



Ethiopia Radiation Protection Authority

(Ethiopia Technology Authority since sep2021)

Existing Activity and the New Initiative on Nuclear program

Eshetu Tilahun

Daejeon Korea

24 November 2022



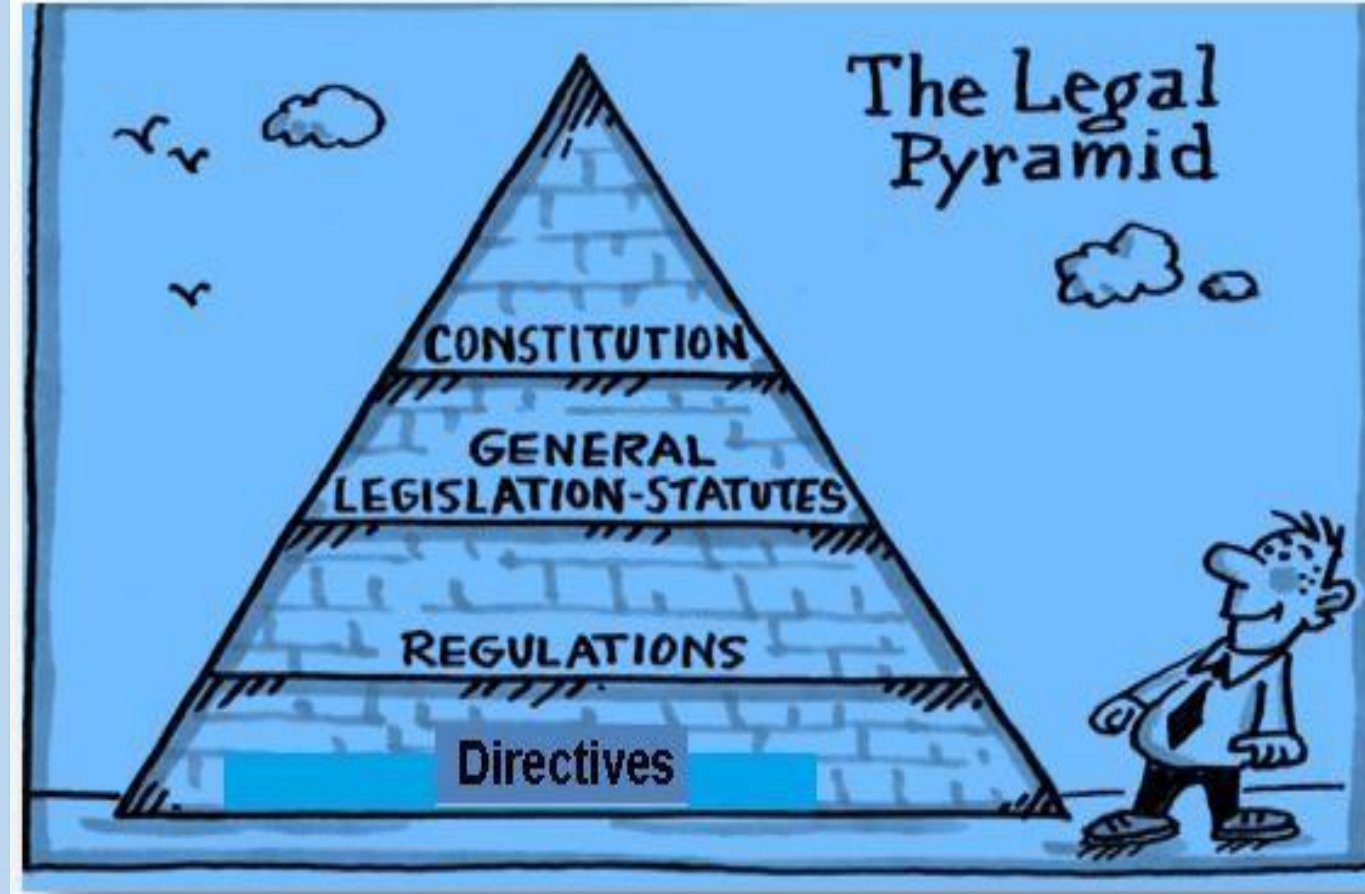
Ethiopia

- Ethiopia located in the Horn of Africa
- Total land area 1,104,300 sq km
- Nations to retain its sovereignty
- It is the place of origin of the **human being** and **coffee** bean.
- **Highest Point:** Ras Dejen 4,550 m
- **Lowest Point:** Denakil Depression (-129 m)
- The **second largest** Nation in Africa
- Ethiopia **Source of Nile**



Legal Hierarchy in Ethiopia

1. **Constitution**: approved by the Parliament
2. **Proclamation**: approved by the Parliament
3. **Regulation**: approved by the Council of Ministers
4. **Directives**: approved in the institution level





Regulatory Framework

- The legislation governing the regulatory control of ionizing radiation sources was in place since December 1993 - with the promulgation of the Radiation Protection Proclamation no. 79/1993

- Proclamation No. 79/1993 Radiation Protection and safety.
 - Based on the BSS Established National Radiation Protection Authority
 - Accountable to STC
 - No provision for cooperation
 - No criminal offences and Penalties





Regulatory Framework

- Proclamation No. 79/1993 revised with Proclamation No.571/2008 as Radiation Protection and Safety law

But

- This law also not compatible with the current International Safety and security standards.
- Accountable to MOST
- Has provision for cooperation with safety





Regulatory Framework

- The 571/2008 law is again revised and Reestablished in with Proc No 1025/2017 which include Nuclear security and safeguards.

- Proclamation No. 1025/2017 encompasses Radiation Protection, safety, Security and safeguards
 - Compatible with the current International standards and Nuclear Law
 - Accountable to Most
 - Has provision for cooperation for safety and security



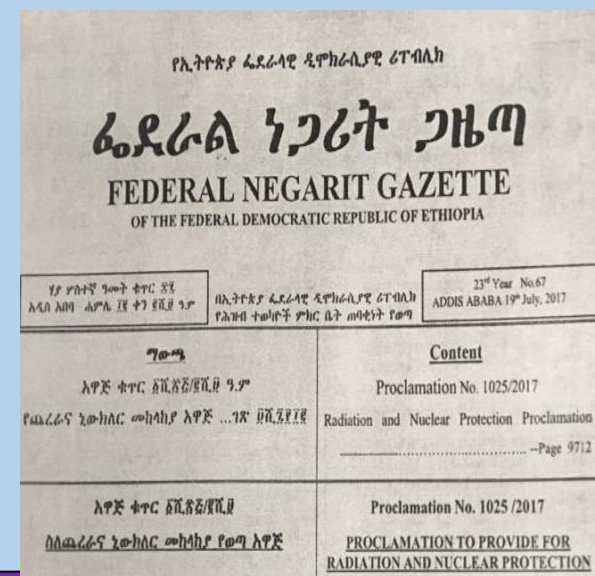
Regulatory Framework



1993



2008



2017

Ethiopia
Technology
Authority

2021





Ethiopia Technology Authority

ETHIOPIA TECHNOLOGY AUTHORITY





Ethiopia Technology Authority

- **Based on governments Reform decision on proclamation No 1263/2021 issued by Council of Ministers Pursuant to Article 58(1)**
- **Ethiopian Technology Authority created**

58. Ethiopian Technology Authority

- 1/ The Ethiopian Technology Authority is hereby established as an autonomous federal government organ having its own legal personality;
- 2/ The powers, duties and organization of the Authority shall be determined by Council of Ministers Regulation.



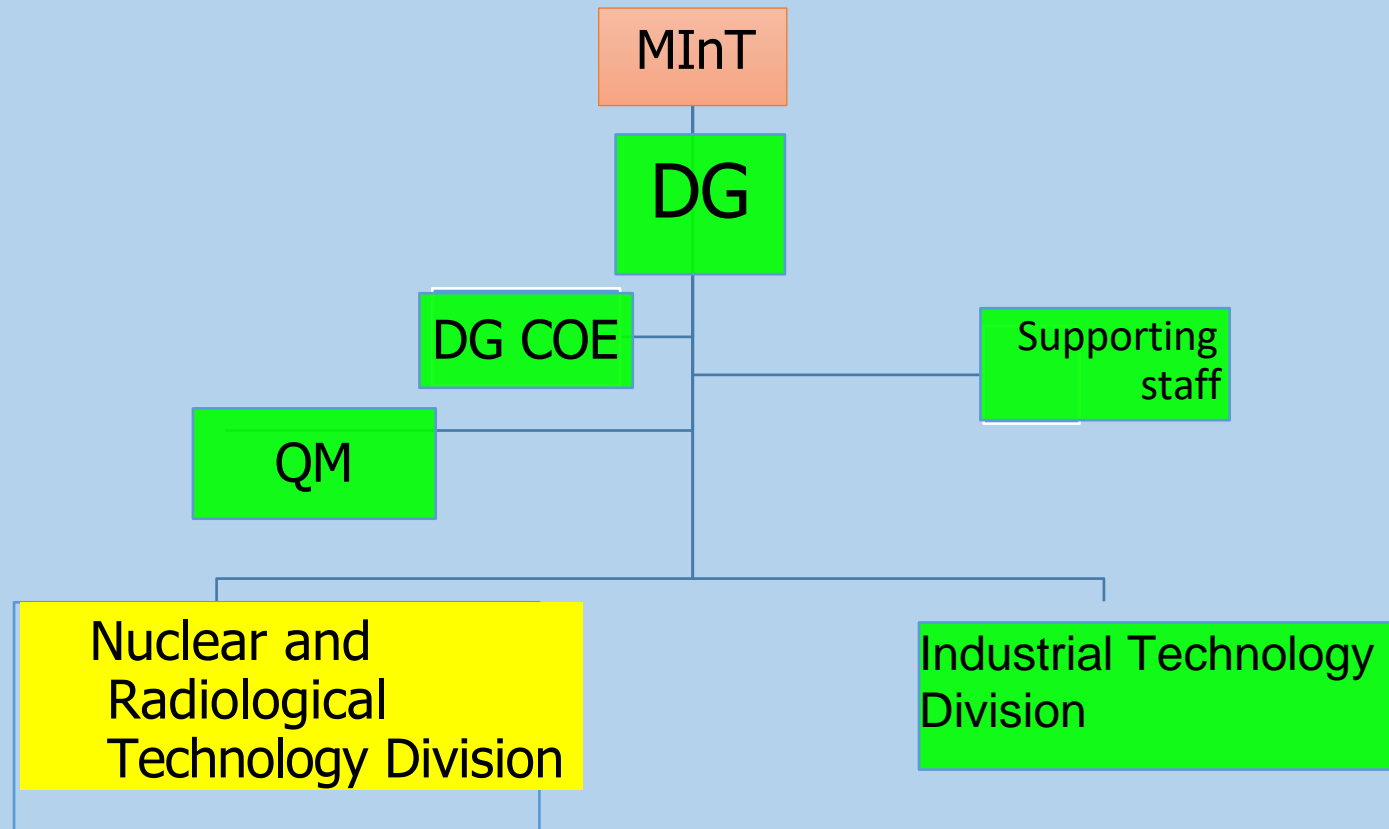


Organizational Scope for New RB

- **The new regulation shall apply to**
 - **Radiation and nuclear Technology**
 - **Chemicals Technology**
 - **Plant and machinery Technology**
 - **Electrical and electronic equipment**
 - **Material and emerging technology**
 - **Geospatial and space technology**



New Organogram of ETA





Human Resource projection for next five yrs

| Departments | Projected No Employees | | | | |
|--|------------------------|------------|------------|------------|------------|
| | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 |
| Radiation regulatory control | 16 | 19 | 25 | 27 | 30 |
| Radiation notification and Authorization | 12 | 13 | 20 | 25 | 30 |
| Non-Ionizing Radiation | 3 | 0 | 0 | 0 | 0 |
| Research and development | 8 | 10 | 18 | 23 | 30 |
| Material and Emerging | 0 | 5 | 13 | 23 | 28 |
| Chemical | 0 | 5 | 13 | 23 | 27 |
| Electronics and Electrical | 0 | 10 | 13 | 22 | 27 |
| Plant and Machinery | 0 | 5 | 13 | 23 | 27 |
| Supporting | 55 | 61 | 83 | 105 | 132 |
| Total number of Employees/year | 94 | 128 | 197 | 271 | 331 |





ERPA Knowledge Management Exprience

- ERPA train experts in different practice through IAEA and other Partners Such as DOE,US-NRC for

- ✓ Years

- ✓ months and

- ✓ weeks

BUT

difficult to retain those people in the organization





ERPA Knowledge Management Exprience

- The regulatory Body develop an internal institutional strategy how to manage the knowledge gained from the training and transfer to staffs
- The strategy identifies the methods and means modality (creating team and wereda web portal).
- The Regulatory Body develop institutional Knowledge management procedure .

Knowledge management\Institution knowledge management procedures.docx



Knowledge Management Experience

- **The Purpose of the procedure is**
 - **To share roles and responsibilities on knowledge management activities within the authority level by relevant party.**
 - **Ensure the dissemination and sharing of information /knowledge within ERPA;**
 - **Provide a platform for ERPA staff to share and exchange knowledge related to regulatory activities of the Authority**
 - **Spread best practices and lessons learned from knowledge gained of the programs;**





Knowledge Management practice

- **Encourage collaboration amongst specialists and experts within a sphere of practice;**
- **Create a culture of knowledge sharing and the creation of new knowledge for innovation;**
- **Aid retention of intellectual capital when experts exit the organization, thereby building the institutional memory;**
- **Speed up the learning process for newly employed members;**
- **Preserve the organizational memory of ERPA;**





Knowledge Management practice

- The Regulatory Body's KNM coordinator collect data made analysis after
 - After each training (short term or long term ,abroad or local)
 - The trainee obliged to submit the training document to the knowledge management coordinator with inter department Knowledge sharing format.
 - The trainee prepare a training schedule and submit to its respective department
 - The department prepare a training program and invite departments to assign trainee. Knowledge management\Inter-department Knowledge





NUCLEAR PROGRAM INITIATION

- **In 2017**
 - Ethiopia and Russia signed a Memorandum of Understanding
 - The Memorandum specifically details plans to develop infrastructure related to nuclear power.





- In April, 2018
- Ethiopia and Russia signed a three-year roadmap setting up the foundation for the construction of a center for nuclear science and technology and a nuclear power plant
- August 2018
- The Government gave mandate to the Ministry of Innovation and Technology to run the task





- In December 2018
- The ministry Create a National task force which consists of different professionals
- In Nov 2019
- The National Task force conduct a national need assessment and provide justification for decision makers
- In 2020 Parliament ratify the agreement and the Government gives green light for new nuclear program.





- In 2022
- The government Create a new organization who runs and coordinate Nuclear program(Ethiopia Nuclear science and Technology Institute as NEPIO).
- Ethiopia and Russia made agreement on human development and 5year Public awareness creation strategy plan develop.
- The ministry of Energy revise the National energy policy and include nuclear energy.
- HRD starts and first batch 58 students sent to Russia





Challenges

- ◉ Lack of trained personnel in specific field area.
- ◉ Lack of national institution (center of Excellence) in the Area who trained experts in the field (short term ,medium and long term training provider).
- ◉ Experts turnover after training
- ◉ Lack of adequate Measuring instruments for medical and environmental monitoring
- ◉ Lack of institution in the Area of Calibration and maintenance of Equipment
- ◉ Lack of consumable supplier

Opportunity

- Reestablishment of ETA with new regulation
- Government commitment to creating Independent Regulatory body
- The assistance from IAEA and other partners in equipment and capacity building;
- The Regulatory body commitment to keep its trained work force.



The WAY FORWARD

- Build the state of the art training facility which helps to provide short term and long term training .
- Build the Authority with High competent and skilled man power.
- A pre-feasibility study will start 2023 and agreement is already made with ROSATOM.

Thank you for your attention



የኢትዮጵያ ጨረራ መከላከያ ባለስልጣን
Ethiopian Radiation Protection Authority