



**TANZANIA INDUSTRIAL RESEARCH AND
DEVELOPMENT ORGANIZATION (TIRDO)**



**THE 20th MEETING OF COMSATS
COORDINATING COUNCIL**

(14th – 15th May 2016, Cairo, Egypt)

Prof. Mkumbukwa M.A. Mtambo

Director General

INTRODUCTION

ABOUT TANZANIA

- ▶ **Tanzania is located in East Africa and includes the islands of Mafia, Pemba and Zanzibar**
- ▶ **Size: 945,000 sq. km**
- ▶ **Population: 43.7 M (UN, 2009)**
- ▶ **The Highest Mountain in Africa (Mt. Kilimanjaro)**
- ▶ **Serengeti NP**
- ▶ **Ngorongoro Crater**



1. INTRODUCTION

- The Tanzania Industrial Research and Development Organization (TIRDO) is a multi-disciplinary research and development organization established by an Act of Parliament No. 5 of 1979 and it became operational on 1st April, 1979.
- TIRDO is a semi autonomous organization under the Ministry of Industry, Trade and Investment

1.1 MISSION

To conduct research, development and technical services on industrial processes and products, while utilizing local materials in partnership with industries

1.2 CORE FUNCTIONS

- **To carry out research in various aspects of local and foreign industrial techniques and technologies and evaluate their suitability for adaptation and alternative use in local industrial production.**
- **To provide to the firms engaged in industrial production advisory technical services so as to improve performance and to avert or minimize the sources of industrial pollution**

1.3 STAFF PROFILE

TIRDO has 85 workers including 35 Researchers (scientists, engineers), 17 technical staff and the rest are administrative personnel.

PhD 12 (4 Studies); MSc 15 (2 Studies)

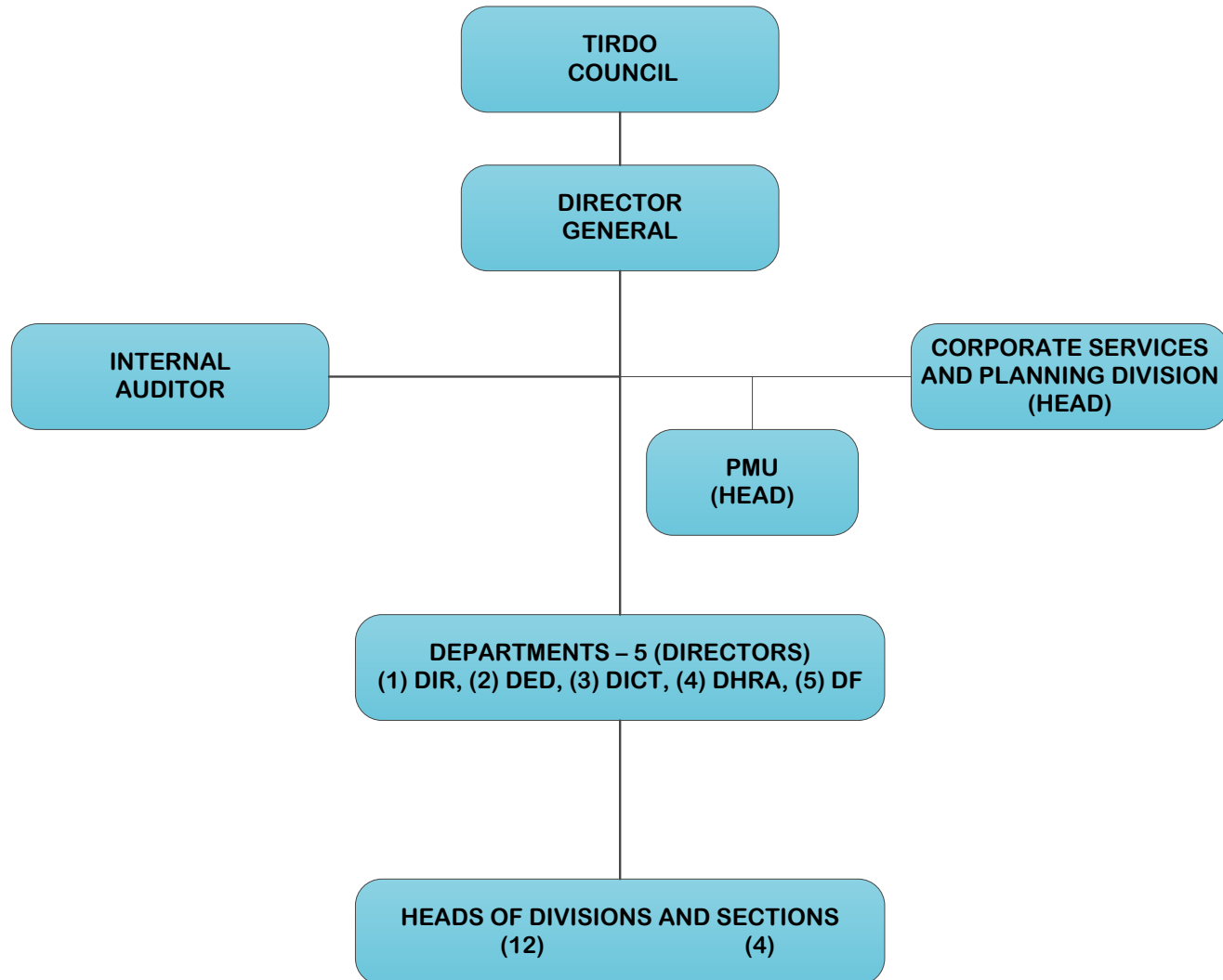
CATEGORIES	FEMALE	MALE	TOTAL
RESEARCHERS	18	17	35
TECHNICIANS	6	11	17
ADMINISTRATION AND FINANCE	10	23	33
TOTAL	34	51	85

1.4 ANNUAL BUDGET (2016/17)

(1 US. \$ = TSHS 2,100)

BUDGET ITEM	AMOUNT IN TSHS
DEVELOPMENT	5,000,000,000
OPERATING COST	4,000,000,000
SALARIES	2,000,000,000
OTHER INCOME	3,500,000,000
TOTAL	14,500,000,000

1.5 ORGANIZATIONAL STRUCTURE



1.6 CORE DEPARTMENTS

- **Industrial Research (Director)**
 - Food & biotechnology Division (Head)
 - Industrial Chemistry and Agro-processing Division (Head)
 - Environment and Occupational Safety Division (Head)
- **Engineering Development (Director)**
 - Materials Science and Technology Division (Head)
 - Textile and Leather Division (Head)
 - Energy Division (Head)
- **Information, Communication Technologies and Technology Transfer (Director)**
 - ICT Division (Head)
 - Instrumentation Division (Head)
 - Technology Transfer Division (Head)

ONGOING PROJECTS

- **Establishment of two medical based industries in Simiyu Region (Cotton based hospital products and IV infusion)**
- **Establishment of a coal briquetting factory**
- **Coal characterization and mapping**
- **Transfer of sensor technology to SME's**

ONGOING PROJECTS

- **Establishment of a metallurgy laboratory at TIRDO to serve the iron and steel industries**
- **Establishment of a technology/SME park at TIRDO in collaboration with private investors**
- **Training on NDT methods for oil and gas sector**



.../ ENGINEERING MATERIALS TECHNOLOGY

Training



Non-destructive testing (NDT)

- * Radiographic
- * Ultrasonic
- * Eddy Current
- * Magnetic Particle
- * Dye Penetrant
- * Visual

Other training courses

- * Advance professional welder
- * Welders qualification
- * Work at height
- * Work at height rescue
- * Confined space
- * Confined space rescue
- * Rope access
- * Fire safety
- * Drone pilot & inspection course

.../ONGOING PROJECTS



Coal Characterization

Technology Park



ONGOING RESEARCH

- **Greener cassava processing system leading to zero waste for enhanced market access by SME's (Michigan University -US)**
- **Capacity building for commercial production of Edible and Medicinal Mushrooms in Tanzania (COSTECH)**
- **Value addition on the leather solid waste to produce leather boards (COSTECH)**

.../ ONGOING RESEARCH

- **Production of value added products and bio fuels (glycerol, ethanol and bio methane) from agro waste.**
- **Quality improvement of locally produced reinforcing steel bars**
- **Utilization of Tanzanian oilseed meals to develop high protein foods and wellness ingredients**
- **Characterization of spent bleaching earth and improvement of biogas through supplementation of manure**
- **Production of Citric Acid from two Non-Edible yam species**

.../ ONGOING RESEARCH



Greener cassava processing system with zero waste

**COLLABORATIVE
ACTIVITIES UNDER
THE COMSATS'
PLATFORM**

COMSATS COLLABORATION ACTIVITIES

Received adiabatic bomb calorimeter from COMSATS



➤ Appreciate the efforts made by the
COMSATS Secretariat



➤ The calorimeter adds the efforts on
strengthening the energy and Food
laboratories

TUBITAK-MAM- TIRDO COLLABORATION

MoU for technical collaboration was signed in 2016

- **3 TIRDO senior staff visited TUBITAK-MAM in 2015**
- **3 TUBITAK-MAM senior staff visited TIRDO in 2016**
- **2 follow up visits by TUBITAK scientists to TIRDO were made in 2016 and 2017**



TUBITAK-MAM – TIRDO COLLABORATION

Ongoing and prospective collaboration activities:

- Commercial coal briquetting project for industry and household use
- Electricity generation from municipal waste – under TIKA, Turkey (prospective)
- NDT to Tanzania standard railway project (prospective)
- Technical services – collaborative e.g. Tubitak analyzed essential oil samples for TIRDO

OTHER COLLABORATIVE ACTIVITIES UNDER THE COMSATS' PLATFORM

- **Leather and textile research collaboration with Industrial Research and Consultancy Centre (IRCC), Sudan – *Planning***
-
- **Engineering works collaboration with Bangladesh Council of Scientific and Industrial Research (BCSIR)- Bangladesh**
- ***Initial Discussions held, Invited***

COLLABORATIVE ACTIVITIES UNDER THE COMSATS' PLATFORM

Participation in thematic research group works

- **Participated in Mathematical and Modeling thematic group: Abuja meeting and conference in year 2015**
- **Participated in ICT thematic group: Pakistan and Jordan meeting in 2015**
- ***Climate change and Environment-planning***

8. PRIORITY AREAS OF RESEARCH COLLABORATION UNDER COMSATS

- **Agro processing, food and micro-biology**
- **Renewable energies**
- **Gas and petrochemical technologies**
- **Coal technologies**
- **Iron and steel technologies**
- **Textile and leather technologies**
- **Natural and medicinal products**
- **Biotechnologies**
- **Pollution prevention and control**
- **ICT**

OTHER COLLABORATIONS

- **WAITRO**
- **EARO- KIRDI, UIRI**
- **KOREA- KDI**
- **CSIR-INDIA Food Biotech,
Medicinal plants**
- **Copenhagen University**



Thank you

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