

**ASSESSMENT OF AGRICULTURAL INFORMATION NEEDS IN
AFRICAN, CARIBBEAN & PACIFIC (ACP) STATES FOR CTA'S
PRODUCTS AND SERVICES**

Phase 1: Caribbean

Country Study: Trinidad and Tobago

Final Report

Prepared by:

Steve Maximay

on behalf of the

Technical Centre for Agricultural and Rural Cooperation (CTA)

Project: 4-7-41-204-4/d

November 2005

Disclaimer

This report has been commissioned by the CTA to enhance its monitoring of information needs in ACP countries. CTA does not guarantee the accuracy of data included in this report, nor does it accept responsibility for any use made thereof. The views and opinions expressed in this report are those of the author alone and do not necessarily reflect the views of CTA. CTA reserves the right to select projects and recommendations that fall within its mandate.

**ASSESSMENT OF AGRICULTURAL INFORMATION NEEDS IN
AFRICAN, CARIBBEAN & PACIFIC (ACP) STATES FOR CTA'S
PRODUCTS AND SERVICES**

Phase 1: Caribbean

Country Study: Trinidad and Tobago

Final Report

Prepared by:

Steve Maximay

on behalf of the

Technical Centre for Agricultural and Rural Cooperation (CTA)

Project: 4-7-41-204-4/d

November 2005

List of Acronyms

| | |
|----------|---|
| ADB | Agricultural Development Bank |
| AGRISTA | Agricultural Science Teachers Association |
| AMCHAM | American Chamber of Commerce |
| APASTT | Association of Professional Agricultural Scientists of Trinidad and Tobago |
| ASRP | Agricultural Sector Reform Programme |
| ASTT | Agricultural Society of Trinidad and Tobago |
| BDC | Business Development Company |
| CABA | Caribbean Agribusiness Association |
| CARDI | Caribbean Agricultural Research and Development Institute |
| CARICOM | Caribbean Community |
| CCN | Caribbean Communications Network |
| CDAP | Chronic Disease Assistance Plan |
| CFNI | Caribbean Food and Nutrition Institute |
| CITES | Convention on International Trade of Endangered species |
| CSO | Central Statistical Office |
| CXC | Caribbean Examinations Council |
| ECIAF | Eastern Caribbean Institute of Agriculture and Forestry |
| FAO | Food and Agriculture Organisation (of the United Nations) |
| FOs | Farmers' Organisations |
| GDP | Gross Domestic Product |
| HSTT | Horticultural Society of Trinidad and Tobago |
| ICT | Information and Communication Technology |
| IICA | Inter-American Institute for Cooperation on Agriculture |
| IT | Information Technology |
| LNG | Liquefied Natural Gas |
| MALMR | Ministry of Agriculture, Land and Marine Resources |
| NAMDEVCO | National Agricultural Marketing and Development Company |
| NGO | Non-Governmental Organisation |
| NIHERST | National Institute for Higher Education Research Science and Technology |
| OPWA | Organisation of Professional Women in Agriculture |
| PHMB | Pink Hibiscus Mealy Bug |
| RHA | Regional Health Authority |
| SFC | Sugarcane Feeds Centre |
| TAS | Tobago Apicultural Society |
| THA | Tobago House of Assembly |
| THA-DAME | Tobago House of Assembly, Division of Agriculture and Marine Affairs |
| TRIPS | Trade Related Intellectual Property Rights |
| TSTT | Telecommunications Services of Trinidad and Tobago |

| | |
|--------|--|
| TTEC | Trinidad and Tobago Electricity Commission |
| TTIFAL | Trinidad and Tobago Industrial Fishing Association Ltd |
| TTT | Trinidad and Tobago Television |
| UNCLOS | United Nations Convention on the Law of the Sea |
| UTT | University of Trinidad and Tobago |
| UWI | University of the West Indies |
| YAPA | Youth Apprenticeship Programme in Agriculture |

Exchange rate: Euro 1 = US\$ 1.29636 (April 2005)

| List of Tables | Page number |
|---|------------------------|
| Table 1. Acknowledged Source Of Information By Key Institutions (Based On Interviews) | 7 |
| Table 2. Information Needs To Service Current Programmes As Identified By Institutions | 8 |
| Table 3. Nature Of Information Needed By Institutions To Service Current Programmes | 10 |
| Table 4. Information That Institutions Deem Difficult To Acquire | 10 |
| Table 5. Categories Of Information Deemed Difficult To Acquire By Selected Institutions | 12 |
| Table 6. Resources And Training Needs To Achieve Strategic Goals Of Key Institutions | 11 |
| Table 7. Resources And Training Needs By Category, For Institutions To Achieve Strategic Goals | 13 |
| Table 8. Identified Need By Institution For Improvement In The Management Of Information | 12 |
| Table 9. Identified Needs By Category, For Institutions To Improve Information Management | 14 |
| Table 10. Estimated Land Use In Trinidad And Tobago – All Agricultural Holdings | 32 |
| Table 11. Contribution Of Agriculture To GDP 1997-2001 (Adjusted To 2001 Prices) | 35 |
| Table 12. Total Production, Domestic Exports And The Value Of Exports For The Years 1998-2002 | 36 |
| Table 13. Production Of Selected Vegetables 1998-2002 | 37 |
| Table 14. Vegetable Imports And Exports 1998-2002 | 37 |
| Table 15. The Guaranteed Price And Subsidy Payment For Paddy Based On Grade | 38 |
| Table 16. Total Production Of Rice Paddy, Domestic Exports And The Value Of Exports For The Years 1998 – 2002 | 38 |
| Table 17. Export Markets For Trinidad And Tobago Agricultural Products | 38 |
| Table 18. Population By Administrative Area | 41 |
| Table 19. Age Structure As Per 2004 Population Estimate | 42 |
| Table 20. Trinidad And Tobago Population By Gender And Age | 42 |
| Table 21. Listing Of Print Media | 44 |
| Table 22. Local Television Stations | 47 |
| Table 23. Radio Stations By Frequency, Programming And Reach | 47 |
| Table 24. Internet Service Providers: Description And Rates | 50 |

List of Figures

Page #

Figure 1 Map of Trinidad and Tobago

28

Figure 2 Map showing regional subdivisions in Trinidad

41

Table of Contents

| | |
|--|------|
| List of Acronyms | i |
| List of Tables | iii |
| EXECUTIVE SUMMARY | vi |
| <i>Capacity building needs</i> | viii |
| 1. INTRODUCTION | 1 |
| 2. COUNTRY PROFILE | 3 |
| 2.1. Agriculture, Fisheries and Forestry..... | 4 |
| 2.1.1 Agriculture | 4 |
| 2.1.2 Fisheries..... | 4 |
| 2.1.3 Forestry..... | 5 |
| 2.2 Information and Communication Management Capacity..... | 5 |
| 2.3 Agricultural Information Services | 6 |
| 3. NEEDS ANALYSIS | 8 |
| 3.1 Information Needs | 8 |
| 3.2 Capacity Building Needs | 13 |
| 4. CONCLUSIONS AND RECOMMENDATIONS | 15 |
| 4.1 Conclusions..... | 15 |
| 4.1.1 Extent of “Key Problems” in the Field..... | 15 |
| 4.1.2 Information Needs..... | 16 |
| 4.1.3 Capacity Building Needs..... | 16 |
| 4.1.4 Potential Partners and Beneficiaries..... | 17 |
| 4.2 Recommendations..... | 17 |
| 4.2.1 Information Needs..... | 17 |
| 4.2.2 Capacity building Needs | 18 |
| 4.2.3 Potential Partners and Beneficiaries..... | 18 |
| ANNEXES | 20 |
| ANNEX I: TERMS OF REFERENCE..... | 21 |
| ANNEX II: COUNTRY PROFILE – TRINIDAD AND TOBAGO..... | 28 |
| II.1 General Agricultural Profile..... | 30 |
| II.2 Socio-economic Profile | 40 |
| II.3 Media and Telecommunications | 44 |
| ANNEX III: PROFILE OF INSTITUTIONS..... | 52 |
| III.1 List of Institutions involved in Agriculture and Rural Development | 52 |
| III.2 Select List of Key Institutions..... | 59 |
| ANNEX IV: LIST OF PERSONS INTERVIEWED..... | 80 |
| ANNEX V: REFERENCES | 84 |

EXECUTIVE SUMMARY

Introduction

CTA's tasks are to develop and provide services that improve access to information for agricultural and rural development, and to strengthen the capacity of ACP countries to produce, acquire, exchange and utilise information in this area. CTA's programmes are organised around three principal activities: providing an increasing range and quantity of information products and services and enhancing awareness of relevant information sources; supporting the integrated use of appropriate communication channels and intensifying contacts and information exchange (particularly intra-ACP); and developing ACP capacity to generate and manage agricultural information and to formulate information and communication management (ICM) strategies, including those relevant to science and technology

This study, commissioned by CTA, details the information needs, and priorities of key agricultural institutions in Trinidad and Tobago.

Objectives

The objectives of the study were:

- to identify agricultural information needs of key actors / beneficiaries for CTA products and services;
- to identify needs of potential actors / beneficiaries of CTA activities and services in terms of building capacity for information and communication management;
- to identify potential partners / beneficiaries for CTA activities and services;
- to develop some baseline data to facilitate subsequent monitoring activities.

The results of the study is expected to assist the three operational departments of the CTA as well as its local representatives to improve and better target interventions and activities aimed at potential partners and beneficiaries (including women, youth, private sector and civil society organisations), to have a more informed picture of their needs and aid in the elaboration of a strategy and framework of action. The study should also highlight where there are specific needs for CTA's products and services thereby enabling improvement in the delivery of the same.

Methodology

To accomplish these objectives a combination of qualitative and quantitative methods were utilized, including a desk review of available literature and information sources and the findings of programme evaluations. Face-to-face interviews with relevant stakeholders of the ten key institutions were conducted with a standardized CTA questionnaire and checklist to ensure the same questions were asked of all interviewees.

The respondents from a selected group of institutions gave their views on information technology, information management and accessibility issues.

Expected Results

The exercise is expected to produce one main report on Trinidad and Tobago including a country profile highlighting the current sources of agricultural information. The report also provides an analysis of information and capacity building needs as well as annexes detailing profiles of agricultural and rural development institutions.

It was also expected that the results of this study will lead to identification / update of some priority agricultural information themes which will feed into a possible priority-setting exercise in the region.

Findings

The key institutions surveyed reported several categories of needs. The information needs to service their current programmes were primarily in the areas of production data, marketing data, specific training needs, event management, equipment sourcing, and understanding the relevant regulatory framework under which they operate. Information deemed difficult to acquire, in decreasing frequency of mention, included information on production data, marketing trends, equipment sourcing, environmental protection, new technologies and the regulatory framework.

The institutions contacted unanimously listed specific forms of staff training as the “resources and training needs necessary to achieve their strategic goals”. Also included were the need for tailor-made software, dedicated hardware, performance management procedures, wider networks, and marketing information. The identified needs for the institutions to improve their information management systems included appropriate software, dedicated hardware, a physical secretariat, production data, operational websites, staff training and marketing data.

Conclusions

The stated information needs were predominately in the areas of production and marketing data. Examples include the need for timely and sector specific production data as stated by the Agricultural Society of Trinidad and Tobago or the need for small scale and subsistence level farm production data as stated by the Ministry of Agriculture, Land and Marines Resources. It suggests a requirement for more coordinated data collection in the field and a structured manipulation and transformation of said data into appropriate information. Crucial components of the information that have been deemed difficult to acquire are locally generated and must be collected as part of a structured, managed and integrated system

The institutions surveyed were often operating without assigned staff, hardware or software to information services and programmes. Capacity building was identified by

the respondents in light of the acknowledged importance of ICM as an area for immediate intervention (Table 8). In the absence of the tools and staff required, many of these institutions will continue to operate under their true potential and not fulfil their respective mandates. The main institutions, with the exception of the Ministry of Agriculture and NAMDEVCO, do not have the staff, hardware or software to manipulate the field data that might be collected. Many of the respondents were acutely aware of that shortcoming and saw this study as a precursor to assistance from CTA in that regard.

The key institutions identified by this study all have mandates that would make them worthy candidates to be CTA beneficiaries and or partners

Recommendations

Information needs

CTA should:

- Distribute more widely the list of available CTA publications by direct mailing to institutions listed in the study and through the regional branch offices of the Ministry of Agriculture and the Division of Agriculture in Trinidad and Tobago respectively.
- Through CARDI launch a series of briefings throughout the country on the range of services available from CTA including but not limited to, beneficiary criteria, mailed notifications, on-line registration, seminar support and the question and answer service.
- Support a “Software and Data Manipulation Training Project” focusing on the continuum from field collection to coding, linking, disseminating, centralizing, storing and retrieval.

Capacity building needs

- CTA should provide the institutions interviewed as part of this survey with a DVD/broadcast format multimedia presentation highlighting the benefits of Information and Communication Management; possibly utilizing best practice as determined by experiences from African and Pacific States.
- CTA should, as part of its “Integrated ICM support to local and national organisations”, provide technical assistance on project development to the Association of Professional Agricultural Scientists of Trinidad and Tobago in its approaches to use local media houses for information exchanges with the public. Additionally, supplement the in-house capability at the Ministry of Agriculture and the Department of Economics and Agricultural Extension at UWI, St. Augustine to develop multimedia information products.
- The CTA Electronic Resource Centre should share resources with the Agricultural Society of Trinidad and Tobago, the Association of Professional Agricultural Scientists of Trinidad and Tobago and the Trinidad and Tobago Industrial Fishing Association Limited for most needed centralized secretariat support through partner training in face-to-face and distance modes. The project should have a

staff recruitment component from which a stipend could be paid for work done in the six-month development phase. Physical housing of the secretariat being the responsibility of the beneficiary institution.

- The CTA should provide grant support to the Non-Governmental Organisations identified by this study to access software and or hardware deemed appropriate by an external evaluator. Conformably, CTA should sponsor “Face-to-face” and CD-ROM based training interventions for appropriate staff or elected members of the key institutions in the sector as identified by this survey.

Potential partners and beneficiaries

- CTA partner with the Agricultural Society of Trinidad and Tobago as the Organisation best placed to transform the sector. The opportunities for matched funding and other support are enhanced by the Society’s clear mission and focused strategies including a major role in the Agricultural Sector Reform Programme. It is one of only two institutions in the sector that is truly national in scope and representation.
- That CTA consider all the preceding recommendations as part of a widened beneficiary support programme for the listed institutions. Said support to be based on clearly articulated proposals emanating from the institution’s membership or primary stakeholders subsequent to briefing sessions by the CTA Branch Office – CARDI.

1. INTRODUCTION

1. The Technical Centre for Agricultural and Rural Cooperation (CTA) was established in 1983 under the Lomé Convention between the ACP (African, Caribbean and Pacific) Group of States and the European Union Member States. Since 2000, it has operated within the framework of the ACP-EC Cotonou Agreement.
2. CTA's tasks are to develop and provide services that improve access to information for agricultural and rural development, and to strengthen the capacity of ACP countries to produce, acquire, exchange and utilise information in this area. CTA's programmes are organised around three principal activities: providing an increasing range and quantity of information products and services and enhancing awareness of relevant information sources; supporting the integrated use of appropriate communication channels and intensifying contacts and information exchange (particularly intra-ACP); and developing ACP capacity to generate and manage agricultural information and to formulate information and communication management (ICM) strategies, including those relevant to science and technology. These activities take account of methodological developments in cross-cutting issues (gender, youth, information & communication technologies – ICTs, and social capital), findings from impact assessments and evaluations of ongoing programmes as well as priority information themes for ACP agriculture¹.
3. In January 2002, CTA's Strategic Plan (2001-2005) was implemented and CTA's activities were distributed among three operational programme areas / departments:
 - Information Products and Services;
 - Communication Channels and Services;
 - Information and Communication Management Skills and Systems.
4. These operational departments are supported by Planning Corporate Services (P&CS) which is charged with the methodological underpinning of their work and monitoring the ACP environment in order to identify emerging issues and trends and make proposals for their translation into programmes and activities. This current exercise, therefore, falls within the mandate of P&CS is consonant with CTA's two operational objectives, as per its plan and framework for action, which are:
 - to improve the availability of, and access to, information on priority information topics for ACP agricultural and rural development;
 - to improve the information and communication management (ICM) capacity of ACP agricultural and rural development organizations.

¹ Priority information themes for ACP agriculture have formed the basis of various several studies, workshops and seminars bringing together various stakeholders, organisations and institutions active in the field of agriculture and rural development. The documents (or extracts thereof) will be provided to the consultants.

5. The objectives of the study were:
 - to identify agricultural information needs of key actors / beneficiaries for CTA products and services;
 - to identify needs of potential actors / beneficiaries of CTA activities and services in terms of building capacity for information and communication management;
 - to identify potential partners / beneficiaries for CTA activities and services;
 - to develop some baseline data to facilitate subsequent monitoring activities.

6. The results of the study are expected to assist the three operational departments of the CTA as well as its local representatives to improve and better target interventions and activities aimed at potential partners and beneficiaries (including women, youth, private sector and civil society organisations), to have a more informed picture of their needs and aid in the elaboration of a strategy and framework of action. The study should also highlight where there are specific needs for CTA's products and services thereby enabling improvement in the delivery of the same.

7. To accomplish these objectives a combination of qualitative and quantitative methods were utilized, including a desk review of available literature and information sources and the findings of programme evaluations. Face-to-face interviews with relevant stakeholders of the ten key institutions were conducted with a standardized CTA questionnaire and checklist to ensure the same questions were asked of all interviewees. The respondents from a selected group of institutions gave their views on information technology, information management and accessibility issues.

2. COUNTRY PROFILE

8. The twin-island republic of Trinidad and Tobago, located Latitude: 11 °00' North of the Equator and Longitude: 61 °00 'West of Greenwich, is the most southerly of the Caribbean Island chain, at 11 km from the Venezuelan Coast. Trinidad is about 105 km long and 77 km broad with an area of 4,828 square kilometres. The island of Tobago lies northeast of Trinidad, from which it is separated by a channel about 31 km wide. It is 51 km long and 18 km broad with an area of 300 square kilometres. The country is divided into eleven administrative areas, ten in Trinidad and one in Tobago.
9. Trinidad and Tobago is by far the Caribbean's largest producer of oil with reserves of 700 million barrels and of liquefied natural gas (LNG) with reserves estimated at 22 trillion cubic feet. Daily oil and natural gas production in 2004 averaged about 125,000 barrels and 1,000 million cubic feet respectively. Further, it is the first LNG producer in the Latin American and Caribbean region, and is one of the major natural gas development centres in the world. Trinidad also has a vast downstream gas sector including gas-intensive industries such as steel, fertilizer, and petrochemicals that are important to the country's economy.
10. Trinidad and Tobago, due to its continental origin, has the greatest biological diversity of the islands in the Caribbean archipelago. Of the 2,160 species of flowering plants in Trinidad and Tobago, 110 are endemic, including many palms. There are approximately 420 species of birds, 100 mammals, 55 snakes, 25 amphibians and 85 reptiles. There are probably about 2,500 species of plants and about 10 times as many animals, the majority being insects and other invertebrates.
11. In 2000 the country's population was estimated at 1,262,366 with a population growth of -0.71% primarily due to declining birth rates. The population density per square mile was 554. There are some 497 Primary, 137 Secondary Schools, a campus of the University of the West Indies (St Augustine) and the multi-campus University of Trinidad and Tobago launched in 2003. The overall literacy rate is 98.6% where male literacy is 99.1% and female literacy is 98% (2003 est.)². The languages spoken in Trinidad and Tobago are English (official), Hindi, French, Spanish and Chinese³. Secondary and tertiary care are provided at one general hospital in Port-of-Spain and one in San Fernando (1,245 beds), at two county hospitals in Trinidad (111 beds), and at one hospital in Tobago (96 beds). Specialized hospitals and units also provide women's health, psychiatric, chest disease, substance abuse, geriatric, oncology, and physical therapy services, for a total 1,513 additional beds.
12. The Trinidad and Tobago Electricity Commission (T&TEC) is the power transmission and distribution utility providing countrywide coverage. The Water and Sewerage Authority delivers potable water to 80% of potential consumers, the others obtain water from ponds and rain-fed catchments.

² http://www.procicaribe.org/networks/clawrenet/reports/z_tt/tt.htm

³ <http://www.cia.gov/cia/publications/factbook/geos/td.html>

2.1. Agriculture, Fisheries and Forestry

2.1.1 Agriculture

13. The total area of arable land is recorded at 312,568 ha of which 44,239 ha are under permanent crops and 35,960 ha under annual crops. Thirty-five percent of farming occurs at a subsistence level and includes tree crops, root crops, vegetables, legumes and livestock. Approximately 65% occurs at the commercial level and crops include vegetables, sugarcane, rice, root crops, cut flowers, ornamentals, citrus, cocoa and bananas. The farming systems are generally mixed farming systems on both levels⁴. Wetlands (mainly mangrove forests) represent 23,540 ha and there are 230,000 ha of forest cover. Official Government of Trinidad and Tobago, Central Statistical Office (CSO) figures for 2001⁵ lists the percentage of men and women working in the category “Agriculture” at 6.2% of the labour force or 35,600 workers and 6,200 or 1.1% of the labour force respectively. These figures are considerably lower than that for employment in the sector due to the other official categories listed by the CSO such as “professionals” and “technicians” that include agriculture workers. Agriculture represents 2.6% of the total Gross Domestic Product (2003 est.). The GDP was €1.67 billion (TT\$10.52 billion) with a real growth rate of 3.7% (2003 est.). The Ministry of Agriculture (personal communication with the Planning Unit) estimates that there are 22,000 active farmers, with over 20,000 being vegetable farmers.

2.1.2 Fisheries

14. The fisheries of Trinidad & Tobago are quite diverse and there are three different fisheries in terms of boat types and operations: artisanal fishery, commercial fishery, and recreational fishery. There are approximately 1657 pirogues in the artisanal fishery while the commercial fishery consists of 22 shrimp trawlers, 32 multi-gear boats, and 6 long-liners. The recreational fishery numbers about 300 vessels. There are 5095 registered fishers and about 1000 unregistered fishers.
15. There are about 20 species of fish and five species of penaeid shrimp that are regularly exploited. By far the most important finfish species is the *carite* in terms of landings and value. Shrimp, however, with significantly smaller landing, are the most valuable commodity exploited by the artisanal fishery. It is estimated that the total yield of all fisheries is about 15 000 tonnes per annum valued at about €16 million⁶. Shrimp fishing in Trinidad and Tobago takes place mainly in the Gulf of Paria where it is rich in nutrients. The productivity is high in this area because of four factors namely: (1) the continental shelf; (2) shallow banks; (3) ocean currents and water flow; and (4) nutrients⁷.

⁴ http://www.fao.org/WAICENT/Fao_Info/Agricult/AGP/AGPS/pgrfa/pdf/trinidad.pdf

⁵ CSO *Agricultural Report 2001*, Table 9, pg. 8

⁶ www.fao.org/fi/fcp/en/TTO/profile.htm

⁷ Rahil, V.A.M (1999) *New Caribbean Geography with Map Reading and CXC Questions*

2.1.3 Forestry

16. Total Forest Area in 2000 was 259,000 ha with a Forest Area per capita of 0.2 ha. In 2000 the percentage share of forestry in the total Gross Domestic Product (GDP) of Trinidad and Tobago was 3.11% disaggregated data are not available⁸. Consequently, information was not available on forestry's contribution for example, to employment. On Trinidad, the principal forest types are: tropical rain forest, semi-deciduous rain forest, littoral woodland, deciduous seasonal woodland, and swamp/mangrove forests.
17. Within tropical rain forest there are several tiers of vegetation interlaced with lianas and vines while epiphytic orchids, bromeliads and ferns are common. Typical plant species include *Carapa guianensis*, *Ceiba pentandra*, *Spondias monbin*, *Pentaclethra macroloba*, and *Brownea latifolia*⁹. One notable type of forest found extensively in east Trinidad, especially near Matura and Mayaro, is mora forest, dominated largely by *Mora excelsa*. The tropical rain forest is restricted to sheltered mountain valleys of Tobago's Main Ridge. Lower montane forest, xerophytic rain forest, evergreen formations and some elfin woodland also occur.

2.2 Information and Communication Management Capacity

18. In this study, information includes items such as: technical, project & financial reports, files (hard and electronic) and correspondence, collections of books, bulletins, newsletters, photographs, videos, audio cassettes, maps, data sets (e.g. statistical data, market information), advisory services. The institutions were profiled using a data capture format that identified the role, mission, fields of specialization, current work programme, sources of information and use of information and communication technologies (cf. Annex III).
19. Of the institutions interviewed, only the Agricultural Development Bank (ADB), Ministry of Agriculture, Land and Marine Resources (MALMR), Agricultural Society of Trinidad and Tobago (ASTT), National Agricultural Marketing and Development Corporation (NAMDEVCO) and the Tobago House of Assembly, Division of Agriculture, Marine Affairs and the Environment (THA-DAME), had staff and/or a unit to specifically manage their institution's information. In all other cases the responsibility to manage the available information was left to the particular capability of a particular secretary. In many instances the secretary was neither trained nor experienced in the cataloguing or other manipulation of the stored information. With the exception of the previously named institutions, all of the others maintained electronic databases on computers that were not the property of the institution. Information management is a task performed by under-equipped volunteers using own equipment in most cases.
20. Staffing arrangements ranged from six specialized units with trained/qualified staff in the MALMR, three departments in the ADB, NAMDEVCO's Unit staffed by two professionals, to the ASTT where the Secretariat is assisted by the four-member

⁸ www.fao.org/documents/show_cdr.asp?url_file=/docrep/003/x6689e/X6689E02.htm

⁹ http://www.worldwildlife.org/wildworld/profiles/terrestrial/nt/nt0171_full.html

Publications and Public Relations Committee of the Board. Each of the five Departments in the THA-DAME manages their stored information. Only the MALMR had a dedicated properly maintained website.

21. Communication refers specifically to the mechanisms for the dissemination and exchange of information through various means such as: radio and TV programmes, e-mail, websites, electronic discussion groups, meetings, television and publications. The five institutions mentioned previously had dedicated staff and equipment to communicate with their internal and external publics. Invariably, the others depended on elected executive members to exchange information with their various stakeholders. Each of the institutions without dedicated hardware and software had an email address through which they could be contacted. Frequently, the address was in the name of an executive member. Without any expenditure, all of these institutions could have selected an address bearing the name of the organisation at a free host, instead of using the executive member's account.
22. The ADB, MALMR, THA-DAME, NAMDEVCO and ASTT all had budgets, reprographic equipment, hardware/software, retrievable information resources and access to the Internet. Total annual operating budgets (for all activities including ICM) ranged from €8.1 million at THA-DAME to €100,000 at ASTT.

2.3 Agricultural Information Services

23. All of the institutions contacted listed the Inter-American Institute for Cooperation on Agriculture (IICA) as a primary source of agricultural information. There were stated volume differences between the amounts of information accessed through IICA as opposed to other mentioned sources. The major medium for information flow was the printed hard copy, primarily as fact sheets, newsletters and brief publications. Three institutions recorded receipt of digitized information as part of an ongoing subscription. None of the interviewed institutions had heard of, or used, DORA, SDI or QAS. Significant use was being made of the publications of CARDI and MALMR and most interviewees had seen or had a subscription to "Spore magazine". The organisations without an organized information management system recorded "Spore magazine" subscriptions by individual members but there were no subscriptions in the name of the respective organisations. Neither the ASTT Journal nor the University of the West Indies publications was mentioned as a source of information. Other organisations mentioned were, NAMDEVCO, CARIRI, FAO, CCIB, GFAR see Annex III.2
24. Only the MALMR has in-house capability to produce educational/informative video. The use of still images as a means of conveying information is not widespread and is dependent on individual members for initiation. No mention was made of radio or television programmes as sources of information. Although the surveyed institutions listed Internet searches as a use of ICT, there was no indication that those operating without dedicated hardware and software sourced substantial information in this manner. Use of the Internet is widespread nationally. The number of computers per 1,000 people

was listed as 80 with 138,000. Internet users (2002 est.) and there were 8,003 Internet hosts¹⁰.

Table 1. Acknowledged source of information by key institutions

| Institution | IICA | CHAMBER | CARIRI | FAO | CARDI | NAMDECO | CTA | MALMR | ADB | UWI | ECLAC | GFAR | INPUT SUPPLIERS | NFFA | U UTRECHT | CAB | UNIV. MARYLAND |
|-------------|------|---------|--------|-----|-------|---------|-----|-------|-----|-----|-------|------|-----------------|------|-----------|-----|----------------|
| THA-DAME | √ | | | | √ | | | √ | | | | | | | | | √ |
| TTIFAL | | | | | | | | √ | | | | | | | | | |
| SFC | √ | | | | √ | | | | | | | | √ | | | | |
| APASTT | √ | | | | √ | | | √ | √ | √ | | | | √ | | | |
| AGRISTA | √ | | | | √ | | | | √ | √ | √ | | | | | √ | |
| TAS | √ | | | | | | | | | | | | | | √ | | |
| NAMDEVCO | √ | | | | √ | | √ | √ | | √ | | | | | | | |
| MALMR | √ | | | | √ | | √ | | √ | √ | | | √ | | | | |
| ADB | √ | √ | √ | | √ | √ | | √ | | √ | | | | | | | |
| ASTT | √ | | | √ | √ | √ | √ | √ | | | | √ | | | | | |

Source: Based on interviews conducted with representatives of the institutions.

¹⁰ <http://www.cia.gov/cia/publications/factbook/geos/td.html>

3. NEEDS ANALYSIS

25. As with all structured interviews, the lack of perceived respondent anonymity and the chance that interviewer bias will be introduced was taken into account. Even the most experienced interviewers can give verbal or non-verbal cues to their respondents. As a result, respondents may alter their answers in order to impress or please the interviewer. Based on the interviewee responses and attendant casual conversation was the pervasive absence of a strategic framework to manage the information that was deemed to be lacking. This type of needs analysis is instructive not only in terms of what is requested but also what is not. Examination of some of the identified needs would suggest that the Institution has already acquired complementary and/or supporting. What was gleaned from further discussions was the absence in most cases of a culture of decision-making based primarily on appropriate information.
26. Information has become a uniquely strategic resource for any organization - as vital as capital. Capital is easily depleted; information on the other hand is a regenerative resource that not only grows with use, but can also be used over and over again in different contexts to create value in multiple ways. Information management is the harnessing of information resources and information capabilities of the organization in order to create and reinvent value both for itself and for its clients or customers. In practice, the task of information management is to plan, design, and develop the organizational structures, resources, and processes to realize strategic objectives.

3.1 Information Needs

27. The following are tabulated responses on the various types of information and data (technical, socio-economic, marketing, regulations, agreements, etc.) required to execute the key institutions' work programmes. It also includes information and data that are difficult to source or acquire and highlights the tendency of respondents to consider the print format primarily.

Table 2. Information needs to service current programmes as identified by institutions

| Institution | Identified needs to service current programmes |
|-------------------------------------|--|
| Agricultural Development Bank (ADB) | Livestock production data Equipment sourcing/availability Commodity profiles Postharvest technology Government and international trade regulations Market data Portfolio performance Debt equity ratios |

| Institution | Identified needs to service current programmes |
|---|---|
| Agricultural Science Teachers' Association (AGRISTA) | <p>Planning of Fairs and Career days</p> <p>Application of communication technologies in teacher extension and outreach</p> <p>Promotion of teacher standards and methodologies</p> <p>Management of information within the organization</p> |
| Association of Professional Agricultural Scientists of Trinidad and Tobago (APASTT) | <p>Land use planning</p> <p>Agroforestry</p> <p>Wildlife/wildlife farming</p> <p>Marketing information</p> |
| Agricultural Society of Trinidad and Tobago (ASTT) | <p>Integrated pest management, small equipment sourcing, crop varieties, post harvest technology, grading, market data, commodity profiles, conferences and meetings, Government and international regulations, trade fairs</p> |
| Ministry of Agriculture land and Marine Resources (MALMR) | <p>Full range of technical and economic information as well as programme management and project management skills</p> |
| National Agricultural Marketing and Development Corporation (NAMDEVCO) | <p>Grading system, post-harvest technology, crop varieties, packaging, equipment sourcing/availability, transportation, integrated pest management, market data, identification of markets, conference and meetings, government and international regulations, trade fairs, programmes executed by agricultural networks, application of Communication Technology to disseminate marketing information, management of information within the organization</p> |
| Sugarcane Feeds Centre (SFC) | <p>Equipment sourcing/availability</p> <p>Waste utilization</p> <p>Programmes executed by agricultural networks (regional and international)</p> <p>Timely details on meetings and conferences</p> <p>Application of communication technologies in extension services</p> |
| Tobago Apicultural Society (TAS) | <p>Pest and disease management, hive health</p> <p>Marketing of apiculture products</p> |

| Institution | Identified needs to service current programmes |
|---|---|
| Tobago House of Assembly Division of Agriculture, Marine Affairs and the Environment (THA-DAME) | Food safety standards Cost of production Census details Group dynamics |
| Trinidad and Tobago Industrial Fishing Association Ltd (TTIFAL) | Practical information on association strengthening and group dynamics Assessment of territorial stock Requirements for a sustainable fishing industry given modern regulatory framework |

Source: Based on interviews conducted with representatives of the institutions

28. To service their current programmes the leadership of the selected institutions sought information that can be categorized as follows in decreasing order of frequency

Table 3. Nature of information needed by institutions to service current programmes

| Category | Frequency |
|---|------------------|
| Production data | 10 |
| Market/Marketing data | 10 |
| Training (specific request for training intervention) | 9 |
| Marketing | 7 |
| Event management | 6 |
| Regulatory framework | 5 |
| Equipment Sourcing | 4 |
| Post-harvest | 4 |
| Management of information | 4 |
| Portfolio performance | 2 |
| Networking | 1 |

Table 4. Information that institutions deem difficult to acquire

| Institution | Difficult to acquire information |
|--------------------|---|
| ADB | Timely and sector-specific production data New developments in the sector Marketing and market trends |
| AGRISTA | Technologies for rabbit rearing, rendering Costing of equipment |
| APASTT | Planning documents from Government Ministries Regional Agricultural information productivity data, environmental conservation data, marketing data |

| Institution | Difficult to acquire information |
|--------------------|--|
| ASTT | Sourcing small equipment New technologies re. Crop production, protection Market information, forecasts International Regulations Undercover production technologies |
| MALMR | Small scale/subsistence level farming data for Trinidad and Tobago, unable to quantify or value the contribution of small scale producers |
| NAMDEVCO | Crop insurance system Transportation logistics |
| SFC | Small equipment for small scale commercial activity eg pasteurization, cheese making Documented performance of animals reared under feeding regimens similar to SFC The interaction and issues between agriculture and the environment |
| TAS | sourcing of small scale equipment for apiculturists |
| THA-DAME | Domestic production data by crop and by region trends in technology usage with regard to yield improvement, food safety |
| TTIFAL | Research results on shrimp movement studies New technologies re. Trawling methods, by-catch reduction Information on fish migratory patterns, forecasts International Regulations Less wasteful harvesting techniques, pollution reduction |

29. The leadership of the selected institutions deemed the following categories of information “difficult to acquire” in decreasing order of frequency

Table 5. Categories of information deemed difficult to acquire by selected institutions

| Category | Frequency |
|------------------------------------|------------------|
| Production data | 7 |
| Market trends/Marketing | 5 |
| Equipment sourcing/costing | 4 |
| Environmental awareness/protection | 4 |
| New developments/technologies | 3 |
| Regulatory framework | 2 |
| State Planning documents | 1 |
| Crop Protection | 1 |
| Crop Insurance | 1 |
| Fish stock assessments | 1 |

Table 6. Resources and training needs to achieve strategic goals of key institutions

| Institution | Resources and training needs to achieve strategic goals |
|--------------------|---|
| ADB | ICT improvement through the provision of additional tailor-made software packages Institutional strengthening through changed corporate culture Staff training in a range of technical areas Programmes on performance management |
| AGRISTA | Hardware/software for database management Training in information management |
| | Extension Organisational development |
| | Widened international network |
| APASTT | Secretariat Dedicated hardware and software Training in database management for recruited staff |
| ASTT | Capacity building in the organisation of farmers' groups Project writing skills Sourcing of grant funds Event management Priority setting Project evaluation |
| MALMR | Resources such as appropriate hardware and software to capture and transfer field data in a timely manner |
| | Training in trade policy analysis; Agricultural health and safety issues to build capacity |
| | Information on decision-making for agribusiness |
| NAMDEVCO | Hardware acquisition and marketing database software development |
| SFC | Appropriate and tailored hardware/software Training in the production of radio and video material Skills upgrades in extension and outreach |
| TAS | Training in pest and disease management |
| THA-DAME | Marketing protocols Training needs assessment re. Staff requirements Appropriate performance appraisal |
| TTIFAL | Information on aquaculture and mariculture Information on stock assessments and migratory patterns Seasonal data on target species of fish and shrimp Ability to retain full-time staff to better liaise with the Fisheries Division in the Ministry |

30. The following categories of resources and training needs are derived from the responses provided by respondents from the institutions surveyed.

Table 7. Resources and training needs by category, for institutions to achieve strategic goals

| Category | Frequency |
|-----------------------------------|------------------|
| Staff training | 11 |
| Tailor-made software | 5 |
| Dedicated Hardware | 4 |
| Change management initiative | 3 |
| Performance management procedures | 2 |
| Dedicated secretariat | 2 |
| Wider network/contacts | 1 |
| Marketing information | 1 |

3.2 Capacity Building Needs

30 Capacity refers to the ability of the institution to identify and satisfy their information needs. Consequently, the tabulated responses to questions on capacity building refer to the need for equipment, funds, additional staff and the need for staff training, to better manage information and communication activities. Although not identified by several respondents, there were performance and skills gaps that suggested there might be need for assistance to develop a strategic information policy. Several of the institutions had *ad hoc* arrangements and goals for the satisfying of their information needs.

Table 8. Identified needs by institutions for building capacity for improvement in the management of information

| Institution | Identified need for improvement in the management of information |
|--------------------|--|
| ADB | Loan monitoring software for Portfolio management, Human Resource information management Electronic record management system Sector-specific information (production, prices etc) Information cataloguing system |
| AGRISTA | Dedicated hardware and software to manage database Functional website Secretariat with trained staff member |
| APASTT | Dedicated secretariat and a full time clerical assistant to oversee database management re. Membership files updating and mailing lists Hardware and software |
| ASTT | Database management re. Membership files updating, extension, outreach and mailing lists |
| MALMR | Appropriate hardware and software Timely collection of data in the field and subsequent download |

| Institution | Identified need for improvement in the management of information |
|--------------------|---|
| NAMDEVCO | Software development for database management Website development Hardware to supplement the field operatives use of palm pads and other peripherals Additional dedicated servers |
| SFC | Hardware and software Trained staff to manage all aspects of information management |
| TAS | Designated hardware and software |
| THA-DAME | Information specialist to manage production and marketing data Revamped marketing and management system |
| TTIFAL | Database management, to update membership files and mailing lists Management of information on maritime regulations and conventions |

Table 9. Identified needs by category, for Institutions to improve information management

| Category | Frequency |
|-----------------------|------------------|
| Appropriate software | 9 |
| Dedicated Hardware | 6 |
| Secretariat | 3 |
| Production data | 3 |
| Website | 2 |
| Staff training | 1 |
| Marketing information | 1 |

4. CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

4.1.1 Extent of “Key Problems” in the Field

31 Respondents interviewed formally and informally noted the limited availability of publications that support decision-making in the agricultural sector in Trinidad and particularly in Tobago. Interestingly, most were unable to list/recall the full range of publications that were actually available. Several of the printing schedules were not routinely kept and distribution networks have been curtailed for UWI, CARDI and CFNI publications. Some of the offices visited still had on display fact sheets and bulletins that were particularly dated. These findings are similar to key problems identified by the Information Products and Services operational programme viz. limited availability of publications because of a weak local publishing structure, that support decision-making in the agricultural sector. Additionally, limited access to locally and externally published information on agriculture and rural development, due to weak distribution infrastructure. There was also a limited awareness of the existing local and external sources of information and the type of products and services available

32 Although most of the respondents were UWI graduates they were unaware of the range of access their graduate status gave them to the University libraries. Of particular concern was the total ignorance of CTA generated or sponsored publications and services. Of the forty technical, clerical and field staff contacted only one university professor of crop science was aware of DORA, QAS and SDI.

33 Apart from IICA, CARDI and the Ministry of Agriculture, many of the respondents had niche overseas organisations from which they sourced information. Examples are the University of Utrecht, Global Forum on Agricultural Research and the Maryland Department of Agriculture. These relationships were based on reliability, mutual respect and a perceived willingness by the information provider “to go the extra mile” as quoted by a respondent from the Agricultural Society of Trinidad and Tobago. The IICA Representative was not surprised by the sector-wide penetration of his organisation as a source of information. Their activities are linked to, and determined by, national strategies borne out a consultative framework. Under Communication Channels and Services, the key problems identified such as weak networking services, limited use of ICTs for networking and dialogue and failure to take full advantage of opportunities for using radio, TV and other non-print media were echoed in this study

34 The THA Department of Agriculture, Marine Affairs and the Environment, the teachers association and over a dozen other interviewees have concluded that the CTA regional office must more pro-actively publicize its capabilities. Only two respondents were aware of the listing of agricultural websites facilitated by the University Library.

An audit of available information sources points to a significant amount of raw data in various enclaves but a scarcity of organized information synthesizing and disseminating capabilities. This weak networking is similar to that found in other CTA studies as a Key problem.

35 The need to widen existing local and regional networks was recognized by many respondents. Most were seeking hardware and software to more effectively network through the use of e-magazines and newsletters. Although most of the interviews captured the views of respondents as a snapshot, it was noteworthy how oblivious they appeared to be of other interactive and audio-visual information media. ICM Skills and System operational programme identified this limited knowledge of the design of cost-effective and participatory ICM systems as a key problem. The fact that the formal interviews were structured under the aegis of CTA, the perception could have been that Spore and the other print media discussed were the focus of the survey.

36 With the exception of the Sugarcane Feeds Centre, none of the respondents appeared willing to take full advantage of opportunities for using radio, TV and other non-print media in communicating agricultural information and knowledge. These shortcomings have been noted by CTA in other studies and confirms them as key problems

37 Even those institutions with information departments recognized the importance of strengthened ICT skills. Many of the Institutions are constrained by the lack of a secretariat and assigned staff to manage their information portfolio. They expressed the view that CTA would facilitate the design of cost-effective and participatory ICM systems. Weak ICM policies and strategies were a feature of other ACP institutions examined by CTA.

4.1.2 Information Needs

38 The stated information needs (as listed in Tables 2,3 and 4) were predominantly in the areas of production and marketing data. Examples include the need for timely and sector specific production data as stated by the Agricultural Society of Trinidad and Tobago or the need for small scale and subsistence level farm production data as stated by the Ministry of Agriculture, Land and Marines Resources. It suggests a requirement for more coordinated data collection in the field and a structured manipulation and transformation of said data into appropriate information. Crucial components of the information that have been deemed difficult to acquire are locally generated and must be collected as part of a structured, managed and integrated system.

4.1.3 Capacity Building Needs

39 The institutions surveyed were often operating without assigned staff, hardware or software. Capacity building was identified by the respondents in light of the acknowledged importance of ICM as an area for immediate intervention (Table 8). In the absence of the tools and staff required, many of these institutions will continue to

operate under their true potential and not fulfil their respective mandates. The main institutions, with the exception of the Ministry of Agriculture and NAMDEVCO, do not have the staff, hardware or software to manipulate the field data that might be collected. Many of the respondents were acutely aware of that shortcoming and saw this study as a precursor to assistance from CTA in that regard.

4.1.4 Potential Partners and Beneficiaries

40 The “CTA Draft Programme of Activities 2005” reiterates the commitment to support partner organisations leading to the development of agricultural information and communication services that would be made available to resource-poor farmers and other small operators. It goes on to state that mainly professional farmers organisations, NGOs working in rural development, groups of private operators and decentralized public services having the same objective are eligible partners/beneficiaries. It would be legitimate to conclude that these identified key institutions all have mandates that would make them worthy candidates to be CTA beneficiaries and or partners. Whilst all the institutions selected are worthy beneficiaries as can be gleaned from their objectives, the ASTT has the reach, national scope and stated intent as an NGO with the capacity to play a coordinating role

4.2 Recommendations

4.2.1 Information Needs

41 With respect to Information Products and Services the following recommendations are based on a review of the responses. There is a greater need for information inventories (i.e. listing of available information by type and source) as opposed to a widened information network. The required information is mainly field-accessible data of ‘local’ origin. The disparate approach to research across the Caribbean also highlights the need for more direct contact between researchers and scientists within the region. The institutions surveyed could all benefit in the short term, however, from widened access to the Distribution of Reference Books on Agriculture (DORA) programme as well as the Question and Answer Service.

42 Distribute more widely the list of available CTA publications by direct mailing to institutions listed in the study and through the regional branch offices of the Ministry of Agriculture and the Division of Agriculture in Trinidad and Tobago respectively.

43 Through CARDI launch a series of briefings throughout the country on the range of services available from CTA including but not limited to, beneficiary criteria, mailed notifications, on-line registration, seminar support and the question and answer service.

44 Support a “Software and Data Manipulation Training Project” focusing on the continuum from field collection to coding, linking, disseminating, centralizing, storing and retrieval.

4.2.2 Capacity Building Needs

- 45 CTA should provide the institutions interviewed as part of this survey with a DVD/broadcast format multimedia presentation highlighting the benefits of Information and Communication Management; possibly utilizing best practice as determined by experiences from African and Pacific States.
- 46 CTA should, as part of its “Integrated ICM support to local and national organisations” provide technical assistance on project development the Association of Professional Agricultural Scientists of Trinidad and Tobago in its approaches to use local media houses for information exchanges with the public. Additionally, supplement CTA ICT-based Information Services should be used to the in-house capability at the Ministry of Agriculture and the Department of Economics and Agricultural Extension at UWI, St. Augustine to develop multimedia information products.
- 47 There are several challenges facing the entire agricultural sector in Trinidad and Tobago with respect to ICM skills and systems. The survey results highlight the need for training and material support viz. hardware and software to augment the efforts currently in train. Nine of the ten institutions identified a need for software whilst six were seeking appropriate hardware
- 48 The CTA Electronic Resource Centre should share resources with the Agricultural Society of Trinidad and Tobago, the Association of Professional Agricultural Scientists of Trinidad and Tobago and the Trinidad and Tobago Industrial Fishing Association Limited for most needed centralized secretariat support through partner training in face-to-face and distance education modules. The project should have a staff recruitment component from which a stipend could be paid for work done in the six-month development phase. Physical housing of the secretariat being the responsibility of the beneficiary institution.
- 49 The CTA should provide grant support to the Non-Governmental Organisations identified by this study to access software and or hardware deemed appropriate by an external evaluator. Conformably, CTA should sponsor “Face-to-face” and CD-ROM based ICM training interventions for appropriate staff or elected members of the key institutions in the sector as identified by this survey.

4.2.3 Potential Partners and Beneficiaries

- 50 CTA in its 2003 Annual Report recognized the importance of farmers’ organisations (FOs). These FOs are providing services once provided by the State and are expected to be the voice of farmers at the local, national and international levels. They are required to do all of this in the context of weak economies, under-developed agricultural sectors and the adverse effects of globalization. They have become major targets of multilateral donors thereby putting their financial and technical resources in

far better shape. Although in most cases their human resources in terms of skills in advocacy, lobbying, extension and ICM remain inadequate.

51 The mission of the ASTT is “**To be an effective advocate in the promotion of sustainable growth and development of the agricultural sector through linkages in all sectors**”. Broad goals of the ASTT involve a commitment to effective advocacy as the recognized voice of agriculture in Trinidad and Tobago. The Society is determined to be the *de facto* umbrella body for all associations in the sector, whether those associations are based on commodities, producer interests or geography. It sees itself as a vehicle for poverty reduction, food security and rural development.

52 The ASTT is ideally placed to partner with CTA because it has a stated mission and operating norms that are in sync with the range of activities identified by CTA. These activities include organizing workshops, exchange visits and strengthening their ICM capabilities to be able to produce magazines and newsletters. The Centre has stated its commitment to work more closely with FOs and establish a strong connection to assist them in defining their own information and communication priorities

53 Cognisant of the central outcome of the study with respect to Institutions in the sector and based on an assessment of their current activities, past record and potential, the following recommendations are submitted:

- That CTA partner with the Agricultural Society of Trinidad and Tobago as the Organisation best placed to transform the sector. The opportunities for matched funding and other support are enhanced by the Society’s clear mission and focused strategies including a major role in the Agricultural Sector Reform Programme. It is one of only two institutions in the sector that is truly national in scope and representation.
- That CTA consider all the preceding recommendations as part of a widened beneficiary support programme for the listed institutions. Said support to be based on clearly articulated proposals emanating from the institution’s membership or primary stakeholders subsequent to briefing sessions by the CTA Branch Office – CARDI.

ANNEXES

ANNEX I: TERMS OF REFERENCE

| |
|--|
| <p style="text-align: center;">ASSESSMENT OF AGRICULTURAL INFORMATION NEEDS IN AFRICAN, CARIBBEAN & PACIFIC (ACP) STATES Phase 1, Caribbean – Country Study: Trinidad & Tobago</p> |
|--|

1. Introduction

The Technical Centre for Agricultural and Rural Cooperation (CTA) was established in 1983 under the Lomé Convention between the ACP (African, Caribbean and Pacific) Group of States and the European Union Member States. Since 2000, it has operated within the framework of the ACP-EC Cotonou Agreement.

CTA's tasks are to develop and provide services that improve access to information for agricultural and rural development, and to strengthen the capacity of ACP countries to produce, acquire, exchange and utilise information in this area. CTA's programmes are organised around three principal activities: providing an increasing range and quantity of information products and services and enhancing awareness of relevant information sources; supporting the integrated use of appropriate communication channels and intensifying contacts and information exchange (particularly intra-ACP); and developing ACP capacity to generate and manage agricultural information and to formulate information and communication management (ICM) strategies, including those relevant to science and technology. These activities take account of methodological developments in cross-cutting issues (gender, youth, information & communication technologies – ICTs, and social capital), findings from impact assessments and evaluations of ongoing programmes as well as priority information themes for ACP agriculture¹¹.

In January 2002, CTA's Strategic Plan (2001-2005) was implemented and CTA's activities were distributed among three operational programme areas / departments:

- Information Products and Services
- Communication Channels and Services
- Information and Communication Management Skills and Systems

These operational departments are supported by Planning Corporate Services (P&CS) which is charged with the methodological underpinning of their work and monitoring the ACP environment in order to identify emerging issues and trends and make proposals for their translation into programmes and activities. This current exercise, therefore, falls within the mandate of P&CS.

¹¹ Priority information themes for ACP agriculture have formed the basis of various several studies, workshops and seminars bringing together various stakeholders, organisations and institutions active in the field of agriculture and rural development. The documents (or extracts thereof) will be provided to the consultants.

2. Background

A comprehensive regional information needs assessment was undertaken in the Caribbean region, by CTA and the Caribbean Agricultural Research and Development Institute (CARDI), over the period 1995-1997. This study detailed the information needs, habits and priorities, of eleven sub-groups of users relevant to the agricultural and rural development sector, presented in sixteen national reports and a regional overview. The results of the studies were followed by a series of national consultations, missions and regional meetings, as well as pilot studies in information and communications management all aimed at arriving at or designing a strategy to meet information needs within the sector. The strategy proposed the development of a Caribbean Agricultural Information Service (CAIS) with a two pronged approach to improving access to information within the Caribbean region:

- Working with institutions at the national level to improve capacity in various aspects of information and communication management (e.g. network development, training, sensitisation).
- Developing information products and services to meet specific information needs identified.

The CAIS strategy has been implemented since 2001. A number of capacity building exercises were executed including workshops and training courses; provision of technical assistance; network development, policies and systems. Since the implementation of this strategy in 2001, there have also been a number of changes within institutions in the region with respect to their awareness and use of information and communications tools and technologies.

2. Main issues

CTA works primarily through intermediary organisations and partners (non-governmental organisations, farmers' organisations, regional organisations, ...) to promote agriculture and rural development. Through partnerships, CTA hopes to increase the number of ACP organisations capable of generating and managing information and developing their own information and communication management strategies. The identification of appropriate partners is therefore of primordial importance.

The "Evaluation of the Implementation of the Mid-Term Plan (1997 – 2000)" emphasized the need for CTA to develop a more pro-active approach and elaborate criteria for decision-making with regard to the choice of partner organisations and beneficiaries. Based on this evaluation, the "Strategic Plan and Framework for Action – 2001 – 2005" identifies strategic issues for CTA being: improved targeting (including partnerships and beneficiaries), geographical coverage, decentralisation, regionalisation and thematic orientation. The Plan also expresses concern about: the extent to which CTA's activities are relevant to and reach the poor, gender awareness and how to identify potential partners especially in the independent sectors.

Besides partner identification and selection issues, the observation has also been made that, the Caribbean region could benefit further from CTA's programme and activities. Finally, various national and regional partners with whom CTA has had a long-standing relationship have requested the current study which would serve to update the earlier studies done and allow them to provide more targeted assistance to their beneficiaries.

3. Objectives and scope of the study

The objectives of the study are as follows:

- to identify agricultural information needs of key actors / beneficiaries for CTA products and services;
- to identify needs of potential actors / beneficiaries of CTA activities and services in terms of building capacity for information and communication management;
- to identify potential partners / beneficiaries for CTA activities and services;
- to develop some baseline data to facilitate subsequent monitoring activities.

The study should assist the three operational departments of the CTA as well as its local representatives to improve and better target interventions and activities aimed at potential partners and beneficiaries (including women, youth, private sector and civil society organisations); to have a more informed picture of their needs and aid in the elaboration of a strategy and framework of action. The study should also highlight where there are specific needs for CTA's products and services thereby enabling improvement in the delivery of the same.

4. Methodology

The consultant will use a combination of qualitative and quantitative rapid appraisal methods including:

- the desk review of available literature and information sources including the findings of programme evaluations;
- the conduct of face-to-face interviews with relevant stakeholders / concerned parties;
- the limited use of questionnaires.

The rapid appraisal approach will allow a general overview of the key issues and company / organisational profiles on a per country¹² basis and may give rise to more in-depth studies as and when needed in the future.

¹² Out of 16 countries comprising the Caribbean ACP, only selected number will initially be the subject of studies, with domestic consultants conducting country-specific assessments. Country selection will be done by CTA on the basis of specific criteria.

5. Expected outcomes / output

One main report per country not exceeding 20 pages according to the following table of contents:

Main report

1. Executive summary
2. Introduction
3. Country profile – summary structure and economic characteristics with particular attention to agricultural sector (includes fisheries and forestry):
 - Summary of how agriculture, fisheries and forestry is organised in the country
 - Summary of the information and communication management capacity
 - The current source of agricultural information and services (synthesise Annex 3)
4. Needs analysis
 - Information needs
 - Capacity building needs (skills, training, media, ICT, equipment)
5. Conclusions and recommendations
6. References

Annexes

1. *Terms of reference*
2. *Country profile*
 - 2.1 General agricultural profile (from available documentation)
 - Size of agricultural population (male / female / youth)
 - Farmed land, forests, fishing areas
 - Agricultural systems
 - Agriculture in the economy (percentage GDP)
 - Main agricultural produce and secondary products
 - Main export markets
 - Trade agreements that include agriculture
 - Sectoral policy related to agriculture, fisheries and forests
 - 2.2 Socio-economic profile (from available documentation)
 - Total active population, demographic breakdown
 - Literacy level and languages
 - Access to services (health, schools, electricity)
 - Rural urban drift
 - 2.3 Media and telecommunications (update / check)
 - Newspapers, periodicals, magazines, radio stations, television channels,
 - Telecommunication services (fixed, mobile, etc.)
 - Computers and Internet access
3. *Profile of institutions*
 - List of all institutions involved in agriculture and rural development activities, including private sector and civil society organisations, with name, contact details, type and role of institution

- Select list of key institutions involved in agriculture and rural development, with extensive data and information on the institution, the problems faced and why it is considered a key actor

It is also expected that the results of this study will lead to identification / update of some priority agricultural information themes which will feed into a possible priority-setting exercise in the region in 2004.

6. Reporting

The country reports will not exceed 20 pages (excluding annexes). The annexes should include a list of acronyms, of persons/institutions interviewed with addresses, phone, fax numbers, e-mail addresses (if any) as well as bibliography.

7. Timing

- Draft final report is to be submitted within three months after contract signature by CTA
- Final report due two weeks after receipt of comments from CTA.

8. Expertise

| Consultant | Country |
|--|--|
| Mrs. Roberta Williams & Mrs. Sue Evan Wong | Antigua & Barbuda |
| Mr. Kelvin Craig | Guyana |
| Mrs. Luvette Thomas-Louisy | Dominica, St. Kitts & Nevis, St. Lucia, St. Vincent & the Grenadines |
| Mr. Steve Maximay | Trinidad & Tobago |
| Mr. Ricardo van Ravenswaay | Suriname |
| Mrs. Barbara Gumbs | Regional Coordinator, Overview report |

The expert should have a university degree or equivalent by experience. In addition, he/she should have at least 10 years experience in field of agriculture, rural development or social / economic sciences. He/she must have in-depth knowledge of the agricultural sector in his/her country and be able to identify key players and institutions / organisations active in this area. The ability to communicate and write clearly in English is essential, while knowledge of at least one of the local languages for communication / interview purposes is an added advantage.

The overall coordination will be carried out by Ms Christine Webster, Deputy Head, Planning and Corporate Services CTA, assisted by Mrs Lola Visser-Mabogunje, Project Assistant.

9. Implementation schedule (CTA)

- Preparation/Finalisation of ToR; Identification/ short-listing of (potential) consultants; Call for offers: February – October 2004
- Selection of consultants & contractual arrangements: October 2004
- Briefing: 3 – 4 November 2004
- Start date of contract: 2 November 2004
- Implementation period: 3 November – 1 May 2005
- End date of contract: 1 May 2005

10. Key documents to be made available to consultants

Documents include:

- Cotonou Framework Agreement
- Excerpts of relevant sections of CTA's Strategic Plan and Plan of Action (2001-2005)
- Annual Reports
- Documents on priority information themes identified for the Caribbean region
- Documents on products & services provided by CTA
- Information Needs Relevant Country and Regional Reports 1997
- CAIS Stakeholders Meeting Reports

11. Role of Regional Coordinator

- Respect the timeframe as specified in Annex IV (regarding submission of reports)
- Help identify and vet country consultants
- Attend briefing meeting in Trinidad
- Review the terms of reference
- Finalise questionnaires and methodological approach after due consultation with CTA Team
- Draw up briefing notes and guidelines for local consultants to ensure accurate and consistent application of the agreed methodology in data collection
- Answer queries (technical & otherwise) of local consultants
- During the studies, monitor and provide technical assistance to the local consultants
- Review preliminary country reports and findings and send comments back to local consultants
- Coordinate and ensure consistency of country reports
- Prepare the overall report taking into account the findings and recommendations of all the Caribbean country reports (table of contents to be agreed).

12. Role of Local Consultants

- Respect all the timeframe as specified in Annex IV (regarding submission of reports)
- Attend briefing meeting in Trinidad
- Familiarise themselves with background documents received from CTA; including the Terms of Reference

- Undertake desk study and prepare country profile, list of institutions involved in agriculture as well as preliminary list of select institutions.
- Undertake field visits in country specified in the contract
- Conduct interviews and gather information in country specified in the contract
- Draft preliminary country reports and send to Regional Coordinator for initial comments
- Based on comments received from Coordinator, revise country reports and send draft final report to CTA within the specified timeframe
- Finalise country reports based on comments and observations received from CTA and send final report back to CTA

13. Role of CARDI

- Assist in the identification and vetting of Local Consultants
- Provide input and feedback for the Terms of Reference
- Make all the logistical arrangements (flights, hotel, venue of meeting, etc) for the briefing session
- Participate in the pre/briefing sessions (in Trinidad)
- Provide backstopping for the Regional Coordinator
- Liaise with CARDI and Regional Coordinator throughout the study
- On receipt of the draft and final reports give comments and observations to the Regional Coordinator with copy directly to CTA

14 Role of CTA

- Draw up initial Terms of Reference and prepare relevant background documents
- Appoint the Regional Coordinator and the ACP Local Consultants
- Attend briefing meeting of consultants in Trinidad
- Liaise with CARDI and Regional Coordinator throughout the study
- Invite the Regional Coordinator and Local Consultants for Briefing Meeting
- Provide input to the Regional Coordinator with regard to fine-tuning terms of reference, questionnaires, interview guide and reporting guidelines for the consultants
- Provide relevant background documents to the Local Consultants & Regional Coordinator
- Elaborate budget and discuss contractual obligations with the Team of consultants & Regional Coordinator
- Pay invoices for services rendered in a timely manner on condition that all payment conditions are fulfilled
- Overall responsibility for the supervision and implementation of the studies
- Bear the agreed costs of expenditure in respect of the study (economy class return tickets to Trinidad, hotel accommodation and subsistence allowances during briefing meeting, or during agreed and specified field visits)
- Provide feedback and comments on draft country reports to the Local Consultants
- Give feedback to the Regional Coordinator on the overall report for the Caribbean.

ANNEX II: COUNTRY PROFILE – TRINIDAD AND TOBAGO

The twin-island republic of Trinidad and Tobago, located Latitude: 11 °00' North of the Equator and Longitude : 61 °00 'West of Greenwich, is the most southerly of the Caribbean Island chain, at 11 km from the Venezuelan Coast. Trinidad is about 105 km long and 77 km broad with an area of 4,828 square kilometres. The island of Tobago lies northeast of Trinidad from which it is separated by a channel about 31 km wide. It is 51 km long and 18 km broad with an area of 300 square kilometres.¹³

Figure 1 Map of Trinidad and Tobago



Source: <http://www.cia.gov/cia/publications/factbook/geos/td.html>

Some 75,000 ha of land were arable and an additional 47,000 ha under permanent crops in 1997. The country is divided into eleven administrative areas, ten in Trinidad and one in Tobago.

Petroleum resources: Trinidad and Tobago is by far the Caribbean's largest producer of oil and gas, with oil production averaging about 125,000 barrels per day (bbl/d) and natural gas production of 1,000 million cubic feet per day. Further, Trinidad and Tobago is the first LNG producer in the Latin American and Caribbean region, and is one of the major natural gas development centres in the world. Natural gas and oil reserves of Trinidad and Tobago are estimated at 22 trillion cubic feet and 700 million bbl, respectively. The Atlantic LNG plant is credited as being the largest single-train plant ever built, with plans presently underway to triple its capacity. Trinidad also has a vast

¹³ : <http://www.cia.gov/cia/publications/factbook/geos/td.html>

downstream gas sector: gas-intensive industries such as steel, fertilizer, and petrochemicals are important to the country's economy.

Biodiversity- Trinidad and Tobago, due to its continental origin, has the greatest biological diversity of the islands in the Caribbean archipelago, although the other Caribbean islands may have species with a high degree of endemism. Of the 2,160 species of flowering plants in Trinidad and Tobago, 110 are endemic, including many palms. There are approximately 420 species of birds, 100 mammals, 55 snakes, 25 amphibians and 85 reptiles. There are probably about 2,500 species of plants and about 10 times as many animals, the majority being insects and other invertebrates.

Agriculture in Tobago is sufficiently different in intensity, technology and management to warrant separate treatment. There are greater information needs in Tobago when compared to the organisations and resources available in Trinidad. The Tobago House of Assembly has jurisdictional control of agriculture in Tobago whilst the Ministry of Agriculture, Land and Marine Resources is responsible for agriculture in Trinidad. Agriculture has been and continues to be a very important part of Tobago's economy. Although 70 % of Tobago's population engages in some form of agricultural activity there are many problems that plague the sector.

Most Tobagonian farmers view agriculture as an adjunct activity and not a business. As a result, many do not keep records and are therefore unable to give the cost of production. In addition, there is an absence or shortage of basic agricultural services on the island. Farmers have to rely on Trinidad for supplies or services, a very time consuming process. Soil testing facilities, specialist advice and the provision of seeds and agro-chemicals are only a few of the services lacking in Tobago.

The tractor pool services used primarily for land preparation are insufficient. Farmers often have to wait months to have their land prepared using the government service. Consequently, farmers turn to private services thereby increasing the cost of production.

Vegetable farmers are unable to supply consumers with produce year round for mainly two reasons; the first being the farmer's inability to stagger his crops due to land constraints or technical knowledge, and the second being weather constraints. The latter brings to the fore the predicament of irrigation and drainage management. Many farmers are unable to establish and maintain an irrigation system, a necessity in the dry season. A lack of water supply hampers production thereby reducing profits.

There is an absence of reasonably priced, high quality feed for livestock on the island. In some cases, animals have suffered and died as a result of nutritional diseases. There is a need for more research to be done using local raw materials to make a high quality feed for livestock. The government stock farm on the island is unable supply all livestock farmers with new stock and stud service. Some farmers have resorted to importing new stock for the purpose of breeding. This is quite costly, and requires specialist advice.

Beekeepers are faced with the problem of a lack of technical advice on the island. Entire colonies are sometimes lost as a result of an attack from exotic and local pests, and the beekeepers' ability to identify and treat with the pest determine their production and hence profits.

The demand for honey far outweighs the supply, therefore, there is a need to attract more persons to bee keeping to satisfy that demand. There are also other products that can be derived from bee keeping including honey combs, beeswax, and soap. This potential can only be realized if the technical support is made available together with other supporting services.

The marketing of agricultural produce on the island is limited as farmers can be guaranteed sale on only a few products; pork being the only meat, and pigeon peas, hot peppers, guava, and sorrel being the only crops. There is however room for the development and marketing of value added products. Consumers, particularly foreigners, constantly enquire about local jams, jellies, candies and sauces.

II.1 General Agricultural Profile

II.1.1 Size of Agricultural Population (male, female, youth)

Trinidad and Tobago's total population for 2000 was 1,262,400 as listed on page 2 in the Republic of Trinidad and Tobago, Central Statistical Office, *Pocket Digest 2002*. The total labour force was 572,800 persons, whereas the total labour force for agriculture was 39,800 representing 6.9% of the total labour force.

Males in Agriculture

Official Government of Trinidad and Tobago, Central Statistical Office (CSO) figures for 2001¹⁴ lists the percentage of men working in the category "Agriculture" at 6.2% of the labour force or 35,600 workers. In that report "Agriculture" includes "sugar refining" but excludes "food manufacturing" and "other agro-industries". These figures are considerably lower than that for employment in the sector due to the other official categories listed by the CSO such as "professionals" and "technicians" that include agriculture workers

Females in Agriculture

CSO figures for 2001 lists the percentage of women working in the category "Agriculture" at 6,200 or 1.1% of the labour force. These figures are considerably lower than that for employment in the sector due to the other official categories listed by the CSO such as "professionals" and "technicians" that include agriculture workers

¹⁴ CSO *Agricultural Report 2001*, Table 9, pg. 8

The female population working in all industries was 243,100 (2nd quarter 2004). In other agriculture, forestry and fishery there were 4,000 females or 1.6% of the female labour force¹⁵.

Youth in Agriculture

Although no figures were found for youth in Agriculture both the past and present Minister of Agriculture, Land and Marine Resources – the Hon. John Rahael and Hon Jarrette Narine respectively, expressed concern with the lack of youth participation in the sector. However, Mr. Rahael stated the Youth Apprenticeship Programme in Agriculture (YAPA) focused on youths aged 17 – 25 years. The programme trains youth to attain technical, professional and business levels within agriculture. He stated that over 1500 youth were exposed to this programme at that time¹⁶.

Mr. Narine on the other hand stated that the 4-H programme involved youth 9 – 25 years in vegetable production, livestock production, ornamentals, grow-box cultivation and food preservation. He stated that there were 160 clubs throughout the country involving 4,500 youth and generally touched the lives of approximately 50,000 youth in total over the years¹⁷.

II.1.2 Farmed Land, Forests and Fishing Areas

Several thousand acres of arable land have become available for agricultural production following the closure in 2003 of the production arm of the State-owned sugar company. The government has stated its commitment to more viable farm sizes and the sector plans emanating from the “2020 Vision (the government’s vision is to make the country a developed nation by 2020) Group Report on Agriculture” emphasizes the raising of educational/training levels of twenty-first century farmers. This shift will reemphasize the importance of information as the base for a knowledge-driven economy.

Soft engineering solutions to the perennial problems of flooding and landslips, as well as increased water catchment, are raising the national profile of non-food agriculture. There are also ongoing efforts to utilize biotechnological advances to augment traditional cultivars and plant types that offer soil-stabilizing solutions. Park and green space management are also underrepresented areas in terms of information sources.

The total area of Trinidad and Tobago is 5,128 km² and the general pattern of land use is as follows: arable land is 14.62%, permanent crops 9.16% and other 76.22% (2001 est). The total arable land is recorded at 312,568 ha of which 44,239 ha are under permanent crops and 35,960 ha under annual crops¹⁸.

¹⁵ <http://cso.gov.tt/statistics/pdf/chart2-3.pdf>

¹⁶ <http://www.agriculture.gov.tt/applicationloader.asp?app=articles&id=1039>

¹⁷ <http://www.agriculture.gov.tt>

¹⁸ Rahil, V.A.M (1999) New Caribbean Geography with Map Reading and CXC Questions pages 284-285

Table 10. Estimated land use in Trinidad and Tobago – all agricultural holdings

| Land Use | Land Area (Hectares) | Percentage |
|--|----------------------|------------|
| Total all lands | 131,572.0 | 100.0 |
| Cultivated croplands | 81,750.8 | 62.1 |
| Cultivated grasslands | 4,503.8 | 3.4 |
| Fallow lands | 8,863.8 | 6.6 |
| Abandoned/semi-abandoned croplands | 12,509.7 | 9.5 |
| New lands being prepared for crops/pasture | 4,475.3 | 3.4 |
| Forest and lastrajo | 8,489.3 | 6.4 |
| Build on and service area | 5,679.8 | 4.3 |
| All other lands | 5,519.7 | 4.2 |

Source: CSO *Agricultural Report 2001*, Table 3, pg 1

In north Trinidad in the Aranguez area, which was historically an old sugar estate, fertile lands were divided into small tenant farms. Many of these remaining farms produce fruit and vegetables using a market gardening system (an intensive form of cultivation of vegetables, flowers or fruits); crops include sweet peppers, cauliflower, tomatoes, eggplant, beans and spinach¹⁹. Other areas of market gardening include Debe, Penal and Barrackpore in the south of the island.

The sugarbelt is mainly found in central Trinidad²⁰ however Caroni (1975) has been reformed and has downsized its operations to focus mainly on sugar refining. The objective of the establishment of the Estate Management and Business Development Company Limited was to increase productivity in light manufacturing, agriculture, housing and commercial complexes. All sugar factories have been closed leaving only the one at Ste. Madeleine open. Additionally, most of the Caroni workers accepted separation packages in July 2003 except for 28 workers²¹.

Forest

Trinidad and Tobago has a long history of successful management of both natural forests and plantations, and forests also play an important role in watershed protection and ecotourism. However, in the past two decades oil production has become a major economic focus, which has created considerable wealth, but has left out a significant proportion of the population. This has led to illegal encroachment into forest areas and their degradation, *inter alia*, by increased fire damage. This problem is exacerbated by high value housing development in prime forest areas.

¹⁹ Rahil, V.A.M (1999) *New Caribbean Geography with Map Reading and CXC Questions* page 285

²⁰ Wilson, Mark (2002) *The Caribbean Environment for CXC Geography*, Oxford University Press, London page 161

²¹ *Review of the Economy 2003*, Republic of Trinidad and Tobago, October 2003, page 46

Trinidad and Tobago decided to reverse forest degradation by adopting a sector-based approach which would engage a wide range of stakeholders in forestry activities, including communities and poorer members of society. This policy shift aims to optimize the contribution of the forest resources of Trinidad and Tobago to the national economic development of the country through consensus-based, sustainable forest management.

Total Trinidad and Tobago Forested Area in 2000 was 259,000 ha with a Forest Area per capita of 0.2 ha. In Trinidad, Wetlands (mainly mangrove forests) represent 23,540 ha and there are 230,000 ha of forest cover. The Northern Range is known for Tropical Rain Forests whereas there are mainly mangrove swamps in Caroni and Nariva. On Trinidad, the principal forest types are: tropical rain forest, semi-deciduous rain forest, littoral woodland, deciduous seasonal woodland, and swamp/mangrove forests.

Within tropical rain forest there are several tiers of vegetation interlaced with lianas and vines while epiphytic orchids, bromeliads and ferns are common. Typical plant species include *Carapa guianensis*, *Ceiba pentandra*, *Spondias monbin*, *Pentaclethra macroloba*, and *Brownea latifolia*²². One notable type of forest found extensively in east Trinidad, especially near Matura and Mayaro, is mora forest, dominated largely by *Mora excelsa*. The tropical rain forest is restricted to sheltered mountain valleys of Tobago's Main Ridge. Lower montane forest, xerophytic rain forest, evergreen formations and some elfin woodland also occur.

In 2000 the percentage share of forestry in the total Gross Domestic Product (GDP) of Trinidad and Tobago was 3.11% disaggregated data are not available. Consequently, information was not available on forestry's contribution for example, to employment.

Fishing Areas

It is estimated that 80% of the annual national catch of marine species is effected by the artisanal inshore fleet. Information on landings and catches are more accurate and dependable for the inshore artisanal fishery as opposed to the semi-industrial and industrial fishing vessels that operate in the Exclusive Economic Zone and beyond²³.

The fishing industry of Trinidad and Tobago in the subsectors of marine, aquaculture, mariculture and ornamental makes quite a valuable contribution to the economy of the country, as illustrated by the export of fish and fish products in 1998 and 1999, and it also contributes to employment, where it is estimated that over 10,000 individuals may be employed directly, with another 50,000 or so engaged in ancillary and support services. It is estimated that the industry employs approximately 10% of the agriculture labour force²⁴.

There were 255 registered fishing boats in Tobago and 1216 in Trinidad by December

²² http://www.worldwildlife.org/wildworld/profiles/terrestrial/nt/nt0171_full.html

²³ www.fao.org/fi/fcp/en/TTO/body.htm

²⁴ www.fao.org/fi/fcp/en/TTO/body.htm

2000. Distribution of registered fishing vessels across the two islands is concentrated in Tobago, and the south and west coast of Trinidad. Of the 54 monitored landing sites in Trinidad, 31 are on the West Coast. There are 10 official landing sites in Tobago²⁵.

Shrimp fishing in Trinidad and Tobago takes place mainly in the Gulf of Paria where both artisanal fishermen and trawlers operate; the smaller boats tend to exploit the resources closer to the shore while the trawlers fish offshore. The Gulf of Paria is rich in nutrients – organic matter that supplies the shrimp and fish of that area. The productivity is high in this area because of four factors namely (1)the continental shelf (2)shallow banks (3) ocean currents and water flow and (4) nutrients²⁶.

In 1998, Trinidad and Tobago and Venezuela signed an Agreement for Cooperation in the Fisheries Sector, which allows trawlers from both countries to operate in a common area south of Trinidad and north of Venezuela. The Agreement also allows for joint research and study by both countries of the resources in this area and the Gulf of Paria. Trinidad and Tobago also participates in a Working Group with Guyana, Venezuela, Suriname and Brazil in a continuous assessment of the fish and ground fish resources of the Guiana/Brazil Shelf.

However, the economy is dominated by oil, natural gas and petroleum exploration and export, so the contribution of the fisheries sector to the Gross Domestic Product (GDP) is small, and is estimated to be about 0.3%, representing about 13 % of the total contribution of agriculture to GDP²⁷.

II.1.3 Agricultural Systems

Farming takes place on two levels in Trinidad and Tobago, on a subsistence level and on a commercial level. Thirty-five percent of farming occurs at a subsistence level and includes tree crops, root crops, vegetables, legumes and livestock. Approximately 65% occurs at the commercial level and crops include vegetables, sugarcane, rice, root crops, cut flowers, ornamentals, citrus, cocoa and bananas. The farming systems are generally mixed farming systems on both levels²⁸.

III.4 Agriculture in the Economy (percentage GDP)

Agriculture in Trinidad has been characterized by the decline of traditional export crops due to relatively high costs of production and the loss of preferential marketing arrangements. Domestic agriculture has surpassed export agriculture in employing productive resources and in value of output. An agricultural census conducted in 2004 (results pending) was the first in 22 years and will underscore the extent of the decline and the diminished role of the sector within the national economy. However, the sector is poised to make an increasing contribution in light of recent (2003-2004) developments

²⁵ personal communication, Elizabeth Thorne, Fisheries Division, MALMR

²⁶ Rahil, V.A.M (1999) New Caribbean Geography with Map Reading and CXC Questions Page 296

²⁷ www.fao.org/fi/fcp/en/TTO/body.htm

²⁸ http://www.fao.org/WAICENT/Fao_Info/Agricult/AGP/AGPS/pgrfa/pdf/trinidad.pdf

including the restructuring of the sugar industry, the importance of soft engineering environmental solutions and the agricultural sector reform programme.

Agriculture represents 2.6% of the total Gross Domestic Product (2003 est.). The GDP was TT\$10.52 billion with a real growth rate of 3.7% (2003 est.). The GDP per capita was \$9,500 (2003 est.)²⁹.

The trend in actual contribution of the sector to GDP is shown in Table 11

Table 11: Contribution of agriculture to GDP 1997-2001 (adjusted to 2001 prices)

| Sector | 1997 | 1998 | 1999 | 2000 | 2001 |
|-----------------------|--------------|---------|---------|---------|---------|
| | TT\$ million | | | | |
| GDP | 36028.2 | 39092.6 | 42866.4 | 52013.1 | 57441.9 |
| Total agriculture | 777.4 | 783.4 | 830.3 | 838.2 | 806.4 |
| Percentage of GDP (%) | 2.2 | 2.0 | 1.9 | 1.6 | 1.4 |
| Export agriculture | 37.5 | 19.5 | 33.2 | 25.2 | 21.4 |
| Domestic agriculture | 384.0 | 410.6 | 399.3 | 405.8 | 417.3 |
| Sugar industry | 355.9 | 353.3 | 397.8 | 407.1 | 367.7 |

Source: CSO *Agricultural Report 2001*, Table 5, pg 3

II.1.5 Main Agricultural Produce and Secondary Products

The main agricultural produce includes sugarcane, cocoa and coffee, rice, citrus and food crops – for e.g. tomatoes, eggplants, cucurbits, crucifers, bodi, beans and spinach³⁰. Other agricultural products include rice and poultry³¹ whilst minor amounts of root tubers such as sweet potato and vegetables such as broccoli are grown.

Cocoa

Area under cultivation

Approximately 16,355 hectares (ha.) are under cocoa cultivation and this includes an area of intercropping of bananas and citrus, so a more realistic estimate of the current area of actively cultivated cocoa is 8,000-10,000 ha.

The major cocoa growing areas are Diego Martin, Blanchisseuse, Toco, Arima, Cunupia, Chaguanas, San Rafael, Pointe-a-Pierre, La Brea, Trinity and Guayaguayare.

²⁹ <http://www.cia.gov/cia/publications/factbook/geos/td.html>

³⁰ http://www.procicaribe.org/networks/clawrenet/reports/z_tt/tt.htm

³¹ <http://www.fao.org/WAICENT/Fao Info/Agricult/AGP/AGPS/pgrfa/pdf/trinidad.pdf>

Number of farmers and employment

There are approximately 7,901 farmers cultivating cocoa in Trinidad and Tobago and the sector provides employment for around 50,000 persons. The industry is labour intensive and is comprised of permanent, occasional and part-time workers.

Table 12. Total production, domestic exports and the value of exports for the years 1998-2002

| Year | Total Production (000 kg.) | Domestic Exports (000 kg.) | Value of Exports (\$000) TT\$ |
|-------------|---------------------------------------|---------------------------------------|--|
| 1998 | 1,270 | 1,319 | 14,884 |
| 1999 | 1,160 | 1,155 | 14,779 |
| 2000 | 1,593 | 1,209 | 16,742 |
| 2001 | 649 | 706 | 985 |
| 2002 | 1,721 | 1,242 | 19,200 |

Source: CSO Agricultural Section Production Figures & CSO Annual Trade Reports
<http://www.agriculture.gov.tt/applicationloader.asp?app=article&id=1024>

Vegetables

Vegetables are mainly grown by small farmers, the size of the plots ranging between 0.25 and 2.0 hectares.(ha.). The majority of farmers cultivate small areas of less than 0.5 ha. using varying levels of agro technology. The vegetables grown in Trinidad & Tobago include tomatoes, cabbages, cucumbers, melongenes, bodi, ochroes, lettuce, pumpkin, patchoi, sweet peppers, celery, cauliflower, chive, hot peppers, dasheen bush, and sorrel.

Contribution to Agricultural Gross Domestic Product

During the year 2000, the vegetable and root crop sub-sectors contributed an estimated TT\$65 million to Agricultural Gross Domestic Product.

Area under cultivation

For the period January to December 2000, the estimated area of green vegetables planted under traditional cultivation was 3,997.0 ha. The major areas of production are in the counties of St. Patrick, Victoria, Caroni and St. George, with some of the major food crop farms located in the counties of St. Patrick and St. George (locations such as Penal, Debe, Barrackpore, Oropouche, Arouca, Aranguez, Santa Cruz and Paramin).

Number of farmers and employment

The vegetable sub-sector, including root crops, is estimated to include approximately 20,000 farmers. In 2000, the majority of labour was permanent, seventy percent (70%) while nineteen (19%) was casual and eleven (11%) was occasional.

Production

Most of the vegetables produced locally are consumed by the domestic market and are traded in the wholesale and retail markets. The following is a summary of the production of selected vegetables for the period 1998-2002.

Table 13. Production of Selected Vegetables 1998-2002

| Vegetable | Unit of Quantity (000) | 1998 | 1999 | 2000 | 2001 | 2002 |
|------------|------------------------|----------|----------|----------|----------|----------|
| Cabbage | Kgs. | 2,659.9 | 1,533.2 | 1,411.4 | 2,251.0 | 1,779.8 |
| Tomato | Kgs. | 1,547.9 | 2,728.2 | 2,736.8 | 2,411.5 | 1,234.6 |
| Cucumber | Kgs. | 3,860.7 | 2,493.7 | 3,503.5 | 4,707.1 | 3,606.5 |
| Pumpkin | Kgs. | 7,656.9 | 2,063.8 | 11,449.3 | 5,795.0 | 5,799.3 |
| Hot Pepper | Single | 23,073.8 | 64,855.6 | 44,848.9 | 80,776.3 | 59,786.7 |

Source: Central Statistical Office, Quarterly Agricultural Report. Imports and Exports

Data show, that over the period 1998 to 2002, with the exception of 1998, when the quantity of vegetable imports stood at 12 million kilograms (kgs.), imports have fluctuated between 25 million to 26 million kgs. Similarly, domestic exports of vegetables ranged from 6 million to 8 million kgs., during the same period, with the exception of 1999, when an estimated 48 million kgs. were recorded (Table 14 refers).

Table 14. Vegetable Imports and Exports 1998-2002

| Year | Imports (kgs.) | Import Value (\$TT) | Domestic Exports (kgs.) | Domestic Export Value (\$TT) |
|------|----------------|---------------------|-------------------------|------------------------------|
| 1998 | 12,073,686 | 41,088,467 | 6,295,037 | 19,422,048 |
| 1999 | 26,044,927 | 81,298,129 | 7,333,780 | 17,370,650 |
| 2000 | 25,187,153 | 76,148,941 | 8,429,054 | 23,304,138 |
| 2001 | 25,282,779 | 76,123,091 | 8,237,373 | 22,921,264 |
| 2002 | 26,374,767 | 75,091,058 | 7,845,519 | 23,704,514 |

Source: Central Statistical Office, Trade Reports.

Rice

Rice production, in addition to providing earnings to farmers, also provides an important source of revenue to the country through exports, thus contributing to Agricultural GDP. In 2000 the rice sub-sector contributed (TT\$17 million). or 1.1% of agricultural GDP.

Area under cultivation

Rice is concentrated mainly in the areas of Caroni, Oropouche and Plum Mitán. In 2001 it is estimated that 1000 ha. of land were under rice cultivation.

Number of farmers and employment

At present there are less than 500 active rice farmers in T&T and the sector provides employment for approximately 1000 persons. Labour shortage continues to plague the

rice industry as farmers find it difficult to attract labour since higher wages are offered in the majority of other activities rather than in the rice sub-sector.

Table 15. The guaranteed price and subsidy payment for paddy based on grade

| Grade | Guaranteed Price (TT\$/Kg.) | Subsidy Payment (TT\$/Kg.) |
|--------------|--|---------------------------------------|
| Grade 1 | \$2.20 | \$1.43 |
| Grade 11 | \$1.82 | \$1.12 |
| Grade 111 | \$1.37 | \$0.72 |
| Grade IV | \$0.66 | \$0.09 |

Source: MALMR, Revised Agricultural Incentive Programme

Production and exports

Table 16. Total production of rice paddy, domestic exports and the value of exports for the years 1998 – 2002

| Year | Total Production (000kg.) | Domestic Exports (000kg.) | Value of Exports (000TT\$) | Total Imports (kg.) | Value of Imports (TT\$) |
|-------------|--|--|---|------------------------------------|--|
| 1998 | 7,037 | 875 | 5,448 | 86 | 918 |
| 1999 | 6,405 | 40 | 80 | 3,027 | 28,735 |
| 2000 | 6,256 | 0 | 0 | 111,010 | 202,455 |
| 2001 | 3,262 | 3,650 | 17,720 | 333 | 3,763 |
| 2002 | 3,882 | 0 | 0 | 45,326 | 51,379 |

Source: CSO Agricultural Reports 1999-2002.

II.1.6 Main Export Markets

The main export markets for Trinidad and Tobago agricultural products are North America, Suriname, Guyana, Dominica, United Kingdom, St. Lucia, St Kitts³². The export commodities include fertilizer, sugar, cocoa, coffee, citrus and flowers³³.

Table 17. Export markets for Trinidad and Tobago agricultural products

| Export market | Main export products |
|----------------------|--|
| Dominica | Processed products Orange Juice |
| Guyana | Processed products ,Citrus juices, fertilizers |
| North America | Peppers, pumpkin, kalanchoe, |
| St Kitts | Processed drinks/juices |

³² http://www.procicaribe.org/networks/clawrenet/reports/z_tt/tt.htm

³³ <http://www.cia.gov/cia/publications/factbook/geos/td.html>

| Export market | Main export products |
|----------------------|---|
| St Lucia | Vegetables (prior to 2004 confirmation of Black Sigatoka disease in Trinidad) |
| Suriname | Fertilizers, processed juices |
| United Kingdom | Dasheen, callaloo, peppers |

Source: Personal communication with NAMDEVCO officials and W. Lee Yuen, ASTT

II.1.7 Trade Agreements that include Agriculture

Trinidad and Tobago is bound by the protocols coming out of the Uruguay Round of Trade Agreements and more directly by trade agreements with specific CARICOM countries. On November 29th, 2002 an agricultural trade agreement was signed with Grenada, subsequent protocols were signed with Barbados and with Antigua/Barbuda on April 1, 2003.

The Barbados protocol is typical of the others and incorporates issues of Approved Packhouses and Registered Farmers, Pink Hibiscus Mealy Bug (PHMB), Produce Quality and Post Harvest Treatments, Packaging, Storage of Produce within the Packhouse, Inspection and Certification of Produce, Exporters' Responsibilities, Importers in, Barbados, Transport of Produce to Port of Exit, Visit by Barbados Officials, Guidelines, for Farmers, Pesticide Management, Certification and Decertification of farms and Packhouses.

Trinidad and Tobago is a full signatory to UNCLOS and CITES agreements which impact on trade related issues. The country is also TRIPS compliant with respect to Trade-Related aspects of Intellectual Property Rights.

II.1.8 Sectoral Policy Related to Agriculture, Fisheries and Forests

The Ministry of Agriculture, Land and Marine Resources (MALMR) has embarked on an agri-business development programme. This has been initiated through an agri-business project under the government's Agricultural Sector Reform Programme (ASRP). Under the Agri-Business Development Project, six products are being developed to form viable export industries. The project has identified the relevant producer, industry or farmer groups, processors or exporters that will lead the development of the industry. These will be key players in the information flows necessary for successful implementation

The six (6) products targeted for development are hot pepper, cassava, pumpkin, sweet potato, paw-paw and tilapia. There is also a development strategy that will ensure continuation of the programme after the ASRP comes to an end in 2005. The 2004 strategic planning exercise of the MALMR found "*The MALMR recognizes that it needs to address several policy and sectoral management issues within an environment of limited financial, physical and skilled human resources in sufficient numbers. It also accepts that the State is a relatively inefficient producer of private goods and services and negates these activities in the private sector. The State has, however, to continue with the provision of regulatory and certification services for quality control; environmental*

protection; the sustainable management of resources; and foster inter-ministerial collaboration with Institutions that share over-lapping responsibilities”³⁴

Following a series of participatory stakeholders’ meetings, culminating in a draft review meeting on March 27, 2001 an official sector policy document was released. The Ministry’s central role as the major stimulant for growth in the sector was underscored and a slew of policy goals announced. These included increases in agricultural production, agricultural incomes, employment, stakeholder participation and food security. The official position of the Ministry on food security is that it should be addressed through food availability and not on notions of self-sufficiency, which it views as impracticable given land and productivity constraints. There was also a commitment to develop the capacity to exploit the anticipated developments in biotechnology.

The policy also lists goals of reducing the food import bill, agricultural risks, degradation of the natural environment and praedial larceny³⁵

II.2 Socio-economic Profile

II.2.1 Demographics

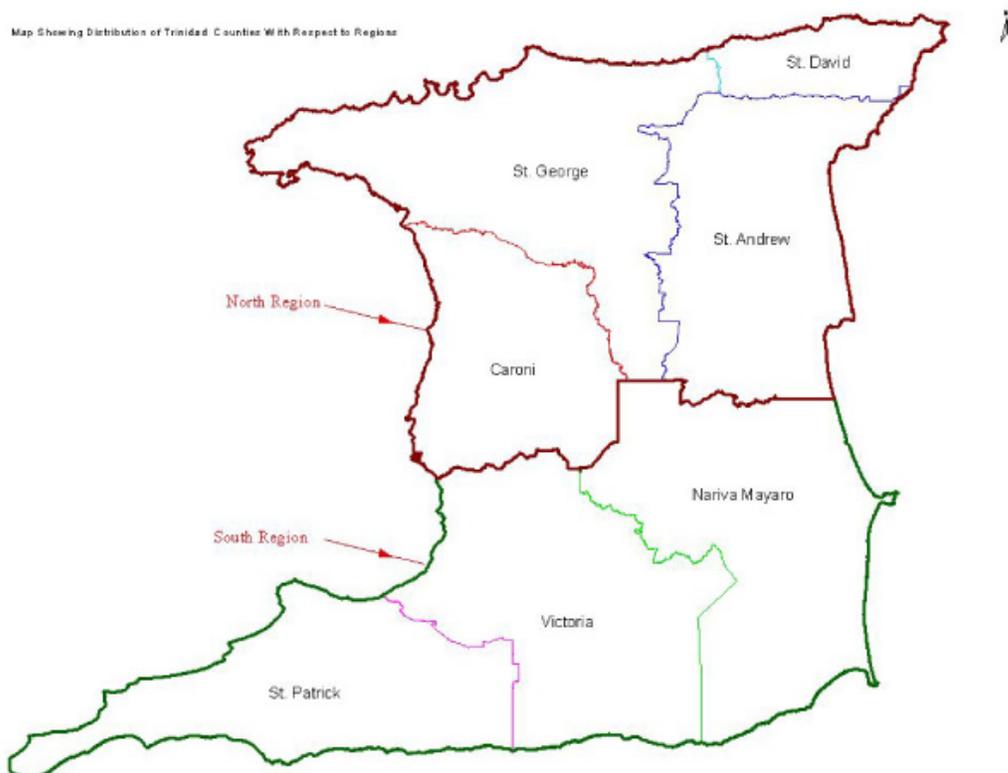
In 2000 the Trinidad and Tobago population was estimated at 1,262,366 with a population growth of -0.71%. The population density per square mile was 554³⁶.

³⁴ Personal communication, Vassel Stewart ASRP consultant, MALMR

³⁵ Anon, 2001, *Sector Policy for Food Production and Marine Resources*. Ministry of Food Production and Marine Resources 41pp

³⁶ <http://www.infoplease.com/ipaA0108046.html>

Figure 2. Map showing regional subdivisions in Trinidad



Source <http://www.agriculture.gov.tt/>

The Republic of Trinidad and Tobago, Central Statistical Office, *Pocket Digest 2002* provides the following census data on population by administrative area

Table 18. Population by administrative area

| Area | Number of individuals ('000) |
|--|------------------------------|
| Trinidad and Tobago | 1262.4 |
| Tobago | 54.1 |
| Trinidad (following 10 Administrative areas) | 1208.1 |
| Port of Spain | 49.0 |
| San Fernando | 55.4 |
| Borough of Arima | 32.3 |
| Borough of Point Fortin | 19.1 |
| County St George | 460.5 |
| County Caroni | 193.5 |
| County Nariva/Mayaro | 34.2 |
| County St. Andrew/St. David | 66.6 |
| County Victoria | 181.1 |
| County St. Patrick | 116.4 |

Source: Republic of Trinidad and Tobago, Central Statistical Office, *Pocket Digest 2002* page 2

The estimated age structure for 2004 is shown in Table 19³⁷:

Table 19. Age structure as per 2004 population estimate

| Age range | Percentage | Males | Females |
|-------------|------------|---------|---------|
| 0-14 | 21.4 | 120,153 | 114,205 |
| 15-64 | 70.6 | 403,202 | 370,498 |
| 65 and over | 8.0 | 39,762 | 48,765 |

Source: <http://www.cia.gov/cia/publications/factbook/geos/td.html>

The country's 2000 census provides the following statistics:

Table 20. Trinidad and Tobago population by gender and age

| Population | Number of individuals ('000) |
|-------------------|------------------------------|
| Total | 1252.4 |
| Male | 633.0 |
| Female | 629.4 |
| Under 15 years | 317.4 |
| 15 – 64 years | 850.2 |
| 65 years and over | 84.8 |

Source: Republic of Trinidad and Tobago, Central Statistical Office, *Pocket Digest 2002* pg. 3

II.2.2 Literacy Level and Language

Literacy levels are defined based on those 15 and over who can read and write. The overall literacy is 98.6% where male literacy is 99.1% and female literacy is 98% (2003 est)¹⁷. The languages spoken in Trinidad and Tobago are English (official), Hindi, French, Spanish and Chinese³⁸

II.2.3 Access to Services

The country has a longstanding commitment to universal access to services such as health and education.

Health

In 1994, the Regional Health Authorities Act was enacted, establishing five Regional Health Authorities (RHAs), four in Trinidad and one in Tobago, as independent statutory authorities accountable to the Minister of Health. Secondary and tertiary care are provided at one general hospital in Port-of-Spain and one in San Fernando (1,245 beds), at two county hospitals in Trinidad (111 beds), and at one hospital in Tobago (96 beds). Specialized hospitals and units also provide women's health, psychiatric, chest disease,

³⁷ <http://www.cia.gov/cia/publications/factbook/geos/td.html>

³⁸ <http://www.cia.gov/cia/publications/factbook/geos/td.html>

substance abuse, geriatric, oncology, and physical therapy services, for a total 1,513 additional beds (the psychiatric hospital is the largest, with 1,060 beds). A comprehensive range of diagnostic services is available at the two general hospitals.

Primary health care in the public sector is provided at no cost to the user at 101 health centres, 19 of which are in Tobago. The number of health centres per RHA in Trinidad varies from 16 in the eastern RHA to 30 in the central RHA. The ratio of population to health centre ranges from less than 3,000 per centre in Tobago to more than 21,000 per centre in Saint George West. While coverage is in principle universal, limited human resources and supplies of drugs limit effective coverage, as well as the range of services provided. The Chronic Disease Assistance Plan (CDAP) provides free medication for chronic diseases for all citizens; prescriptions can be filled at public or private pharmacies.

Education

There are some 497 Primary, 137 Secondary Schools, a campus of the University of the West Indies (St Augustine) and the multi-campus University of Trinidad and Tobago (launched in 2003) in Trinidad and Tobago. The following goals are part of the Ministry of Education's plan 2002-2007³⁹:

- Government will improve the quality and equity of access to education and training;
- The provision of student support services;
- Improvement in the quality of education at all levels of the system;
- Promotion of skills development;
- Ensuring that no student is denied tertiary level training based simply on inability to pay;
- Creation of a culture of lifelong learning.

Utilities

The Trinidad and Tobago Electricity Commission (T&TEC) is the power transmission and distribution utility of the twin island republic of Trinidad and Tobago. T&TEC is responsible for the design, construction, operation and maintenance of the country's electrical transmission and distribution network. Its Marketing Department claims the ability to guarantee transmission to any consumer nationwide. The utility supplies electric power to its some 350,000 customers on both islands via a single interconnected grid.

T&TEC purchases the bulk electric power from independent generation companies for resale and is also responsible for securing fuel supplies for the generation companies. It is state owned and regulated and is by law the sole retailer of electric power in the twin-island republic.

³⁹ http://www.logosnet.net/ilo/150_base/en/topic_n/t1_tri.htm

II.2.4 Rural-Urban Drift

Both official⁴⁰ and NGO-generated documents⁴¹ recognize the existence of rural-urban drift, they refer to it as being significant and exacerbated by the patterns of Government expenditure on social programmes. The overall consensus is that disproportionate State allocation of Social programme spending in the East-West corridor in particular encourages movement from rural communities to urban Port of Spain.

II.3 Media and Telecommunications

II.3.1 Newspapers, Periodicals and Broadcast Media

Newspapers

All listed newspapers are privately owned and distributed throughout the two islands through a network of dealers and carriers. The Catholic Church Communities are responsible for distribution and sales of the Catholic News.

Table 21. Listing of print media

| Name | Internet address | Agric/Rural Issues | Frequency | Circulation |
|---------------|---|-----------------------------|------------|-------------------------------------|
| Express | http://www.trinidadexpress.com | Average of 3 weekly columns | Daily | 80,000 (weekday) 80,000 (Sunday) |
| Guardian | http://www.guardian.co.tt | Average of 4 weekly columns | Daily | 45,000 (weekday) 50,000 (Sunday) |
| Newsday | http://www.newsday.co.tt | Average of 3 weekly columns | Daily | |
| TNT Mirror | http://www.tntmirror.com | Ad hoc | Twice/week | 42,000 (Friday) 44,000 (Sunday) |
| Bomb | | Ad hoc | Weekly | |
| Tobago News | http://www.thetobagonew.com | Community focus | Weekly | |
| Catholic News | http://www.catholicnews-tt.net | Ad hoc | Weekly | |
| Showtime | | nil | Weekly | 32,000 |

⁴⁰ (<http://www.energy.gov.tt/applicationloader.asp?app=newsarticles&cmd=view&articleid=33>)

⁴¹ <http://www.toco.interconnection.org/tocoregion.htm>

| Name | Internet address | Agric/Rural Issues | Frequency | Circulation |
|--------------|---|--------------------|-----------|-------------|
| The Review | | Ad hoc | Monthly | |
| Blast | | Ad hoc | Weekly | |
| Sunday Punch | http://www.tntmirror.com | nil | Weekly | 70,000 |

Source: Telephone enquiry with Circulation Departments of respective newspapers.

Daily newspaper circulation in 2001 was quoted as 191,000 whilst Sunday circulation figures were listed as 167,000⁴²:

Periodicals

The Ministry of Agriculture, Land and Marine Resources and the then Extension Department of the Faculty of Agriculture, University of the West Indies have ceased to produce any periodicals. The Ministry publishes, ad hoc, the Agri Newsletter and factsheets as deemed appropriate.

The following regional and international agencies produce periodicals that are utilized by nationals of Trinidad and Tobago

Caribbean Agricultural Research and Development Institute

CARDI headquarters

UWI Campus,

St Augustine

Trinidad and Tobago W.I.

Tel: 1- (868) 645-1205

Fax: 1-(868) 645-1208

CARDI Update:

Electronic newsletter

Published about 4 times per year

<http://www.cardi.org/publications/cardiupdate.php>

CARDI Review:

Focus is on research conducted by CARDI mainly crops and livestock

Dissemination is mainly electronic however a limited number of hard copies are issued

Published twice per year

<http://www.cardi.org/publications/cardireview.php>

⁴² <http://cso.gov.tt/publications/digest.asp#>

Inter-American Institute for Cooperation on Agriculture

Representative: Aaron H. Parks

Direct Phone: 628-4078

Tel: 628-4078/79

622-7086/93

628-4403

IICA Library System

SIBIICA: sibiica@iica.int

Fruits: - an in-house project being conducted by a member of staff

Carifin: - Animal health and Plant protection news and information

Agriview: - General information on the Agriculture sector

Food and Agriculture Organisation (Publications)

Food and Agriculture Organisation

184-186 Frederick Street

PO Box 822

Port-of-Spain

e-mail FAO-TT@fao.org

The following publications are issued by FAO:

Agriculture

Plant Production and Protection

Animal Production and Health

Forestry

Fisheries

Land and Water Development

Economic and Social Development Studies

Food and Nutrition

Each of these is published once per year and is usually produced after an annual workshop. These books are available for purchase but a formal letter must be written which is forwarded to FAO headquarters before the purchase can be authorized.

Broadcast media

Television

Only 2 television stations were recorded as operating in 2004⁴³. However the Telecommunications Licensing Authority recognizes 5 television stations details of which are shown in Table 8.

⁴³ <http://www.cia.gov/cia/publications/factbook/geos/td.html>

Table 22. Local television stations

| Name | Channel | Agric/rural focus programming | Reach | Ownership |
|---------------------------------|---------|-------------------------------|-------------------|-----------|
| Trinidad and Tobago Television* | 2, 13 | Ad hoc /news | nationwide | State |
| CCN TV6 | 6 | Ad hoc news | nationwide | Private |
| Synergy TV | 28/64 | nil | Cable subscribers | Private |
| IE TV* | 4/16 | Information | nationwide | State |
| Gayelle | 28/7 | 1 hr community programming | Cable subscribers | Private |

*Decommissioned State entities for the period Jan-June, new ownership pending
Source: Telephone interviews with representatives of each station.

Radio

In 2001 it was recorded that there were 532 radios per 1,000 persons. There are 4 AM stations and 18 FM stations operating in this country (2004)⁴⁴.

Table 23. Radio stations by frequency, programming and reach

| Name | Frequency/band | Format | Agric/rural focus programming | Reach | Ownership |
|-----------------|----------------|------------------|-------------------------------|--------------|-----------|
| 100FM* | 100 FM | Music | | nationwide | State |
| Power 102 | 102 FM | Music/talk | Nil | nationwide | Private |
| 103FM | 103 FM | East Indian/info | Ad hoc | nationwide | Private |
| Ebony | 104 FM | Music | Nil | nationwide | Private |
| Vibe 105 | 105 FM | | Nil | | Private |
| Sangeet | 106 FM | East Indian | Ad hoc | nationwide | Private |
| Radio Toco | 106.7 FM | Community | Rural/agric | 15% coverage | NGO |
| Radio Guardian* | 610 | News | Ad hoc | nationwide | State |
| Radio Trinidad | 730 | News/info | Ad hoc | nationwide | Private |
| CGI | 90.5 FM | East Indian/info | Ad hoc | 90% coverage | Private |
| Trini Bashment | 91.9 FM | Local music | Nil | nationwide | Private |
| Radio Tambrin | 92.1 FM | Tobago info | rural | Tobago | Private |

⁴⁴ <http://www.cia.gov/cia/publications/factbook/geos/td.html>

| Name | Frequency/band | Format | Agric/rural focus programming | Reach | Ownership |
|-------------|----------------|------------------|-------------------------------|--------------|-----------|
| Hott 93 | 93 | Music | Nil | 90% coverage | Private |
| HCU network | 94.1FM | East Indian/info | Rural. 2hrs/wk agric | nationwide | Private |
| Mix 951 | 95.1 FM | Music | Nil | nationwide | Private |
| I95 | 95.5 FM | Talk | Ad hoc | nationwide | Private |
| WE FM | 96.1 FM | Music | Nil | nationwide | Private |
| Music radio | 97.1 FM | Music | Nil | nationwide | Private |
| The Promise | 98.1 FM | Religious | Nil | 90% coverage | Private |
| 98.9* | 98.9 | Music | Nil | nationwide | State |
| Wack | 99.5 | Music | Nil | nationwide | Private |

*Decommissioned State entities for the period January - June, new ownership pending.

Source: Tuning, listening, staff interviews

II.3.2 Telecommunication Services

The Telecommunications Services of Trinidad and Tobago Limited (TSTT) is the only full service telecommunication company in Trinidad and Tobago.

TSTT was formed in 1991 and is the sole licensed provider of telephone services in Trinidad and Tobago. The company is jointly owned by National Enterprises Limited (NEL), a company incorporated in Trinidad and Tobago (51%) and Cable & Wireless (49%).

Over the past five years, TSTT's customer base has grown at an average of 5.4% per annum. The number of subscribers grew from 181,000 in 1992 to 295,855 at the close of 2000. Services TSTT provides include basic telephony, cellular, Internet, leased lines and data services. The switching and transport infrastructure are both digital. The transport network comprises primarily fiber optic based systems supported by microwave radio systems. TSTT customers include: banks, insurance companies, petroleum and energy based industries and government and tourist offices.⁴⁵

There were 325,900 (2002) telephone main lines in use and 361,900 (2002) mobile cellular telephones whilst the general assessment of the system was recorded as "an excellent international service and good local service"⁴⁶. The "land line" telephone coverage is nationwide; all areas of the country are serviced through a system of 31 Exchanges.

⁴⁵ http://www.ecitele.com/news/print_mod.asp?v_name=news/2001/trinidad_mgw_cust_2bw.asp.

⁴⁶ <http://www.cia.gov/cia/publications/factbook/geos/td.html>.

A three-minute local call costs €0.26 (TT\$2.07) day rate or €0.09 (TT\$0.69) evening rate on the fixed and €0.6 (TT\$4.77) peak hours rate or €0.3 (TT\$2.37) off-peak hour rate on the mobile network.

II.3.3 Computers and the Internet

The National Institute of Higher Education, Research, Science and Technology (NIHERST) conducted the first Survey on the Utilisation of Information Technology by Households in the Republic of Trinidad and Tobago in 2001.

The survey based on a representative sample of 2812 households, was designed to provide empirical data on the penetration of Information Technology in private households of varying socio-economic status and has generated essential benchmark indicators, for comparison with future longitudinal studies of similar objectives⁴⁷.

Objectives of the survey:

- Households with/without computers by geographic areas.
- Reasons for no computers in households.
- Source of funding.
- The socio-economic and demographic profile of computer users in households.
- Range of computer applications.
- Internet connections, usage, satisfaction with service providers and concerns for security.

The survey results indicated that:

- Only 13.0% of the households in Trinidad and Tobago (approximately 44,600 households based on national statistics for 2000) had a home computer as at June 2001; 26.9% in Diego Martin, 19.8% in San Fernando and 18.8% in Chaguanas.
- For purposes of comparison, more than 30% of the households in a number of Organisation for Economic Co-operation and Development (OECD) countries were equipped with computers by 1997, and more than half (54.0%) of the households in Australia had computers in May 2000.
- Affordability was the major constraint in 56.0% of all households without computers, ranging from 43.9% in the City of Port of Spain to 78.0% in the Borough of Point Fortin.
- 53.0% of households purchased computers from private savings; 13.0% accessed Government loans.
- Households (20.0%) with gross monthly incomes of \$6,000 - \$7,999 had the largest proportion of home computers, followed by 15.0% of households with incomes of \$4,000 – \$5,999. Only 5.0% of households with monthly incomes of less than \$2,000 had computers.
- In 2000, 27.0% of the computers were acquired compared with 6.7% in 1997.

⁴⁷ <http://www.niherst.gov.tt/st-statistics/survey-highlights/it-household-survey.htm>

- Almost three out of four persons (73.0%) in each household used the computer.
- The proportion of male (51.0%) to female (49.0%) computer users was generally similar.
 - 16.6% of computer users were between 15 – 19 years, 16.3% between 30 – 39 and 14.5% between 40-49.
 - Of computer users, 50.0% had acquired secondary level education; only 3.8% had a university level education in computer studies.
 - 50.0% of computer users were employed and self-employed and 39.0% were students.
 - In Private Enterprises, 59.8% of employees used the computer compared with 29.7% in Government.
 - Windows 98 and 95 were the main operating systems in 74.4% of households.
 - Most households (70.8%) used the computer daily between two and five or more hours.
 - Only 11.8% of households were engaged in software development and 20.2% accessed distance learning/education compared with other activities such as games (78.4%), Microsoft Office (66.0%), e-mail (62.4%) and web searches (61.5%).
 - By value of e-commerce transactions, 42.2% of the households spent less than \$500, while 35.6% spent between \$500 and \$2,999 over the six month period ending May/June, 2001.
 - A significant proportion of households (40.0%) was dissatisfied with the service of Internet Access Providers due to ‘high cost’, ‘too much time for connection’ and ‘interruption while working’.
 - Of the households with Internet access, 19.5% reported e-commerce transactions, mainly in the purchase of computer hardware/software, electronic goods and books and magazines.

The number of Computers per 1,000 people was listed as 80 with 138,000 Internet users (2002 est) and there were 8003 Internet hosts⁴⁸

There are four major Internet Service Providers in addition to TSTT with TSTT as the sole telecommunications provider. All other providers dial up on TSTT hardware.

Table 24. Internet service providers: description and rates

| Name | Brief Description/address | Cost of 10 hours access |
|--------------|--|--------------------------------|
| TSTT | Internet access services. http://www.tstt.net.tt | €4.31 (TT\$34.50) |
| Opus Networx | regional and international Internet access and Web presence http://www.opus.co.tt | €4.31 (TT\$34.50) |

⁴⁸ <http://www.cia.gov/cia/publications/factbook/geos/td.html>

| Name | Brief Description/address | Cost of 10 hours access |
|--------------------|---|--------------------------------|
| WOWNET | a low cost ISP with POPs in Port-of-Spain, Diego Martin and San Fernando. http://www.wow.net | €2.08 (TT\$16.67) |
| Carib-Link Limited | An information and technology company providing Internet access in Trinidad and Tobago and throughout the Caribbean. http://www.carib-link.net | €3.59 (TT\$28.75) |
| InterServ Limited | full range of Internet services throughout the Caribbean Region, head office in Trinidad http://www.trinidad.net | €1.73 (TT\$13.80) |

Source: Staff interviews.

ANNEX III: PROFILE OF INSTITUTIONS

III.1: List of Institutions involved in Agriculture and Rural Development

| Name and contacts | Type | Role |
|---|------|---------------|
| Agribusiness Alumni C/o Andrew B. Joseph #5 Archibald Street Tunapuna | PA | EX, TR |
| Agricultural Development Bank (A.D.B.) 87 Henry Street, Port of Spain Tel 623-0261 Fax 627-7493 Email adbp.o.s@tstt.net.tt | BNK | FS |
| Agricultural Society of Trinidad And Tobago (ASTT) Pembroke Street, Port of Spain Tel: 868-627-3087 Fax: 868- 623-7797 email Agrisoc@tstt.net.tt | AS-F | RU, EX, IN |
| AGRISTA Agricultural Science Teachers Association Levi Brown 46 Churchill Circular Extension Arouca 667-0916 | PA | EX |
| Aquaculture Association of Trinidad and Tobago L.P. 64 Water Pipe St. Arouca or C/o Sugarcane Feeds Centre Pokhor Road Longdenville, Chaguanas Tel: 868-665-9967 Fax: 868-665-7913 Email: sfc@carib-link.net | AS-F | EX,RD |
| Arena Farmers Group # 172 Arena Road, Freeport or C/o Agricultural Society of Trinidad And Tobago (ASTT) Pembroke Street, Port of Spain Tel: 868-627-3087 Fax: 868- 623-7797 email Agrisoc@tstt.net.tt | AS-F | EX |
| Association of International Agricultural Extension and Education (AIAEE) Regional Chapter Dr Wayne Ganpat C/o Dept of Agricultural Economics and Extension UWI, St Augustine 645-6263 | REG | EX,RD |

| Name and contacts | Type | Role | |
|--|------|-----------|-----|
| Association of Professional Agricultural Scientists of Trinidad and Tobago (APASTT) Prof Lawrence Wilson C/o Dept of Food Production UWI, St Augustine 645-3232- Ext 2089 | PA | EX, TR | RD |
| Bee Keepers Association Gladstone Solomon C/o Botanic Station Scarborough Tobago 639 4356 | AS-F | EX | |
| Bethel Farmers Association Samuel Charles #2 Montgomery Local Road Carnbee Tobago 639 7223 | AS-F | EX | |
| Bon Air Agro-Processors Limited #9 Ramcharan Street off Thavenot Street Tacarigua 640-8859 | PRV | PS-M | |
| Bonsai Society of Trinidad and Tobago P.O.Box 5154, Tragarete road Port of Spain | AS-F | EX | |
| CARDI Karl Murray Officer in Charge / Agronomist Blenheim Tobago 660 2237 | REG | IN, RD | EX, |
| Caribbean Agri-Business Association C/o Inter-American Institute for Co-operation on Agriculture (IICA) 2 Herbert Street Port Of Spain Tel: 868-628-4403 Fax: 868-628-4562 email: iicatt@iicacarc.org | REG | IN, RD | |
| Caribbean Agricultural Research and Development Institute (CARDI) U.W.I. St. Augustine Tel: 868-645-1205- Fax: 868-645-1208 email: infocentre@cardi.org | REG | EX, RD | IN, |

| Name and contacts | Type | Role |
|--|-------------|-------------|
| Caribbean Food Crops Society C/o Dept of Agricultural Economics and Extension UWI, St Augustine 645-6263 | REG | EX, IN |
| Caribbean Network for Integrated Rural Development (CNIRD) 41 Eastern Main Road St Augustine 645-6459 | NGO | IN, RU |
| Cocoa and Coffee Board Frederick Street, Port of Spain Tel: 625-0289 Fax:627-4172 email ccid@tstt.net.tt | STA | PS-E |
| Cunupia Farmers Association C/o Anil Ramnarine LP #62 Esmerelda Road Cunupia | AS-F | EX |
| Depot Road Farmers Group C/o Mrs. Miradai Seetahal LP 76-86 Depot Road Longdenville Post Office Via Chaguanas | AS-F | EX |
| Eastern Caribbean Institute of Agriculture and Forestry Centeno 642-1773 | EDU | TR |
| Faculty of Science and Agriculture University of the West Indies, St Augustine 645-3232 Ext 2112 | EDU | TR |
| Federation of Agricultural Organisations of Trinidad and Tobago 65 – 67 St James Street San Fernando | NGO | RU |
| Food and Agriculture Organization (FAO) 134-138 Fredrick Street, Port Of Spain Tel: 868-625-0467-8, Fax: 623-0995 email: FAO-TT@fao.org | REG | RU, PP |
| Friendsfield Young Farmers Association Linton Thomas 91 Friendsfield Road Scarborough Tobago 635 0859 | AS-F | EX |

| Name and contacts | Type | Role |
|--|-------------|---------------|
| General Poultry Farmers Association C/o Yolande Vieira Brazil Village Talparo 643-8223 | AS-F | PS-P, EX |
| Horticultural Society of Trinidad and Tobago Secretary P. O. Box 252 Port of Spain | AS-F | EX |
| Institute of Science and Technology for Agriculture (formerly Kendal Farm school) Kendal Tobago | EDU | TR |
| Inter-American Institute for Co-operation on Agriculture (IICA) 2, Herbert Street, Port of Spain Tel: 868-628-4403 Fax: 868-628-4562 email: iicatt@iicacarc.org | REG | RU, IN, PP |
| Jubilange People's Cooperative Society 24 Jubilee Street Gonzales | AS-F | PS-M |
| La Philipine Farmers Association C/o Kenneth Heeralal Gran Couva Main Road Gran Couva 679-9527 | AS-F | EX |
| Las Cuevas Farmers and Homesteaders Association Ltd. Rincom Trace Las Cuevas 622-1082 | AS-F | RU |
| Livestock and Livestock Products Board 80 Abercromby Street, Port of Spain Tel: 625-7829 Fax: 627-6245 email: llpb@tstt.net.tt | STA | RG |
| Maloney Farmers Association Abdul Young Street Aranguez 638-9479 | AS-F | EX |
| Ministry of Agriculture, Land and Marine Resources St Clair Circle Port of Spain | GOV | EX, RU, PP |
| Mt. St. George Farmers Association Owen Dillon C/o Botanic Station Scarborough Tobago 639-4356 | AS-F | EX |

| Name and contacts | Type | Role |
|--|-------------|---------------|
| National 4-H Organisation C/o Ministry of Agriculture, Land and Marine Resources St Clair Circle Port of Spain | AS-Y | TR, EX, |
| National Agricultural Marketing and Development Company (NAMDEVCO) S.S Erin Road, Debe Tel: 868-647-3218 Fax: 868-647-6087 Email: namdevco@tstt.net.t | PRV | PS-P, PS-S |
| Rabbit Farmers Association Kenrick Alfred PO Box 129 Scarborough Tobago 635 1235 | AS-F | EX |
| Sheep and Goat Farmers Association Josefa Patience PO Box 555 Scarborough Tobago 660 7762 | AS-F | EX |
| Sugar Cane Feed Center Pokhor Road Longdenville, Chaguanas Tel: 868-665-9967 Fax: 868-665-7913 Email: sfc@carib-link.net | GOV | EX, RD |
| THA Division of Agriculture, Land and Marine Resources Sandra Timothy Postharvest Technologist Marketing Department Bay 3, NIPDEC Warehouse Scarborough Tobago 639 5091 | GOV | EX, RD, PP |
| The Garden Club P.O.Box 205 Port of Spain | AS-F | EX |
| The Organisation of Professional Women in Agriculture (OPWA) Ms. Gail Henry Research Division, Ministry of Agriculture Tel. (868) 769-9892 Ms Diana Archibald Farmers Training Centre, Ministry of Agriculture Tel. (868) 642-0167 | PA | IN, PP, RD |

| Name and contacts | Type | Role |
|--|-------------|-------------------|
| The Trinidad and Tobago Orchid Society Secretary P. O. Box 1128 Port of Spain 637-5513 | AS-F | EX, IN |
| Tobago Agricultural Society Garnet Peters President Fairfield Complex Bacolet Street Scarborough Tobago 639 2432 | AS-F | EX, IN |
| Tobago House of Assembly, Division of Agriculture, Marine Affairs and Environment Botanic Gardens Station Scarborough 639-4356 | GOV | EX, PP, RD, RU |
| Trinidad and Tobago Bee-Keepers Association C/o Bede Rajahram Superville Quarry Rd Diego Martin 632-8743 | AS-F | EX |
| Trinidad and Tobago Goat and Sheep Society C/o Shiraz Khan Carlsen Field Chaguanas 671-9400 | AS-F | EX, PS-P |
| Trinidad Island-wide Cane Farmers Association 19A Sutton Street San Fernando 652-4903 | AS-F | EX |

Key: Type and Role of listed Institutions

- Type AS-F Farmers' association (includes co-operatives)
AS-W Women's association
AS-Y Youth association
BNK Bank or credit institution
CCI Chamber of commerce and industry
CHU Church-based group
EDU Educational institution
GOV Government institution
NGO Non-government organisation

PRV Private enterprise, company
REG Regional organisation, project or network
STA Statutory body
STE State enterprise

Role EX Extension and outreach
IN Information services
FS Financial services
PP Policy and planning
PS-E Corporate – exporter (fresh, frozen and dried produce)
PS-M Corporate – manufacturer (e.g. tannery, bottler, refiner, roaster)
PS-P Corporate – producer (e.g. commercial farm, fishing company)
PS-S Corporate – supplier (e.g. ag chemicals, equipment, seeds)
RD Research and development
RG Regulation (compliance, standards)
TR Training (at secondary, tertiary and vocational level)
TM Trade and marketing (include market develop

III.2 Select List of Key Institutions

| |
|--|
| <p>Name of institution: National Agricultural Marketing and Development Corporation</p> |
| <p>Objective / mission statement:</p> <p>To provide the country's agro-processors and marketers with the marketing facilities, support services and regulatory framework necessary to take Trinidad and Tobago foods to the WORLD</p> |
| <p>Field of specialisation:</p> <ul style="list-style-type: none"> ▪ Promotes Trinidad and Tobago Food products ▪ Facilitates the development and expansion of markets, market opportunities and agri-business investment ▪ Creates of alliances and partnerships with key stakeholders ▪ Identifies and maximises returns on investment in products and services |
| <p>Number of staff professional, clerical, technical, etc; permanent / temporary):</p> <ul style="list-style-type: none"> ▪ Professional 10 ▪ Clerical 33 ▪ Ancillary 56 |
| <p>Branches, other sites: Piarco Packing House Facility</p> |
| <p>Annual budget: Euros 2.2M (17,500,000 TT dollars)</p> |
| <p>Source of funding, incl. main donors / sponsors:</p> <ul style="list-style-type: none"> ▪ Government subventions (85%) ▪ Fees and other revenue (15%) |
| <p>Programme / projects undertaken:</p> <ul style="list-style-type: none"> ▪ Farm certification ▪ Provision of packing house service ▪ Root-crop inclusion in School Feeding programme |
| <p>Target audience (plus number, actual or estimated):</p> <ul style="list-style-type: none"> ▪ Farmers/producers ▪ All stakeholders ▪ School feeding programme |

| |
|--|
| <p>Name of institution: National Agricultural Marketing and Development Corporation</p> |
| <p>Extent of interaction with CTA – Spore Magazine, SDI, QAS, DORA, seminars, consultants, publications:</p> <p>Spore magazine, CTA sponsored seminars</p> |
| <p>Extent of collaboration / interaction with other institutions (name, nature):</p> <p>CARDI, IICA, UWI, FAO, Trinidad and Tobago Manufacturers Association, Caribbean Industrial Research Institute, Export Import Bank Trinidad, Agricultural Society of Trinidad and Tobago all for information sharing and Joint activities/training</p> |
| <p>How information needs are currently met, and from where or by whom:</p> <ul style="list-style-type: none"> ▪ CTA ▪ University of the West Indies, St. Augustine Campus ▪ Caribbean Agricultural Research and Development Institute ▪ Ministry of Agriculture, Land and Marine Resources, Trinidad ▪ Inter-American Institute for Cooperation on Agriculture |
| <p>Main information needs not satisfied:</p> <ul style="list-style-type: none"> ▪ Crop insurance system ▪ Transportation (proper packaging to transport overland in trucks and/or as sea freight) |
| <p>Main problems faced in terms of information and communication management:</p> <ul style="list-style-type: none"> ▪ Software development for database management ▪ Web development ▪ Hardware acquisition to supplement the Field Operatives use of palm-pads etc ▪ The provision of additional dedicated servers |
| <p>Why institution selected as a key:</p> <p>Major provider of agricultural marketing information</p> |

| |
|--|
| <p>Name of institution: Agricultural Society of Trinidad and Tobago</p> |
| <p>Objective / mission statement:</p> <p>To be an effective advocate in the promotion of sustainable growth and development of the agricultural sector through linkages in all sectors</p> |
| <p>Field of specialisation:</p> <ul style="list-style-type: none"> ▪ Seminars on trade, organic farming, etc ▪ Field visits; farmers' fora ▪ Policy planning with respect to the remodeled incentive programme ▪ Participation in the Regional Food Security Committee ▪ State-financed Agricultural Sector Reform Programme ▪ Publishing of journal/newsletter |
| <p>Number of staff professional, clerical, technical, etc; permanent / temporary):</p> <ul style="list-style-type: none"> ▪ Clerical 4 ▪ Board members 9 (6 Technical 3 Professional) |
| <p>Branches, other sites: Branch network not functional; 12 affiliate Associations</p> |
| <p>Annual budget: €93,750 (750,000 TT dollars)</p> |
| <p>Source of funding, incl. main donors / sponsors: Government subventions</p> |
| <p>Programme / projects undertaken:</p> <ul style="list-style-type: none"> ▪ Public awareness re food standards ▪ Integrated Pest Management workshops ▪ Farmers Field Schools ▪ Grades and standards for the production sub-sector ▪ Draft water policy for agriculture |
| <p>Target audience (plus number, actual or estimated): Farmers/producers <i>All stakeholders</i></p> |

| |
|--|
| <p>Name of institution: Agricultural Society of Trinidad and Tobago</p> |
| <p>Extent of interaction with CTA – <i>Spore Magazine</i>, SDI, QAS, DORA, seminars, consultants, publications:</p> <p>Spore Magazine, co-sponsored seminars</p> |
| <p>Extent of collaboration / interaction with other institutions (name, nature)</p> <ul style="list-style-type: none"> ▪ CARDI, Information sharing ▪ IICA, Joint activities/training, policy advice ▪ FAO, Information sharing, advice on policy ▪ GFAR. Information |
| <p>How information needs are currently met, and from where or by whom:</p> <ul style="list-style-type: none"> ▪ CTA ▪ Global Forum on Agricultural Research (GFAR) ▪ Caribbean Agricultural Research and Development Institute (CARDI) ▪ Ministry of Agriculture, Land and Marine Resources, Trinidad ▪ Inter-American Institute for Cooperation on Agriculture ▪ Food and Agriculture Organisation of the United Nations (FAO) ▪ International Federation of Agricultural Producers |
| <p>Main information needs not satisfied:</p> <ul style="list-style-type: none"> ▪ Sourcing small equipment ▪ New technologies re. Crop production, protection ▪ Market information, forecasts ▪ International Regulations ▪ Undercover production technologies |
| <p>Main problems faced in terms of information and communication management:</p> <ul style="list-style-type: none"> ▪ Database management re. Membership file updating, mailing lists ▪ Extension and outreach ▪ Acquisition of software for accounting and desktop publishing |
| <p>Why institution selected as a key:</p> <p>Legitimate voice of the range of agricultural producers nation-wide</p> |

| |
|---|
| <p>Name of institution: Trinidad and Tobago Industrial Fishing Association Ltd.</p> |
| <p>Objective / mission statement:</p> <p>To:</p> <ul style="list-style-type: none"> ▪ raise the profile of the fishing industry ▪ provide amenities and port services ▪ ensure compliance with HACCP and other standards ▪ develop necessary infrastructure ▪ advocate on behalf of members |
| <p>Field of specialisation:</p> <ul style="list-style-type: none"> ▪ Representing fishermen's interest on national committees ▪ Provision of berthing and warehousing facilities ▪ Conducting/hosting training programmes for members and other stakeholders ▪ |
| <p>Number of staff professional, clerical, technical, etc; permanent / temporary):</p> <p>Elected Executive 5 members (voluntary)</p> |
| <p>Branches, other sites:</p> <p>None</p> |
| <p>Annual budget:</p> <p>€9,375 (75,000 TT dollars)</p> |
| <p>Source of funding, incl. main donors / sponsors:</p> <p>Membership dues only (no membership shareholding ...special regulations along cooperative lines)</p> |
| <p>Programme / projects undertaken:</p> <ul style="list-style-type: none"> ▪ Public awareness re food standards ▪ Development of a Redfish fishery to bridge shrimp seasons ▪ Provision of improved amenities at Sea Lots berthing facility |

| |
|--|
| <p>Name of institution: Trinidad and Tobago Industrial Fishing Association Ltd.</p> |
| <p>Target audience (plus number, actual or estimated):</p> <ul style="list-style-type: none"> ▪ Fishermen ▪ All stakeholders ▪ Association members (60) |
| <p>Extent of interaction with CTA – <i>Spore Magazine</i>, SDI, QAS, DORA, seminars, consultants, publications:</p> <p>Spore magazine</p> |
| <p>Extent of collaboration / interaction with other institutions (name, nature)</p> <p>Ministry of Agriculture, Fisheries Division. - information exchange joint projects Ministry of National Security, - security Ministry of Health - Licensing arrangements Ministry of Trade and Industry Shipping and Transport Agencies -linked services</p> |
| <p>How information needs are currently met, and from where or by whom:</p> <p>Ministry of Agriculture, Land and Marine Resources, Trinidad Fisheries Division Inter-American Institute for Cooperation on Agriculture Food and Agriculture Organisation of the United Nations (FAO)</p> |
| <p>Main information needs not satisfied:</p> <ul style="list-style-type: none"> ▪ Research results on shrimp movement studies ▪ New technologies re. Trawling methods, by-catch reduction ▪ Information on fish migratory patterns, forecasts ▪ International Regulations ▪ Less wasteful harvesting techniques, pollution reduction |
| <p>Main problems faced in terms of information and communication management:</p> <p>Database management re. Membership file updating, mailing lists Management of information on Regulations and conventions</p> |
| <p>Why institution selected as a key:</p> <p>Representative of the fishing fraternity.</p> |

| |
|--|
| <p>Name of institution:</p> <p>Association of Professional Agricultural Scientists of Trinidad and Tobago</p> |
| <p>Objective / mission statement:</p> <ul style="list-style-type: none"> ▪ Promote sustainable agriculture through the application of science and technology ▪ Act as a voice on behalf of the profession ▪ Encourage original research |
| <p>Field of specialisation:</p> <ul style="list-style-type: none"> ▪ Seminars and panel discussions on conservation, land use planning, wildlife farming, etc.; ▪ Policy planning with respect to the utilization of Caroni Lands ▪ Galvanizing professional opinion on topical issues |
| <p>Number of staff professional, clerical, technical, etc; permanent / temporary):</p> <p>Executive 8 (Professional)</p> |
| <p>Branches, other sites:</p> <p>None</p> |
| <p>Annual budget:</p> <p>€875 (7.000 TT dollars)</p> |
| <p>Source of funding, incl. main donors / sponsors:</p> <p>Membership dues</p> |
| <p>Programme / projects undertaken:</p> <ul style="list-style-type: none"> ▪ Seminars panel discussions on a range of topics ▪ Hosting international cocoa revitalization seminar and publication of proceedings ▪ Hosting World Food Day seminars |

| |
|---|
| <p>Name of institution:</p> <p>Association of Professional Agricultural Scientists of Trinidad and Tobago</p> |
| <p>Target audience (plus number, actual or estimated):</p> <p>Farmers/producers/Public All stakeholders 100 listed members Public</p> |
| <p>Extent of interaction with CTA – <i>Spore Magazine</i>, SDI, QAS, DORA, seminars, consultants, publications:</p> <p>Spore, co-sponsored seminars</p> |
| <p>Extent of collaboration / interaction with other institutions (name, nature)</p> <ul style="list-style-type: none"> ▪ CARDI - Information sharing ▪ IICA - Joint activities/training, ▪ Ministries of Agriculture Planning and Environment, - opportunities to present joint seminars, panel discussions ▪ NAMDEVCO - Information |
| <p>How information needs are currently met, and from where or by whom:</p> <ul style="list-style-type: none"> ▪ Caribbean Agricultural Research and Development Institute (CARDI) ▪ Ministry of Agriculture, Land and Marine Resources, Trinidad ▪ Inter-American Institute for Cooperation on Agriculture ▪ National Food Crop Farmers Association ▪ Faculty of Science and Agriculture, UWI |
| <p>Main information needs not satisfied:</p> <ul style="list-style-type: none"> ▪ Planning documents from Government Ministries ▪ Regional Agricultural information productivity data, environmental conservation data, marketing data |
| <p>Main problems faced in terms of information and communication management:</p> <ul style="list-style-type: none"> ▪ Need for a dedicated secretariat and a full-time clerical assistant to oversee database management re. Membership file updating, mailing lists ▪ Association does not own any equipment, individuals use employers hardware and software |

| |
|---|
| <p>Name of institution:</p> <p>Association of Professional Agricultural Scientists of Trinidad and Tobago</p> |
| <p>Why institution selected as a key:</p> <p>It is the only active voice of professional agricultural scientists in the country at a time when they are charged with the modernization of the sector in sustainable ways</p> |

| |
|---|
| <p>Name of institution:</p> <p>Sugarcane Feeds Centre</p> |
| <p>Objective / mission statement:</p> <p>To demonstrate practical sustainable farming systems using sugarcane and other local feeds</p> |
| <p>Field of specialisation:</p> <ul style="list-style-type: none"> ▪ Research involving non-traditional feeds for livestock ▪ Integrated systems of livestock and crop production ▪ Dissemination of practical experience-based information on animal management |
| <p>Number of staff professional, clerical, technical, etc; permanent / temporary):</p> <ul style="list-style-type: none"> ▪ Professional/technical 5 ▪ Clerical 13 ▪ Daily paid 47 ▪ Contract workers 10 |
| <p>Branches, other sites:</p> <p>None</p> |
| <p>Annual budget:</p> <p>€750,000 (TT\$ 6,000,000)</p> |
| <p>Source of funding, incl. main donors / sponsors:</p> <ul style="list-style-type: none"> ▪ Government subventions (70%) ▪ Farm-based revenue (30%) |

| |
|--|
| <p>Name of institution: Sugarcane Feeds Centre</p> |
| <p>Programme / projects undertaken:</p> <ul style="list-style-type: none"> ▪ Integrating wild species into sustainable production systems ▪ Production methods for river conch ▪ Alternative feed base for cascadura |
| <p>Target audience (plus number, actual or estimated):</p> <p>Farmers, aquaculturists nationwide</p> |
| <p>Extent of interaction with CTA – <i>Spore Magazine</i>, SDI, QAS, DORA, seminars, consultants, publications:</p> <p>Spore magazine, co-sponsored seminars</p> |
| <p>Extent of collaboration / interaction with other institutions (name, nature)</p> <p>Ministry of Agriculture/UWI joint projects</p> |
| <p>How information needs are currently met, and from where or by whom:</p> <ul style="list-style-type: none"> ▪ IICA ▪ UWI-Faculty of Science and Agriculture ▪ CARDI ▪ Ministry of Agriculture ▪ Input suppliers ▪ Individual professional's network |
| <p>Main information needs not satisfied:</p> <ul style="list-style-type: none"> ▪ Small equipment for small scale commercial activity eg pasteurization, cheese making ▪ Documented performance of animals reared under feeding regimens similar to SFC ▪ The interaction and issues between agriculture and the environment |
| <p>Main problems faced in terms of information and communication management:</p> <p>Hardware, software</p> <p>Trained personnel to manage all aspects of information management</p> |
| <p>Why institution selected as a key:</p> <p>The premier livestock and aquaculture training provider in the country.</p> |

| |
|--|
| <p>Name of institution: Agricultural Science Teachers' Association</p> |
| <p>Objective / mission statement:</p> <ul style="list-style-type: none"> ▪ To promote Public awareness of the importance of Ag. Science in national and regional development ▪ Promote improvement in the professional status of AGRISTA members ▪ Maintain/promote high standards with respect to training and practice of the profession |
| <p>Field of specialisation:</p> <ul style="list-style-type: none"> ▪ Advocacy, retention of Ag science in the school curriculum on the part of 400 teachers (only 60 are members) ▪ Maintaining the gardening and livestock rearing component in secondary schools throughout the country |
| <p>Number of staff professional, clerical, technical, etc; permanent / temporary):</p> <p>Nil; there is a 5 member executive President, Vice President, Secretary, Treasurer and Trustee</p> |
| <p>Branches, other sites:</p> <p>None</p> |
| <p>Annual budget:</p> <p>€375 (TT\$ 3000)</p> |
| <p>Source of funding, incl. main donors / sponsors:</p> <p>Membership dues</p> |
| <p>Programme / projects undertaken:</p> <ul style="list-style-type: none"> ▪ Outreach programmes fundraisers for students ▪ Co-host annual AIAEE conference/seminar ▪ Annual review of performance in the CXC Ag Science exams |

| |
|---|
| <p>Name of institution: Agricultural Science Teachers' Association</p> |
| <p>Target audience (plus number, actual or estimated):</p> <ul style="list-style-type: none"> ▪ Secondary School students ▪ Teachers ▪ Teachers and parents of CXC students ▪ Agriculture teachers 400 |
| <p>Extent of interaction with CTA – <i>Spore Magazine</i>, SDI, QAS, DORA, seminars, consultants, publications:</p> <p>Spore magazine</p> |
| <p>Extent of collaboration / interaction with other institutions (name, nature)</p> <ul style="list-style-type: none"> ▪ TTUTA: material support, advocacy assistance, joint seminars ▪ IICA: seminars, career days, scholarships |
| <p>How information needs are currently met, and from where or by whom:</p> <ul style="list-style-type: none"> ▪ IICA ▪ UWI extension department ▪ CARDI ▪ CAB International ▪ ADB ▪ ECIAF ▪ Ministry of Agriculture |
| <p>Main information needs not satisfied:</p> <ul style="list-style-type: none"> ▪ Technologies for rabbit rearing, rendering ▪ Costing of equipment |
| <p>Main problems faced in terms of information and communication management:</p> <ul style="list-style-type: none"> ▪ Dedicated hardware and software to manage databases ▪ Need to develop a website ▪ Secretariat with dedicated trained staff member |

| |
|---|
| <p>Name of institution: Agricultural Science Teachers' Association</p> |
| <p>Why institution selected as a key:</p> <p>This organisation has been struggling to retain the agriculture curriculum at the Secondary school level. A segment of the next generation of scientific farmers is being denied the opportunity to explore the subject</p> |

| |
|--|
| <p>Name of institution: Agricultural Development Bank</p> |
| <p>Objective / mission statement:</p> <p>To facilitate sustainable socio-economic development of the agri-business and rural sectors through strategic partnerships with our stakeholders, delivering cutting edge financial products and services to satisfy our internal and external customers utilizing a team and customer focused approach.</p> |
| <p>Field of specialisation:</p> <ul style="list-style-type: none"> ▪ Farmer training ▪ Trend lending ▪ New product development |
| <p>Number of staff professional, clerical, technical, etc; permanent / temporary):</p> <ul style="list-style-type: none"> ▪ Professional/technical 41 ▪ Clerical 59 |
| <p>Branches, other sites:</p> <p>Central Office, 29 Ramsaran Street, Chaguanas South Office, 7 Ciperio Street, San Fernando Tobago Office Unit 3B Campbell Building, Burnett Street, Scarborough</p> |
| <p>Annual budget:</p> <p>Operating budget €1.875M (TT\$ 15,000,0000) Loan budget €15.625M (TT\$ 125,000,000)</p> |

| | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------------------|-----|----------|---------------------|---------------------|------|-------------------|-------|--------------|----------|---------------------|--------|---------------------|------|--------------------|--------|----------|-----|---------------------|---------------------|----------|----------------------------------|---------------------|
| Name of institution: Agricultural Development Bank | | | | | | | | | | | | | | | | | | | | | | | |
| Source of funding, incl. main donors / sponsors: Internally generated revenue | | | | | | | | | | | | | | | | | | | | | | | |
| Programme / projects undertaken: <ul style="list-style-type: none"> ▪ Cocoa revitalizer loan package ▪ Unit Trust loan/Investment package ▪ CARIFORUM Research and training fund management ▪ “Dairy Gro” loan package ▪ Loan packages | | | | | | | | | | | | | | | | | | | | | | | |
| Target audience (plus number, actual or estimated): <ul style="list-style-type: none"> ▪ Cocoa farmers ▪ Ex-CARONI employees (9000) ▪ Farming sector/researchers ▪ Dairy farmers ▪ Farmers, processors, agribusiness professionals agri-entrepreneurs | | | | | | | | | | | | | | | | | | | | | | | |
| Extent of interaction with CTA – <i>Spore Magazine</i>, SDI, QAS, DORA, seminars, consultants, publications: Spore, co-hosting seminars | | | | | | | | | | | | | | | | | | | | | | | |
| Extent of collaboration / interaction with other institutions (name, nature) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">UWI</td> <td style="width: 50%;">seminars</td> </tr> <tr> <td>Min. of Agriculture</td> <td>product development</td> </tr> <tr> <td>IICA</td> <td>seminars/meetings</td> </tr> <tr> <td>CARDI</td> <td>facilitation</td> </tr> <tr> <td>NAMDEVCO</td> <td>product development</td> </tr> <tr> <td>CARIRI</td> <td>product development</td> </tr> <tr> <td>ASTT</td> <td>meetings/promotion</td> </tr> <tr> <td>AMCHAM</td> <td>meetings</td> </tr> <tr> <td>THA</td> <td>product development</td> </tr> <tr> <td>Chamber of Commerce</td> <td>meetings</td> </tr> <tr> <td>Business Development Corporation</td> <td>product development</td> </tr> </table> | | UWI | seminars | Min. of Agriculture | product development | IICA | seminars/meetings | CARDI | facilitation | NAMDEVCO | product development | CARIRI | product development | ASTT | meetings/promotion | AMCHAM | meetings | THA | product development | Chamber of Commerce | meetings | Business Development Corporation | product development |
| UWI | seminars | | | | | | | | | | | | | | | | | | | | | | |
| Min. of Agriculture | product development | | | | | | | | | | | | | | | | | | | | | | |
| IICA | seminars/meetings | | | | | | | | | | | | | | | | | | | | | | |
| CARDI | facilitation | | | | | | | | | | | | | | | | | | | | | | |
| NAMDEVCO | product development | | | | | | | | | | | | | | | | | | | | | | |
| CARIRI | product development | | | | | | | | | | | | | | | | | | | | | | |
| ASTT | meetings/promotion | | | | | | | | | | | | | | | | | | | | | | |
| AMCHAM | meetings | | | | | | | | | | | | | | | | | | | | | | |
| THA | product development | | | | | | | | | | | | | | | | | | | | | | |
| Chamber of Commerce | meetings | | | | | | | | | | | | | | | | | | | | | | |
| Business Development Corporation | product development | | | | | | | | | | | | | | | | | | | | | | |

| |
|---|
| <p>Name of institution: Agricultural Development Bank</p> |
| <p>How information needs are currently met, and from where or by whom:</p> <ul style="list-style-type: none"> ▪ UWI ▪ Min. of Agriculture ▪ IICA ▪ CARDI ▪ NAMDEVCO ▪ CARIRI ▪ ASTT ▪ AMCHAM ▪ THA ▪ Chamber of Commerce ▪ Business Development Corporation ▪ Caribbean Agribusiness Association |
| <p>Main information needs not satisfied: Timely and sector-specific production data New developments in the sector Marketing and market trends</p> <hr/> <p>Main problems faced in terms of information and communication management: Portfolio management (need loan monitoring software) Human resource Information service Record management (not yet fully electronic) Sector specific information not always available Information cataloguing system is needed</p> <hr/> <p>Why institution selected as a key: Major source of financial support to the agricultural sector</p> |

| |
|--|
| <p>Name of institution: Ministry of Agriculture, Land and Marine Resources</p> |
| <p>Objective / mission statement:</p> <p>To facilitate sustainable development of Agriculture, Forestry and Fisheries while conserving and enhancing (safeguarding) the environment, strengthening the capabilities of our clients and providing for the achievement of personal excellence and growth of all our employees.</p> |
| <p>Field of specialisation:</p> <ul style="list-style-type: none"> ▪ Production related commodity development (livestock and crops) ▪ Infrastructural development ▪ Research and development ▪ Marine fisheries management ▪ Land management and distribution ▪ Bio-safety and biotechnology research |
| <p>Number of staff professional, clerical, technical, etc; permanent / temporary):</p> <p>Professional/technical 1300 Daily paid 3500</p> |
| <p>Branches, other sites:</p> <ul style="list-style-type: none"> ▪ Central Research Station, Centeno ▪ Eight (8) Agriculture County Offices ▪ Two (2) Fisheries Units ▪ Five (5) propagation sites ▪ Two (2) Regional Administrative Offices |
| <p>Annual budget:</p> <p>Not available</p> |
| <p>Source of funding, including main donors / sponsors:</p> <p>Central Government</p> |

| |
|--|
| <p>Name of institution: Ministry of Agriculture, Land and Marine Resources</p> |
| <p>Programme / projects undertaken:</p> <ul style="list-style-type: none"> ▪ Water winning at Carlsen Field and Depot Road ▪ Agri Sector Reform Programme 1999-2005 ▪ Rationalization of the Sugar Industry, closure of CARONI 1975 Ltd. ▪ Infrastructural development programme, access roads, bridges |
| <p>Target audience (plus number, actual or estimated):</p> <ul style="list-style-type: none"> ▪ Farming community in those areas ▪ Entire farming sector ▪ Entire country ▪ Farmers in the respective areas |
| <p>Extent of interaction with CTA – <i>Spore Magazine</i>, SDI, QAS, DORA, seminars, consultants, publications:</p> <p>Spore, co-hosting seminars</p> |
| <p>Extent of collaboration / interaction with other institutions (name, nature):</p> <p>Joint projects with:</p> <ul style="list-style-type: none"> ▪ FAO ▪ IICA ▪ CARDI ▪ Cocoa Coffee Industry Board (CCIB) ▪ Ministries of Trade, Planning, Finance, Health, Legal Affairs, Environment ; ▪ co-sponsors of training programmes, expertise sharing ▪ ASTT assistance with the Agricultural Sector Reform Programme |

| |
|--|
| <p>Name of institution: Ministry of Agriculture, Land and Marine Resources</p> |
| <p>How information needs are currently met, and from where or by whom:</p> <ul style="list-style-type: none"> ▪ IICA ▪ CTA, ▪ CARDI ▪ FAO ▪ Economic Commission for Latin America and the Caribbean (ECLAC) ▪ UWI-Faculty of Science and Agric ▪ ADB ▪ Alliance (CARICOM Sec, IICA and FAO) |
| <p>Main information needs not satisfied:</p> <p>Small scale/subsistence level farming data for Trinidad and Tobago, unable to quantify or value the contribution of small scale producers</p> |
| <p>Main problems faced in terms of information and communication management:</p> <p>Acquisition of appropriate hardware and software, Timely collection of data in the field and subsequent download</p> |
| <p>Why institution selected as a key:</p> <p>Has the resources to modernize the sector, serves the largest clientele in the sector.</p> |

| |
|---|
| <p>Name of institution: Division of Agriculture, Marine Affairs and the Environment</p> |
| <p>Objective / mission statement:</p> <p>To transform the agricultural sector in a sustainable and environment-friendly manner through the development of human and land resources, increased use of appropriate science and technology while sustaining viable and committed agro-industries</p> |
| <p>Field of specialisation:</p> <ul style="list-style-type: none"> ▪ Organisation of farmers' groups ▪ Strong extension services ▪ Supporting agro-processing of rootcrops and condiments ▪ Linkages with hotels and tourism sector ▪ Marketing and technical support for farmers |
| <p>Number of staff professional, clerical, technical, etc; permanent / temporary):</p> <ul style="list-style-type: none"> ▪ Professional/technical 60 ▪ Clerical 440 ▪ Daily paid 500 |
| <p>Branches, other sites: Administration Centre at Glen Road Marketing Division at Shaw Park Plant Propagation/Nursery at Louis D'Or Fisheries Division at Milford Road Environment Division at Highmoore</p> |
| <p>Annual budget:</p> <ul style="list-style-type: none"> ▪ Operational: €6.25 M (TT\$ 50,000,000) ▪ Developmental: €2.5 M (TT\$ 20,000,000) |
| <p>Source of funding, incl. main donors / sponsors:</p> <p>Central Government</p> |

| |
|---|
| <p>Name of institution: Division of Agriculture, Marine Affairs and the Environment</p> |
| <p>Programme / projects undertaken:</p> <ul style="list-style-type: none"> ▪ Upgrade of fishing centres, markets, abattoirs ▪ Strengthened marketing systems ▪ Introduce and strengthen quality standards ▪ Improved market research and information services ▪ Facilitated increased crop and livestock production |
| <p>Target audience (plus number, actual or estimated):</p> <ul style="list-style-type: none"> ▪ Public ▪ All farmers and fisherfolk |
| <p>Extent of interaction with CTA – <i>Spore Magazine</i>, SDI, QAS, DORA, seminars, consultants, publications:</p> <p>Spore Magazine</p> |
| <p>Extent of collaboration / interaction with other institutions (name, nature)</p> <ul style="list-style-type: none"> ▪ CARDI demonstrating/training ▪ IICA trade data exchange/seminars/training ▪ Min of Ag Agricultural services ▪ EMA environmental protection, assessment ▪ IMA marine surveys, assessments ▪ Dep't of Agric Maryland, USA livestock production, semen exchanges |
| <p>How information needs are currently met, and from where or by whom:</p> <ul style="list-style-type: none"> ▪ CARDI ▪ IICA ▪ IDB ▪ CIDA ▪ Business Monitor (London) ▪ World Bank reviews |
| <p>Main information needs not satisfied:</p> <ul style="list-style-type: none"> ▪ Domestic production data by crop and by region ▪ Trends in technology use, yield improvement, food safety |

| |
|---|
| Name of institution: Division of Agriculture, Marine Affairs and the Environment |
| Main problems faced in terms of information and communication management: Need an information specialist, need to coordinate production data, marketing data through designated staff |
| Why institution selected as a key: The most significant mobiliser of resources in Tobago, custodian of most land resources and trained manpower |

ANNEX IV: LIST OF PERSONS INTERVIEWED

| Name of Person | Designation and Contact Information |
|----------------------------|---|
| Prof. Richard Braithwaite | Professor, Fmr Head Department of Food Production, Faculty of Science and Agriculture University of the West Indies St Augustine Trinidad Tel. 868-645-3232 Email RBrathwaite@fans.uwi.tt |
| Mr. Levi Brown | President, Agricultural Science Teachers Association 46 Churchill Circular Extension Arouca Tel. 868-667-0916 |
| Mr. Samaroo Dowlath | Chief Executive Officer National Agricultural Marketing and Development Company (NAMDEVCO) S.S Erin Road, Debe Tel: 868-647-3218 Fax: 868-647-6087 Email: namdevco@tstt.net.t |
| Dr. Wayne Ganpat | Regional Coordinator Association of International Agricultural Extension and Education (AIAEE) C/o Dept of Agricultural Economics and Extension UWI, St Augustine Tel. 868-645-6263 |
| Ms. Earla Hazel | Extension Officer Tobago House of Assembly, Division of Agriculture, Marine Affairs and Environment Botanic Gardens Station Scarborough 639-4356 |
| Ms. Patricia LaBorde-Grant | Director Planning Unit Ministry of Agriculture, Land and Marine Resources St Clair Circle Port of Spain Tel. 868-622-1221 Fax. 868-622-8762 Email agrilibp@tstt.net.tt |

| Name of Person | Designation and Contact Information |
|----------------------|--|
| Ms. Wendy Lee-Yuen | President, Agricultural Society of Trinidad And Tobago (ASTT) Pembroke Street, Port of Spain Tel: 868-627-3087 Fax: 868- 623-7797 Email Agrisoc@tstt.net.tt |
| Mr. Bruno Maharaj | President Trinidad and Tobago Industrial Fishing Association Ltd. 1A Production Ave, Sea Lots, Port of Spain Tel: 868-624-4235 Fax: 868-676-7994 E-mail: vince@tstt.net.tt |
| Mr. Ramon Marks | Advisor to the Secretary Tobago House of Assembly, Division of Agriculture, Marine Affairs and Environment Botanic Gardens Station Scarborough 639-4356 |
| Mr. Floyd Neckles | Director Sugarcane Feeds Centre Pokhor Road Longdenville, Chaguanas Tel: 868-665-9967 Fax: 868-665-7913 Email: sfc@carib-link.net |
| Mr. Aaron Parke | Representative Inter-American Institute for Co-operation on Agriculture (IICA) 2 Herbert Street Port Of Spain Tel: 868-628-4403 Fax: 868-628-4562 email: iicatt@iicacarc.org |
| Ms. Josepha Patience | President Sheep and Goat Farmers Association PO Box 555 Scarborough Tobago Tel. 868-660-7762 |
| Ms. Adana Pilgrim | Consultant C/o PLANTPRO Associates Ltd. 25 Sixth Street East Cane Farm Ave Trincity Tel 868-770-9377 |

| Name of Person | Designation and Contact Information |
|-------------------------------|--|
| Ms. Sharon Premchand-Mohammed | Librarian I The Campus Libraries The University of the West Indies St Augustine Tel. 868-645-3232 Fax. 868-662-9238 |
| Ms. Sandra Quashie-Thomas | Extension Officer Tobago House of Assembly, Division of Agriculture, Marine Affairs and Environment Botanic Gardens Station Scarborough Tel. 868-639-4356 |
| Ms. Jacqueline Rawlins | Chief Executive Officer Agricultural Development Bank 87 Henry Street, Port of Spain Tel 868-623-0261 Fax 868-627-7493 Email adbp.o.s@tstt.net.tt |
| Ms. Monica Rogers-Fletcher | Manager, Business Development Agricultural Development Bank 87 Henry Street, Port of Spain Tel 868-623-0261 Fax 868-627-7493 Email adbp.o.s@tstt.net.tt |
| Mr. Terrence Sampson | Audio-visual Technician Faculty of Science and Agriculture The University of the West Indies St Augustine Tel. 868-645-3232 |
| Mr. Gladstone Simon | President Beekeepers Association C/o Tobago House of Assembly, Division of Agriculture, Marine Affairs and Environment Botanic Gardens Station Scarborough Tel. 868-639-4356 |
| Ms. Elizabeth Thorne | Consultant (Fisheries) 20 Newalloville Avenue, San Juan, Trinidad Tel. 868-781-7758 Email lizthorne72@hotmail.com |

| Name of Person | Designation and Contact Information |
|-----------------------|--|
| Prof. Lawrence Wilson | President Association of Professional Agricultural Scientists of Trinidad and Tobago (APASTT) C/o Dept of Food Production Faculty of Science and Agriculture UWI, St Augustine Tel. 868-645-3232 Ext 2089 Fax. 868-662-1182 |

ANNEX V: REFERENCES

Central Bank 2003 *Review of the Economy 2003*, Volume 3, October 2003 Republic of Trinidad and Tobago, Ministry of Finance, Central Bank, Trinidad

Central Statistical Office, *Statistics at a glance 2000*. Republic of Trinidad and Tobago, Ministry of Finance, The Central Statistical Office Printing Unit, Trinidad and Tobago

Central Statistical Office, *Agricultural Report 2001*. Republic of Trinidad and Tobago, Ministry of Planning and Development, The Central Statistical Office Printing Unit, Trinidad and Tobago

Central Statistical Office, *Pocket Digest 2002*. Republic of Trinidad and Tobago, Ministry of Planning and Development, The Central Statistical Office Printing Unit, Trinidad and Tobago

Central Statistical Office, *Bulletin* Volume 13, No. 283, February 2003. Republic of Trinidad and Tobago, Ministry of Planning and Development, The Central Statistical Office Printing Unit, Trinidad and Tobago

Ministry of Food Production and Marine Resources, 2001, *Sector Policy for Food Production and Marine Resources*. Government Printing Office, Trinidad.

Rahil, V.A.M 1999 *New Caribbean Geography with Map Reading and CXC Questions*, Caribbean Educational Publishers, Trinidad pp 284-296

Technical Centre for Agricultural and Rural Cooperation 2004a. *Annual Report 2003* Wageningen, The Netherlands

Technical Centre for Agricultural and Rural Cooperation 2004b. *Summary of CTA projects with International organisations 2003-2004* Wageningen, The Netherlands

Wilson, Mark 2002 *The Caribbean Environment for CXC Geography*, Oxford University Press, London page 161

<http://www.agriculture.gov.tt>

<http://www.agriculture.gov.tt/applicationloader.asp?app=articles&id=1039>

<http://www.cia.gov/cia/publications/factbook/geos/td.html>

<http://www.cso.gov.tt/publications/digest.asp#>

<http://www.cso.gov.tt/statistics/pdf/chart2-3.pdf>

http://www.ecitele.com/news/print_mod.asp?v_name=news/2001/trinidad_mgw_cust_2bw.asp)

<http://www.fao.org/WAICENT/Fao Info/Agricult/AGP/AGPS/pgrfa/pdf/trinidad.pdf>

<http://www.infoplease.com/ipaA0108046.html>

http://www.logosnet.net/ilo/150_base/en/topic_n/t1_tri.htm

<http://www.energy.gov.tt/applicationloader.asp?app=newsarticles&cmd=view&articleid=33>

<http://www.niherst.gov.tt/st-statistics/survey-highlights/it-household-survey.htm>

http://www.procicaribe.org/networks/clawrenet/reports/z_tt/tt.htm

http://www.procicaribe.org/networks/clawrenet/reports/z_tt/tt.htm

<http://www.toco.interconnection.org/tocoregion.htm>

http://www.worldwildlife.org/wildworld/profiles/terrestrial/nt/nt0171_full.html
