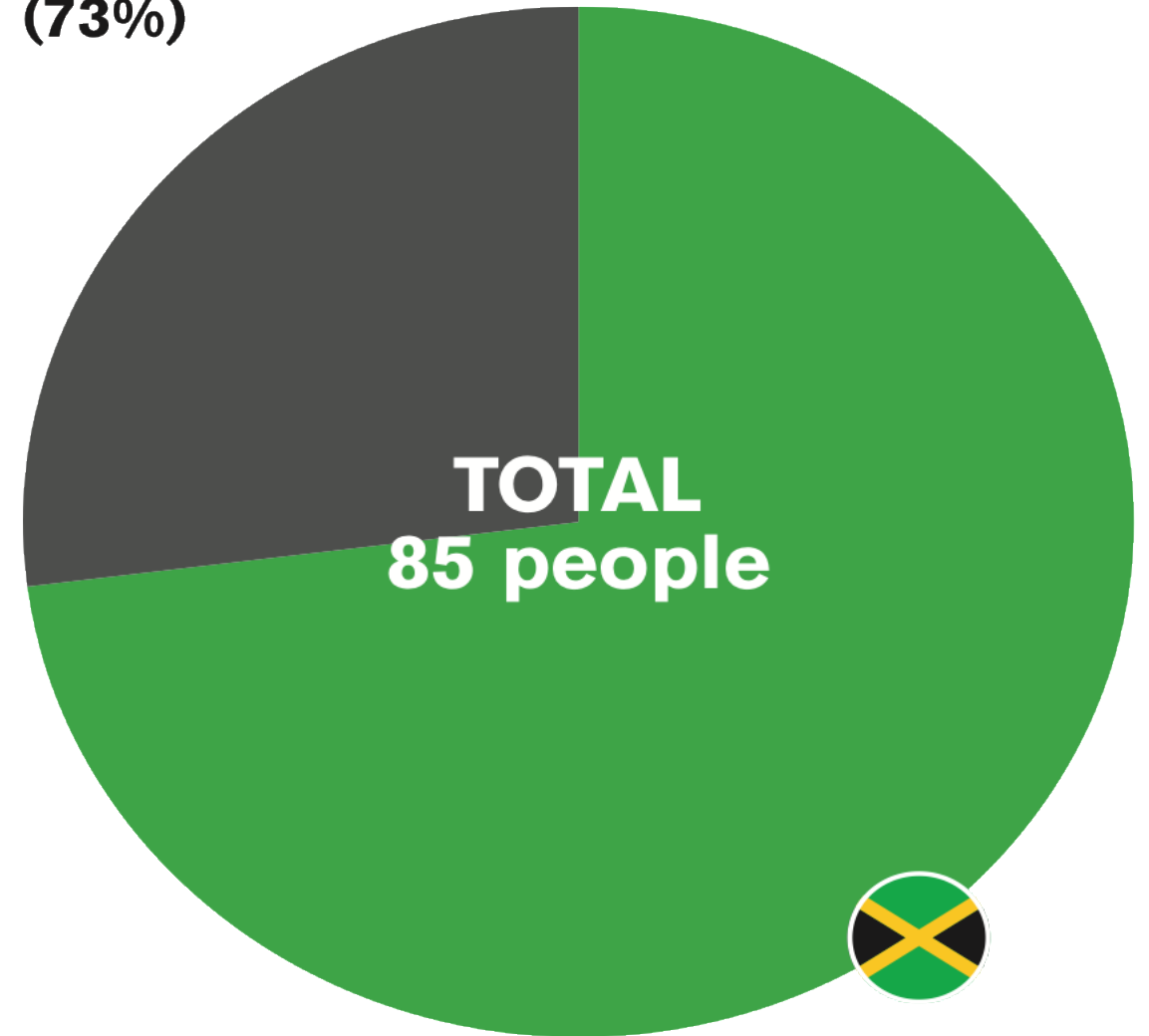
43 females

(51%)



62 Jamaicans

(73%)





Outputs



“The Flood Protection Benefits and Restoration Costs for Mangroves in Jamaica”

was developed by The University of California Santa Cruz (UCSC), the Environmental Hydraulic Institute of Cantabria (IHC), and The Nature Conservancy (TNC).

Lead authors included: Dr. Michael W. Beck (UCSC-TNC), Dr. Siddharth Narayan (UCSC), Dr. Iñigo J. Losada (IHC), Dr. Antonio Espejo Hermosa (IHC), and Dr. Saul Torres Ortega (IHC).



“Local Scale Assessments on Mangrove Ecosystems Status and their Role in Coastal Resilience”, and the “Mangroves Monitoring and Evaluation Manual- Jamaica”

was developed by the University of West Indies MONA Campus (Kingston, Jamaica).

Lead authors included: Dr. Arpita Mandal, Dr. Rose-Ann Smith, Dr. Taneisha Edwards, Dr. Robert Kinlocke, Dr. Simon Mitchell (Department of Geography and Geology); Dr. Mona Webber, Camilo Trench, and Patrice Francis (Centre for Marine Science); and Dr. Adrian Spence (International Centre for Environmental and Nuclear Sciences).



“Valuation of Selected Ecosystem Service Co-Benefits Beyond Coastal Protection”


was developed by Dr. Peter E.T. Edwards.



In addition to these reports, the University of California Santa Cruz (UCSC), the Environmental Hydraulic Institute of Cantabria (IHC), and The Nature Conservancy (TNC) produced the following online tool:



maps.coastalresilience.org/jamaica



MANGROVES

MONITORING AND EVALUATION MANUAL

JAMAICA



<https://maps.coastalresilience.org/jamaica/>





**Forces of
Nature
Report**

FORCES of NATURE

Assessment and Economic Valuation
of Coastal Protection Services
Provided by Mangroves in Jamaica

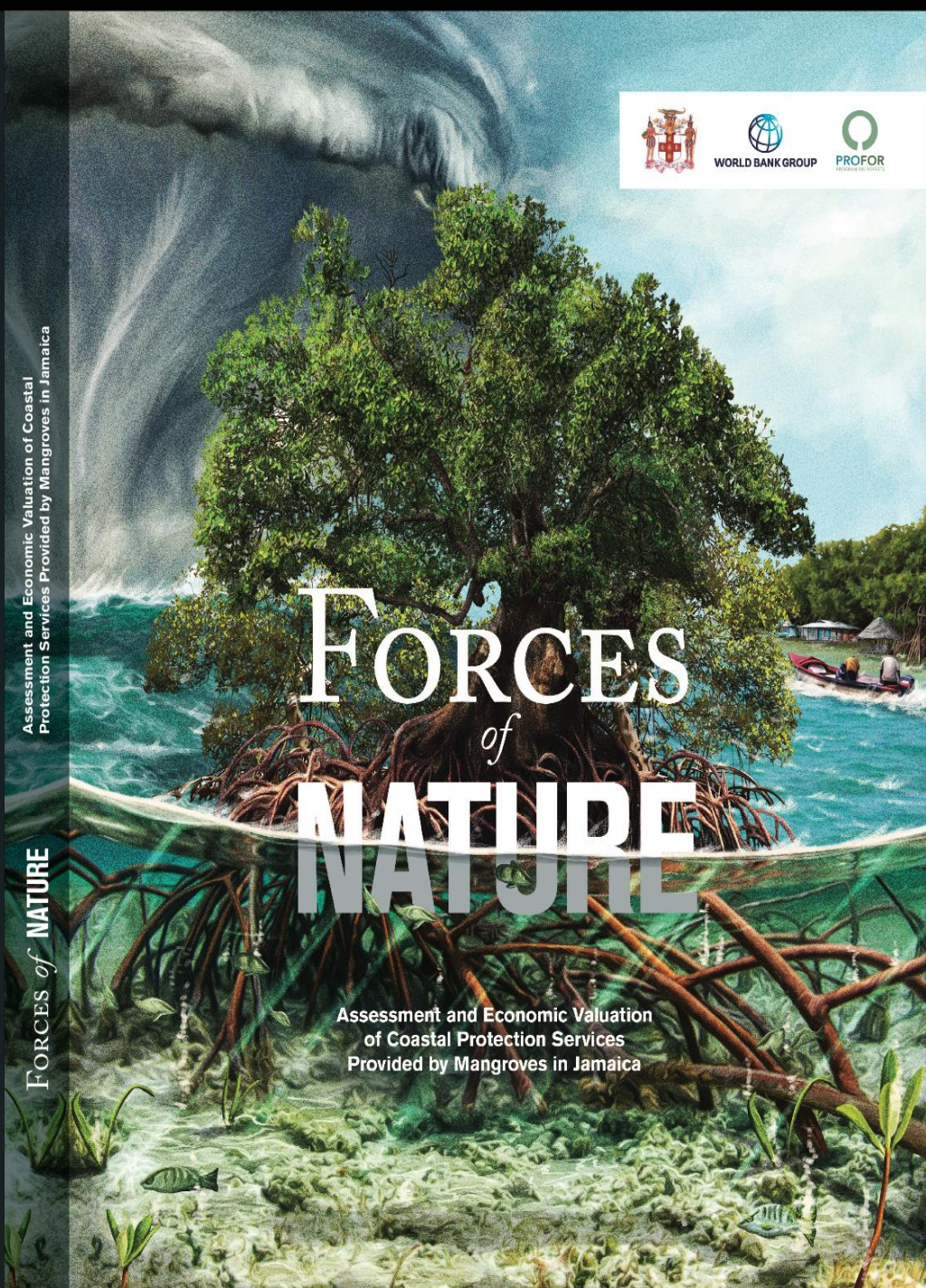
World Bank Caribbean Office
www.worldbank.org/caribbean
Follow us on Twitter @WBCaribbean

Additional Information:
Juliana Castaño-Isaza
E: jcastanoisaza@worldbank.org



FORCES of NATURE

Assessment and Economic Valuation of Coastal
Protection Services Provided by Mangroves in Jamaica



FORCES of NATURE

Assessment and Economic Valuation
of Coastal Protection Services
Provided by Mangroves in Jamaica

Editors

World Bank

Juliana Castaño-Isaza
Simone Lee
Saurabh Dani

Authors

UCSC, IH Cantabria, and TNC

Michael W. Beck
Siddharth Narayan
Iñigo J. Losada
Antonio Espejo Hermosa
Saul Torres Ortega

UWI

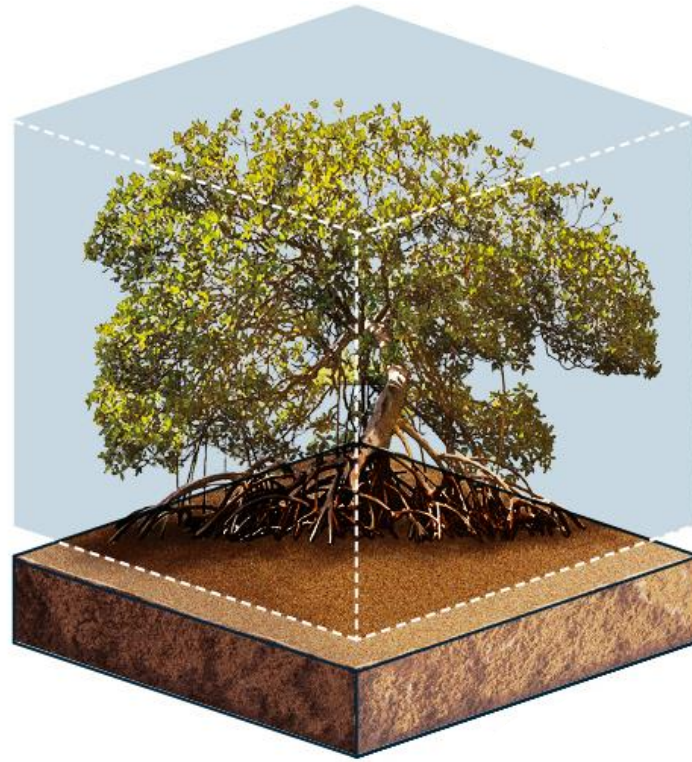
Arpita Mandal
Rose-Ann Smith
Taneisha Edwards
Robert Kinlocke
Simon Mitchell
Mona Webber
Camilo Trench
Patrice Francis
Adrian Spence

Peter E.T. Edwards



Implications

High quality
coastal flood
risk study with
and without
mangroves



Baseline
information for
risk reduction,
disaster
recovery, and
disaster risk
financing

Comprehensive
site-level study
of mangrove
ecosystems and
human
dependence

Supporting
information for
UNFCCC, and
Sendai
Framework

Opportunities
for private
sector and
community
engagement



GFDRR
Global Facility for Disaster Reduction and Recovery



SOCIAL, URBAN, RURAL AND RESILIENCE GLOBAL PRACTICE
LATIN AMERICAN AND THE CARIBBEAN UNIT



WORLD BANK GROUP

FORCES *of* NATURE

**Assessment and Economic Valuation
of Coastal Protection Services
Provided by Mangroves in Jamaica**



PROFOR
PROGRAM ON FORESTS

Juliana Castaño-Isaza

jcastanoisaza@worldbank.org