

TECHNOLOGY TRANSFER IN THE BAHAMAS

LATIN AMERICAN AND CARIBBEAN WORKSHOP
IN TECHNOLOGY TRANSFER

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INITIAL DRAFT

Executive Summary

Very Little is being done in the way of Transfer of Technology of Renewable Energy or Clean Air projects in the Bahamas. The reasons for this lack of activity are threefold and are similar to those of other small Island Nations:

1) Capacity Building Needs

There is a readily definable and identifiable need for trained technical personnel, infrastructural developments and facilities.

2) Barriers

The presence of barriers to TT is well documented and no different in the Bahamas. These barriers are compounded by:

3) Lack of Clearly Identified Technology Needs

The presumption that there is little major industry and perhaps little room for technology transfer in small markets has led to unexplored areas in the technology needs identification process

1.0) Introduction

The Commonwealth of The Bahama Islands is an archipelago of low lying limestone Islands stretching some 900 Km from the southeast tip of Florida to Hispaniola. The land area of the Bahamas covers over 13,880 square kilometers,

but the effective mean area of the country an archipelagic nation covers more than 259,000 square kilometers. The Bahama Islands are not strictly Caribbean nor West Indian even though generally lumped in one of these broad generalizations for ease of reference to the entire geographical region.

1.1) Geography

The Bahamas experiences approximately 3,000 solar-hours per year. It is located in a geographical corridor which is subject to the effects of tropical cyclones (Hurricanes).

The natural resources are limestone, aragonite. Arable land comprises approximately 10% of the countries land area but are under-produced. The main crops are onions, bananas, tomatoes, citrus and other small fruit, most of which are consumed locally.

1.2) Economic Profile

Exports include Fisheries, (crabs, lobster, conch), salt, and aragonite. The key sectors of the economy are Tourism and Banking. The per capita income of the Bahamas is approximately \$8,000 (US \$ equivalent).

1.3) Energy Usage

1.3.1 Principle sources

The principle source of energy in the Bahamas is fossil fuels accounting more than 95% of energy production. There are no sources of fossil fuel energy and all energy sources are imported.

1.3.2 Renewable Energy

There is great potential for the implementation/adaptation of renewable energy systems, but as yet this is still un-tapped. The potential for solar, wind, wave and perhaps geothermal all offer the promise of clean technologies as alternatives to fossil fuels.

1.4 Environmental policy

The Bahamas signed the UNFCCC 12 June 1992, entry into force on the 27 June 1994 and signed the Kyoto Protocol 9 April 1999. The Bahamas has begun the formulation of comprehensive environmental policy addressing issues involving sustainable development, conservation of Biodiversity, climate change, Coastal zone management, land use, forestry and eco-tourism among other environmental concerns.

2.0 ASSESSMENT OF NEEDS

2.1 Technology Needs and Assessments

A comprehensive assessment of the technologies which can be successfully incorporated into a clean air process for the Bahamas has yet to be performed. The lack of any such assessment is perhaps indicative of one of the barriers to the transfer of technology itself and that is lack of information. It would therefore appear that one of the technological needs of the Bahamas is that of education and dissemination of information, i.e., the ability to conduct a technology needs assessment is itself lacking.

2.1 Capacity Building

It is anticipated that once other needs are addressed, capacity building will naturally follow or will be more easily facilitated. Identification of capacity building needs has not yet been performed.

3.0 BARRIERS TO TRANSFER OF TECHNOLOGY

As an enabling environment presently does not exist in the Bahamas, all of currently popularly held barriers to Technology transfer and perhaps more relevantly, implementation of RE technology are valid, these include, inter alia:

a) Lack of proper regulatory framework/Enabling Environment

At present no regulations exist which promote the use of RE technologies over traditional fossil fuels. This obstacle/barrier is directly related to the widespread general lack of awareness/information.

b) Lack of Information/Awareness

Again, dissemination of information to all stakeholders has not been done. The local parties to the CDM are unaware of the issues and potential rewards.

c) Financial/Economic

The present financial and economic conditions supporting RE technologies only seem to favour larger economies.

4.0 POSSIBLE ACTIONS TO REMOVE BARRIERS

i) Support for governmental education and awareness programs is imperative as first step in removing barriers to TT.

ii) Smaller island nations must be given the opportunity and supported in their efforts to attend national, regional and international workshops, conferences and courses in order to improve the “information store” and knowledge database.

iii) Opportunities for private sector participation and attraction of risk capital must be provided. Moreover, the precise mechanisms for achieving this must be identified and established.

5.0 POSSIBLE ACTIONS AND INITIATIVES TO REMOVE BARRIERS

- i) A strong public awareness program must be implemented
- ii) Implementation of training to increase capacity.
- iii) Encourage participation from private sector.
- iv) Establishment of enabling environment.

6.0 OPPORTUNITIES FOR INVESTMENT AND PRIVATE SECTOR PARTICIPATION

Displacement of fossil fuel energy can be realized in the following sectors:

- i) Heating cooling in the case of the Bahamas using the Bahamas reverse geothermal gradient?
- ii) Power generation increased efficiency, demand side management
- iii) Limited small scale lighting switch to fluorescence?
- iv) Solar heating/cooling/ drying in the agriculture sectors
- v) Water production using reverse osmosis
- vi) Biomass/gas collection and use in power plants
- vii) Conversion to other fuels ie propane for vehicles?

7.0 ONGOING AND PLANNED TECHNOLOGY ACTIVITIES

There are no ongoing technology activities. Planned Technology activities relate to implementation of displacement issues raised in section 6.0.

8.0 ELEMENTS OF SUCCESSFUL TECHNOLOGY ACTIVITIES

Successful Technological Activities will have the following characteristics:

They must :

- a) Be economically feasible on relatively small scale.
- b) Be maintainable, not technologically sophisticate.
- c) Be Sustainable.
- d) Be Financially Viable.
- e) Not be capital intensive.
- f) Produce demonstrable benefits ie cost/ environment/ health etc.

9.0 POSSIBLE ELEMENTS OF A FRAMEWORK FOR MEANINGFUL AND EFFECTIVE ACTIONS TO ENHANCE THE IMPLEMENTATION OF ARTICLE 4.5 OF THE CONVENTION.

10.0 CONCLUSIONS

It is imperative that the overall RE strategy include the small island states which are typically and for unexplainable reasons excluded from real benefits of the components of the climate change process. Not surprisingly however, it is precisely those nations, which have been (perhaps unintentionally) excluded which perhaps because of size and/or lack of resources are most in need of assistance and inclusion in the process.