

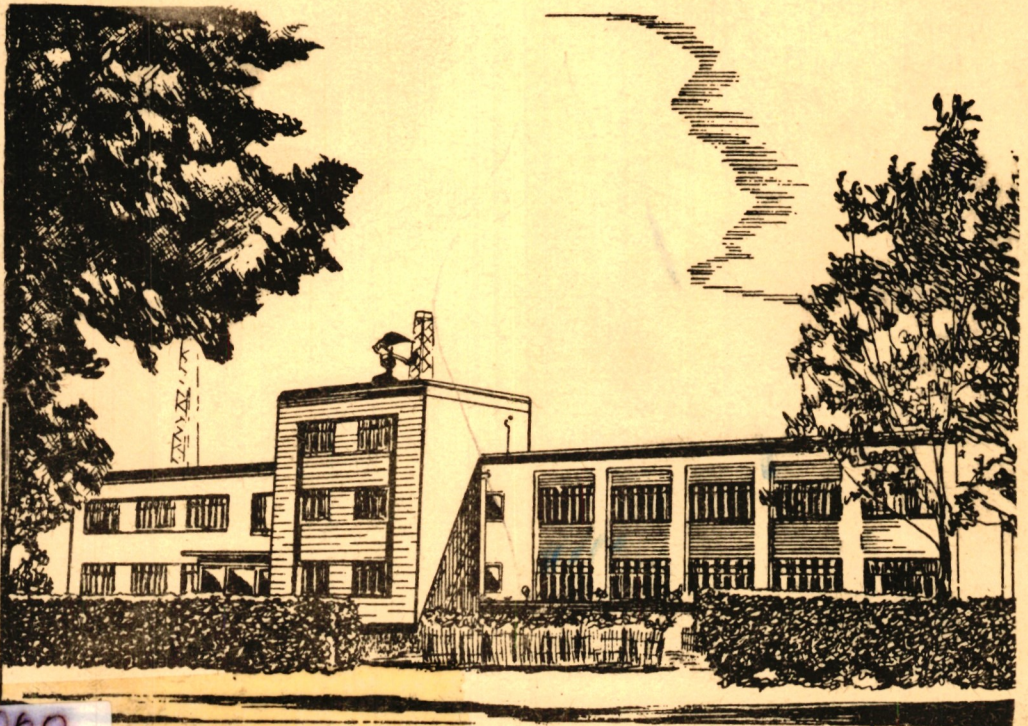
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**KENYA  
METEOROLOGICAL DEPARTMENT  
ANNUAL REPORT 1982/1983**



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**Meteorological Headquarters**

**ANNUAL REPORT  
ON THE  
KENYA METEOROLOGICAL DEPARTMENT  
FOR THE PERIOD  
1ST JULY 1982 TO 30TH JUNE 1983**

**Presented by the Director  
to the  
Minister for Transport and Communications**

**KENYA NATIONAL ASSEMBLY**

Accession: 10012925

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**Issued by  
Kenya Meteorological Department  
Dagoretti Corner, Ngong Road  
P.O. Box 30259, Nairobi, Kenya**

## 1.1 FOREWARD BY THE Ag. DIRECTOR

During the period under review, the Kenya Meteorological Department continued to take part in the activities of the World Meteorological Organization and other international meteorological circles in addition to playing, at the local level, its assigned role in various activities of significance in national economic development.

Staff of the Department represented Kenya at various international meetings. Of these meetings the most important during the reporting period was the World Meteorological Congress held in Geneva, to which the Director headed a delegation of 3 Kenyans. The Kenya delegation played a 'front line' role in the election of the first African (Prof. G.O.P. Obasi) as Secretary General of the World Meteorological Organization. The Director was also re-elected to the Executive Council of the Organization which held its first meeting soon after the World Meteorological Congress.

We continued to receive equipment for the modernization of the National Meteorological Centre, Instruments Workshop and the National Telecommunications Centre under French Credit agreement. Additional equipment through WMO's Voluntary Co-operation Program (VCP) was received from the United Kingdom. The Automatic Message Switching System (AMSS) became fully operational during this review period.

Up to twelve officers attended various courses under sponsorship of WMO, Commonwealth Secretariat, and other agencies. I am most grateful for these fellowships which have enabled the Department to keep abreast with the fast changing field of Meteorology and associated technology. In addition to training abroad we have continued to take full advantage of local facilities such as the University of Nairobi, the Kenya Polytechnic and Kenya Institute of Administration (KIA) in training various cadres of staff in the Department.

In my last report, I mentioned that negotiations were entered into with VOK with a view to having our Meteorologists present weather on television. During the period under review three meteorologists were identified for this purpose and arrangements were under way to send them to United Kingdom for suitable training.

Requests for weather forecasts and climatic data continued to increase and the new monthly weather summaries were becoming increasingly popular with the farming community. However, our hopes of expanding the station network were not realized due to inadequate funds and personnel.

Training and Research at the Institute for Meteorological Training and Research continued uninterrupted. Seven courses were completed during the review period and six were continuing. Four Institute research reports were published and three MSc theses by Institute staff were completed and accepted by the University of Nairobi.

Staffwise, we were able to replace eight of the nine non Kenyans whose contracts expired during the review period, but were still unable to fill vacancies in the engineering technician cadre due to lack of suitable candidates. Discipline was extremely high as evidenced by the fact that only one officer was removed due to gross misconduct.

Our development projects were greatly hampered by reduction in budgetary provisions which were restricted to on going projects and even these were delayed due to abandonment of sites by contractors in a case like Eldoret (for the second time!), Lodwar Garissa and Voi.

Finally I wish to thank my colleagues in the departments of Agriculture, Defence, Environment, Water Development and Civil Aviation for their co-operation and support.

A.L. Alusa  
Ag. DIRECTOR OF METEOROLOGICAL SERVICES

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### **1.3 FUNCTIONS OF THE KENYA METEOROLOGICAL DEPARTMENT**

The Kenya Meteorological Department is the State Meteorological Service. It forms part of the Ministry of Transport and Communications. The Director is responsible to the Minister of Transport and Communications through the Permanent Secretary, Ministry of Transport and Communications.

The general functions of the Meteorological Department are:

- (i) The provision of meteorological and climatological service to agriculture, plantation farming, forestry development and for the better exploitation and utilization of natural resources for national development.**
- (ii) The provision of meteorological and climatological service to water resources development and other government departments, public corporations, local authorities, the mass media and the general public.**
- (iii) The provision of meteorological service to civil aviation for the safety and economy of civil aircraft operations.**
- (iv) The provision of meteorological service to shipping in the western Indian Ocean including the issue of cyclone warning for the safety of merchant and other ships in the western Indian Ocean.**
- (v) The provision of meteorological service to military aviation for the safety of Kenya Air Force aircrafts for national defence.**
- (vi) The provision of meteorological and climatological advice to the private sector including industry, commerce and public utilities.**
- (vii) The provision of meteorological and climatological advice for the improvement and preservation of national environment for a better human life.**
- (viii) The organization and administration of surface and upper air meteorological observations within its area of responsibility and the publication of climatological data.**

- (ix) The maintenance of an efficient telecommunication system for rapid collection and dissemination of meteorological information required for national and international use in accordance with World Meteorological Organization and ICAO procedures.**
- (x) Research in meteorology and climatology including co-operation with other authorities in all aspects of applied meteorological research.**
- (xi) The maintenance of National Meteorological Library.**
- (xii) Evolving suitable training programmes in all fields of meteorological relevant to national development.**

**The Meteorological Department also takes a leading part in International co-operation in meteorology. The Director is the Permanent Representative of Kenya to the World Meteorological Organization and acts in concert with the other Directors of the Meteorological Services in the general development of meteorology in Africa. He is also an elected member of the Executive Committee of the World Meteorological Organization.**



#### **1.4 Principal Officers of the Meteorological Department**

<b>Director</b>	<b>J.K. Murithi, B.Sc. (London)</b> <b>Dip. Met. (Nairobi)</b>
<b>Deputy Director</b>	<b>A.L. Alusa, B.Sc. (Oregon State)</b> <b>M.Sc. (State Univ. N.Y.)</b>
<b>International Relations Section:</b>	
<b>Principal Meteorologist</b>	<b>G.W. Mwetesa (Mrs)</b> <b>B.Sc. (Nairobi)</b>
<b>Operational Services Division:</b>	
<b>Assistant Director</b>	<b>E.A. Mukolwe B.Sc.,</b> <b>Dip. Met. (Nairobi)</b>
<b>Regional Meteorological Centre:</b>	
<b>Principal Meteorologist</b>	<b>K.N. Mutaku, B.Sc. (Dar)</b> <b>Dip. Met. (Nairobi)</b>
<b>Aeronautical Section:</b>	
<b>Principal Met. Officer</b>	<b>L.K. Kariungi</b>
<b>Jomo Kenyatta Inter. Airport</b>	<b>A.C. Warratho</b>
<b>Senior Meteorological Officers (in charge of forecast Offices):</b>	
<b>Mombasa International Airport</b>	<b>S. Magalasia</b>
<b>Moi Air Base</b>	<b>L.K. Njoroge</b>
<b>Laikipia Air Base</b>	<b>S. Wanderi</b>
<b>Port Met. Office, Kilindini</b>	<b>S. Ochieng' (Acting)</b>
<b>Engineering Section:</b>	
<b>Principal Engineering Technician</b>	<b>P.S. Mwasi</b>
<b>Communications Section:</b>	
<b>Senior Communications Officer</b>	<b>J.M. Oluoch</b>
<b>General Services Division:</b>	
<b>Assistant Director</b>	<b>S.J.M. Njoroge,</b> <b>B.Sc., Dip. Met. (Nairobi)</b>
<b>Climatology Section:</b>	
<b>Meteorologist</b>	<b>R.S. Masika,</b> <b>B.Sc., Dip. Met. (Nairobi)</b>
<b>Observatories Section:</b>	
<b>Principal Meteorologist</b>	<b>J.H. Kinuthia, B.Sc. (Nairobi)</b>
<b>Agrometeorology Section:</b>	
<b>Senior Meteorologist</b>	<b>S.B. Oteng', B.Sc. (Nairobi)</b>

***Instruments Section:***

Senior Instruments Officer G.M. Muchemi

***Printing Section:***

Press Superintendent W. Ogada

***Institute for Meteorological Training & Research, Nairobi***

Assistant Director J.K. Njihia,  
B.Sc., M Sc., Dip. Met. (Nairobi)

***Training Section:***

Principal Meteorologist L.N. Njau, B.Sc. (Nairobi)

***Research Section:***

Principal Meteorologist R.E. Okoola, B.Sc (Reading)

***National Meteorological Library***

Librarian V. Saropa

***Administrative Section:***

Senior Executive Officer M. Owino

***Accounts Section:***

Senior Accountant J.E. Kamau

***Supplies Section:***

Senior Supplies Officer S.O. Onyimbo

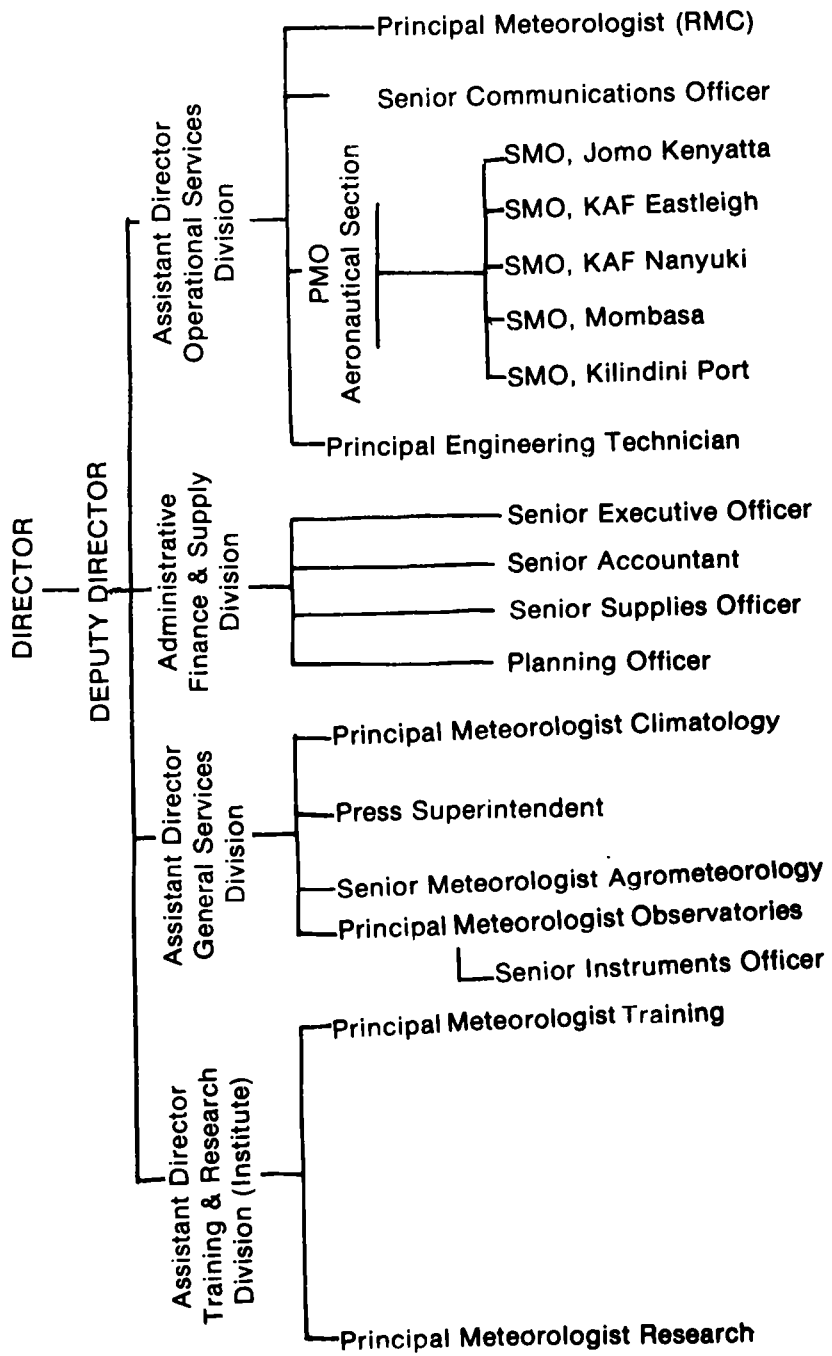
***Planning Development Section:***

Planning Officer E.G. Njoroge

***Transport Section:***

Transport Officer S.M. Mbathi

# 1.5 ORGANIZATION OF THE METEOROLOGICAL DEPARTMENT



## **2. INTERNATIONAL AFFAIRS AND TRAINING**

### **2.1 General**

During the year under review, the Department was involved in a wide range of international activities. Training activities continued at various institutions. The following is a summary of the Department's involvement in international matters and training activities.

### **2.2 TRAINING**

#### **2.2.1 Overseas Training**

Financial support on specialized training was received from the United Nations Development Programme (UNDP), the Voluntary Co-operation Programme (VCP) of the World Meteorological Organization (WMO) and the Commonwealth Secretariat to cover the following training:-

- (i)* One meteorologist was trained in India on Meteorological Telecommunications (UNDP).
- (ii)* One meteorologist was trained in India in Agricultural Meteorology (Commonwealth Secretariat).
- (iii)* One meteorologist continued his training in the United States on Computer Science (WMO/VCP).
- (iv)* Two meteorological assistants attended training on Meteorological Instruments in the United Kingdom (WMO/VCP).
- (v)* One meteorological assistant returned from a two year training on Basic Electronics in the United Kingdom (WMO/VCP).
- (vi)* One meteorologist continued his training on Instruments Specialization in Canada.
- (vii)* Three meteorologists continued their training in Computer Science in France (French Credit).
- (viii)* Mr. Stanley Magalasia attended a seminar on Radar Meteorology in Erice, Italy (WMO).
- (ix)* Miss W.A. Mutuli attended a training Workshop on Meteorological Data for Solar and Wind Energy in Seychelles (Commonwealth Secretariat).

- (x) Towards the end of the reporting period six officers left for training on the hardware and the software of the Data Processing Computer which is being provided under French Credit.

### **2.2.2 Local Training**

Training in our local institutions was very much affected by the economic problems that faced the country during the period.

Training programmes for Instruments Assistants, Engineering Technicians and Library Assistants at the Kenya Polytechnic and the Central Post Office Training School were discontinued during the period.

- (i) Three senior officers attended Senior Management courses at the Kenya Institute of Administration (KIA): two secretaries attended a management course while two officers attended the Management Development Course at Kenya Institute of Administration.
- (ii) One Engineering technician continued his training at the Kenya Polytechnic.
- (iii) One meteorologist took a postgraduate Diploma in Computer Science at the University of Nairobi.
- (iv) Professional training for meteorologists continued with six undergraduates at the University of Nairobi and sixty officers of various meteorological cadres at the Institute for Meteorological Training and Research

### **2.3 Equipment**

Under the French Credit agreement between the Kenya and the French governments the department continued to receive equipment for the modernization of National Meteorological Centre (NMC), the Instruments workshop and National Telecommunications Centre. The progress of the UNDP programme to acquire a computer for the Institute for Meteorological Training and Research was at an advanced stage. A transformer for a Transmitter which was provided by the United States under the WMO VCP Project was burned out and a request for replacement made. The Department received Anemographs and Radio Telephone Equipment from the United Kingdom during this period.

## 2.4 International Conferences

- (i) Mr. J.W. Muhoro represented the Regional Association I (Africa) at the WMO's study Group Meeting on the Provision of Marine Meteorological Information to Shipping which was held in Geneva in September, 1982. During the same month, he also represented WMO at the Intergovernmental Oceanographic Commission (IOC) meeting on Co-operative Investigation in Northern, Central and Western Indian Ocean, held in Nairobi.
- (ii) In November, 1982, Mr. John Mwikya represented Kenya at the International Symposium on the Agrometeorology of Sorghum and Millet in Hyderabad, India.
- (iii) In November, 1982, the Deputy Director Mr. A.L. Alusa represented Kenya at the Eighth session of the WMO's Regional Association I (Africa) held in Cairo, Egypt.
- (iv) In December, 1982 Mr. J.K. Njihia attended a World-wide Symposium on Education and Training in Meteorology in San Jose, Costa Rica.
- (v) During January/February, 1983 Messrs E.A. Mukolwe and I.K. Sogomo represented Kenya at the eighth session of the Commission for Basic Systems held in Geneva, Switzerland.
- (vi) In February/March 1983, Mr. S.B. Oteng'i represented Kenya at the eighth session of the Commission for Agricultural Meteorology held in Geneva.
- (vii) In March 1983, K.N. Mutaku attended the third session of the Working Group on the Provision of Meteorological Information required before and after the Flight (PROMET).
- (viii) In May the Director Mr. J.K. Murithi and Mr. E.A. Mukolwe represented Kenya at the ninth World Meteorological Congress during which Mr. Murithi was re-elected a member of the Executive

Committee. After the Congress in Geneva, the Director proceeded to the United Kingdom to attend the Commonwealth Conference of the Directors of Meteorological Services.

- (ix) In June, Mr. I.K. Essendi attended a meeting of the Working Group on the Global Telecommunications System held in Geneva.

### *2.5 Institute for Meteorological Training & Research (IMTR)*

By the end of the reporting period, seven non-national instructors left at the expiry of their three year contracts with the Kenya Government. Under the UNDP special fund project, Dr. P.K. Das, from India reported at the University of Nairobi early February to take up the post of Professor of Meteorology.

The Institute continued to receive students from many countries in Africa and a few students from the Asian Region. The Third meeting of Inter-Governmental Council for the IMTR was held in December and the Director was elected Chairman for the third time. Countries and Organizations represented were Ethiopia, Kenya, Malawi, Zambia, UNDP and WMO. On the recommendation of the third Inter-Government Council Meeting, a Tripartite Review Meeting was held in June to review the progress since UNDP initiated the project in August, 1980. During the review meeting where the UNDP, WMO and the Kenya Government were represented, it was learnt that the original contribution by UNDP had greatly been reduced but the project was to be continued until 1986.

The Institute continued to take part in Research work which covered various fields in meteorology. Several research reports were published during the period.

### *2.6 Visitors to the Department*

During the reporting period many people from both Kenya and other countries visited the Department. On 23rd March, which is the World Meteorological Day, hundreds of visitors were taken around meteorological stations and offices.

The following is a list of some of the important visitors to the Department's Headquarters:-

- (i) In July the Department was honoured by a visit from the German Ambassador to Kenya Dr. A.G. Kuehn and two of his 1st secretaries. Two other visitors during the same months were messrs Hans-Fargen Siever and M. Niehhor of Deutscher Wetterdienst, Offenbach, Germany.

(ii) In September, Dr. Zinyowera of Zimbabwe's Meteorological Service and Mr. S. Chacowry, a WMO expert in Harare, Zimbabwe paid a visit to the Department.

(iii) In October, Mr. N.M. Sahor, an Assistant Director of the Gambian Water Resources Department and Mr. B.G.B. Barrefors of ICAO, Middle East and African Office, Cairo, Egypt, paid visits to the Department.

(iv) Towards the end of November we had Messrs S.B. Mpata, B.K. Mlenga and I.W. Lakioni of the Department of Civil Aviation and Meteorology, Malawi, Messrs V.A. Simango, Director of Meteorological Services, Zambia and W. Degefu, General Manager, National Meteorological Service Agency, Ethiopia and Mr. M.W. Stubbs of the British Meteorological Office.

(v) In December the Department was honoured by a visit from members of the Public Service Commission of Kenya led by its Secretary, Mr. D.G. Kimani and the Deputy Chairman, Mr. Mwandia. Mr. M. Mojisi from the Botswana High Commission in Zambia also visited the Department in the same month.

(vi) In February the Department was visited by Messrs Philip W. Poster from the Department of Geography, University of Minesota in USA, and K. Puri from the Australian Numerical Research Centre.

(vii) In May Mr. Ronald Lowe of the Reading College of Technology in the United Kingdom visited the Department.

(viii) In June the Director of Botswana Meteorological Service Miss Gladys Ramothwa and Mr. E.B.M. Barua Chele of the Kenya Treasury also visited the Department.

(ix) The following officers from the World Meteorological Organization visited the Department during the period:-

Mr. and Mrs Sehmi, Mr. H. Diallo, Dr. Thomas D. Potter, Mr. S. Mbele-Mbong, Mr. W. Degefu - President of WMO RA I, Messrs K. Yamagushi, G.A. Peterson and W. Schrum.

(x) The following officers from the office of the Resident Representative of UNDP, Nairobi visited the Department:- Mrs. R.I. Mzera, Mr. C.P.C. Metcalf, Ms. Leah A. Josiah and Madeleine Wilkens.

(xi) Visitors from Sofreavia, a French Company which is providing the Department with Meteorological Equipment/Instruments included Messrs C. Melchoir, G.A. Delorme, and C. Dillard.



### **3. OPERATIONAL SERVICES DIVISION**

#### **3.1 General**

The Division carries out the operational functions of the Kenya Meteorological Department. Such functions include the maintenance and operation of the national and international meteorological telecommunications circuits for exchange of meteorological data. The National Telecommunication Centre/Regional Telecommunication Hub (NTC/RTH) situated at Nairobi (Dagoretti Corner) is on the branch Nairobi-Offenbach of the Main Telecommunication Network (MTN) of the World Weather Watch (WWW) Global Telecommunications System (GTS).

On the real-time data processing and forecasting services, the Division continued to operate the National Meteorological Centre/Regional Meteorological Centre/Area Forecast Centre (Main Analysis Centre) whose products cover most of the African continent and Western Indian Ocean. In this connection, the Division maintained a facsimile broadcast for analysed and forecast products for various levels in the atmosphere in accordance with national and international procedures and requirements.

The Division also continued to operate Aerodrome Meteorological Offices at Jomo Kenyatta Airport, Nairobi and Moi Airport, Mombasa and a Port Meteorological Office, Mombasa. During the reporting period, the Division took part in Airport Development Planning of Jomo Kenyatta Airport.

In addition to services to the public, national and international aviation and shipping concerns, the Division provided wind-flow streamline charts to Army Worm Research Unit in Muguga and Desert Locust Control Unit of Food and Agriculture Organization.

#### **3.2 Data Processing and Forecasting**

During the period under review, the National Meteorological Centre/Regional Meteorological Centre/Area Forecast Centre (NMC/RMC/AFC) suffered from some shortage of personnel and materials such as mufax paper, morse tapes and silver paper for the APT/WEFAX ground satellite receiving station. Having automated the telecommunication centre, two fast teleprinters were installed in NMC/RMC/AFC for reception of data there. Analysis and forecasts improved markedly due to reception of satellite observation (SATOB) data i.e. winds and temperatures. The section relied on satellite pictures from APT/WEFAX equipment at the Institute. The

satellite pictures provided very useful additional information for operational weather forecasting. Coverage of upper air data over the African continent remained poor. Meteorological data reports from aircrafts and ships were scanty.

Some staff in NMC/RMC/AFC participated in both Mombasa and Nairobi Agricultural shows where they explained weather forecast methods to the public.

### *3.3 Meteorological Service to Civil Aviation*

The Area Forecast Centre (AFC) co-located with National Meteorological Centre (NMC) and Regional Meteorological Centre (RMC) at Dagoretti Corner continued to produce improved forecast wind and temperature (PROGNOSTIC) and significant weather charts for Civil Aviation. Unfortunately, these charts could not be received at our major airports through transmission due to lack of mufax paper for facsimile reception. The charts were made available to Jomo Kenyatta Airport by road - a system which was too expensive for the Department. Moi Airport relied on Forecast upper wind and temperatures at specified points for aeronautical purposes (ARMETs) and route forecasts for aviation (ROFORs) which could be transmitted by teleprinter lines. Familiarization flights to Malindi and Mombasa by Meteorologists and Meteorological Officers were undertaken during the review period. These flights were made possible by our National Airline, Kenya Airways.

A representative of the International Civil Aviation Organization (ICAO) held discussions with Principal Meteorologist in charge of NMC (PNMC) on the provision of AFC products over Africa and the Middle East. Further discussions on the implementation of the New World Area Forecast System were held.

Kenya was requested by the Working Group on the provision of Meteorological information required before and during the flight (PROMET) to submit a sample of a significant weather chart above flight level 250 over the tropics for consideration for inclusion in the ICAO publication of Meteorological Service for International Air Navigation.

A summary of forecasts and other products issued by Jomo Kenyatta and Moi airports is given in Table 1

Table 1

*A summary of Forecasts and other Products issued by  
Jomo Kenyatta and Moi Airports*

	July to October	November to February	March to June	Total
F/C Folder Ex-JKA	4043	4320	4301	12,664
F/C Folder Ex-Wilson	932	2640	2684	6,256
Routine ROFORS	968	736	648	2,352
Misc ROFORS	484	154	75	713
Trend Type Landing Forecasts	5809	6122	6106	18,037
TAFS - JKA	1440	1440	1464	4,344
TAFS - KISUMU	240	240	244	724
MISC Inquiries	8	8	8	24
Sgments	0	14	5	19
Aireps	605	*	*	605
Forecast Folders Ex-Moi Airport	1214	1779	1171	4,164
Tafs Moi Airport and Malindi Airport	1722	1680	1708	5,110
Trend type landing forecasts		5760	5856	11,616

\*Not available

### ***3.4 Meteorological Service to Military Aviation***

The usual meteorological products from NMC were issued through the Meteorological Offices attached to the respective military bases. However, these offices did not receive facsimile transmissions and satellite pictures due to lack of the necessary consumables. Otherwise, communications equipment and meteorological instruments were serviceable most of the time.

Senior Meteorological Officer, Moi Airbase continued to give lectures in meteorology to cadets in the flying Training School.

### ***3.5 Meteorological Service to Shipping in West Indian Ocean***

Routine shipping broadcasts and warnings of tropical storms and near gale or gale force winds were issued to ships in the West Indian Ocean. The Port Meteorologist continued with his efforts to recruit more and more ships for weather observation over oceans. He regularly checked meteorological equipment and instruments aboard ships and provided advice on ships weather observations and data collection.

### ***3.6 Meteorological Service to the General Public***

In addition to the daily weather forecasts, monthly weather summaries and expected weather were issued to the public through local newspapers and the Voice of Kenya Radio and Television. NMC staff participated in the 1983 Meteorological Day celebrations during which the functions of the Department were explained to school children and the public. PNMC gave a seminar on 'Climatic Characteristics of the Eastern African Coastal Zones' at the Institute for Meteorological Training and Research.

During the period under review, discussions between the technical staff of the Kenya Meteorological Department and Voice of Kenya (VoK) were held with a view to having meteorologists present weather on television.

### ***3.7 National Telecommunication Centre/Regional Telecommunication Hub (NTC/RTH)***

The Automatic Message Switching System (AMSS) became fully operational in October, 1982. To accelerate the exchange of data, telegraphic speeds to and from Jomo Kenyatta Airport, Moi Airport, Mogadishu, Re-Union and Dar-es-Salaam were upgraded from 50 bauds to 75 bauds.

RTH, Nairobi continued to effectively participate in the WMO International coordinated monitoring of the operation of the Global Telecommunication System (GTS) which was carried out between

1st and 15th October, 1982. In March, 1983, the RTH hosted a Roving Seminar organised by the World Meteorological Organization. The Seminar was attended by participants from RTHs Nairobi and Lusaka and from National Meteorological Centres (NMCs) in their (Nairobi and Lusaka) zones of responsibility. Data reception was often interrupted due to outages of the leased Posts and Telecommunications Corporation Circuits. Data reception from RTHs Kano and Cairo continued to be very poor. However, supplementary observational data from Africa and Asia were received in NTC by intercepting Radio Broadcasts from RTH Jeddah. Data broadcasts from RTH, Nairobi were satisfactory.

### *3.8 Engineering*

Some staff from the section participated in the preparatory work of, and attended, the International Telecommunication Union Plenipotentiary Conference held in Nairobi in September, 1982. A standby power generating set 400 KVA, was installed at the transmitting station in Industrial Area and a two-week course on the set was conducted by Sofreavia. In April, 1983, two Wind Finding Radars were installed - one at Garissa and one at Dagoretti Corner. The second standby generator installed at Headquarters, Dagoretti Corner, was commissioned in June, 1983. Two weather Radars were also installed - one at Moi Airport and the other at Jomo Kenyatta Airport.

Maintenance work was greatly affected by lack of spare parts and an acute shortage of staff in the Engineering Section.

## **4. GENERAL SERVICES DIVISION**

### *4.1 General*

The Division is responsible for natural resources activities of the Department which include climatology, Data Processing, Agro-meteorology and Hydrology in addition to Instruments, Printing and Observatories. It maintains liaison with the ministries of Agriculture, Natural Resources, Water Development and Environmental Secretariat among other relevant government ministries and institutions in matters related to Climatological Data. There are major modernization and expansion programme in Computer Data Processing, Instruments workshop and Printing Section. Details of these programmes appear in relevant paragraphs in this report.

## *4.2 Weather in Kenya*

The period under review has been characterised by rainfall totals that were above the long term averages in most areas except for; Northern and Central parts of Eastern Province, Bungoma area in Western Province, Kisii area in Nyanza Province, Southern parts of Rift Valley Province and Western parts of Coast Province.

Between July and December, 1982 most areas recorded above average rainfall with pronounced amounts accruing during the short rains period (October to December). During the months of January to June, 1983 most areas received below average rainfall.

### *Western Province*

During the period July to December, 1982, the province received above normal total rainfall from 03 - 51% above the average. January to June, 1983 was characterised by below average rainfall with deficits of the order of 21 - 25% of the average total rainfall.

### *Nyanza Province*

Only in the northern areas of the province were rainfall totals above normal with up to 71% of the average total rainfall being reported for the period July, to December, 1982. In the same period the areas around Kisii received below average rainfall with a deficit of about 7% of the average total rainfall. The January to June, 1983 period was characterised by below normal total rainfall with deficits of the order of 27 - 33% of the average total rainfall.

### *Rift Valley Province*

Except for Kitale area which received above normal rainfall throughout the period under review, the rest of the province received above normal total rainfall during the months of July to December, 1982 with excesses ranging from 43-255% of the average total rainfall. The months of January to June 1983 were characterised by below normal total rainfall with deficits of the order of 28-81% of the average total rainfall.

### *Central Province*

During the period June to December, 1982 the province recorded above normal total rainfall ranging from 31 - 61% in excess of the average total rainfall. The months of January to June, 1983 were characterised by below normal total rainfall with deficits of the order of 22 - 29% of the average rainfall.

### *Eastern Province*

Except for Moyale which received above normal total rainfall throughout the reporting period, the rest of the province recorded above normal total rainfall during the month of July to December, 1982 with 17 - 96% in excess of the average total rainfall being reported. And the period of January to June, 1983 was characterised by below normal total rainfall with deficits of the order of 25 - 73% of the average total rainfall.

### *North Eastern Province*

Areas around Wajir received above normal rainfall throughout the reporting period. The rest of the province received above normal total rainfall for the period July to December, 1982 with 65-157% in excess being reported and below normal total rainfall for the period January to June 1983 with deficits of the order of 25 - 51% of the average total rainfall.

### *Coast Province*

Most areas of the Coast Province received above average rainfall throughout the period under review with 09 - 48% in excess of the average total rainfall being reported. However, the Western parts of the province recorded total rainfall up to 48% in excess of the average total rainfall and 30% below for the periods July to December, 1982 and January to June, 1983 respectively.

*Annual Rainfall Totals for the period July 1982 to June 1983 and the percentage of the long term mean.*

STATION	TOTAL (MM)	% OF MEAN
<i>Western Province</i>		
Bungoma	1364	88
Kakamega	2267	112
Butere	2206	100
<i>Nyanza Province</i>		
Maseno	1681	104
Kisumu	1481	113
Miwani	1549	101
Kisii	1787	79
<i>Rift Valley Province</i>		
Lodwar	265	142
Kitale	1626	136
Maralal	929	132

STATION	TOTAL (MM)	% OF MEAN
Eldoret	1288	115
Kabarnet	1458	107
Nandi	1651	107
Eldama Ravine	1267	114
Londiani	1299	115
Njoro	921	98
Nakuru	1017	106
Naivasha	626	103
Narok	750	102
Ngong	834	101
Magadi	391	91
Kajiado	565	131
<i>Central and Nairobi Provinces</i>		
Nyeri	992	106
Murang'a	1379	115
Thika	1096	125
Kiambu	1255	122
Jomo Kenyatta Airport	924	125
Wilson Airport	1007	122
Dagoretti	1086	103
<i>Eastern Province</i>		
Sabbarei	333	90
Moyale	926	131
Marsabit	1012	118
Meru	1328	96
Mau Nyambene	1984	72
Embu	1318	122
Endau	1254	153
Kitui	1215	114
Machakos	757	110
Makindu	811	133
<i>North Eastern Province</i>		
Mandera	377	148
Wajir	800	280
Garissa	363	113



## COAST PROVINCE

Hola	527	123
Lamu	1300	141
Malindi	1503	141
Kilifi	1441	148
Mtwapa	1646	132
Mombasa	1444	136
Kwale	1051	96
Voi	695	126
Wundanyi	1511	144
Taveta	515	72

### *4.3 Agrometeorology*

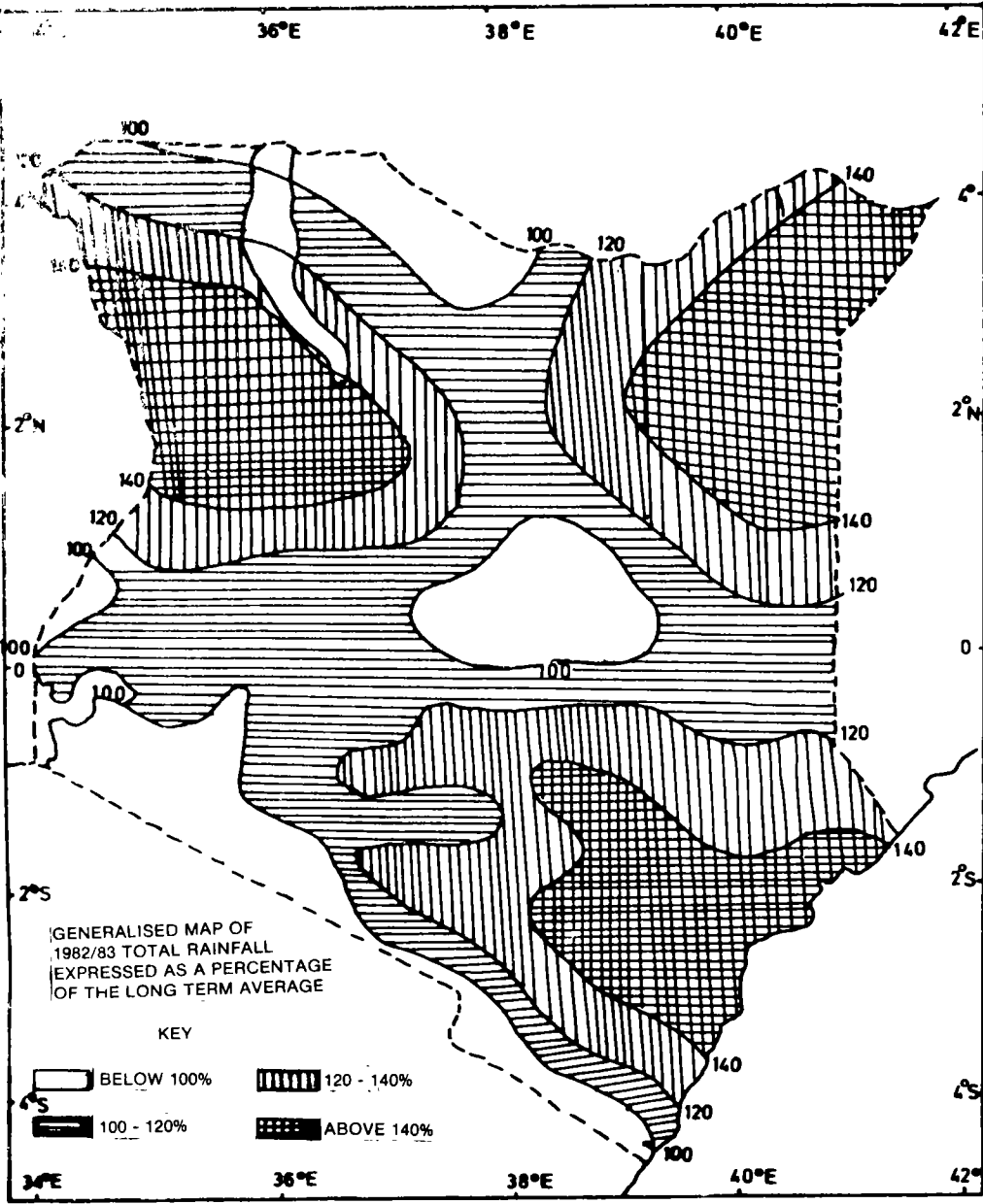
The section continued to provide agrometeorological services to the country in the form of Farming Weather Bulletins and the 10 Day Crop and Weather reports. Other services included providing advice to the Bureau of Statistics which had launched a micro-computer on crop monitoring and training meetings of the Ministry of Agriculture on Agroclimatological Mapping in the country. Due to lack of funds and shortage of staff the station network was not expanded and remained the same as before. However, Msabaha station was upgraded to grade A and Nyahururu Agromet Station was shifted to a new site in Ol-Joro-orok.

The Section in co-operation with the Institute carried out determination of soil constants in Kitale. Staff of the Section assisted in teaching duties at the Institute as well as supervising research projects.

### *4.4 Hydrology*

The Hydrometeorology unit continued to function within the Climatology Section and worked closely with the Ministry of Water Development and the Hydromet Survey Project of Lake Victoria.

During this reporting period the Rainfall Inspector did not make inspection or recruitment safaris due to lack of rain gauges in the Department. The purchase of these rain gauges had been approved by the Central Tender Board but could not be purchased due to the Government freeze on expenditure during the second half of the reporting period. As a result the station network did not expand except for the opening of 12 new rainfall stations through correspondence bringing the total network to 1712 stations.



#### *4.5 Climatology and Data Processing*

The principal activities of the Climatological and Data Processing Sections are the routine processing and archiving of meteorological data from stations all over the country and the preparations and issuance of routine and nonroutine summaries to our user agencies. The data processing in the Department is semi-computerised with the use of an ICL Key Edit unit for keying data into magnetic tapes. Extraction of such data from the magnetic tapes and running of various programmes is carried out using the University of Nairobi computer. Meteorological charts are stored in 35 mm microfilms.

During this period the Climatology Section suffered several setbacks due to the financial position in the country as a whole. No new calculators were purchased and half of the available ones were unserviceable. The ICL Key Edit unit processes data into 7 track magnetic tapes which had to be converted to 9 track using the Kenya Post Office computer. There was a further shortage of microfilms and other materials for archiving the charts. Hence work went at a very slow pace.

The observation and metar registers were received and processed up to April, 1983. Computation of climatology statistics on forms 602 and 509 were completed up to December, 1982. The Section commenced preparation of computation of the climatological statistics for the period 1971 to 1980. Extraction of data was manual and tedious and it was hoped that in future this will be carried out with a computer or a tabulator. Annual rainfall summaries for 1975 were completed and a draft form prepared. As reported in the last report the Department will be installing a data processing computer under the French-Kenya Government Protocol. At the end of the period under review the computer had been assembled and was on plat-form in France. Construction of the computer room at the Meteorological Department Headquarters was at a very advanced stage. We expect that installation of this computer will alleviate problems experienced due to the current use of manual and semi-computerised data processing.

#### *4.6 Observatories*

This section is responsible for the proper operations of the Synoptic stations network in the country. The Principal Meteorologist in charge of Observatories physically inspects the stations and Network officers supply all types of consumables as well as instruments to these stations.

The financial constraints in the Department did not allow the Principal Meteorologist (PMB) to inspect all the stations. He therefore inspected the stations in Eastern Province only. The Network Officer was however able to supply stores and consumables to all the stations in the country during this reporting period. Isolated trips were made to repair unserviceable instruments as and when it became necessary.

There was no progress made in expanding our network or developing the existing stations. The development projects in Eldoret, Voi and Lodwar did not progress due to various problems of finances and administration of such work. The section was however able to upgrade most of the stations to 24 hours operations.

The following is a full list of our station network as well as a report of Pilot Balloon ascents.

#### **24 HOUR STATIONS**

**Jomo Kenyatta International Airport**

**Malindi Airport**

**Kitale**

— Synoptic & Agromet

**Lodwar**

— Synoptic

**Narok**

— Synoptic

**Nyeri**

— Synoptic & Agromet

**Mandera**

— Synoptic

**Moyale**

— Synoptic

**Makindu**

— Synoptic

**Moi International Airport**

**Kisumu Airport**

**Eldoret**

— Synoptic

**Nakuru**

— Synoptic

**Meru**

— Synoptic

**Wajir**

— Synoptic

**Garissa**

— Synoptic

**Marsabit**

— Synoptic

**Voi**

— Synoptic

**Dagoretti**

— Synoptic

#### **18 HOUR STATIONS**

**Kisii**

— Synoptic & Agromet

**Kakamega**

— Synoptic & Agromet

## 12 HOUR STATIONS

Thika

Msabaha

Kericho

Nyahururu

Mtwapa

Katamani

Kabete

— Agromet

— Agromet

— Upper Air & Research

— Agromet

— Agromet

— Agromet

— Agromet

## ASCENTS MADE BETWEEN 1-7-82 AND 30-6-83

Station	No. Possible	No. Made	%	Above 15,000 Ft.	%	Highest in Feet	Date
Nakuru	730	570	78	469	82	63,141	17.12.82
Lodwar	730	479	66	103	22	10,190	19.9.82
Malindi	730	203	28	32	16	32,570	8.12.82
Voi	730	497	68	95	19	53,390	30.6.83
Kisumu	730	550	75	392	71	44,269	20.4.83
Embu	730	438	60	182	42	63,900	1.8.83
Eldoret	730	488	62	411	84	80,499	1.1.83
Moi Airport	730	409	56	42	10	41,702	9.3.83
Moyale	730	402	55	54	14	58,600	18.12.82
Narok	730	517	71	319	62	57,700	26.10.82
Kitale	730	485	67	284	59	53,700	20.4.83
Marsabit	730	316	44	112	36	49,413	20.9.82
Meru	730	317	51	202	54	49,600	3.10.82
Nyeri	730	147	20	67	46	42,270	27.1.83
Garissa	730	173	24	50	29	46,000	16.5.83
Mandera	730	116	16	10	9	39,755	16.5.83
Wajir	730	263	36	172	65	54,800	5.2.83
Makindu	730	567	78	120	21	51,280	1.10.82
Kericho	730	92	13	71	77	56,141	13.3.83

Dagoratti Radio Sonda No. of ascents done were 693

Ht. of balloons 24

Average heights of balloon bursts 011 ft.

#### *4.7 Services to Public Including Enquiries, Shows etc.*

The division continued to serve the public through answering enquiries which were made either in person, by letter or by telephone. The recorded such enquiries in the Climatological Section during the reporting period amounted to 844. The enquiries were from farmers, architects, research scientists and interested members of the public.

The Department participated in the Nairobi International A.S.K. Show. There was also participation in Garissa, Kakamega and Kisumu shows. During these shows a lot of effort was put into explaining the work of the Department and the services it renders to the country.

The Division led the celebrations for the 1983 World Meteorological Day whose theme was 'Honouring the Observer'. Throughout the stations visitors were conducted on a tour of the Meteorological enclosures and at Headquarters over 800 visitors attended the celebrations which were highlighted by a lecture on the theme.

The Department continued to assist various institutions in the country who requested meteorological services in one form or another. Several instruments were calibrated and officers from Mumias Sugar Factory were trained as observers in the Department.

#### *4.8 Instruments*

The Instruments Section has a primary duty of maintaining Meteorological Instruments in the Department. It is also responsible for initiating development on instrumentation and regular calibration of all new and old instruments. The section has embarked on the design and production of simple meteorological instruments to save the Government some foreign exchange.

This section as in all other sections of the Department, was hit by lack of adequate funds to carry out its scheduled duties. Only one scheduled visit was made to the North Eastern for the repairs of instruments; otherwise all other repairs were attended to on an ad hoc basis.

Since the station network did not expand as explained earlier the Instruments Section was involved in very minor installations. They shifted the instruments enclosures in Nyahururu and Msabaha to new sites. A programme for construction of hydrogen pits was not very successfully as only one pit was constructed in Meru.

A new instruments workshop was under construction and several workshop machinery had been ordered through French-Kenya Government financial aid protocol. It was expected that by the

middle of the next reporting period the new workshop would be operational.

#### **4.9 Printing**

The Printing Section of the Department is responsible for the printing of operational forms and publishing Meteorological Pamphlets, Agrometeorological and Climatological Data, Research Reports etc. Although the section had received new equipment, it was not possible to put the machines into operation due to lack of consumables such as chemicals, plates etc. During the reporting period a total of 17580 books and 80538 forms were printed.

Four (4) Press Assistants were released to attend a training course offered by the Government Printer. The course is designed to improve their efficiency and also assist them in advancing within their career. Some other press assistants sponsored themselves at the Kenya Polytechnic for evening classes in various aspects of printing.

The Section was expected to expand with the completion of the new printing workshop whose construction was well advanced at the time of reporting. With this new workshop and the new machines in operation the Department would be able to meet over 90% of all its printing requirements.

### **5. INSTITUTE FOR METEOROLOGICAL TRAINING AND RESEARCH, NAIROBI**

#### **5.1 ADMINISTRATIVE AND SUPPORT SERVICES**

##### **5.1.1 Staffing**

During the period covered by this report, the running of the Institute Hostel was further improved by having six members of the subordinate staff run a 24-hour duty roster at the Hostel reception. Previously, we had a two-man duty roster that operated between 7.00 a.m. and 8.00 p.m. The extra four subordinate staff were drawn from other sections in the Institute, which were subsequently left under-staffed. Seven expatriate instructors from Uganda and Tanzania left the Institute at the end of June following the expiry of their second three-year contract with the Kenya Government. They were replaced by six meteorologists who had been deployed to the Institute earlier in 1983 to understudy them.



Towards the end of the reporting period, the staff situation in the Library was seriously strained following the departure of the Library Assistant, Mr. C.W. Sakwa, who joined the Ministry of Environment and Natural Resources, on promotion. Mr. Sakwa's departure left the Library with the Librarian and four untrained clerks.

#### **5.1.2 Accounts and Stores**

During the period covered by the report the revenue collected at the Institute was as follows:-

	K.Shs.
Hostel Charges	388,889.40
Tuition fees	176,200.00
Sale of departmental publications	3,384.00
Miscellaneous charges	<u>2,740.00</u>
Total	<u>571,213.40</u>

In addition, a total of K.Shs. 8,500.00 refundable caution money was collected from the students.

#### **5.1.3 Institute Hostel**

The number of Institute Hostel residents ranged from one to ninety-six. In December all Hostel residents except one left for their Christmas vacation. Besides students registered for courses at the Institute, a few students from the East African School of Aviation and Strathmore College were offered accommodation at the Institute Hostel.

#### **5.1.4 Inter-Governmental and Tripartite Review Meetings**

The Third Inter-Governmental Council Meeting was held from 29th November to 1st December, 1982 at the Institute. The Meeting was attended by four participating countries viz Ethiopia, Kenya, Malawi and Zambia. Since the meeting was short of quorum (5 participating countries), the report of the meeting was circulated to the members for approval by correspondence. By the end of February, Botswana, Sudan and Seychelles had approved the report (by correspondence). The report was therefore approved by a majority of the participating countries. The other countries participating in the Project are Somalia and Mauritius. In view of the approval, the Institute and other parties concerned, started to implement the decisions and recommendations made during the Council Meeting.

The training and research activities of the Institute were reviewed in a Tripartite Review Meeting held at the Institute in June. The Meeting was attended by representatives of UNDP, WMO and the Kenya Government. The recommendations and observations made during the Review were compiled into a report which was submitted to all the relevant authorities.

## **5.2 GENERAL SERVICES**

### **5.2.1 Library Services**

During the period, the Library continued to provide an active service not only to the members of staff and students but also to other professional users outside the Department.

The Library was represented during the Mombasa and Nairobi Agricultural Shows where departmental Publications continued to be on great demand to Government Institutions, commercial interests, researchers and farmers.

The Library received two valuable donations of books, viz. 'Desert Locust Forecasting Manual Vol. 1 and 2' worth £95.00 from the Centre for Overseas Pest Research, London, and 'Solar Radiation Over India, 1982' worth 700.00 rupees from the Department of Science and Technology, Government of India. These donations were very useful addition to our Library collection. Renewal of subscriptions for periodicals for the calendar year 1983 was effected through the Crown Agents and the American Meteorological Society. The Library started receiving some of the periodicals from the first half of 1983.

### **5.2.2 Library Statistics**

New publications (periodicals, non-accessioned)	2,001
Departmental publication issued	2,165
Books borrowed	2,150
Books bound and repaired	178

### **5.2.3 Research Papers Published as Departmental Publications**

- (a) Solar power potential in Kenya — by R.E. Okoola.  
Research Report No. 1/82, published in July, 1982.
- (b) The reliability of pentad rainfall in Kenya  
by S.B.B. Oteng'i  
Research Report No. 2/82, published in July, 1982.

- (c) The persistence of monthly rainfall in East Africa  
by L. Ogallo  
Research Report No. 3/82, published in August, 1982.
- (d) A newly found Jet in Northern Kenya  
by J.H. Kinuthia and G.C. Asnani  
Research Report No. 4/82 published in December, 1982

#### *5.2.4 Departmental Publications Received*

- (a) Record of Research, Annual Report 1980, published in October, 1982.
- (b) Observer's Manual No. 1: Rainfall Observations - reprinted
- (c) Average meteorological data recorded at agricultural, Hydrological and other stations in Kenya, 1963-1973- published in November, 1982.

#### *5.3 Training Activities*

During this period, a number of courses for various cadres of meteorological personnel were held at the Institute. These courses mainly involved the training of meteorologists Class I, II, III and IV. The Institute continued to give lectures to the trainees at the East African School of Aviation. Trainees from the Ministry of Water Development Training School were given a special course on General Meteorology and Instruments. A short course on operation of the Donier APT/WEFAX Sattelite receiving station and interpretation of satellite weather pictures, under the sponsorship of the Federal Republic of Germany, was held at the Institute from 19th July to 13th August, 1982. A summary of courses held at the Institute is shown on page 30.

A WMO/UNDP/MOWD sponsored Regional Training Course for Hydrological Technicians which started during the last quarter of 1981/82 ended on 2nd July, 1982. The Institute did not take much active part in this course; we mainly offered facilities. The Course had eighteen participants from twelve African countries including Seychelles and Mauritius.

#### *5.4 RESEARCH ACTIVITIES*

##### *5.4.1 Research completed during the period*

Eight research projects were completed during the period. Four of

Detailed summary of the courses held within the period of the report

COURSE	Kenya	Tanzania	Malawi	Zambia	Ethiopia	Seych.	Ghana	Burundi	Algeria	Bangladesh	Egypt	Sudan	Gambia	Botswana	Total No.	Successful No.
Operational Training Course No. 12 20-4-83 to 29-8-83	4	1			2										7	7
WHO Class II No. 18 5-1-81 to 3-12-82	1	4	1	4	6	1								3	20	20
WHO Class II No. 19* 4-1-82 to 2-12-83	7	3		4											14	
WHO Class II No. 20* 3-1-83 to 30-11-84		5		5		1									11	
WHO Class III No. 4 4-1-82 to 7-10-82	15	4											3		22	14
WHO Class II No. 5* 20-6-82 to 22-10-82	10														10	
WHO Class IV No. 45 20-6-82 to 22-10-82	5					8									13	13
WHO Class IV No. 46 4-1-83 to 29-4-83	53														55	54
WHO Class IV No. 47* 20-6-83 to 14-10-83	4														4	
Advanced Forecasting Course Course No. 7 28-3-83 to 3-6-83		1				1		1	1						4	4
Specialized Course in Agreement No. 6 28-6-82 to 23-12-82	1	1								1				1	4	4
Specialized Course in Agreement No. 7A* 28-6-83 to 14-12-83	2									2					4	
Sanitation Course 1-7-82 to 13-6-82	8	2									4	2			16	16

Note: \* Course still in progress

these were published as Institute research reports — see section 5.2.3 - and three were bound into theses and submitted to the University of Nairobi, being part fulfillment for the requirements for Masters of Science degree.

These are the following:-

- (a) A study of the mean upper tropospheric horizontal motion field in the near-equatorial region — by N.D. Pyuzza
- (b) Monsoon system over Southwest Indian Ocean during northern summer of 1979 — by R.E. Okoola
- (c) Tropospheric wave disturbances over East Africa by L.N. Njau

The report on the eighth project had not been printed by the end of the period under review:-

Principal component analysis of sea-level pressure over the Southwest Indian Ocean during the Northern Summer of 1979 — by R.E. Okoola

#### *5.4.2 Research Programmes in Progress*

The following research projects were in progress by the end of the reporting period:-

- (a) Long Range Forecasting of Seasonal rainfall amounts in Kenya — by R.E. Okoola, P.G. Ambenje and P.K. Ngumbi
- (b) Wind Study in the Turkana Channel — J.H. Kinuthia
- (c) Maximum surface wind speeds (gusts) in Kenya by P.K. Ngumbi
- (d) Mean monthly 700 mb level geopotential fields over East Africa — by P.G. Ambenje

#### *5.4.3 Seminars*

The following seminars were given:-

- (a) Pentad rainfall variability and use of weibull distribution in determining period of flooding in field crops — by S.B.B. Oteng'i
- (b) Principal component analysis of sea-level pressure over the Southwest Indian Ocean during the Northern Summer of 1979 — by R.E. Okoola

- (c) Further evidence for windborne movement of army-worm, moths, spodoptera exempta, in East Africa — by S.H. Mwandoto
- (d) Climatic characteristics of the Eastern African Coastal Zones — by K.N. Mutaku

#### **5.4.5 Research Nucleus**

The Fourth Departmental Conference created a Research Nucleus which would be headed by the Principal Meteorologist (Research). Two meteorologists were deployed to the Research Nucleus. These meteorologists will carry out individual research/group research and any research that may be assigned to them by any of the various Divisions/Sections in the Department.

#### **5.5 Mt. Kenya Pollution Station**

The observations on meteorological parameters and measurements of particulates in Timau Hill on Mt. Kenya were abandoned due to unforeseen and insurmountable logistic difficulties. However, the collection of precipitation for precipitation chemistry project at Meru Station, a recommended nearby site, was in good progress. The record, on precipitation chemistry of the already analysed samples was updated during the period.

### **6. ADMINISTRATIVE, FINANCE, PLANNING, SUPPLIES AND SECURITY**

#### **6.1 STAFF ADMINISTRATION**

Several posts in the Engineering Technicians cadre remained vacant due to lack of suitable candidates. However, the post of Executive Officer I was filled by the Public Service Commission. In addition, a number of posts falling within the purview of the Permanent Secretary were filled as follows:-

POST	GRADE
39	Meteorological Assistant III
15	Communication Assistant II
7	Instrument Assistant III
1	Cook Grade II
1	Artisan Grade III

Contracts of nine non-Kenyans expired during the period under review. Out of that number only one/non Kenyan was offered further employment after expiry of his contract.

Ten officers retired from the service during the report period. Out of those who retired, eight had attained retirement age of 55, one retired under 50 year rule and the other was retired in the Public Interest.

The number of officers who have left the service as a result of breaches of discipline was greatly reduced. A total of ten officers left the service during the report period. Out of these, eight deserted their duties, one was jailed following criminal conviction and the other had been involved in cases of gross misconduct.

Ten officers from various cadres resigned from the service in order to take up employment in the private sector. One officer, the late Mr. Joseph Maraigua died in the service after a short illness.

#### *6.2.1 Accounting Services*

During the period under review Mr. J.E. Kamau left to attend a one-year course leading to Diploma in Financial Management in Sri-Lanka, and Mr. G.J. Marwa took over from him as the Ag. Senior Accountant.

#### *6.2.2*

The section continued operating as normal, processing payments and attending to matters affecting accounting services. However, these activities were greatly affected by issuance of Treasury Circular No. 1 of 4th March, 1983 which greatly curtailed Government spending. This was followed by supplementary Estimates (1982/83) which reduced our approved Estimates by £317,379 (K.Shs. 6,347,580.00) hence leading to over-expenditure of Shs. 292,000 in the entire Meteorological Vote.

Tables 6.2.5 and 6.2.6 show our financial position as at 30.6.83

6.2.5 HEADQUARTERS EXPENDITURE AS AT 30-6-1983

PARTICULARS	SUBHEAD	AUTHORISED EXPENDITURE	ACTUAL EXPENDITURE	UNDER EXPENDITURE	OVER EXPENDITURE
1. Leave Travelling Expenses	080	540,000.00	484,041.35	55,958.65	—
2. Transport Operating Expenses	100	912,000.00	1,053,453.40	—	141,453.40
3. Travelling & Accommodation Expenses	110	500,000.00	621,404.95	—	121,404.45
4. Postal & Telecommunications Expenses	120	2,819,300.00	2,883,370.60	—	64,070.60
5. Electricity, Water Conservancy	140	855,000.00	769,675.80	85,324.20	—
6. Purchase of Stores for Production	150	99,620.00	281,678.70	—	182,058.70
7. Food & Rations	160	1,000,000.00	1,032,606.20	—	32,606.20
8. Uniforms, Clothing & Other Materials	170	267,980.00	574,218.75	—	306,238.75
9. Rents and Rates	180	1,007,800.00	948,853.40	58,946.60	—
10. Miscellaneous Other Charges	190	168,760.00	186,060.15	—	17,300.15
11. Purchase of Stores & Equipments	220	—	—	—	—
12. Maintenance of Equipment and Plant	250	540,520.00	575,026.35	—	34,506.35
13. Subscriptions to Inter. Organizations	360	—	—	—	—
		8,710,980.00	9,410,389.65	200,229.45	899,639.10

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1  
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6.2.6 INSTITUTE

PARTICULARS	SUBHEAD	AUTHORISED EXPENDITURE	ACTUAL EXPENDITURE	UNDER EXPENDITURE	OVER EXPENDITURE
1. Passage & Leave Trav. Expenses	080	80,000.00	47,400.00	32,600.00	—
2. Transport Operating Expenses	100	183,400.00	218,531.90	—	35,091.90
3. Travelling & Accommodation Expenses	110	20,000.00	7,039.45	12,960.55	—
4. Postal & Telecommunications Expenses	120	11,840.00	31,306.85	—	19,466.85
5. Electricity, Water & Conservancy	140	280,000.00	210,989.55	69,010.45	—
6. Food and Rations	160	720,000.00	551,001.80	168,998.20	—
7. Uniforms Clothing & Other Materials	170	300,000.00	95,490.25	204,509.75	—
8. Rents & Rates	180	9,500.00	—	9,500.00	—
9. Miscellaneous Other Charges	190	17,340.00	30,827.40	—	13,487.40
10. Purchase of Plants and Equipment	220	80,000.00	—	80,000.00	—
11. Maintenance of Plant & Equipment	250	16,640.00	19,426.20	—	2,786.20
		1,718,760.00	1,210,013.40	577,578.95	70,832.35

### **6.3 PLANNING AND DEVELOPMENT**

#### **6.3.1 Development Estimates**

The Development Estimates for 1982/83 were reduced as shown below:-

220: Telecommunications Equipment - reduced from £430, 500 to : 400,000

464: Staff Housing - reduced from £300,000 to £135,700

465: Staff Housing Outstations - reduced from £350,000 to £118,050

The Development funds were provided to complete on-going projects and no funds were approved to start new projects.

#### **6.3.2 Fifth National Development Plan 1984-1988**

A series of meetings were held during the reporting period and we forwarded our proposals for the Fifth National Development Plan 1984-1988.

The projects that could not be started during the 4th Development Plan were re-submitted, for example the Six Storey Office Block, the Institute Library and the Outstations projects.

#### **6.3.3 (a) Headquarters Construction**

The Headquarters flats consisting of 72 units remained vacant due to lack of electricity. Although E.A. Power & Lighting Co. Ltd. had been paid Shs. 171,680.00 to connect the electricity it was discovered in the last minute that a mistake had been made when making the electrical scheme for the overhead power line. The power line would have interfered with our receive aerials.

A fresh scheme was made and E.A.P & L. demanded an extra Shs. 144,853.00 but although the amount was paid, at the time of preparing this report electricity had not been connected.

#### **(b) Workshops**

The contractor who built the flats was given the job to build two workshops and a walk-way. This project was behind schedule as a vital drawing needed for the project was not given on time by the Ministry of Works and Housing. However, towards the end of the reporting period the contractor made good progress and these projects will be completed towards the end of 1983.

One of the workshops will be occupied by the Printing Section and the other by the Instruments Metal Workshop Unit.

#### **6.3.4 (a) Outstations Projects**

The project at Moyale consisting of an office, eight intermediate quarters and three junior quarters was completed and the houses handed over in May.

All other on-going projects at Lodwar, Garissa, Voi and Eldoret were abandoned and the contracts determined. For Eldoret this was the second contractor to abandon the project.

All our out-stations Development Projects were affected by Ministry of Works and Housing as they appointed poor contractors who could not complete the jobs and at the same time the projects were poorly supervised by Ministry of Works personnel.

The Government is bound to lose a lot of money when completing the abandoned project due to escalation of costs of building materials.

#### **(b) Transmitter Station**

Eight junior houses were completed but could not be occupied as there was no electricity.

The electrical sub-contractor for this project abandoned his work without issuing the commencement/completion certificate for the work and as such M/S E.A. Power & Lighting Co. Ltd. did not connect electricity.

However, a power plant house to accommodate a 400 KVA standby generator was completed and the building taken over in January.

#### **6.3.5 Plants and Equipment**

- (i)** A new two position electronic PABX which was ordered in Financial Year 1981/82 was installed and commissioned. The new PABX is servicing both the Headquarters Building and the Institute. We applied for K.P. & T. to give us more exchange lines to serve the new PABX and at the time of writing this report work to provide nine more exchange lines was almost completed.
- (ii)** The boiler at the Institute remained unserviceable throughout this period and efforts to get the Provincial Works Officer, MOW & H, Nairobi Province to repair the plant failed, due to lack of funds.

- (iii) The old 50 kva no-break generator was removed from the power house and Treasury authorized that the generator be transferred to Ministry of Information, Kenya Institute of Mass Communications. K.I.M.C. later showed no interest in the generator and there was no alternative but to request the Treasury to cancel the earlier authority so that we can dispose off the generator by open tender.

#### **6.3.6 General Maintenance**

The Provincial Works Officer, Nairobi Province failed to maintain our leaking roofs and fire appliances. He also failed to claim damages from the contractor who did a shoddy job in construction of parking area at the Headquarters Wing.

In the long run the Department will have no option but to ask for extra funds so that we can undertake the maintenance work instead of relying on MOW & H.

#### **6.4 Supplies Section**

During the period under review, this section experienced some changes both in personnel and supplies of materials. In personnel there was general lack of competent storemen and those who were there were not professionally qualified and so had to be re-deployed in other sections and others brought in.

##### **6.4.1 Staff**

Mr. S.O. Onyimbo reported for duty on 2nd April from Kenya Institute of Administration after undergoing a year's diploma course in Supplies and Materials Management. Mr. P.M. Makau joined the Department on 15th April, 1983 on posting from Materials Branch. Mr. David Muigai and Mr. John Ng'ang'a Mugo also joined the Department during the period under review.

Mr. William Odhong, Supplies Assistant I and Mr. J.M. Mukaburu, Supplies Assistant I were transferred from this Department during the year.

There were some deployments affecting the clerical staff who were working in this section but this was for the smooth running of the section and increased efficiency.

#### **6.4.2 Procurement**

During the period under review, there were problems in procuring the required materials brought about by lack of sufficient funds, unavailability of goods, reluctance by suppliers to supply ordered goods and the stringent bureaucracy of procurement adopted during the period especially regarding the Crown Agents Indents. As a result a lot of items which are essential for our operations ran out of stock and this proved expensive as it raised the running and operative costs.

#### **6.4.3 Stock Control**

Stock Control Section which was established over one year ago had become the centre of activities as the movement of stocks could be watched from the stock cards. The sections is now being headed by a professional Supplies Assistant I who is assisted by four storeman

#### **6.4.4 Warehouse**

The warehouse has, during the period under review, had qualified staff headed by a Supplies Assistant II. There were four storemen assisting the officer in charge and each was allocated with sufficient duties.

Although there were difficulties in replenishing the stocks, the warehouse had not been completely empty. It was hoped that the situation would improve in the nearest future economically and that would in turn improve our position.

Finally the section showed some improvement in as far as general staff discipline was concerned and this had enabled it to forge ahead in re-designating some of the clerical officers into storemen and it is hoped that the exercise will be completed soon.

#### **6.5 Security Section**

The Security Section did a remarkable job in safeguarding Government property. However, there were a few cases of attempted theft which were reported to the police for investigation. There still remained the general problem of inadequate staff which we hoped will be resolved soon.

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