

## CONFERENCE DOCUMENTS



United Nations  
Educational, Scientific and  
Cultural Organization

IESALC

International Institute of UNESCO  
for Higher Education in  
Latin America and the Caribbean

UNESCO Kingston  
Cluster Office for the Caribbean





# Science Technology & Innovation in the Caribbean

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**THERE ARE SOME THINGS  
WHICH WE IN THE CARIBBEAN  
WILL DO BEST...AND THERE ARE  
SOME THINGS WHICH ONLY WE  
IN THE CARIBBEAN WILL WANT  
TO DO**

***...SIR ARTHUR LEWIS***

**SINCE 1995, CARICOM HOGs  
SET A GOAL OF 15% 3ry  
ENROLMENT FROM THE 2ry  
LEVEL COHORT**

**(NOW < 7%)**

**SINCE 1980, THERE IS A SHIFT  
TO GRADUATE EDUCATION IN  
THE HOPE OF ACHIEVING  
GREATER INVOLVEMENT IN  
INNOVATION & MEETING THE  
SOCIOECONOMIC  
DEVELOPMENTAL NEEDS.**



**GATS SINCE 1995 HAS GIVEN  
THIS A PUSH AS FOREIGN-  
BASED UNIVERSITY LEVEL  
INSTITUTIONS HAVE  
INCREASED FROM 1 IN 1980 TO  
56 IN 2006.**

# GRADUATE STUDIES SHOULD RESULT IN:

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- **GREATER ABILITY FOR INNOVATION**
- **CRITICAL ANALYSIS**
- **ADOPTION AND ADAPTATION OF BEST PRACTICES**
- **FORESIGHTING**

# QUALITY ASSURANCE MECHANISMS:

- ACTI
  - UNICA
  - ACHEA
  - UCJ
  - NQAA
  - CARICOM ACCREDITATION
- ## MECHANISMS



# **FINANCING:**

- GOVERNMENT SUBSIDIES**
- SCHOLARSHIPS, BURSARIES  
etc.**
- STUDENTS' LOAN SCHEMES**

# **FINANCING (cont'd):**

## **PRIVATE SECTOR**

- PARTNERSHIPS**
- SPONSORSHIPS**

## **SELF**

# WORLD BANK (2004)

## GOLD STANDARDS FOR RESEARCH-BASED UNIVERSITIES:

- ARTISTS, SCIENTISTS, ENGINEERS, TECHNOLOGISTS AND OTHER CREATIVE PERSONS MUST CONSTITUTE > 30% OF ACADEMIC STAFF.

- **WB stds cont'd**

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**REGISTRATION AND/OR  
GENERATION OF SOME 500  
PATENTS/COPYRIGHTS/TRADE  
MARKS ETC. PER 1m  
POPULATION PER ANNUM.**

- WB stds cont'd

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- EARN ROYALTIES/LICENCE FEES > US\$100/1000 population/yr

# **EXTREME SHORTAGE OF SKILLS:**

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**ENVIRONMENT/ARCHITECTURE**

**ENGINEERING**

**PURE AND APPLIED SCIENCES**

**LAW**

**AGRICULTURAL SCIENCES**

**BUSINESS AND MANAGEMENT**

**Vanus James, 2006**

# TRENDS IN GRADUATE SUPPLY, UWI

	1991 (%)	2001 (%)
Medical Doctor	86.6	68.3
Lawyer	76.7	68.2
Teacher (Entry Level)	73	30.7
Engineer (Civil)	62	13
Health Professionals (excl. nurses)	55	11.1
Computer Systems Designer/Analyst	45.5	15.1
Business Professions	45.0	17.8

# CARIBBEAN UNIVERSITIES

'THE RECIPE FOR SUCCESS'

- **LINK WITH INSTITUTIONS, NATIONALLY, REGIONALLY AND INTERNATIONALLY IN A VARIETY OF COLLABORATIVE ARRANGEMENTS AND SO GAIN CREDIBILITY.**



# CARIBBEAN UNIVERSITIES

'THE RECIPE FOR SUCCESS'

- UP TO RECENTLY, GRADUATE EDUCATION IN THE CARIBBEAN HAS FOCUSED ON FOREIGN INTERESTS, BUT PRACTISED IN INADEQUATE ENVIRONMENTS.

- **R & D CONTRIBUTES 50% OF GDP IN G8 COUNTRIES**

- **COMBINED BUDGET OF GOVERNMENTS AND PRIVATE SECTOR SPENDS SOME 31% ON RESEARCH AND DEVELOPMENT**

# The Importance of HE in STI Development

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- In the G8 countries – Russia, Germany, France, Italy, UK, USA, Canada, Japan : 50% of GDP from new knowledge and innovations
- competitive economies invest up to 3% of their Gross National Product (GNP) in STI

- **R & D IN CARICOM COUNTRIES CONTRIBUTE < 1% GDP**
- **THESE ISLAND STATES SPEND ON AVG 0.13% OF BUDGET ON R & D**

# The Importance of HE in STI Development

- Caribbean Council for Science and Technology recommends that Caribbean Governments should spend at least 3% on active R&D – i.e. the median between small island developing states and developed countries

## Investment in STI as a percentage of GDP\*

Japan	3.2 %
Singapore	2.4 %
Rep. of Korea	3.0 %
North America	2.7 %
Canada	2.0 %
Caribbean	0.13%

\* *Source: UNESCO institute for Statistics, 2004*

# GRADUATE OFFERINGS OF MAJOR UNIVERSITIES IN THE CARIBBEAN

- HUMANITIES & EDUCATION
- MEDICAL SCIENCES
- PURE AND APPLIED SCIENCES (INCL. ICT, AGRICULTURE)
- SOCIAL SCIENCES (INCL. DEVELOPMENT, INTERNATIONAL STUDIES)
- LAW
- ENGINEERING
- *ALSO, THE FOREIGN UNIVERSITIES (ON/OFF-SHORE)*

# CARIBBEAN NICHE MARKETS ON THE WORLD STAGE

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- MUSIC (*REGGAE, CALYPSO, STEELPAN*)
- TOURISM (*ALL INCLUSIVES, ECO-AWARENESS*)
- SPORT (*ATHLETICS, CRICKET*)
- LOCAL CUISINE (*JERK, CREOLE*)



# ADDED VALUE OF SPIN-OFFS TO THESE AREAS INCLUDE:

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- INTELLECTUAL PROPERTY
- HEALTH TOURISM, SPORTS  
MEDICINE

# THE NICHE MARKET PRODUCTS REQUIRE FOR ENHANCEMENT:

- RESEARCH AND GRADUATE STUDY
- INNOVATION
- ADAPTATION
- TECHNOLOGY SUPPORT

GRADUATE STUDIES	RATE OF RETURN (cf 10% ON MONEY)
	%
PURE AND APPLIED SCIENCES	39
AGRICULTURAL SCIENCES	38
LAW	35
BUSINESS	34
SOCIAL SCIENCES	19
ENGINEERING AND COMPUTING	18
HUMANITIES AND EDUCATION	13

# Challenges and Solutions to STI Development

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- Concentrate STI agenda on improving domestic industries eg: tourism, food service, energy, agriculture and SMEs
- Develop the accompanying infrastructure and systems critical to supporting STI development

# Challenges and Solutions to STI Development

- Partnerships between our governments and the private sector in CARICOM
- 1) to create STI development opportunities .
- 2) attract Foreign Direct Investment to the region, particularly from institutions and individuals in the Diaspora



*Herein lies the epitome  
of WISDOM*

*May we like him ponder  
upon these thoughts!*

*and the work goes on.....*

*....thanx much!*