

THE FUNCTIONS OF THE GOVERNMENT CHEMIST LABORATORY AUTHORITY (GCLA)

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OUTLINE

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1. INTRODUCTION

- GCLA was established under Government Chemist Laboratory Authority Act No. 8 of 2016
- It started as a Centre for conducting researches in tropical diseases to a National Laboratory in 1895 during German colony.
- **Prof. Dr. Robert Koch (1897-1898)**, eminent bacteriologist advanced tremendously some fundamental research in T.B. and malaria in some of the buildings currently occupied by GCLA, at Ocean Road in Dar es salaam. The first person to isolate the TB.
- **Mr. Gustav Giemsa (1897-1898)**; who developed a stain for identification of malaria parasites in blood smears called "*Giemsa Stain*". He was the 1st CGC(1895 – 1932).
- *Transformed from an Executive **Agency** (1999) to an **Authority** (July 2017) under GCLA Act, 2016.*

1. INTRODUCTION...

The first building of the Government Chemist
at Ocean Road



2. VISION AND MISSION

- **Vision:** To become a reputable world-class analytical laboratory for executing health, social well being and environmental interventions.
- **Mission:** To provide quality and cost effective laboratory and regulatory services to the Government, Institutions and the general public for the purpose of safeguarding human health and the environment.

3. THE FUNCTIONS OF GCLA

The functions of GCLA are as stipulated under section 5(1)-(3) of GCLA Act, 2016:

1. **Laboratory Analysis of various Samples and exhibits on:**

a) Criminal issues/cases

- Drugs of abuse, armed and poisoning deaths, rape cases, sodomise cases,

b) Social related issues/cases

- Paternity cases; diagnosis of superior sex for child with unambiguous sex (hermaphrodite), solving inheritance related conflicts, diagnose bodies of unidentified victims due to disasters such drowning, fire/explosion, aircraft, car accidents, etc.

c) Quality and safety of products and goods from agriculture and industries.

Some examples of samples/exhibits and chemists performing their duties



(i)



(ii)

Plate: (i) chemist preparing human river for lab. analysis of poisons, (ii) chemists taking various human organs from the strong room for laboratory analysis of poisons.

Some samples/exhibits under laboratory analysis...



(i)



(ii)



(iii)

Plate (i): A dead elephant suspected of being poisoned

Plate (ii): Fish suspected of being poisoned

Plate (iii): Chemists undertaking laboratory analysis of suspected explosive materials. In plate(i) and (ii) Samples/exhibits are taken to confirm whether the deaths were due to poisoning or not.

Suspected drug samples/exhibits



(i)

Plate (i): Suspected heroine drugs that were swallowed for easy transportation.



(ii)

Plate (ii): Suspected bhang exhibits/cannabis packed in sacks. They have been analyzed and sealed by GCLA analysts ready for submission to the client (i.e. Police).

Example of National disastrous events that required laboratory diagnosis of unidentified victims

Drowning of MV Nyerere ferry at Lake Victoria on the 19 September 2018 at Ukara, Ukerewe District, Mwanza Region, whereby (05) victims were identification after HDNA Lab. Analysis



National disasters.....

A fuel tanker accident that occurred at Msamvu in Morogoro Region; on the 19 August 2018, whereby more than 71 people were burnt beyond recognition



3. THE FUNCTIONS OF GCLA...

2. *To provide expert opinion/advice to the Government*

- ✓ To provide expert opinion to legal or other institutions on laboratory findings over forensic sciences, food, drugs, chemicals, etc on:
 - **Criminal cases**
Drugs of abuse, deaths, rapes, sodomise, etc;
 - **Litigation cases**
Paternity cases; solving inheritance related conflicts
- ✓ To provide expert opinion to legal or other institutions related to other functions of GCLA such as management and control of chemicals; management of chemical, forensic and DNA laboratory.

IMPORTANCE OF LABORATORY ANALYSIS TO THE COMMUNITY

- To facilitate forensic investigations and hence **assurance of justice and rule of law**,
- Paternity test and sex identification in order **to address society concerns**
- **Treatment:** Analysis of DNA compatibility of a Donor and Recipient before Kidney transplant
- Laboratory analysis of agricultural and industrial produce to **ascertain safety and quality**,
- Laboratory analysis of environmental and occupational health for **protection of health and the environment**.
- **Provision of Expert Advice to the Court of Law** for laboratory analysis of evidence; hence facilitate the execution of justice

3. THE FUNCTIONS OF GCLA...

3. To manage the implementation of three GCLA Legislations:

a) The Industrial and Consumer (Management and Control) CAP.182.

- ✓ To control and regulate industrial and consumer chemicals, chemical products through registration and issuance of permits, and sampling & analysis of chemicals related to quality and safety.
- ✓ To carry out inspection of chemicals and premises in accordance with the ICCA Cap 182
- ✓ To carry out training and awareness to the general public on the proper management of chemicals

Some examples of activities carried out related to control of chemicals



(i)



(ii)



(iii)



(iv)

Plate: (i) Chemical inspectors preparing for inspection of hazardous chemicals

Plate (ii) and (iii) Chemical inspectors conducting inspection of chemicals in one of the Borders;

Plate (iv) Chemical waste that has been identified for disposal after inspection

3. THE FUNCTIONS OF GCLA...

3. To manage the implementation of three legislations....

b) The Government Chemist Laboratory Authority Act. No. 8 of 2016

- ✓ The Act establishes the Authority as the supreme and referral laboratory of the United Republic of Tanzania
- ✓ Registration of chemical, forensic and DNA Laboratories
- ✓ Manage the National Poison Control Center (NPCC)

The Government Chemist Laboratory Authority Act. No. 8 of 2016

The National Poison Control Center (NPCC)



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3. THE FUNCTIONS OF GCLA...

c) The Human DNA Regulation Act, Cap 73.

- ✓ Inspection and registration of Human DNA Laboratories
- ✓ Issuance of research permits on Human DNA
- ✓ To establish and manage the Human DNA National Database

4. ORGANISATION OF GCLA

- **GCLA is headed by the Chief Government Chemist (CGC), being assisted by four Directors:**
 - **Forensic Science Services Directorate**
 - ✓ Human DNA Laboratory
 - ✓ Forensic Chemistry Laboratory
 - ✓ Forensic Toxicology Laboratory
 - **Regulatory Services Directorate**
 - ✓ Registration of chemicals and Chemical Laboratory
 - ✓ Inspection of chemicals and Chemical Laboratory
 - ✓ Inspection and Registration of Forensic and Human DNA Laboratories

4. ORGANISATION OF GCLA ...

- **Product and Environmental Analysis Directorate**
 - ✓ Food and Drugs Laboratory
 - ✓ Microbiology Laboratory
 - ✓ Environmental Laboratory
- **Corporate Services Directorate**
 - ✓ Planning, Monitoring and Evaluation
 - ✓ Accounts section
 - ✓ Human Resources and Administration
- **GCLA has six zonal offices:**
 - ✓ Central Zone - Dodoma
 - ✓ Eastern Zone – Dar es Salaam,
 - ✓ Northern Zone – Arusha
 - ✓ Southern Highland Zone – Mbeya
 - ✓ Southern Zone – Mtwara
 - ✓ Lake Zone - Mwanza

5.0. ACHIEVEMENTS

- a) Construction of Office and Laboratory Building for GCLA HQs in Dodoma Capital City



5.0. ACHIEVEMENTS...

- b) GCLA IS 9001:2015 Certified - Quality Management System
- c) GCLA Laboratories are ISO 17025:2017 Accredited - Competence on Laboratory Analysis

5.0. ACHIEVEMENTS...

Some of our Achievements include :

d) Acquisition of modern and advanced high tech equipment. These include:

- LC-MS/MS & GC-MS/MS
- Genetic Analyzer,
- AAS & ICP- EOS,
- ED-XRF & ED-XRD,
- FTIR & FTNIR,
- HPLC etc

5.0 ACHIEVEMENTS...



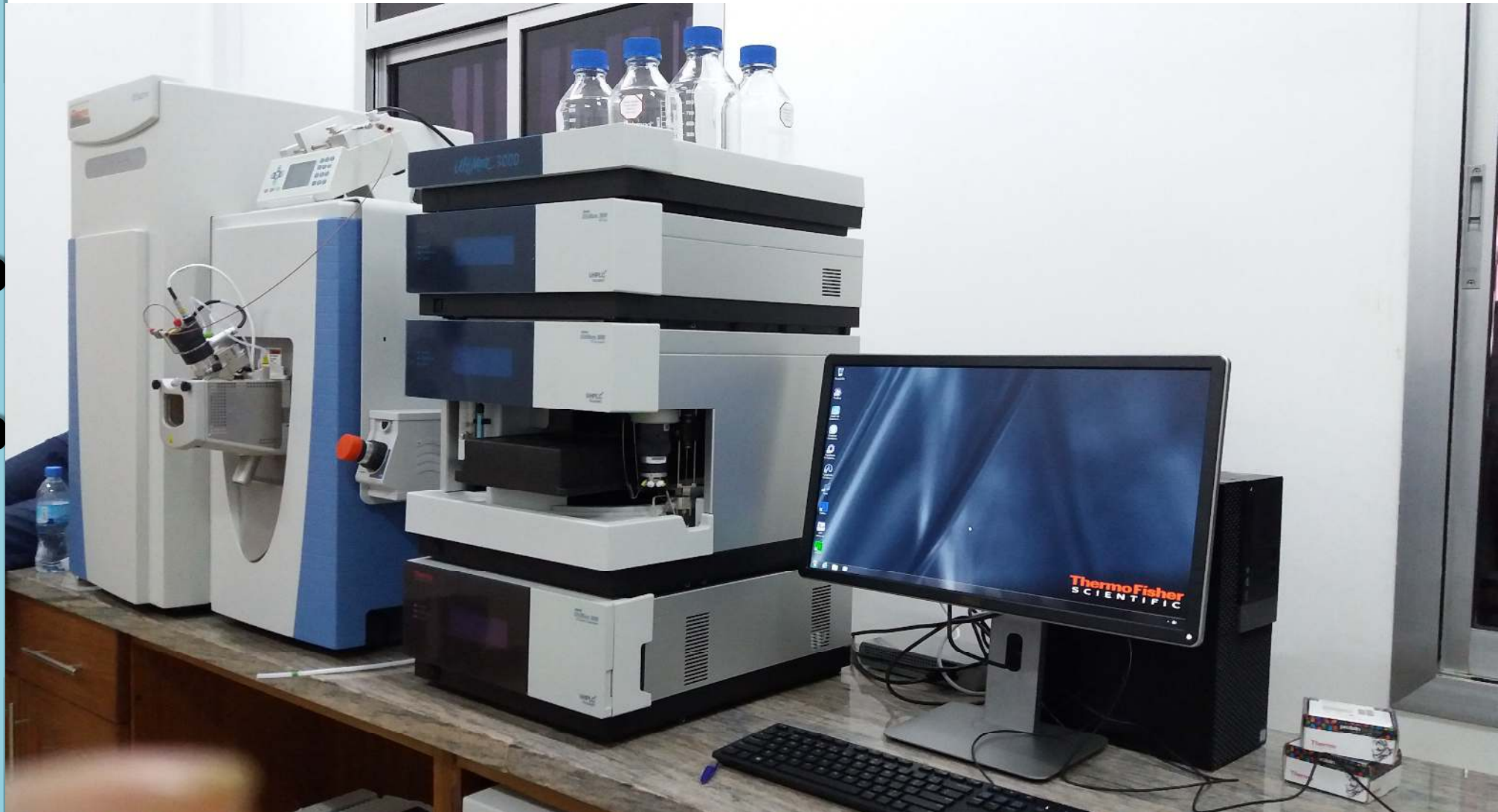
GC- MSMS

5.0. ACHIEVEMENTS...



ICP - EOS.

5.0 ACHIEVEMENTS...



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5.0 ACHIEVEMENTS...



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5.0. ACHIEVEMENTS...

e) GCLA has developed systems for provision of its services. These systems include:

- Laboratory Information Management system(LIMS)
- Customer Chemicals Management Portal (CCMP)
- Expert Witness information System
- Video teleconferencing and virtual courts

6.CONCLUSION

- The GCLA being an Authority has enhanced smooth operations of its functions, realization of its objectives, and attainment of its mission and hence, complement to the Government efforts in improving the wellbeing of its people and the environment.
- *Attainment of these achievements has been possible through Cooperation from the GOVERNMENT and from various STAKEHOLDERS.*

ASANTENI KWA KUNISIKILIZA