



**Caribbean Subgroup
of the Latin American and Caribbean Forestry Commission
(LACFC)**



WORKSHOP ON FORESTRY RESEARCH IN THE CARIBBEAN

3rd to the 5th of November 2009

Pax Guesthouse, Mt. St. Benedict, Trinidad W.I.

Workshop Report

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Executive Summary

The Forestry Research Workshop for the English speaking Caribbean was held from the 3rd to the 5th of November 2009 at the Pax Guest House. The 3-day workshop was attended by 18 participants from 14 organisations and 7 countries. The workshop was held by The Eastern Caribbean Institute of Agriculture and Forestry (ECIAF) Campus of the University of Trinidad and Tobago (UTT) on behalf of the Food and Agriculture Organisation of the United Nations (FAO).

The goal of this workshop was to bring together representatives from the national forest authorities and institutions involved in forest research. In order to address this goal, the specific questions examined during the workshop were:

1. What requires research? What are the research priorities in the Caribbean at a national level and at a regional level?
2. What are the perceived impediments to this research? How can these impediments be overcome and the research implemented?
3. How can regional research cooperation be initiated?

Knowledge, opinions and experiences of the participants were captured in a series of workshop exercises and a field trip. In addition the participants were asked to complete a questionnaire prior to the workshop and prepare a presentation on their research experiences in their organisation.

Several recommendations were made for promoting forest research in the Caribbean and making research more effective in contributing to addressing forest management issues.

Recommendations for setting regional and national forest research priorities:

- Develop a guide to conducting national forest research priority setting that can be implemented in countries in the region.
- Identify and publicise the human resources available in the region to help plan and conduct research priority setting exercises.
- At the regional level, identify key regional forestry research stakeholders and organize a regional research priority setting exercise. Use the exercise to build a regional research resources network.
- Use pilot studies to help define objectives for detailed studies.

In terms of implementing the research, participants also recommended participatory and collaborative approaches. Specific actions suggested were to:

- try participatory research so stakeholders can continue to be engaged in the research;
- share research experiences regionally on a regular basis;
- find out the research resources available regionally and use these resources to complete the research;
- have forestry administrations partner with regional research institutions such as universities and institutes;
- publish the results of the research in many different forms so that a maximum number of stakeholders are reached. Make sure the research includes clear recommendations for management. Informal meeting of stakeholders should occur regularly to keep managers in contact with research and enable research to feed into management. It will not always happen

immediately but if well publicised the recommendations from the research likely to be picked up at a later date.

Recommendations for Removing Research Barriers:

- Set research priorities that have the support of a wide group of stakeholders by including stakeholders in the priority setting process
- Including stakeholders in research execution
- Fill capacity and logistic gaps by partnering with other regional organizations particularly the regional universities and International Institute of Tropical Forestry (IITF).
- Partner with communication experts to communicate research results. Use regional peers to vet research publications
- Put research in the context of a medium to long term plan
- Cultivate formal and informal relationships in other organisations both regionally and internationally
- Institutionalise rewards for research such as publication record in universities

Recommendations for setting up a regional research network

- Join the Caribbean Forester network if it can offer the requirements suggested in the workshop
- Set up a website to get researchers into contact in the short term

Key outcomes from the workshop also included:

- enhanced capacity of participants in analysing management issues from social as well as economic and ecological perspectives;
- increased awareness of participants to knowledge gaps in management issues that may be usefully tackled by research;
- appreciation of the value of engaging stakeholders in developing research priorities and in implementing the research in order to ensure that research better addresses real management issues and is more effectively fed into management;
- built or enhanced relationships between countries and between forestry administrations and research institutions and increased interest in collaboration.

1. Background & Objectives

1.1 Background

At a meeting of the Caribbean sub-group of the Forest Commission for Latin America and the Caribbean the heads of forestry management agencies expressed a desire to revitalise forestry research in the Caribbean. It was felt that management of forests needs a scientific basis that can be provided by scientific research. However it was not clear what required research, how that research could be implemented, what were the barriers to research and what advantages could be gained by regional cooperation. The FAO undertook to organise two workshops in the Caribbean sub region (one for the English speaking Caribbean and one for the Spanish speaking Caribbean) to explore these issues. This is the report on the English speaking Caribbean Forestry Research Workshop held from the 3rd to the 5th of November 2009 at the Pax Guest House. The 3-day workshop was attended by 18 participants from 14 organisations and 7 countries (see participant list in Appendix 4). The workshop was held by The Eastern Caribbean Institute of Agriculture and Forestry (ECIAF) Campus of the University of Trinidad and Tobago (UTT) on behalf of the Food and Agriculture Organisation of the United Nations (FAO). The workshop was co-facilitated by Dr Mike Oatham of the University of the West Indies, St. Augustine and Nicole Leotaud of the Caribbean Natural Resources Institute (CANARI).

1.2 Objectives

The goal of this workshop was to bring together representatives from the national forest authorities and institutions involved in forest research:

- To identify the main problems affecting the implementation of sustainable forest management and to determine to what extent the solutions of these problems require a research input.
- To discuss how to organise research in forestry and to determine whether it is feasible for small national forest administrations to dedicate resources to design and conduct research programmes or whether it would be better to implement the research in partnership with more specialised institutions such as The University of Trinidad and Tobago (UTT), The University of the West Indies (UWI), Caribbean Natural Resources Institute (CANARI), International Institute for Tropical Forestry (IITF), Tropenbos Suriname, Centre for Agricultural Research in Suriname (CELOS) and University of Guyana (UG).
- To identify the tangible benefits to be derived from regional cooperation on research and how to organize the cooperation.

In order to address these objectives, specific questions examined during the workshop were:

1. What requires research? What are the research priorities in the Caribbean at a national level and at a regional level?
2. What are the perceived impediments to this research? How can these impediments be overcome and the research implemented?
3. How can regional research cooperation be initiated?

2. Workshop Program

The program of the workshop is outlined below. The various objectives and questions of the workshop were addressed in several sessions.

Day 1

9:00 am – 12:00 noon	Opening, welcome and objectives of workshop (Claus Eckelmann) Icebreaker and introductions (Facilitated by Nicole Leotaud) Presentations from participants on How Research Contributes to Forest Management in their organisations (Facilitated by Mike Oatham)
12:00 – 1:00 pm	Lunch
1:00 – 5:00 pm	Report on the pre-conference Questionnaire on forestry research in the Caribbean (Presented by Mike Oatham) Small group work, presentations and plenary discussion on Setting Research Priorities to Best Address Forest Management Needs (Facilitated by Claus Eckelmann, Nicole Leotaud, Mike Oatham and Melanie Griffith-McDermott) Guiding Questions: <ul style="list-style-type: none"> • How was research decided upon? Did this priority setting work, or didn't work? • Who carried out the research? Did this work? • Was the research used? What strategies were implemented to make sure research was used? This exercise involved breaking the participants into small groups and getting them to discuss the questions above. A plenary session was held to bring all the views together. Participants shared their knowledge about how deciding which research projects should be pursued and made recommendations on how research directions should be prioritized. Recommendations were also made on how to approach the research to maximize the potential of the research succeeding. Finally participants discussed experiences in feeding research into management of forests and made recommendations for how this can be promoted. Introduction to field trip (Presented by Mike Oatham)
5:00 – 7:00 pm	Cocktail reception

Day 2

Field trip case study to analyse forest management issues, identify research needs, and identify practical ideas to develop and implement a research programme

8:30 am – 1:00 pm	Field trip to examine management Issues in North Central Conservancy. Visiting Aripo Savannas Environmentally Sensitive Area; Nursery; Arena Forest Reserve; Arena Dam and Pine Harvesting in Caratal
1:00 pm – 1:30 pm	Lunch
1:30 pm – 3:00 pm	Small group work, presentations and plenary discussion on Setting Research Priorities, Research Implementation and Input into Management for protected areas and facilities visited in the North Central Conservancy This exercise was carried out during the workshop fieldtrip after participants had viewed four reserves and facilities in the North Central Conservancy. Participants got a firsthand experience in identifying issues in management which they will be

	able to relate to similar situations in their own countries. The broad range of issues was also surprising to many participants not the least to the NCC staff.
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Day 3

9:00 am – 12:00 noon	<p>Review of Work shop so far. Participant feedback. (Facilitated by Nicole Leotaud)</p> <p>Setting Research Priorities: some past experiences (Facilitated by Nicole Leotaud)</p> <ul style="list-style-type: none"> • CANARI and the Aripo Savannas Environmentally Sensitive Area (Nicole Leotaud): CANARI conducted a project for the Environmental Management Authority (EMA) to develop a management plan which also included setting research priorities for the protected area. • Tropenbos and Suriname Forests (Rudi van Kanten) <p>Setting Regional Research Priorities Exercise (Facilitated by Mike Oatham) Plenary on priority management issues, small group work to identify research directions and methods for each issue, presentations and plenary session Plenary on priority management issues, small group work to identify research directions and methods for each issue, presentations and plenary session. Participants were asked to select priority management issues that were generated from the country presentations. The selected management issues were voted on (each participant given 3 votes) and the top four management issues were taken to be the top issues requiring research.</p>
12:00 – 1:00 pm	Lunch
1:00 – 4:00 pm	<p>Continuing Plenary discussion on Setting Regional Research Priorities</p> <p>Removing Barriers to Research Plenary Discussion (Facilitated by Nicole Leotaud) Nicole Leotaud led a plenary session summarizing and bringing together the different topics explored in the workshop. Topics covered included: Setting priorities for research; barriers to research and finding ways around them; and using regional networks to get research done.</p> <p>Key lessons and recommendations from the workshop and workshop close (Claus Eckelmann)</p>

3. Country Reports

The following guidelines for preparation of country presentations were given to workshop participants:

- Forest managers:
 - What are the main issues for forest management in your country?
 - Which of these issues require research?
 - What research (if any) is being conducted (by you or others) to help to address these issues?
 - How are you collaborating with researchers and other forest management agencies to address these issues?
- Research institutions:
 - How are you collaborating with forest managers and other research institutions to contribute to forest management?
 - How is your research agenda defined by forest management issues?
- For all participants:
 - How is research currently conducted (who is involved and how)?

The following is a list of presentations:

- The Foundation for Production, Control and Forest Management (SBB). The National Forest Authority in Suriname.
- Centre for Agricultural Research in Suriname (CELOS) and the University of Suriname
- Topenbos Suriname
- University of Guyana
- Guyana Forestry Commission
- Forestry Division, Trinidad
- Environmental Management Authority, Trinidad
- University of Trinidad and Tobago/ Eastern Caribbean Institute of Agriculture and Forestry (ECIAF)
- Carlton Sambury, Trinidad
- Tobago House of Assembly, Forestry Division in Tobago
- Dominica Forestry Commission
- Jamaica Forestry Commission
- International Institute of Tropical Forestry (IITF) Puerto Rico

Please see Appendix 3 for a summary of these presentations.

4. Summary of the Questionnaire Results

Please see Appendix 1 for a copy of the survey instrument and Appendix 2 for a summary of the questionnaire results.

The pre-conference questionnaire asked respondents to assess the research needs for ten roles that forests are thought to play in countries in the region (Appendix 1). The roles were selected by the workshop facilitators on the basis of literature on forest use in the tropics and expert opinion. The ten roles were grouped into four themes during analysis based on how the role affected the forest (extractive uses, non-extractive uses, services and deforestation).

4.1 Respondents

Nine respondents were from Trinidad and Tobago, three from Suriname, two from Guyana and one each from St. Lucia, Dominica, Puerto Rico and Jamaica. The respondents all participated in the workshop.

4.2 Findings on the Roles Forests Play in the Countries

Rate the importance of forests in performing the following roles in your country (0- forests do not play this role in my country; 1- not important; 5- very important)

Biodiversity conservation was considered to a very important role for forests for 76% of respondents. This role seemed to be the most consistently important across the countries of the region followed by timber production with 65% of respondents classing it a very important role of forests in their country. Hunting, water production and indirect economic return were rated as very important roles for forests for greater than 50% of respondents. Forests were seen as very important to non-timber product extraction by only 25% of respondents and only 35% of respondents saw forests as being very important in recreation or direct economic return to governments or private sector in their countries.

The questionnaire responses seem to reinforce the perception that forests are important for roles that provide little in the way of direct economic return (biodiversity conservation, hunting, and water production). The fact timber production was considered a very important role of forests by only 2/3 of respondents indicates that forests in many of the respondent countries may not contain commercial quantities of timber and timber production in those countries is now based on plantations or imports.

4.3 Findings on Management Issues Needing Research

Rate the knowledge of methods and processes needed to adequately manage forests to perform the following roles forests play in your country (0- forests do not play this role in my country; 1- knowledge completely lacking; 5- more than enough knowledge)

The roles of forests that the most respondents felt that there was an inadequate amount of knowledge for management were indirect economic return, flood control, non-timber products and hunting. The roles of forests where most respondents felt there were adequate levels of knowledge for management were direct economic return, water production and tourism. At least two respondents felt there was more than enough knowledge for management of timber production in their countries but apart from timber production no other role had more than one respondent saying there was more than enough knowledge.

Generally this question revealed that the respondents felt no role of forests was very well understood and all could stand some research.

4.4 Findings on Research Currently Carried Out

- A. Rate the amount of research (by amount of money or number of projects) carried out presently or in the past into the following roles of forests in your country (0- forests do not play this role in my country; 1- no research carried out; 5- much research carried out)
- B. Rate the effectiveness of research (i.e. how much does the research help with management issues) into the following roles forests play in your country (0- forests do not play this role in my country; 1- research ineffective; 5- research very effective)

The respondents felt the amount of research was very low for all roles that forests play in their countries but some research had been carried out into most roles. The small amount of research carried out was felt to be effective in researching biodiversity conservation, recreation, water production and hunting. Research into tourism and indirect economic return was felt to be ineffective.

The amount of research carried out was generally felt to be very small and with mixed effectiveness.

4.5 Findings on Areas Needing Research

Rate the urgency of requirement for research into the following roles forests play in your country (0- forests do not play this role in my country; 1- research not needed; 5- research needs critical)

Most of the respondents felt research needs were critical for all roles that forests play in countries of the region.

4.6 Findings on Impediments to Research

Tick the impediments to research into the following roles that forests play. You may select more than one impediment per forest role.

On average the respondents rated all of the impediments to research suggested equally except for time which they felt was generally not a problem. On average no role suffered from impediments more than others although there were some patterns. Respondents felt research into deforestation (planned or unplanned) was impeded mainly by lack of interest from politicians or senior management and research into timber and water production from forests was felt to be impeded mainly by lack of money and equipment.

4.7 Findings on Local and Regional – International Research Collaboration.

Local collaboration is with partners from within the country, Regional collaboration is collaboration with partners from other countries in the region, International collaboration is with partners from countries outside the region or international agencies (such as FAO or ITTF).

- A. Tick the research topics in which you have had collaboration at the local, regional or international level.
- B. Tick the research topics in which you wish to have collaboration at the local, regional or international level.

The majority of research collaborations that the respondent's organizations had been involved with in the past were local collaborations however there was at least one or two respondents who reported regional or international research collaboration in all the roles forests play. It was only in research into biodiversity conservation and timber production that research collaboration with regional and international partners was nearly equal to local partners.

It seems there is very little within region or international collaboration in forest research going on. There are a few projects but the majority of collaboration is probably opportunistic local collaboration. It is likely the network of contacts does not exist to help facilitate development of research at a regional or international level but it does seem to exist at a local level.

5. Addressing the Objectives of the Forest Research Workshop

5.1 Findings on Objective 1: What requires research? What are the research priorities in the Caribbean at a national level and at a regional level?

5.1.1 Areas requiring research

In the pre-conference questionnaire, most respondents indicated that all of the ten nominated roles that forests play needed some research to better for manage for that role or resource. Most respondents felt there was inadequate knowledge for management for deforestation (illegal), flood control, non-timber products and hunting. When asked how urgent the need for research is to support management, most respondents indicated that all roles were in urgent need of research.

So from the preconference presentations it seems that deforestation (illegal), flood control, non-timber products and hunting were seen to be particularly lacking in knowledge for management although all roles the nominated roles forests play were thought to be lacking in knowledge. Respondents felt all the nominated roles had an equal status in the urgency of research needed to fill the knowledge gaps for management and no clear priorities came though from the questionnaire.

Most country presentations identified areas that required research at a national level. Participants from the continental countries of Suriname and Guyana felt that timber production, biodiversity conservation, rehabilitation of mined lands and forest livelihoods were the main themes requiring research. In the smaller islands wild life status, watershed management, and biodiversity conservation where the main management issues requiring research.

From the collective list of issues identified during the country presentations, participants were asked to select their four top priority issues requiring research in the Caribbean. The top four issues then clearly emerged as:

- i. Improving the livelihoods of forest based populations and surrounding rural populations (by using forest resources)
- ii. Uses of Non-Timber Forest Products (Including medicines): Sustainable harvesting and markets for products
- iii. Co-management and governance of forest resources
- iv. Management of forest resources at a landscape scale

The “traditional” use of tropical forests for timber production was not seen as a regional research priority. Instead there seemed to be a lot of interest in defining the role of tropical forests in 21st century society in the region. Even in the continental countries there seems to be a wish to understand how forests can benefit the society in ways separate from timber production. The initial research methods proposed for each of the priorities management issues were using social methods to engage stakeholders, find out how they relate to forests and how they could be drawn into management of the forest either directly by entering the forest and using its resources or indirectly by engaging in practices outside of the forest that do not degrade the forest resources. The linkage between forests and the wider landscape in ecological, economic and social terms seems to be the research priority for the participants.

5.1.2 Process for setting research priorities

From the country presentations it seems that few countries in the region had gone through a multi-stakeholder process whereby priorities had been set for research a national level let alone at a regional level. Only Suriname had engaged in a multi-stakeholder research priority setting exercise run by Tropenbos Suriname. There were some indications that the exercise had identified issues requiring management and helped influence research in Suriname. The Guyana Forestry Commission developed a research strategy in 2001 but it seems this was a single organisation priority setting exercise and the presentation seemed to indicate that the research needs identified were not explored to any great extent due to poor funding, inertia and lack of human resources. There has been little or no drive to set regional research priorities.

Participants recommended effective setting national and regional forest research priorities should be done using participatory techniques to engage a broad range of key stakeholders. They felt that the research problems and specific objectives of the research need to be developed in conjunction with key stakeholders in a very structured transparent process that promotes buy-in to the research process. Participants felt that this would benefit as:

- discussion among stakeholders would allow for exploration of management issues;
- linkages would be built and partnerships that will aid in execution of research;
- correctly setting research priorities with stakeholder participation will help research feed into management of the resource.

Setting research priorities at different levels requires engaging different sets of stakeholders. At a regional level, stakeholders are likely to be:

- i. Forestry management agencies
- ii. Regional bodies such as OECS and CARICOM
- iii. Ministers in regional governments
- iv. Research funding donors such as International NGOs

Participants recommended using participatory approaches to setting research priorities by:

- developing a guide to conducting national forest research priority setting that can be implemented in countries in the region;
- identifying and publicising the human resources available in the region to help plan and conduct research priority setting exercises;
- at the regional level, identifying key regional forestry research stakeholders and organizing a regional research priority setting exercise, which will contribute to building a regional research resources network;
- using pilot studies to help define objectives for detailed studies.

5.1.3 Implementing and communicating the research

In terms of implementing the research, participants also recommended participatory and collaborative approaches. Specific actions suggested were to:

- try participatory research so stakeholders can continue to be engaged in the research;
- share research experiences regionally on a regular basis;
- find out the research resources available regionally and use these resources to complete the research;
- have forestry administrations partner with regional research institutions such as universities and institutes;
- publish the results of the research in many different forms so that a maximum number of stakeholders are reached. Make sure the research includes clear recommendations for management. Informal meeting of stakeholders should occur regularly to keep managers in contact with research and enable research to feed into management. It will not always happen immediately but if well publicised the recommendations from the research likely to be picked up at a later date.

The concept of using social science techniques to understand and change human behaviour creating management issues was new to many participants. They experienced firsthand the discussion involved in coming up with research projects and exploring stakeholder skill sets to develop research partnerships to conduct successful projects.

5.2 Findings on Objective 2: What are the perceived impediments to this research and how can they be overcome?

5.2.1 Impediments to research

Responses to the Pre-Conference Questionnaire did not identify any impediment as more problematic than another and none of the roles listed seemed to be impeded more than any other. Lack of time was not identified as a problem, although it was in the workshop discussions. It is likely the questionnaire was ill-designed and misunderstood by the respondents. The respondents seemed to think senior management/politicians do not have an interest in solving deforestation problems.

Some impediments mentioned in the country presentations were:

1. Lack of locally based human resources to tackle research problem both in terms of time to carry out research and expertise to conduct research. As a result research agendas often set by foreign researchers and local research needs are not met.
2. Ancillary resources such literature, remote sensing and specialised scientific equipment are often lacking in countries of the region. These resources can be supplied by a local research networks as described by Dr Ariel Lugo from Puerto Rico.
3. Transfer of knowledge between countries in the region is often lacking leading to duplication of research efforts.

During the plenary discussion sessions participants felt the following barriers to research were most problematic:

- Low value accorded to evidence –based management by administrators and society as a whole
- Little time allocated to research by administrators

- Scientific research skills lacking
- Low capacity to attract funding from a limited source of funds available for research, research directions dictated by international funding agencies and often carried out by developed country teams
- Publishing and communication of results seldom carried out
- Research often result of “knee jerk” reactions and fads and a program is not well thought out
- Bureaucratic structures in forest management organisations not flexible enough for research

Participants also noted that when research is carried out in isolation it is more likely to fail due to lack of resources which be available (often cheaply or for free) nationally or within the region. If international researchers are interested in conducting research in the country they felt that it was important to get local researchers into the project.

5.2.2 Overcoming impediments to research

Participants felt that many of the barriers identified above are a problem in the region but careful planning and approaches can help surmount many of them. Steps to successfully carry out research projects were recommended:

1. Identify research priorities by:
 - i. Identifying stakeholders in forest management
 - ii. Identifying issues in management in conjunction with stakeholders
 - iii. Rank issues to prioritize and decide which can benefit from research
 - iv. Share these results with stakeholders, get input and thus validate the ranking of priorities
2. Form partnerships with stakeholders to carry out the research
3. Form partnerships regionally to fill skills gaps. Role for research organisations such as the regional universities and IITF. Identify skill sets and facilities available using some web based networking site.
4. Build capacity to write internationally competitive proposals for research funds and promote awareness of sources of research funding
5. By partnering with professional communicators build capacity to communicate results of research on a variety of different levels including:
 - i. Scientific publications (regional peer review to assist)
 - ii. Executive actions for administrators and politicians
 - iii. Mass media, popular science segments
 - iv. Schools education material
6. Put the research in the context of a medium to long term plan
7. Cultivate long term formal and informal relationships with stakeholders to help overcome bureaucratic rigidity
8. Partner with international research organisations such as United States or European universities or government agencies to access logistic support and funding. Try to avoid losing control of the research program
9. Find ways to gain recognition for research output through publication record etc...

Some solutions to problems such as lack of literature and learning from other research projects in the region were suggested by networking forest researchers throughout the region.

Recommendations for removing research barriers:

1. Set research priorities that have the support of a wide group of stakeholders by including stakeholders in the priority setting process
2. Including stakeholders in research execution
3. Fill capacity and logistic gaps by partnering with other regional organizations particularly the regional universities and IITF
4. Partner with communication experts to communicate research results. Use regional peers to vet research publications
5. Put research in the context of a medium to long term plan
6. Cultivate formal and informal relationships in other organisations both regionally and internationally
7. Institutionalise rewards for research such as publication record in universities

Use regional research networks to help relieve problems with logistics

5.3 Findings on Objective 3: How can regional research cooperation be initiated?

Most of the research collaboration experienced by the respondents to the Pre-Conference Questionnaire was with organisations within their own country. However, there were low levels of collaboration at the regional and international level and the respondents showed a desire for more cooperation in research within the region. This suggested that there is willingness for regional cooperation in research. The question must be why is it not happening more?

During the country presentations, Ariel Lugo from IITF in Puerto Rico alerted participants and made an offer of the resources of IITF in terms of literature and remote sensing to help research in the region. In Suriname there is much collaboration between Tropenbos Suriname, CELOS and local and foreign Universities. In Trinidad, The EMA collaborates mainly with the local Universities and the government ministries and sees its role as coordinating research efforts. During questions and discussions after the country presentations mechanisms of increasing regional collaboration in research was briefly discussed especially in relation to the Caribbean Foresters organisation coordinated by IITF and the regular meetings held by the organization. The idea of getting regional organisations with better research capacity such as IITF or the regional Universities to carry out research in the priorities identified was not explored to any great extent.

It was felt there needed to be more regional research collaboration and the best way to achieve this was to create a regional research network which would allow researchers to stay in closer contact, support each other in research and develop regional research plans. Also the research network would allow skills and capacities present in the region to be brought to bear on research problems in countries throughout the region.

Suggestions and discussions were had on the methods to establish regional research networks. It was felt a regional research network would support research by:

- i. Allowing regional researchers to exchange research experiences
- ii. Advertising available skills and competencies that may be used in the region
- iii. Advertising and disseminating logistic support for research such as literature sources, remote sensing and GIS resources
- iv. Allowing peer vetting of research proposals and reports
- v. Allowing research partnerships to form and develop to conduct research projects
- vi. Develop regional research priorities and seek funding with regional research partnerships

The following mechanisms were recommended:

- Joining an existing network such as the Caribbean Forester network administered by the International Institute of Tropical Forestry which has substantial resources and holds annual meetings. It also has a website in early stages of development.
- Set up a web based network to achieve much of the goals above in the short term. The question of who would host and administer the web site would need to be addressed.

6. Next Steps for Caribbean Forest Research

The workshop identified a number of key recommendations to help make research more effective in contributing to addressing forest management issues.

The workshop identified the main problems affecting the implementation of sustainable forest management (see Section 5.1) and explored to what extent the solutions of these problems require a research input. In this regard, the process of setting regional and national forest research priorities was felt to be crucial. Participants recommended using participatory approaches to setting research priorities by:

- developing a guide to conducting national forest research priority setting that can be implemented in countries in the region;
- identifying and publicising the human resources available in the region to help plan and conduct research priority setting exercises;
- at the regional level, identifying key regional forestry research stakeholders and organizing a regional research priority setting exercise, which will contribute to building a regional research resources network;
- using pilot studies to help define objectives for detailed studies.

In terms of implementing the research, participants also recommended participatory and collaborative approaches. Specific actions suggested were to:

- try participatory research so stakeholders can continue to be engaged in the research;
- share research experiences regionally on a regular basis;
- find out the research resources available regionally and use these resources to complete the research;
- have forestry administrations partner with regional research institutions such as universities and institutes;
- publish the results of the research in many different forms so that a maximum number of stakeholders are reached. Make sure the research includes clear recommendations for management. Informal meeting of stakeholders should occur regularly to keep managers in contact with research and enable research to feed into management. It will not always happen immediately but if well publicised the recommendations from the research likely to be picked up at a later date.

Recommendations for removing research barriers:

1. Set research priorities that have the support of a wide group of stakeholders by including stakeholders in the priority setting process
2. Including stakeholders in research execution
3. Fill capacity and logistic gaps by partnering with other regional organizations particularly the regional universities and IITF
4. Partner with communication experts to communicate research results. Use regional peers to vet research publications
5. Put research in the context of a medium to long term plan
6. Cultivate formal and informal relationships in other organisations both regionally and internationally

7. Institutionalise rewards for research such as publication record in universities
8. Use regional research networks to help relieve problems with logistics

The workshop also discussed how to organise research in forestry and explored whether it is feasible for small national forest administrations to dedicate resources to design and conduct research programmes or whether it would be better to implement the research in partnership with more specialised research institutions. It was felt there needed to be more collaboration at a national levels as well as regional research collaboration. Specific recommendations for setting up a regional research network were:

1. Join the Caribbean Forester network if it can offer the requirements suggested in the workshop
2. Set up a website to get researchers into contact in the short term

Key outcomes from the workshop also included:

- enhanced capacity of participants in analysing management issues from social as well as ecological perspectives;
- increased awareness of participants to knowledge gaps in management issues that have that may be usefully tackled by research;
- appreciation of the value of engaging stakeholders in developing research priorities and in implementing the research in order to ensure that research better addresses real management issues and is more effectively fed into management;
- built or enhanced relationships between countries and between forestry administrations and research institutions and increased interest in collaboration.

Appendices

Appendix 1. Pre-Conference Questionnaire

Forestry Research in the English Speaking Caribbean Workshop

Pre-Conference Questionnaire

Introduction and Aims of the Questionnaire

The objective of this questionnaire is to gather opinions from participants in the Forestry Research Workshop so that their experiences can be collated and priority issues in forestry research targeted at the workshop. A presentation on the results from this survey will be given on the first day of the workshop. It is requested the participant be the one to fill out the questionnaire but in consultation with their work colleagues if possible. It should be emphasized that the questionnaire aims only to gather personal opinions and experiences of the participants and not a country's official position in the matter of forestry research.

The overall goal of the workshop is to share knowledge between participants so they can return to their countries better equipped to carry out forest research in support of forest management. It also aims to create links between organizations so research burdens can be shared.

Participants will also be asked to prepare a 5 minute presentation on forest research in their country. The questionnaire can be used to guide participants in the types of information we will be discussing at the workshop.

The presentation and the questionnaire aim to give information to help address the following questions;

- Forest managers:
 - What are the main issues for forest management in your country?
 - Which of these issues require research?
 - What research (if any) is being conducted (by you or others) to help to address these issues?
 - How are you collaborating with researchers and other forest management agencies to address these issues?
- Research institutions:
 - How are you collaborating with forest managers and other research institutions to contribute to forest management?
 - How is your research agenda defined by forest management issues?
- For all participants:
 - How is research currently conducted (who is involved and how)?

What to do

Open the questionnaire in MSWord and fill in the questionnaire by reading the question and indicating the most appropriate answer by **highlighting**. Save the MSWord document. Alternatively, print a hardcopy of the questionnaire and fill it in with a pen or pencil and then scan it back into the computer as a JPEG file. Please draw on your own experience and the experiences of your colleagues to fill in the questionnaire. There are no right or wrong answers, just situations.

Once done, email the MSWord document or JPEG file back to Kumarie Boodram at UTT (kayboodram@yahoo.com) by the 21st of October 2009 so we can enter and analyse the results before the workshop the following week.

The Questions

1. Roles Forests Play in Your Country

Rate the importance of forests in performing the following roles in your country (0- forests do not play this role in my country; 1- not important; 5- very important)

i. Tourism	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
ii. Recreation	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
iii. Hunting	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
iv. Timber production	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
v. Biodiversity conservation	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
vi. Non-timber product extraction	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
vii. Water production	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
viii. Flood and erosion control	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
ix. Direct and clear economic return to the government or private sector	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
x. Indirect services or economic return to government or private sector	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

2. Management Issues Needing Research

Rate the knowledge of methods and processes needed to adequately manage forests to perform the following roles forests play in your country (0- forests do not play this role in my country; 1- knowledge completely lacking; 5- more than enough knowledge)

i. Tourism	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
ii. Recreation	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
iii. Hunting	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
iv. Timber production	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
v. Biodiversity conservation	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
vi. Non-timber product extraction	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
vii. Water production	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
viii. Flood and erosion control	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
ix. Deforestation: Planned or Legal	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
x. Deforestation: Spontaneous, unplanned or illegal	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

3. Research Currently Carried Out

A. Rate the amount of research (by amount of money or number of projects) carried out presently or in the past into the following roles of forests in your country (0- forests do not play this role in my country; 1- no research carried out; 5- much research carried out)

i. Tourism	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
ii. Recreation	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
iii. Hunting	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
iv. Timber production	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
v. Biodiversity conservation	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
vi. Non-timber product extraction	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
vii. Water production	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
viii. Flood and erosion control	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
ix. Deforestation: Planned or Legal	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
x. Deforestation: Spontaneous, unplanned or illegal	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

B. Rate the effectiveness of research (i.e. how much does the research help with management issues) into the following roles forests play in your country (0- forests do not play this role in my country; 1- research ineffective; 5- research very effective)

i. Tourism	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
ii. Recreation	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
iii. Hunting	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
iv. Timber production	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
v. Biodiversity conservation	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
vi. Non-timber product extraction	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
vii. Water production	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
viii. Flood and erosion control	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
ix. Deforestation: Planned or Legal	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
x. Deforestation: Spontaneous, unplanned or illegal	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

4. Areas Needing Research

Rate the urgency of requirement for research into the following roles forests play in your country (0- forests do not play this role in my country; 1- research not needed; 5- research needs critical)

i. Tourism	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
ii. Recreation	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
iii. Hunting	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
iv. Timber production	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
v. Biodiversity conservation	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
vi. Non-timber product extraction	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
vii. Water production	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
viii. Flood and erosion control	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
ix. Deforestation: Planned or Legal	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
x. Deforestation: Spontaneous, unplanned or illegal	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

5. Impediments to Research

Tick the impediments to research into the following roles that forests play. You may select more than one impediment per forest role.

	Lack of Money/Equipment	Lack of Expertise	Politicians or Senior Management not Interested	Lack of Time	Other Impediment
i. Tourism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ii. Recreation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
iii. Hunting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
iv. Timber production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
v. Biodiversity conservation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
vi. Non-timber product extraction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
vii. Water production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
viii. Flood and erosion control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ix. Deforestation: Planned or Legal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
x. Deforestation: Spontaneous, unplanned or illegal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

6. Local and Regional – International Research Collaboration. Local collaboration is with partners from within the country, Regional collaboration is collaboration with partners from other countries in the region, International collaboration is with partners from countries outside the region or international agencies (such as FAO or ITTF).

C. Tick the research topics in which you have had collaboration at the local, regional or international level.

	Local Collaboration	Regional Collaboration	International Collaboration	Need Collaboration	Comments
i. Tourism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ii. Recreation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
iii. Hunting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
iv. Timber production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
v. Biodiversity conservation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
vi. Non-timber product extraction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
vii. Water production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
viii. Flood and erosion control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ix. Deforestation: Planned or Legal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
x. Deforestation: Spontaneous, unplanned or illegal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

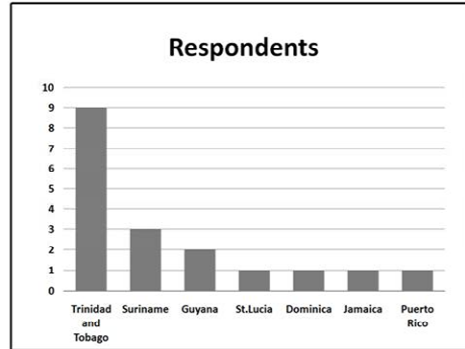
D. Tick the research topics in which you wish to have collaboration at the local, regional or international level.

	Local Collaboration	Regional Collaboration	International Collaboration	Need Collaboration	Comments
i. Tourism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ii. Recreation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
iii. Hunting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
iv. Timber production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
v. Biodiversity conservation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
vi. Non-timber product extraction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
vii. Water production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
viii. Flood and erosion control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
ix. Deforestation: Planned or Legal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
x. Deforestation: Spontaneous, unplanned or illegal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Appendix 2. Print out of Pre-Conference Questionnaire Analysis

11/25/2009

Forestry Research in the English Speaking Caribbean Workshop
Pre-Conference Questionnaire Results



1. Role of Forests

Summary

5- very important

Rate the importance of forests in performing the following roles in your country.

Role of Forest	Percentage of Respondents saying 5
Biodiversity Conservation	76
Timber Production	65
Hunting	59
Water Production	59
Indirect Economic Return	53
Flood Control	47
Tourism	47
Recreation	35
Direct Economic Return	35
Non-Timber Products	24

Red- Extractive Uses
Green- Non-Extractive
Blue- Services
Purple- Economic Return

2. Management Issues Needing Research

Summary

5- more than enough knowledge

Rate the knowledge of methods and processes needed to adequately manage forests to perform the following roles forests play in your country.

Management Issues Needing Research	Percentage of Respondents saying 5
Timber Production	12
Hunting	6
Water Production	6
Flood Control	6
Indirect Economic Return	6
Direct Economic Return	0
Non-Timber Products	0
Biodiversity Conservation	0
Tourism	0
Recreation	0

Red- Extractive Uses
Green- Non-Extractive
Blue- Services
Purple- Economic Return

2. Management Issues Needing Research

Mgt Issues Needing Research	Mode of the Response
Indirect Economic Return	Inadequate amount of knowledge for management
Flood Control	Inadequate amount of knowledge for management
Non-Timber Products	Inadequate amount of knowledge for management
Hunting	Inadequate amount of knowledge for management
Timber Production	Moderate amount of knowledge
Biodiversity Conservation	Moderate to adequate knowledge for management
Recreation	Moderate to adequate knowledge for management
Direct Economic Return	Adequate knowledge for management
Water Production	Adequate knowledge for management
Tourism	Adequate knowledge for management

Red- Extractive Uses
Green- Non-Extractive
Blue- Services
Purple- Economic Return

3. Research Currently Carried Out A

Summary

5- much research carried out.

Rate the amount of research (by amount of money or number of projects) carried out presently or in the past into the following roles of forests in your country.

Amount of Research carried out	Percentage of Respondents saying 5
Timber Production	6
Biodiversity Conservation	6
Recreation	0
Tourism	0
Hunting	0
Non-Timber Products	0
Flood Control	0
Water Production	0
Direct Economic Return	0
Indirect Economic Return	0

Red- Extractive Uses
Green- Non-Extractive
Blue- Services
Purple- Economic Return

3. Research Currently Carried Out A

Amount of Research carried out	Mode of the Response
Flood Control	Inadequate amount of research carried out (2)
Water Production	Inadequate amount of research carried out (2)
Indirect Economic Return	Inadequate amount of research carried out (2)
Direct Economic Return	Inadequate amount of research carried out (2)
Non-Timber Products	Inadequate amount of research carried out (2)
Hunting	Inadequate amount of research carried out (2)
Tourism	Inadequate amount of research carried out (2)
Recreation	Inadequate amount of research carried out (2)
Biodiversity Conservation	Inadequate amount of research carried out (2)
Timber Production	Inadequate to moderate amount of research carried out (2)

Red- Extractive Uses
Green- Non-Extractive
Blue- Services
Purple- Economic Return

3. Research Currently Carried Out B

Rate the effectiveness of research [i.e. how much does the research help to guide management] into the following roles forests play in your country.

Summary		5- research very effective
Effectiveness of Research	Percentage of Respondents saying 5	
Biodiversity Conservation	12	
Tourism	6	
Water Production	6	
Non-Timber Products	6	
Timber Production	6	
Hunting	0	
Recreation	0	
Flood Control	0	
Direct Economic Return	0	
Indirect Economic Return	0	

Red- Extractive Uses
Green- Non-Extractive
Blue- Services
Purple- Economic Return

3. Research Currently Carried Out B

Effectiveness of Research	Mode of the Response
Tourism	research ineffective to almost ineffective
Indirect Economic Return	research ineffective to almost ineffective
Non-Timber Products	research almost ineffective
Flood Control	research almost ineffective
Direct Economic Return	research almost ineffective
Water Production	research effective
Biodiversity Conservation	research effective
Hunting	research effective
Recreation	research effective
Timber Production	research almost ineffective and research effective

Red- Extractive Uses
Green- Non-Extractive
Blue- Services
Purple- Economic Return

4. Areas Needing Research

Rate the urgency of requirement for research into the following roles forests play in your country.

Summary		5- research needs critical
Urgency of Requirement for Research	Percentage of Respondents saying 5	
Flood Control	65	
Water Production	53	
Tourism	47	
Recreation	47	
Biodiversity Conservation	47	
Hunting	47	
Non-Timber Products	47	
Timber Production	41	
Direct Economic Return	41	
Indirect Economic Return	41	

Red- Extractive Uses
Green- Non-Extractive
Blue- Services
Purple- Economic Return

4. Areas Needing Research

Urgency of Requirement for Research	Mode of the Response
Flood Control	research needs critical
Water Production	research needs critical
Hunting	research needs critical
Non-Timber Products	research needs critical
Timber Production	research needs critical
Indirect Economic Return	research needs critical
Direct Economic Return	research needs critical
Tourism	research needs critical
Recreation	research needs critical
Biodiversity Conservation	4 and 5 ?

Red- Extractive Uses
Green- Non-Extractive
Blue- Services
Purple- Economic Return

5. Barriers to Research

Tick the impediments to research into the following roles that forests play. You may select more than one impediment per role.

	Lack of Money/Equipment	Lack of Expertise	Politicians or Senior Mgt not Interested	Lack of Time	Average Percentage
Tourism	59	41	47	6	38
Recreation	53	47	65	6	43
Hunting	47	59	35	6	37
Timber production	59	35	35	6	34
Biodiversity conservation	53	59	41	12	41
Non-timber product extraction	35	47	35	12	32
Water production	53	41	29	12	34
Flood & erosion control	41	59	47	6	38
Deforestation: Planned or Legal	29	35	71	6	35
Deforestation: unplanned or illegal	35	35	71	6	37
Average Percentage	46	46	48	8	37

6. Research Collaboration A

Tick the research topics in which you have had collaboration at the local, regional or international level.

	Local Collaboration	Regional Collaboration	International Collaboration	Need Collaboration	Average Percentage
Tourism	41	29	29	12	28
Recreation	29	18	24	12	21
Hunting	47	12	24	12	24
Timber production	35	41	35	12	31
Biodiversity conservation	41	41	41	12	34
Non-timber product extraction	41	29	12	24	26
Water production	41	18	6	24	22
Flood & erosion control	53	12	12	12	22
Deforestation: Planned or Legal	41	6	12	24	21
Deforestation: unplanned or illegal	47	18	18	24	26
Average Percentage	42	22	21	16	25

6. Research Collaboration B

Tick the research topics in which you wish to have collaboration at the local, regional or international level.

	Local Collaboration	Regional Collaboration	International Collaboration	Need Collaboration	Average Percentage
Tourism	35	59	29	0	31
Recreation	35	47	29	6	29
Hunting	35	41	24	12	28
Timber production	29	41	47	6	31
Biodiversity conservation	29	53	71	12	41
Non-timber product extraction	41	41	41	6	32
Water production	35	59	41	6	35
Flood & erosion control	35	53	47	0	34
Deforestation: Planned or Legal	35	59	35	12	35
Deforestation: unplanned or illegal	35	53	35	12	34
Average Percentage	35	51	40	7	33

Appendix 3. Summary of Country Presentations

Objective/Topic	Type of Organization (Forest Manager/Research Org/Authority)	Country	What are the main issues for forest management in your country?	Which of these issues require research?	What research (if any) is being conducted (by you or others) to help to address these issues?	How are you collaborating with researchers and other forest management agencies to address these issues?
Foundation for Forest Management and Production Control (SBB)	Authority	Suriname		Code of practice; Research of lesser known species (wood characteristics); Update of the vegetation map; Biomass modeling; Forest degradation; Other forest products and services to optimize the forest utilization; Utilization of wood waste as bio-energy.	Minor timber products, Carbon stock baseline	Cooperation between SBB and research institutions Minor timber products (SBB, CELOS & Tropenbos) Carbon stock baseline (SBB, CELOS & Tropenbos)
CELOS	Research Organization	Suriname	Improve and diversify forest management; Ensure sustainable timber production; Protect and make better use of the country's biodiversity; The position of Suriname as a country with a high forest cover and low deforestation rate; Improve livelihoods of forest based communities		Forestry; Biodiversiteit; Agroforestry; Woodtechnology	Anton de Kom University of Suriname, National Herbarium, Zoological department, Foundation for production Control and Forest Management, Nature, Conservation Division, National Institution for the Environment in Suriname, NGO's and CBO's, Wood industry
TROPENBOS	Research Organization	Suriname	Forest Products and Trade; Biodiversity conservation and Forest Based Livelihoods	Poly-cyclic timber harvesting (CELOS system); Carbon Credits baselining; goldmining deforestation	Improvement of Indigenous and Maroon Agroforestry systems (Guyagrofor); Multidisciplinary Landscape Assessment; Gold-mining impacts & Goldmine rehabilitation Brownsberg Nature park; Transfer of Knowledge	Anton de Kom University of Suriname, Ministries, Communities and private sector
Guyana Forestry Commission	Forest Manager	Guyana	Timber production; national forest policy		Research strategy developed. Poor funding, inertia and lack of human resources	
University of Guyana	Research Organization	Guyana	Timber production; biodiversity conservation			External institutions provide funding and research direction. UG provides students and staff
Trinidad and Tobago Forestry Division	Forest Manager	Trinidad	Population pressure; roles forests have to play in relieving rural poverty; plantations and natural forests timber production; invasive species; impacts of GCC	all	FRIM doing research in timber production; other mainly isolated researchers	Not much collaboration
Environmental Management Authority	Authority	Trinidad	Revising Policy		Revising National Forest Policy; Protected Area policy; National Environmental Policy; controls CEC process; promote environmental awareness	Biodiversity Unit researching ESAs and ESSs in collaboration with tertiary institutions
University of Trinidad and Tobago Forestry Division/Tobago House of Assembly	Research Organization Forest Manager	Trinidad	Conservation Forestry	Lack of knowledge of status of wildlife; forest fragmentation; Invasive species	Low level research by diploma students Not Much if any; lack of funding and human resources	Collaboration with T&T Forestry Division
St Lucia Forestry Department	Forest Manager	St Lucia	Utilization of forest resources; sustaining livelihoods; conservation of biodiversity	need timber inventories, regeneration and succession, NTTFPs inventory and monitoring; Watershed management; wildlife protection and monitoring; ecotourism		
Domanica Forestry Department Jamaica Forestry Department	Forest Manager Forest Manager	Dominica Jamaica	Wildlife management for tourism, NTTFP production	Wildlife status and monitoring; NTTFP harvesting, and monitoring; agricultural crop damage monitoring; timber inventories; impact of GCC; Invasive species; Policy maker attitudes	Chytrid fungus and amphibians; parrots status and monitoring; palm status and management; agricultural crop damage; sea turtle research Minesite rehabilitation	Much research done by foreign researchers
International Institute of Tropical Forestry	Research Organization	Puerto Rico	New forest ecosystems; landscape dynamics; non-native species; urban forestry; forest governance	New forest ecosystems; landscape dynamics; non-native species; urban forestry; forest governance	yes	yes

Objective/Topic	How are you collaborating with forest managers and other research institutions to contribute to forest management?	How is your research agenda defined by forest management issues?	How is research currently conducted (who is involved and how)?
Foundation for Forest Management and Production Control (SBB)			Not a priority
CELOS	For Financing Research: Conservation International, WWF, UNDP/ GEF program, Tropenbos Suriname, Rava/ CIFOR, EU/Forenet, Amazon Cooperation Treaty		
TROPENBOS	Minitries and Anton de Kom University	Research priorities set by workshop	
Guyana Forestry Commission			
University of Guyana			
Trinidad and Tobago Forestry Division	Not much collaboration		Individuals in FD collaborating as part of their postgrad programs
Environmental Management Authority	Collaborations with UWI, UTT and FD. Coordinating role in research		
University of Trinidad and Tobago Forestry Division/Tobago House of Assembly		Research mainly based on student interest and logistics	
St Lucia Forestry Department			
Domanica Forestry Department		Not really. Foreign researchers set research agenda	Foreign researchers mainly
Jamaica Forestry Department			Small Foretry Department research group
International Institute of Tropical Forestry			research supported by research infra-structure of literature and services such as GIS-Remote sensing and field stations

Appendix 4. List of Participants

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