Ministry of Public Utilities and the Environment

Meteorological Services Division

Report of the Meteorological Services Division To the Joint Select Committee of Parliament

Overview: The main business of the Meteorological Service is to provide information to the local population with respect to weather forecasting to ensure the utilization of this information in planning, safety and economy. Because the atmosphere is a global common, we share data with all countries of the region and we make this data available to the international meteorological community through an efficient telecommunications system (including rental of a space segment) for use in numerical weather prediction routine runs.

The mandate of the Meteorological service is to meet the needs of the many weather sensitive sectors in the society including aviation (the main customer), agriculture, insurance, water resources, construction, and education. A recent challenge is to partially recover some costs through commercialisation of its products to specialized users.

1. Mission and Vision Statements

The Vision of the TTMS is "to improve the quality and expand the variety of services provided, to grow and move forward with the advance of the science of meteorology by acquiring cutting-edge technology, information and training, leading to an environment in which staff's happiness and contentment is realized to meet tomorrow's challenges adequately."

The Mission statement of the Meteorological Service is "*to provide meteorological and other related information and advice, consistent with international standards, towards the pursuit of national, scientific, social, economic and cultural goals, especially in the attainment of sustainable development.*"

1.1 Strategic Plan

The Medium Term Plan of the Trinidad and Tobago Meteorological Service (TTMS) is influenced by the World Meteorological Organization (WMO) medium and long-term plans and by policy directives at the local level.

The Vision of the TTMS is "to improve the quality and expand the variety of services provided, to grow and move forward with the advance of the science of meteorology by acquiring cutting-edge technology, information and training, leading to an environment in which staff's happiness and contentment is realized to meet tomorrow's challenges adequately."

1.1.1 Introduction

1.1.2 International and Regional Organizations

1.1.2.1 Trinidad and Tobago is a Member of the World Meteorological Organization (WMO) (by 1950 Convention) since 1963 and belongs to the WMO Regional Association IV comprising countries of North and Central America and the Caribbean.

1.1.2.2 The purposes of the WMO are as follows.

(a) To facilitate worldwide co-operation in the establishment of networks of stations for the making of meteorological observations as well as hydrological and other geophysical observations related to meteorology, and to promote the establishment and maintenance of centers charged with the provision of meteorological and related services;
(b) To promote the establishment and maintenance of systems for the rapid exchange of meteorological and related information;
(c) To promote standardization of meteorological and related observations and to ensure the uniform publication of observations and statistics;
(d) To further the application of meteorology to aviation, shipping, water problems, agriculture and other human activities;
(e) To promote activities in operational hydrology and further close co-operation between Meteorological and Hydrological Services; and
(f) To encourage research and training in meteorology and, as appropriate, in related fields and to assist in coordinating the international aspects of such research and training.

1.1.2.3.1 Further, under the British Empire colonial rule, a Caribbean Meteorological Service (CMS) existed with Forecast offices in Trinidad and Tobago (1946), Jamaica and the Bahamas. This service came under the defunct Federation with a Director General based in Trinidad. In 1963, Trinidad and Tobago Government assumed full responsibility for the TTMS. However, the CMS prevailed until 1972, with major responsibilities for non-forecast observing offices of Anglophone Caribbean States. The CMS gave way to the CMO, which was established in 1973 when the first local director was appointed and with the emergence of the Caribbean Meteorological Institute (CMI) established as a UNDP project in the late 1960s. An agreement among Caribbean Member States gave rise to the CMO with the creation four organs namely:

- The Caribbean Meteorological Council of Ministers (decision-making);
- The CMI renamed Caribbean Institute for Meteorology and Hydrology (CIMH) (teaching, training and research arm);
- The Headquarters Unit (hosted by Trinidad and Tobago);
- The Caribbean Meteorological Foundation.

1.1.3 Major Traditional Services provided by the TTMS include:

- Weather Forecasting, including those issued to Aviation industries, Marine interests and for public/private consumption

- Climate data/ information to Insurance Companies, Construction, Tourism/ hospitality industries, Marine Exploration, Agriculture and Water Resource sectors.

- Contribution to Regional and Global exchange of data

- Provision of an Area Forecast for Guyana and Adjacent waters for world-wide use and meteorological information for Flight Information Region in the nearby Atlantic Ocean, east of the Lesser Antilles for civil aviation purposes.

1.1.4 Strengths and Weaknesses

1.1.4.1 Considerable changes have occurred over the years with the advent of satellite, radar and computer technology. Trinidad and Tobago is currently benefiting from this technology transfer especially through the technical/voluntary co-operation programme of the WMO. Super-computer derived numerical weather prediction output is received via satellite space communication on Workstations at the Main Operational Centre, the Synoptic Branch since 1995. The major carrier of information and data to and from this center is now satellite-driven.

1.1.4.2 However, while the service remains technologically driven, problems to retain experienced and highly trained and qualified staff have become insurmountable as a result of an unattractive compensation package that threatens the very survival of this essential service. The TTMS found ways of maintaining a survival programme by recruitment and training of graduate personnel to ensure our vital services to local, regional and international interests are maintained. Contract appointments were offered to new members who were brought into the Establishment. Retired officers were also rehired on contract.

1.1.4.3. The Government of Trinidad and Tobago, fully aware of the problems, which existed, provided for the award of twenty-seven (27) scholarships in 1998/1999. However, this may lead only to a temporary reprieve of the staffing needs, since qualified personnel can easily be lost since they can compete successfully in the external market place where demand for their skills and qualifications is high.

1.1.5 ***Opportunities***

1.1.5.1 There are now many opportunities, which abound, especially in areas of climate change, environmental protection, atmospheric pollution monitoring, agro and marine meteorology. Workstations are replacing the manual sweat environment, requiring information technology skills and competencies. The TTMS will need to build its capacity to ensure that it keeps abreast and relevant in coping with these challenges. **The Mission statement** of the Meteorological Service is "*to provide meteorological and other related information and advice, consistent with international standards, towards the pursuit of national, scientific, social, economic and cultural goals, especially in the attainment of sustainable development.*"

1.1.6 ***Plans and strategies for the sustainability of the TTMS are presented in the Medium term Plan.***

1.1.6.1 Threats (Require Legal Framework and Regulation)

Further, Meteorological information is easily subjected to distortion with the myriad of cable channels available in Trinidad and Tobago. The TTMS will seek Government's consideration in creating a Meteorological service, legally binding and as the only authority to disseminate information of a meteorological nature for the consumption of the peoples of Trinidad and Tobago. This would be appropriate as the TTMS ventures into commercialisation and the use of data/information generated outside its border.

1.1.6.2 *Strategies for Sustainability*

1.1.6.2.1 Restructure the TTMS to include a Marine section, an agro-meteorological section, and an information technology section to provide beneficial services to the country (implementation immediately)

1.1.6.2.2 To train technical/professional employees in the TTMS, in Marine and agro-meteorology at the graduate level and information technology.

1.1.6.2.3 To ensure that networking with users of meteorological information is strengthened to determine the impact of services provided. This will be aggressively pursued later in the year.

1.1.6.2.4 To seek technical assistance and guidance from the World Meteorological Organization and ensure that we keep abreast of meteorological development worldwide. This exercise is on going.

1.1.6.2.5 Work with the Caribbean Meteorological Organization Forecast Offices to acquire Doppler Weather Radar in Trinidad as soon as possible.

1.1.6.2.7 *Consider different Management options for the TTMS*

Pursue the de-linking of the TTMS from the mainstream Public Service and establish an independent agency with its own budget and Accounting Unit reporting directly to a constituted board or a Minister or Consider merging of TTMS with any allied agency under an authority, which maintains its autonomy and uniqueness as expected of a Meteorological service, while using mutual benefits to reinforce each other.

1.1.6.2.8 Human Resource Development

1.1.6.2.8.1 Measures must be put in place immediately to ensure low turnover of staff through adequate compensation in order to reduce our training expenses.

1.1.6.2.8.2 Introduce the job classification within the TTMS as mandated by the WMO as soon as possible.

1.1.6.2.9 Institutional Strengthening

1.1.6.2.9.1 Establish a Meteorological Training Institution in Trinidad and Tobago, which will enhance the capacity of the TTMS through

- Strengthening of its human resource base
- Providing a ready institution for nationals to access without the attendant costs of going elsewhere or the CIMH in Barbados
- Developing endogenous capabilities in meteorology and related environmental sciences
- Optimising the current annual budgetary allocation with respect to transfers and subsidies to maintain Caribbean Meteorological Organization Institutions.
- Forging alliances with other locally based organizations e.g. UWI, St Augustine, Climate Change Centre (Petrotrin), and the Civil Aviation Training Institute, NIHERST and the Institute of Marine Affairs.
- Providing local training in the field of environmental sciences, meteorology, hydrology and climatology and in repair and maintenance of meteorological equipment and instrument, including computer hardware and software engineering.

1.1.6.3 Challenges

1.1.6.3.1 *The Physical Plant*

1.1.6.3.1.1 Repair and maintenance of existing building and air-conditioning Units will be taken care of as usual under Sub-Item: 15 under Sub-Head: Goods and Services.

1.1.6.3.1.2. The Weather Forecasting Section of the Meteorological service should relocate from the Main Terminal Building to the Rawinsonde Building after the new terminal Building becomes fully operational. This would require the extension of the existing building to create additional office space by construction of a second floor. This change will address the security of staff and equipment since it is envisaged that the present location will become remote and unsafe. The Director intends to pursue this matter expeditiously.

1.1.6.3.2 Continue to contribute to the development of the scientific and technical and operational programmes of the TTMS including the following areas.

- *Operational Forecasting Services*
- Climate Information
- *Data Collection*
- Develop sustained Ground-based Remote sensing capability
- Maintain Global Telecommunication System in co-operation with WMO
- Update our Hurricane Procedures by studying carefully the annually modified Regional Operational and Technical Plan.
- Promotion of in-house lectures.

1.1.6.3.2.1 Deepening and broadening the skills essential in today's user-focused environment leading to, the exploitation of agro-meteorology to provide advice in the promotion of food security in the country and to the provision of marine meteorology information for consumption to the burgeoning pleasure craft and tourism industry in the country.

1.1.6.3.2.2. These services will continue to be provided for national, regional and international usage on an on-going basis.

1.1.6.3.3 The Meteorological Service will pursue training for its employees as it seeks to prepare the organization to render quality services to the peoples of the country.

1.1.6.3.3.1 Over the next two years, seven (7) WMO Class I awards, leading to B.Sc. degree in Meteorology and an option in computer science will be sought to ensure that we can provide the required services to the communities which we must serve and to cater for succession planning. Further, (7) recruits at the entry level of the technical class will be selected for training at the WMO Class IV and Class III levels as opportunities for vertical mobility are created for employees within the TTMS thus leaving vacant established positions at the entry-level. The restructured TTMS requires fifty-six (56) technical/professional/directorate officers and the current pool is fifty (50).

1.1.6.3.3.2 It is germane to emphasize the development of our people in keeping with the government's policy to provide education to all. Weather has such a profound effect on people's lives that it is important to reach as many of our people as possible.

1.1.6.3.4. The TTMS will pursue management-training workshops/programmes for its senior officials to bridge the gap between the technical and scientific capabilities and their role as future managers of the Service. The WMO has organized such a programme in the recent past and the Director is awaiting any such available opportunity. Management training modules for senior public servants will also be important for building capacity in project planning, budgets and the understanding of

the appropriation bill, accounting and auditing practices etc for these potential managers.

1.1.6.3.5 Public Weather Service

1.1.6.3.5.1 In order to improve the visibility of the TTMS and to provide the information our people need for safety, planning and economy and as a '*Public Good*'; a Public Weather Service should be implemented. There is need for interaction with the Public with respect to more detailed information on extreme weather conditions, climate change, ozone depletion, UV-B radiation, atmospheric pollution and water quality. The TTMS, given the resource it requires, should be able to play a pivotal role in the promotion of its services. This is required if the concept of total quality management should be the motor which drives this entity to be effective and productive.

1.1.6.3.5.2 Strengthening of our outreach programme is a must when our staffing situation is normalized. We will continue to support visits to our offices by all schools and interest groups and will encourage our professional staff to provide lectures to senior forms at secondary schools.

1.1.6.3.6. Revenue generation

1.1.6.3.6.1. The TTMS will explore all opportunities to collect as much revenues as possible from all special interest groups through the sale of information and services. However, it will continue to provide information free of charge to government agencies and to educational institutions especially for projects at secondary and tertiary levels.

1.1.6.3.6.2. It would require the assistance of a marketing consultant on short term contract with the Meteorological Service to effectively promote the commercialisation of the service and broaden our customer base.

1.1.6.3.7. Information Technology

1.1.6.3.7.1. Access to the Internet will be maintained.

1.1.6.3.7.2. The development of a Website/web page will be pursued at minimum cost.

1.1.6.3.7.3. An information technology resource person should be employed on a permanent basis to supervise the administration of computer hardware and software technology and to provide advice to the directorate of TTMS with respect to technological changes and computer management.

1.1.6.3.8. Equipment Procurement and Maintenance

1.1.6.3.8.1. The sustainability of the TTMS depends primarily on man and machine. Both must work together to produce at its optimal level. Most of cost intensive equipment can be maintained and updated with assistance from WMO through its Voluntary co-operation project with the USA or any other Developed Countries.

1.1.6.3.8.2. However, a programme for replacement of the less expensive equipment must be put in place. Over the last two years, the NISC has donated six (6) computers to the TTMS for which we are grateful. But, these computers are subjected to breakdown over short timeframe (6 months to one year). The plan was always to change two computers a year if the mean life –span of a reliable workstation is five years. This is the kind of target that we will like to work with to ensure full utility of the machines.

1.1.6.3.8.3 The procurement of Automatic Weather Stations will be pursued

1.1.6.3.8.4 Other equipment, which need maintenance include printers and other computer peripherals and fax machines.

1.1.6.3.8.5 Outsourcing the Repair and Maintenance Functions may be considered in the medium term.

1.1.6.3.9. Budget:

1.1.6.3.9.1. Increase under Personnel Expenditure as staff satisfaction is met.

1.1.6.3.9.2. Increase under Goods and Services for the development of the service must be considered due to rising costs of Goods and services and greater demand for expendables.

1.1.6.3.9.3. Contribution to Regional Organizations under Transfers and Subsidies should be controlled and must be limited to 20% of the total allocation for Meteorology in the medium term.

1.1.6.3.9.4. Contribution to WMO has been revised downward and is in accordance with the formula as adopted by the UN, and is reasonable.

1.1.6.3.9.5. ***Public Service Investment Programme (PSIP)***

1.1.6.3.9.5.1. The preparation of the weather radar site situated in Brasso Venado, Central Range and the construction of access roads and the erection of an appropriate building and provision of the infrastructure necessary for its full functionality will be pursued. The European Union and the Government of Trinidad and Tobago will undertake the funding of these activities.

1.1.6.3.9.5.2. The expansion of the Rawinsonde Building to accommodate the Synoptic Branch, presently located at the Main Terminal Building is to be pursued under the PSIP.

1.1.6.3.10. ***Administrative Responsibilities***

1.1.6.3.10.1. The TTMS will continue to follow up on all matters, which affect the comfort level of all its employees for instance, appointments, promotion, and settlement of staff grievances.

1.1.6.3.10.2. Appropriate staffing level at the clerical and administrative section will be pursued.

1.1.6.3.10.3. Training including short courses in computer literacy will be provided to all categories of staff.

1.1.6.3.10.4. Senior professional staff and technical supervisors will be exposed to training programmes, with emphasis on capacity building or where hands-on experience can be gained for job efficacy at regional or international institution/forum.

1.1.6.4.0. <u>Interaction with local, regional and international organizations</u>

1.1.6.4.1. The TTMS will continue to strengthen alliances with local agencies: NEMA, IMA, EMA, WRA, and Forestry Division.

1.1.6.4.2. Further, Trinidad and Tobago will continue to support the Caribbean Meteorological Organization and its mandate with respect to coordination of meteorology, training, education and research leading to development of meteorology, hydrology and climatology in the region.

1.1.6.4.3. The Government or CMO should pursue the initiative to deepen relationships with China in our quest for excellence in Meteorology through capacity building with assistance from China. (As it should be aware the atmosphere is a 'Global Common').

- to provide appropriate experts in information technology and computer networking and training in agro-meteorology,
- By setting up of a China desk for attachment of professional meteorologists to be engaged in numerical weather prediction hands-on experience,
- In establishing an exchange of Meteorologists programme with China and
- By acquisition of equipment and instruments.

1.1.6.4.4 The plans and programmes of the TTMS will continue to be guided by deliberations of the World Meteorological Congress, the WMO's medium and long-term plans.

1.1.6.4.5. The TTMS will seek to host regional or international meetings when the opportunity presents itself.

1.1.6.5.0. Conclusion

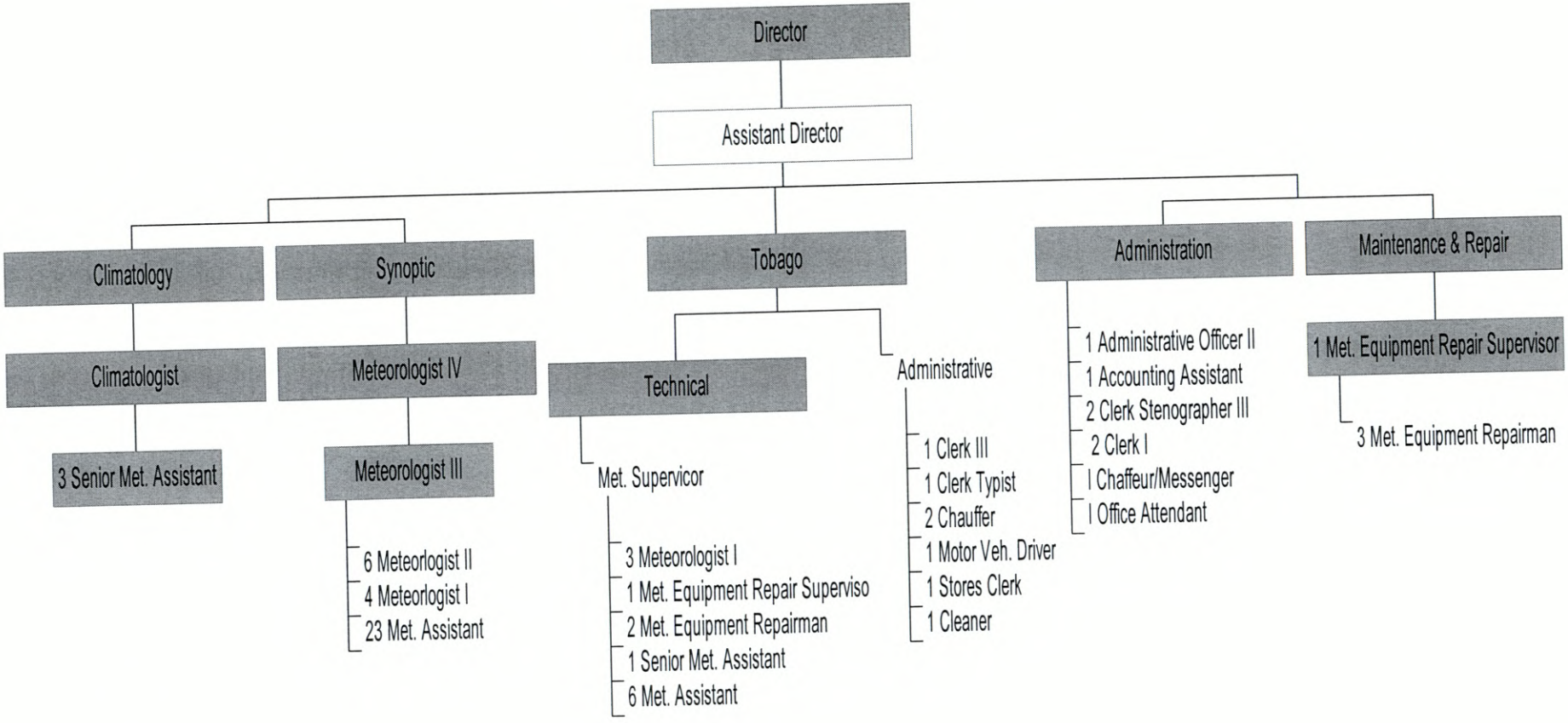
The plans and programmes outlined above are predicated on staff stability as the TTMS over the last three years has been striving to rebuild its manpower to a level of sustainability. A lot more training is required. The expectation is that government will realize the critical problems facing the TTMS and will take action to reverse the looming threat that the TTMS faces with respect to survival of its essential services through resignation or early retirement. ***A better compensation package across the board will improve the circumstances of current and future employees***.

2. Organizational Structure

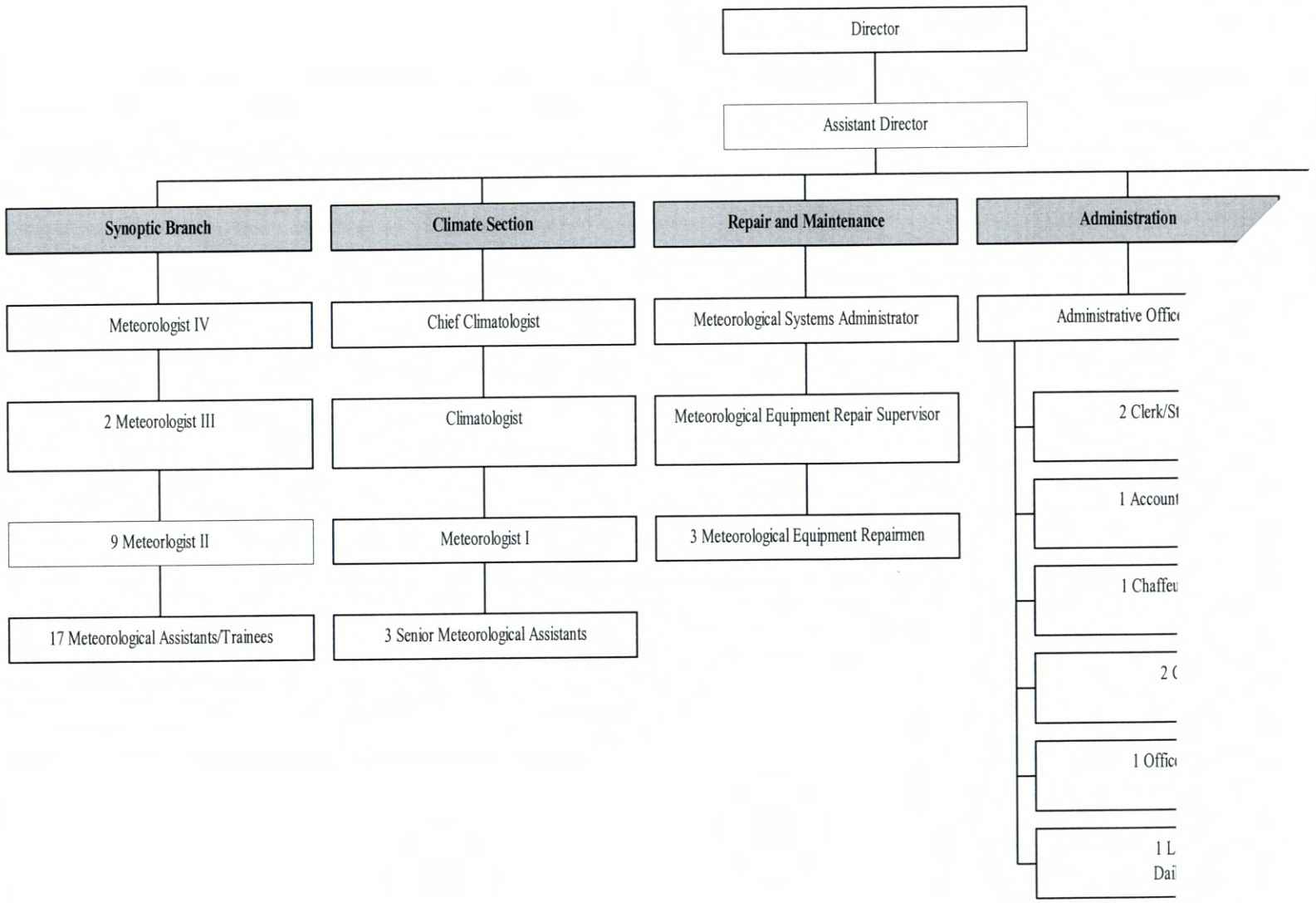
Prior to October 1st 2002, the Meteorological Services Division had two sections in Trinidad and an observing office in Tobago, which reported to the Central Administrative Services Tobago (CAST). The head of the sections in Trinidad reported to the Assistant Director, who reported to the Director and the Director was answerable to the Ministry of the Environment in the first instance and later to the Ministry of Public Utilities and the Environment.

The Cabinet of Trinidad and Tobago in Cabinet Minutes No. 1315 and 2046 dated 19th September 2001 and 19th September 2002 agreed to Phase 1 and Phase 2 or the restructuring of the Meteorological Services Division respectively. Phase 2 of the restructuring was implemented on 1st October 2002.

Structure of the Meteorological Services Division Prior to October 1st 2002



Meteorological Services Division Organizational Chart 1st October 2002



3. Performance Accomplishments

Some of the Achievements of the Meteorological Service Division of the Ministry of Public Utilities and the Environment are as follows:

- **Staff satisfaction:** Permanent appointments were achieved for many of our technical and professional staff during the past four years. Further, the matter of scheduling the positions of Meteorological Equipment Repair personnel as travelling officers has been achieved and technical staff enjoy an enhance remuneration package through the payment of professional allowance.

- **Training:** Postgraduate level training was sourced in Climatology and Agro-meteorology through the kind cooperation of the Government of India and the World Meteorological Organization. Three members of staff received graduate training, which culminated in May 2004. Training at the Class II diploma level was provided to four (4) members of staff; four (4) members of staff accessed training at the Class III level and seven national access training at the entry-level.

- **Caribbean Radar Project:** The European Union has employed a team leader, a Radar expert, and other resource personnel in Trinidad and Tobago to pursue the site and building preparation along with cost estimates for consideration of the donor, for all four (4) recipient countries including Trinidad and Tobago. Infrastructural works are ongoing, the site has been fenced, the access road is under construction and electricity lines have been laid.

- **Data Network:** The Meteorological Service is pursuing vigorously the implementation of network of automatic weather stations throughout Trinidad and Tobago; thus far eight (8) stations have been deployed in Trinidad and one (1) in Tobago.

- **Satellite Communication:** Meteorology thrives on large data sets for analysis and forecast of atmospheric variables. During March 2004, a new International Satellite Communication Systems was implemented in Trinidad to enable the organization to access larger data set as the international moved from the low bandwidth X25 protocol to the TCP/IP protocol.

4 Financial Operations

TABLE 1: BUDGET AND EXPENDITURE STATEMENT FOR FISCAL 2000/2001		
SUB-ITEM	**Budget 2000/2001 $**	**Expenditure 2000/2001 $**
01 PERSONNEL EXPENDITURE		
01 Salaries and Cola	2,236,300	1,816,245
02 Wages and Cola	30,000	33,421
03 Overtime	67,000	49,210
04 Allowances	130,000	121,689
05 Government Contribution to NIS	100,000	89,911
20 Government Contribution (GHI Daily)	500	169
02 GOODS AND SERVICES		
01 Travelling	170,000	145,078
03 Uniforms	1,400	955
04 Electricity	20,500	17,887
05 Telephones	90,000	79,977
06 Water& Sewerage Rates	18,000	13,560
09 Rent - Equipment	83,000	39,691
10 Office Stationary& Supplies	20,000	13,853
11Books & Periodicals	6,100	1,268
12 Materials & Supplies	88,000	45,484
13 Upkeep of Vehicle	8,800	3,573
14 Repairs to Vehicle	4,000	3,483
15 Repairs and Maintenance (Building & Equipment)	109,000	46,529
16 Consulting and Other Contracted Services	693,050	401,478
17 Training	66,000	37,620
18 Expenses	55,000	28,537
57 Postage	1,500	
03 MINOR EQUIPMENT PURCHASES		
02 Office Equipment	36,000	1,719
03 Furniture & Furnishings	10,000	25,000
04 Other Minor Equipment	574,000	7,100
04 CURRENT TRANSFERS AND SUBSIDIES		
04 CMO Headquarters Unit	631,812	631,812
05 Caribbean Institute for Meteorology and Hydrology	2,403,107	2,403,107
04 World Meteorological Organization	50,000	50,000

TABLE 2: BUDGET AND EXPENDITURE STATEMENT FOR FISCAL 2001/2002		
SUB-ITEM	**Budget 2001/2002 $**	**Expenditure 2001/2002 $**
01 PERSONNEL EXPENDITURE		
01 Salaries and Cola	2,905,000	2,495,308
02 Wages and Cola	33,000	37,240
03 Overtime	87,800	75,999
04 Allowances	191,100	127,871
05 Government Contribution to NIS	124,100	102,286
12 Settlement of Arrears to Public Officers	131,000	116,058
20 Government Contribution (GHI daily)	700	351
22 Increased Salaries to Public Officers 1999-2001	98,000	95,001
02 GOODS AND SERVICES		
01 Travelling	229,000	163,633
03 Uniforms	1,400	1,160
04 Electricity	20,500	14,776
05 Telephones	100,000	125,299
06 Water& Sewerage Rates	18,000	2,971
09 Rent - Equipment	83,000	37,435
10 Office Stationary& Supplies	8,000	6,939
11Books & Periodicals	9,000	2,763
12 Materials & Supplies	114,000	65,410
13 Upkeep of Vehicle	10,000	2,368
14 Repairs to Vehicle	6,000	10,835
15 Repairs and Maintenance (Building & Equipment)	96,500	43,665
16 Consulting and Other Contracted Services	82,000	95,693
17 Training	42,000	53,053
18 Expenses	47,000	23,309
57 Postage	4,000	3,488
03 MINOR EQUIPMENT PURCHASES		
02 Office Equipment	36,000	22,956
03 Furniture & Furnishings	10,000	9,995
04 Other Minor Equipment	588,000	**Nil**
04 CURRENT TRANSFERS AND SUBSIDIES		
04 CMO Headquarters Unit	401,500	401,500
05 Caribbean Institute for Meteorology and Hydrology	2,253,850	1,246,972
04 World Meteorological Organization	50,000	**Nil**

TABLE 3: BUDGET AND EXPENDITURE STATEMENT FOR FISCAL 2002/2003		
SUB-ITEM	**Budget 2002/2003 $**	**Expenditure 2002/2003 $**
01 PERSONNEL EXPENDITURE		
01 Salaries and Cola	2,945,500	2,521,107
02 Wages and Cola	34,000	31,131
03 Overtime	87,800	80,342
04 Allowances	191,100	112,693
05 Government Contribution to NIS	124,100	101,038
12 Settlement of Arrears to Public Officers	175,000	610,664
20 Government Contribution (GHI daily)	350	338
02 GOODS AND SERVICES		
01 Travelling	250,000	159,200
03 Uniforms	960	1,160
04 Electricity	19,475	15,627
05 Telephones	121,600	95,348
06 Water& Sewerage Rates	18,000	6,167
09 Rent - Equipment	74,700	32,103
10 Office Stationary& Supplies	18,000	6,750
11Books & Periodicals	7,650	2,915
12 Materials & Supplies	112,500	80,722
13 Upkeep of Vehicle	9,500	8,428
14 Repairs to Vehicle	7,600	13,074
15 Repairs and Maintenance (Building & Equipment)	85,000	52,825
16 Consulting and Other Contracted Services	950	**NIL**
17 Training	42,500	40,648
18 Expenses	36,100	32,914
57 Postage	3,200	150
03 MINOR EQUIPMENT PURCHASES		
02 Office Equipment	26,000	25,495
03 Furniture & Furnishings	41,000	29,609
04 Other Minor Equipment	573,000	509,261
04 CURRENT TRANSFERS AND SUBSIDIES		
04 CMO Headquarters Unit	703,500	703,500
05 Caribbean Institute for Meteorology and Hydrology	2,613,000	2,613,000
04 World Meteorological Organization	50,000	100,000

TABLE 4: BUDGET AND EXPENDITURE STATEMENT FOR FISCAL 2003/2004		
SUB-ITEM	**Budget 2003/2004 $**	**Expenditure 2003/2004 $**
01 PERSONNEL EXPENDITURE		
01 Salaries and Cola	3,202,000	2,908,830
02 Wages and Cola	40,321	44,099
03 Overtime	89,000	150,002
04 Allowances	150,000	118,505
05 Government Contribution to NIS	120,000	111,541
08 Vacant Post (without Bodies)	11,900	**Nil**
20 Government Contribution (GHI daily)	1,000	338
27 Government Contribution to Health Insurance	**Nil**	6,734
02 GOODS AND SERVICES		
01 Travelling	243,000	190,417
03 Uniforms	1,300	1,180
04 Electricity	20,000	17,204
05 Telephones	115,000	109,928
06 Water& Sewerage Rates	11,000	5,021
09 Rent lease of Vehicle & Equipment	80,000	40,015
10 Office Stationary& Supplies	8,000	4,896
11Books & Periodicals	3,000	2,448
12 Materials & Supplies	102,000	115,744
13 Maintenance of Vehicle	16,000	11,630
15 Repairs and Maintenance (Equipment)	80,000	69,687
21 Repair & Maintenance (Building)	25,000	24,960
23 Fees	20,000	1,635
37 Janitorial Services	2,000	1,006
57 Postage	2,000	800
62 Promos/Publicity/Printing	15,000	10,061
66 Hosting Conferences etc.	5,000	613
03 MINOR EQUIPMENT PURCHASES		
01 Vehicle Replacement	320,000	213,151
02 Office Equipment	30,000	67,667
03 Furniture & Furnishings	24,000	23,918
04 Other Minor Equipment	150,000	146,834
04 CURRENT TRANSFERS AND SUBSIDIES		
04 CMO Headquarters Unit	582,000	582,000
05 Caribbean Institute for Meteorology and Hydrology	2,613,000	2,613,000
04 World Meteorological Organization	100,000	10,300

5 Human Resource Development Plan

5.1 Career Path Systems

Entry into the Meteorological Services Division is mainly through the rank of the Meteorological Assistant. Nationals of Trinidad and Tobago are invited to apply for a scholarship in Meteorology. The scholarship is eight (8) months in duration, with four (4) months of theoretical training at the Caribbean Institute for Meteorology and Hydrology in Barbados and four (4) months of on-the-job training in Trinidad.

After the eight (8) months of satisfactory training, the officer is presented with his certificate in Meteorology (Class IV). This certificate allows the officer to function independently from a senior officer and he/she is now classified as a Meteorological Assistant Trainee. An officer will usually serve in this capacity for at least one (1) year, before promotion to the rank of Meteorological Assistant.

Generally after serving one (1) year as a Meteorological Assistant/ Meteorological Assistant Trainee, an officer is eligible for promotion to the rank of Senior Meteorological Assistant once a vacancy exists. All promotions within the Synoptic Branch to the rank of Meteorologist II require further study. The same holds for officers in the Climate Section, including the rank of Climatologist, which require postgraduate study.

Meteorological Assistant can also receive further training to become a Meteorological Equipment Repairman and eventually the Meteorological Systems Administrator.

5.2 Performance Measurement Tools

The technical work performed with the Division must meet the Standards of the World Meteorological Organization (WMO) and the International Civil Aviation Organization (ICAO). Observational data is transmitted hourly through the satellite communication system, where there is international verification.

All observations made by the Meteorological Assistants, are entered into Observations Register, which are corrected by the Senior Meteorological Assistant and an errata sheet is produced to enable the Meteorological Assistants to improve their skills. Synoptic charts, which are plotted by the Meteorological Assistants are verified and analysed by the Meteorologist I or Meteorologist II.

Officers at the level above scrutinize the work performed by officers at the lower level and officers are informed of any errors. If the errors indicate a lack of understanding in the subject, then the officer will be given remedial training.

All the information produced is fed into the quarterly performance appraisals and eventually into the annual appraisals.

5.3 Promotion - Selection Procedures

Promotion within the Meteorological Service usually requires further training. Officers of the following ranks will go before a scholarship panel, which functions

under the auspices of the Scholarship and Training Division, Ministry of Public Administration and Information.

- Senior Meteorological Assistant
- Meteorological Equipment Repairman
- Meteorologist I
- Meteorologist II
- Climatologist
- Meteorological Systems Administrator

The Permanent Secretary of the Ministry of Public Administration and Information usually chairs the panel, which has members from other institutions including Labour.

Promotion within the other ranks is through seniority.

6 Procurement Procedures

Most items purchased by the Meteorological Services Division, is through the list of bonded contractors published by the Central Tenders Board.

Items not listed require three quotations to satisfy the Financial Regulations, these quotations are requested from firms, which supply items needed.

Equipment purchases is through open tender, however, there are time when sole tendering is initiated. Such as the recent purchase of the automatic weather stations, were the Meteorological Service received four (4) stations the SIDS-Caribbean Project, which was managed by the World Meteorological Organization (WMO). The Division requested that WMO act as agents for the Service, to procure a further three (3) stations from the same supplier to reduce the need for competing stores, part and base systems.