strategies for the reduction of adverse pregnancy outcomes. The project is done in collaboration with LSHTM, AMREF, BMC and the Mwanza Regional Medical Office and is funded by the Welcome Trust.

The Centre has also started studies on diarrhoeal diseases and malaria. The study on diarrhoea diseases is looking at the epidemiology of rotavirus infections in underfive years in different parts of lake zone and is being done in collaboration with the Medical University of South Africa (MEDUNSA). The studies on malaria are addressing issues regarding the impact of malaria on anaemia in underfives, quality of malaria management at the health centre level and susceptibility of mosquito vectors of malaria to insecticides. The Centre has also initiated a study assessing the quality of medical diagnostic services in health facilities in the lake zone to guide the ongoing Health Sector Reform (HSR) in Tanzania.

The centre aims at expanding further its activities, so that it is able to fulfil all of NIMR’s mandated objectives.

To achieve this, the Centre will continue in its endeavour to strengthen its research capacity, expand and strengthen its collaboration with both local institutions especially at district level, and institutions out of the country. The Centre will also strive to develop into a resource centre for the Lake zone. In order to achieve this, the Centre has to continue improving its capability in the current research areas, but also expand into other areas such as traditional medicine, HSR, and others. The Centre also needs to develop a strong communication system in order to be able to communicate efficiently with different parts of the country and abroad. To achieve all these the Centre will require a strong financial input. Therefore, the Centre will have to strengthen its ability to solicit funds both from within and outside the country, and also have an elaborate and transparent financial mechanism.

The playing field is too wide to play individually, let us all work together in order to improve the health of Tanzanians and beyond.

MUHIMBILI RESEARCH STATION
(CENTRAL TUBERCULOSIS REFERENCE LABORATORY)

The main responsibility of the Muhimbili Research Station (MRS) has been to undertake laboratory and other research on tuberculosis (TB) and its related diseases in the country. Other activities of the station have been laboratory diagnosis of TB in terms of direct smear and culture of sputum, drug sensitivity testing and surveillance, supervision and quality control of laboratory services to the peripheral and zonal laboratories. The station contributes in strengthening TB laboratory diagnostic activities in the country by training and retraining medical and paramedical workers.

Five research areas were set/targeted for action during the period. These were:
1. TB diagnosis
2. Epidemiology of TB in HIV error
3. Surveillance of anti-TB drug resistance
4. Case holding and
5. Prevention.

Inputs
Despite the major draw back that the institute for the period of the plan had no defined machinery for obtaining funds for research, the scientists continued carrying out research activities using funds obtained through collaboration with other research institutions in and outside the country.

Enormous efforts was put on developing research proposals to achieve the target areas.

<table>
<thead>
<tr>
<th>Discipline/Cadre</th>
<th>Present strength</th>
<th>Retiring</th>
<th>Shortfall</th>
<th>Additional Staff by Programme Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1999</td>
<td>2000</td>
</tr>
<tr>
<td>1.0 Research Scientists</td>
<td>5</td>
<td>-</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>1.1 Epidemiology</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>1.2 Microbiology</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>1.3 Biostatistics</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1.4 Social Sciences</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>1.5 Parasitology</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>2.0 Lab Technologists</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>2.1 Parasitology</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>2.2 Microbiology</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>2.3 Hematology</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>2.4 Others</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>
A number of the station’s scientific staff underwent various professional courses through personal and institutional effort.

The courses included masters degrees, Advanced Diplomas, computer courses and Epidemiology.

Rehabilitation of the station’s laboratory and construction of new office premises were also done under collaboration with the Sokoine University of Agriculture as part of the planned activities in the period.

Listed below are studies which have been proposed, conducted and same are still ongoing:

1. The zoonotic implication of bovine on human TB and its integrated control strategies in Arusha region.
2. Epidemiology of TB and cost-effectiveness of community-Based DOTS in Kilombero district.
3. Impact of HIV infection on outcome of treatment and survival of TB patients in Mwanza Tanzania.
4. The study on the interaction of tuberculosis and HIV infection in Tanzania.
5. Evaluation of the MycoDot™ Test in patients with suspected Tuberculosis in a field setting, in Tanzania.
6. The epidemiology of TB and cost effectiveness of community based DOTS Urban areas (Dar es Salaam).
7. Quality assurance of smear microscopy services in Dar es Salaam and neighboring urban areas.
8. The efficacy of secondary TB prophylaxis in HIV infected patients.
9. Algorithmic tool for diagnosis of smear negative TB.
10. Incidence of TB in tea farming area in Mufindi district.
12. The Efficacy and Cost-effective Treatment Regimen for Smear Negative Pulmonary and Extra-Pulmonary Tuberculosis in Dar es Salaam.
15. The Incidence of Cutaneous Hypersensitivity Among HIV Positive TB Patients Treated with Thiacetazone Regimens in Dar es Salaam.

**Funded Projects**

Research proposals No. 1 - 5 above were carried out through collaborative efforts between NIMR and other institutions.

<table>
<thead>
<tr>
<th>Project</th>
<th>Collaborating Institutions</th>
<th>Source of Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>NIMR, SUA, MMC Moledun Institute (MI)</td>
<td>DFID</td>
</tr>
<tr>
<td>2.</td>
<td>IHRDC, NIMR, NTLP Instituto de Immunologia de Colombia (IIC), Kilombero District Council (KDC)</td>
<td>HC, HRTF</td>
</tr>
<tr>
<td>3.</td>
<td>NTLP, MRS, MUCHS</td>
<td>IUATLD</td>
</tr>
<tr>
<td>4.</td>
<td>NTLP, MRS, KNCV, IUATLD</td>
<td>IUATLD</td>
</tr>
<tr>
<td>5.</td>
<td>NIMR, NTLP, WHO</td>
<td>WHO</td>
</tr>
</tbody>
</table>

Out of the three funded research projects, two (No. 1 and 2) are still going on whereas, two studies (No. 3 and 5) were completed and published in scientific journals. Data analysis and report writing for study No. 4 are in progress.

The following research proposals were granted ethical clearance but were not funded:

1. The epidemiology of TB and cost effectiveness of community based DOTS in Urban areas (Dar es Salaam).
2. Quality assurance of smear microscopy services in Dar es Salaam and neighboring urban areas.
3. The efficacy of secondary TB prophylaxis in HIV infected patients.

The following research proposals were developed but were yet to be submitted to the MRCC for peer review and ethical clearance:

1. Algorithmic tool for diagnosis of smear negative TB.
2. Incidence of TB in tea farming area in Mufindi district.
4. The Efficacy and Cost-effective Treatment Regimen for Smear Negative Pulmonary and Extra-Pulmonary Tuberculosis in Dar es Salaam.
5. Drug sensitivity pattern of *Mycobacteria* isolated from TB patients with and without HIV co-infection in Ilala and Mwanza Districts, Tanzania.

Output from Research Activities

Achievements
Despite the fact that there were difficulties in obtaining funds for conducting research, the station's scientists managed to prepare the following review articles:

4. The role of private sector in tuberculosis control in Tanzania.
5. Analysis of the laboratory drug sensitivity-data available at the station's data base.
6. New diagnostic methods and their place at present in the tuberculosis problem in developing countries (Tanzania).

Published Research Results
The following research projects were executed either during the 1991-1996 (not reported in the 1991 - 1996 evaluation report) or during, the 1996 - 1999 research development plan. These were published in various scientific journals.

1. Impact of HIV infection on outcome of treatment and survival of tuberculosis patients in Mwanza, Tanzania.
2. Effects of delayed processing of sputum specimen on laboratory results at the Central Tuberculosis Laboratory, Dar es Salaam.

Other Publications

Published Review Articles

1. New diagnostic methods and their place at present in the tuberculosis problem in developing countries (Tanzania).
4. Characterization of mycobacteria from an HIV endemic area.

Failures
Some of the programme objectives were not achieved during the named research development plan. The reasons where that these areas were not within the current changing world scientific interests in tuberculosis.

RESEARCH ACTIVITIES CARRIED BY TABORA RESEARCH STATION FOR THE PAST 20 YEARS

National Institute for Medical Research, Tabora Research Station

Background
Tabora Research Station started in 1922 as Sleeping Sickness Service Unit. It was established by Sleeping Sickness Specialist from UK, Dr. F.I. Apted. The Unit was charged with Trypanosomiasis medical surveillance, treatment of sleeping sickness cases and also coordinated treatment, follow-up and liaison with Tsetse control staff.

In 1961 the unit was under the supervision of Dr. Laufer after the retirement of Dr. Apted, by then Dr. Laufer was also Medical Officer Incharge of Tabora. In 1963 the Sleeping Sickness Unit was completely taken over by the Ministry of Health and Dr. R. K. Paul was appointed as Officer Incharge. During that period Tabora was still experiencing catastrophic outbreak of human trypanosomiasis and therefore the Ministry decided to keep Tabora as Sleeping Sickness Co-ordination Unit and main treatment centre of the country.

During that period the control of trypanosomiasis vectors was under the Ministry of Livestock Development (Now Ministry of Agriculture and Livestock Development) whereas the Ministry of Health was charged with the detection and treatment of Human Trypanosomiasis cases. All Sleeping Sickness reports from endemic foci were supposed to be sent to sleeping sickness Unit in Tabora.