Innovating in the Caribbean

Challenges and Opportunities

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15 Sept. 2016
Washington DC

The Caribbean Region

- The **Caribbean Sea** is bounded by:

  Belize and Central America to the west and south west

  The Greater Antilles starting with Cuba to the north

  The Lesser Antilles to the east

  The north coast of South America to the south

- One of the largest seas: about 2,754,000 km^2 (1,063,000 mi^2) The deepest point - Cayman Trough, between the Cayman Islands and Jamaica, at 7,686 m (25,220 ft) below sea level

  - Largely untapped as a food security resource

  - Need to protect its integrity and sustainable use

- Islands, Islets and Cays: Over 7,000 - largest are Cuba, Jamaica, Hispaniola (*Haiti, Dominican Republic*)and Puerto Rico.

https://en.wikipedia.org/wiki/Caribbean_Sea

- THE ANTILLES: Eastward from the Yucatan Peninsula and south from the Florida peninsula, to the north-eastern coastline of South America. ***Lesser Antilles*** – east of Puerto Rico bordered by the Atlantic Ocean, southward to Trinidad off the northern coast of Venezuela. Included - Aruba, Bonaire, Curacao and a group of Venezuelan islands.

- VOLCANOES: Many islands have a central volcanic peak or a mountainous interior. Ongoing seismic activity - St. Lucia, Dominica, Grenada and St. Vincent.

- MOUNTAINS: Significant mountain ranges - Cuba, Hispaniola, Jamaica, Trinidad and Tobago. Highest point is Pico Duarte at 3098 m (10,164 ft) in the Dominican Republic.

- RAINFORESTS: Found across the Caribbean - Dominica and Jamaica - the most prominent.

- CORAL REEFS: Home to about 9% of the world's coral reefs, covering about 52,000 sq km (*20,000 sq miles*) - Belize barrier reef.

- RIVERS AND LAKES: Most significant - Cuba, Hispaniola and Trinidad and Tobago. Largest - Lake Enriquillo (Dominican Republic) - 265 sq km (102 sq miles). Cuba - Laguna de Leche at 67.2 sq km (25.9 sq mi), and the Zaza Reservoir - 113.5 sq km (*43.8 sq mi*). Over 400 rivers - longest river is the Cauto at 230 mi (*370 km*) in Cuba.

http://www.worldatlas.com/webimage/countrys/namerica/caribb/caribland.htm

A SYNOPSIS OF THE EVOLUTION OF SCIENCE AND TECHNOLOGY IN JAMAICA

ERA	FEATURES
TAINO PRE-1494	Basic Technologies -Pottery, Weaving
SPANISH 1494-1655	Improved Basic Technologies -Agricultural Cultivation and Road Construction
ENGLISH 1670'S-1940'S	Scientific Approaches (Natural History) -Improved Sugar Production and Processing -Steam Power
POST WORLD WAR II	Research to Improve Agriculture -Water Availability Surveys -Creating Specialist Institutions
POST INDEPENDENCE 1962-1970'S	Centralization of Research - Rapid Infrastructural Development (Scientific Research Council, Sugar Research Institute, Natural Resources Conservation Authority, Bureau of Standards)

SELECTED INNOVATIONS AND TECHNOLOGICAL ADVANCEMENTS IN JAMAICA

- Selective breeding of cattle
- Improved processing of bauxite
- Exploration and mining of limestone
- Technological transfer in business and public sectors (eg Electronic Arc Ltd)
- Propagation of pimento
- Development of Canasol
- Research and treatment of sickle cell disease
- Fish farming
- Innovations by the poor and informal sectors

CHALLENGES TO INNOVATION IN THE CARIBBEAN

- Contrasting views of innovation
- Weak S&T literacy across society
- Science viewed as being too theoretical for practical purposes
- Few organized ways of tapping global knowledge networks
- Weakening R&D capability unable to define/tackle problems
- Insufficient implementation, execution, assessment and learning mechanisms
- Ill-suited financial mechanism
- Poor and informal sectors left out of the equation
- No consensual national philosophy or direction
- S&T workers amongst the worst paid and least respected

OPPORTUNITIES FOR INNOVATION

- Recognition that old ways are inadequate
- Mounting social, economic, environmental and security problems
- Crime and violence – mitigation
- A latent creative society developing survival innovations
- Increasing and improving educational opportunities (infant to graduate)
- Insufficient use of S&T infrastructure, including IP protection
- Improving possibilities for regional and hemispheric collaboration
- Availability of multilateral assistance
- Multi-polar approach for S&T progress

RECOMMENDATIONS

- Make poverty the main socio-economic focus
- Strengthen national coordination and support for S&T system
- Boost absorptive capacity for S&T transfers
- Reward creativity and innovation - Education system
- Improve society's scientific literacy
- Organize S&T investments in key sectors and activities
- Reward workers for incremental innovations
- Support fledging Caribbean information platform

CaribSTIP

A community for Caribbean Science, Technology and Innovation Policy

CaribSTIP

A regional online platform to:

-Bring together science, technology and innovation related resources across the region

-Be a source of information on regional and national developments, programmes and projects, reports, capabilities ...

-Provide a platform for ongoing interaction among regional players – debate issues, discussion/work groups

-Highlight success stories

https://caribstip.com/

Conclusion

- The relationships between the multilateral and national institutions have to be realigned for true sustainability to be a realistic goal

- Make bolder attempts to capture and improve innovations that are taking place for survival

- Link all economic sectors (informal, small and medium) to the local and external knowledge systems

- Support CaribSTIP to bridge the weakness in information flow in the region