



# Chemicals Regulation & Green Chemistry in Middle East and Africa

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# Agenda

Introduction

Chemical Regulatory Framework in The  
Middle East (West Asia)

Chemical Regulatory Framework in  
Africa

Green Chemistry Initiatives in Middle  
East and Africa

Takeaways



# Introduction



# Introduction



## The Middle East Region (West Asia)

- Unofficial grouping of countries that vary to include between 16-24 countries
- Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia, Syria, Türkiye, United Arab Emirates and Yemen



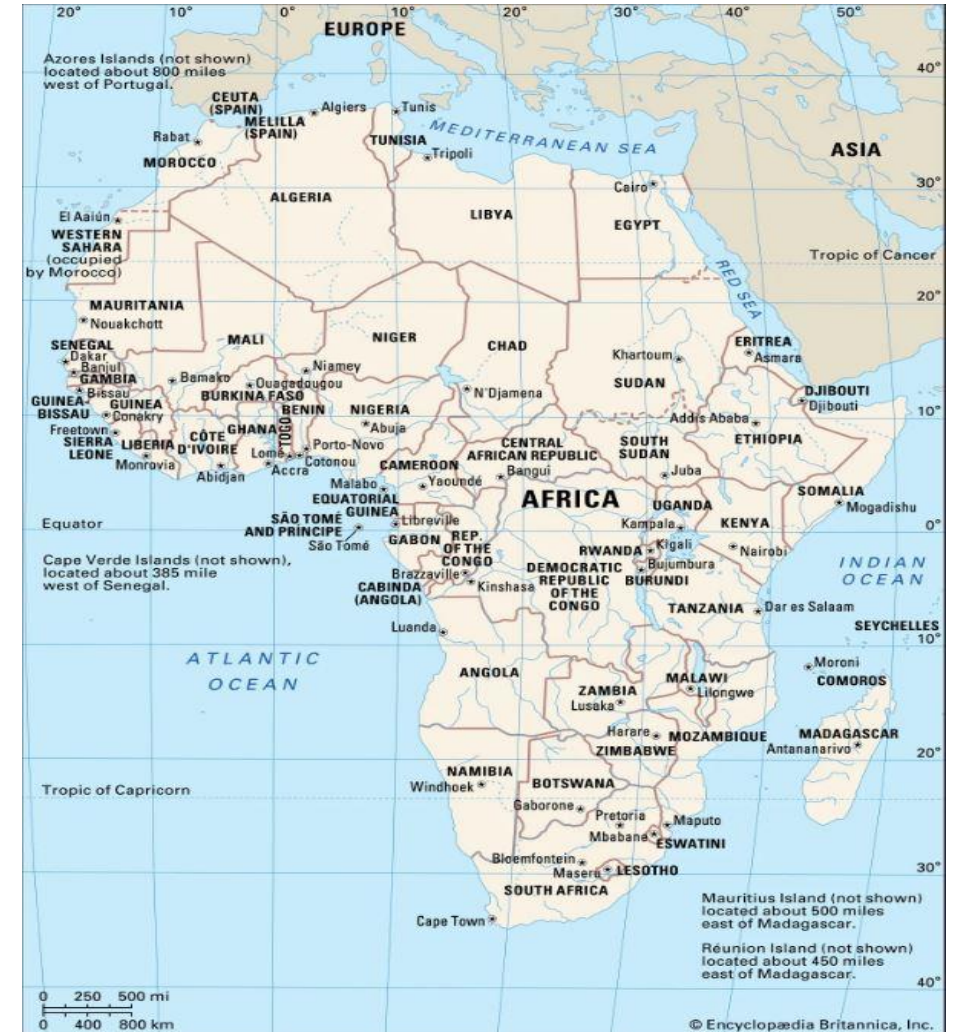
Source: <https://www.britannica.com/place/Middle-East>

# Introduction



## The African Continent

- There are 54 sovereign states (or countries).
- It is the world's second-largest and second-most-populous continent.



Source: <https://www.britannica.com/place/Africa>

# Chemical Regulatory Framework in The Middle East (West Asia)





# Chemical Regulatory Framework in The Middle East



## Background of The Middle Eastern Chemical Industry

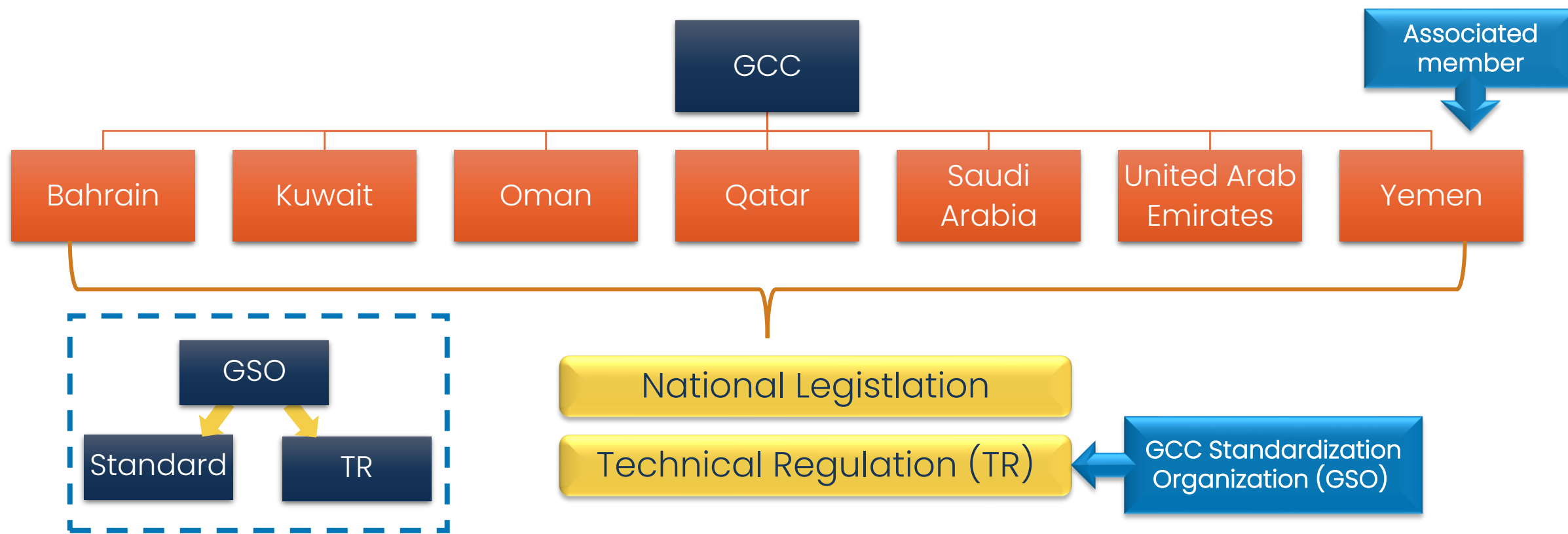
- Part of number of Multilateral Environmental Agreements (MEAs)



- Management of chemical substances by a system of licenses and permits
- Presence of trading blocs
- Existence of some cities/states with its own regulatory system

# Chemical Regulatory Framework in The Middle East

## Regulatory Framework of The Gulf Cooperation Council (GCC)





# Chemical Regulatory Framework in The Middle East



## Regulatory Framework of The GCC – Saudi Arabia



Royal Decree No. M/38, 12 June 2006 –Law on  
Chemicals Import and Management

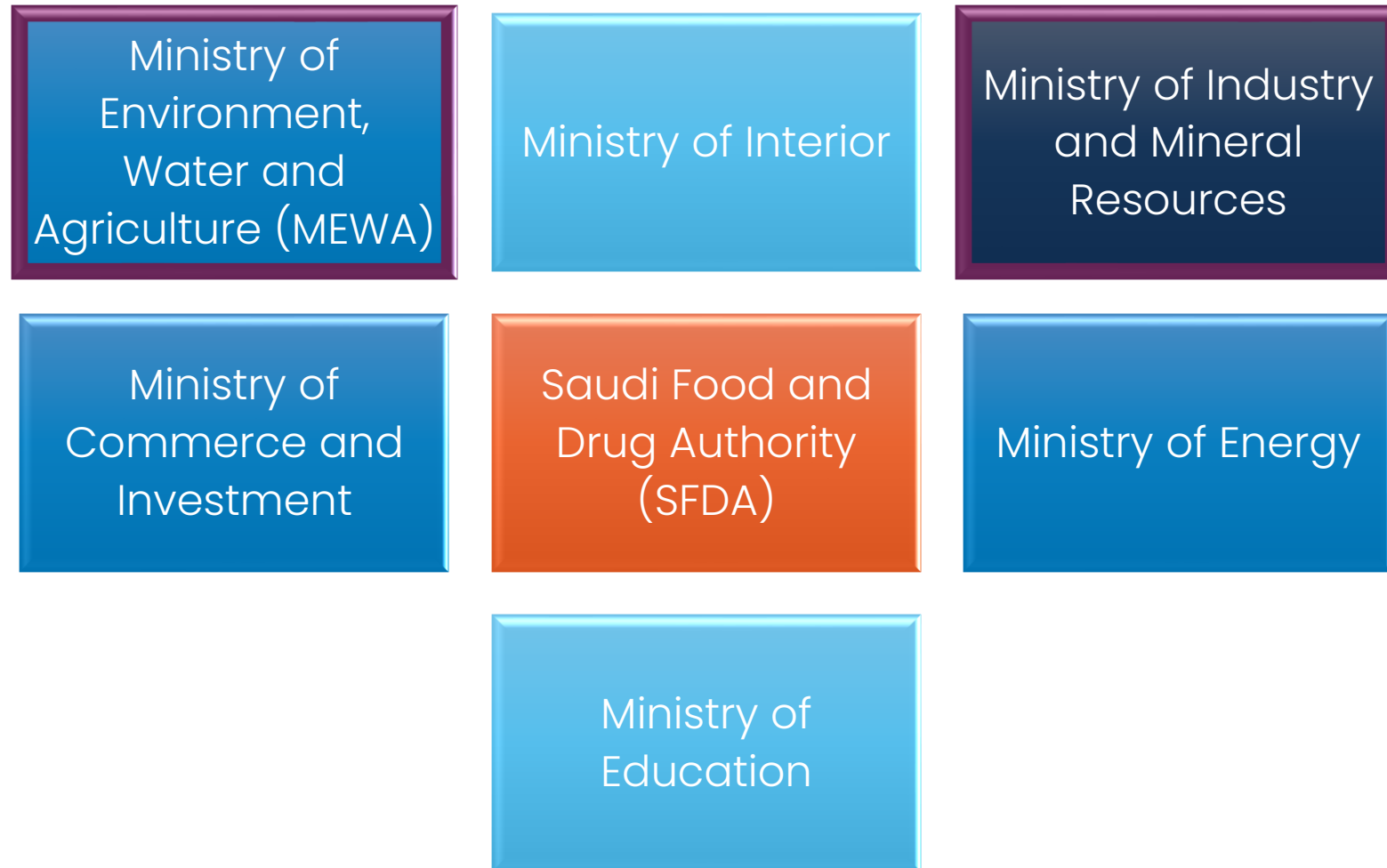


Ministerial Decision No. 4503 of 2017 Executive  
Regulation Regarding Law of Chemicals  
Import and Management

# Chemical Regulatory Framework in The Middle East



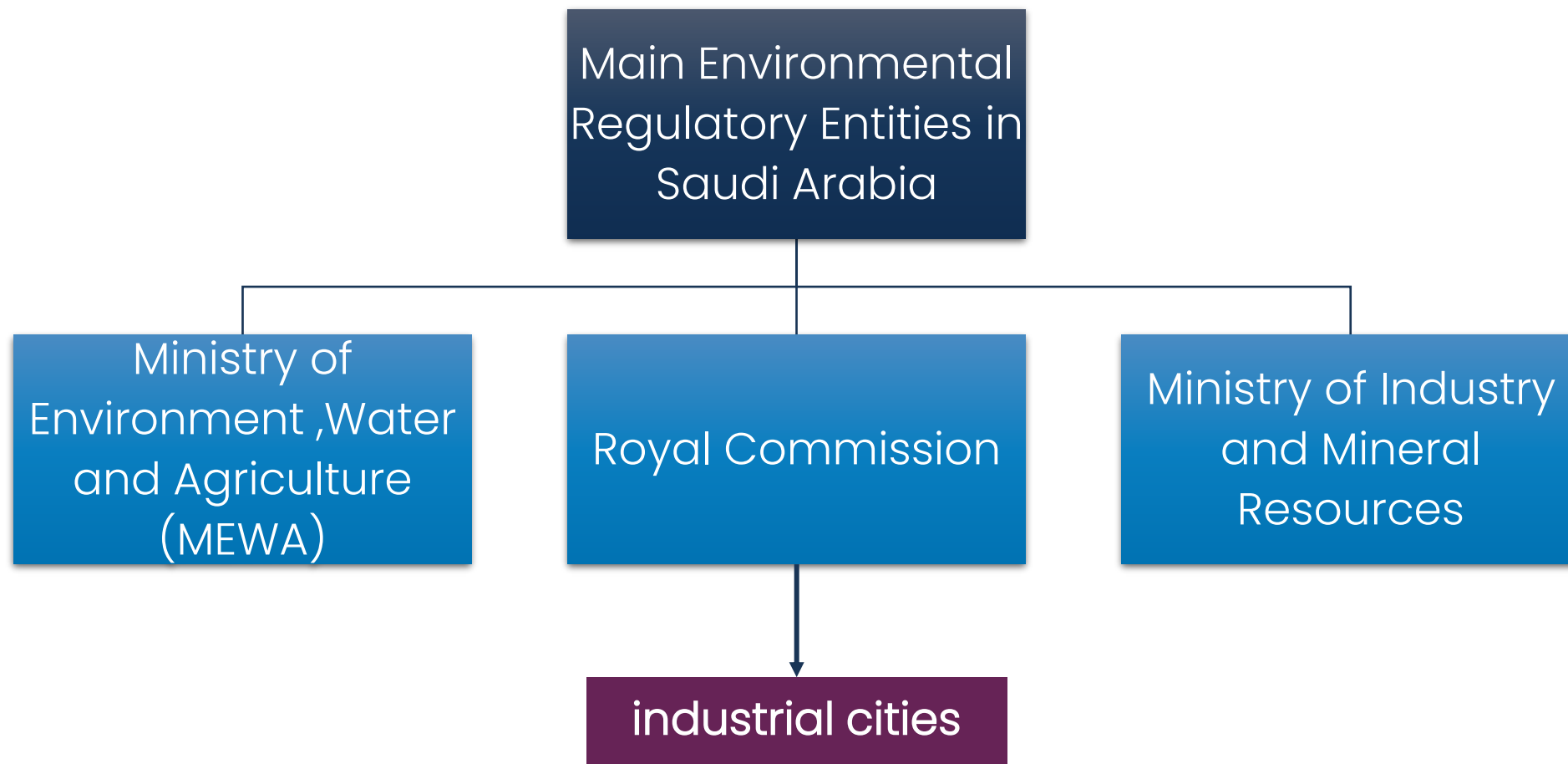
## Regulatory Framework of The GCC – Saudi Arabia



# Chemical Regulatory Framework in The Middle East



## Regulatory Framework of The GCC – Saudi Arabia



# Chemical Regulatory Framework in The Middle East



## Regulatory Framework of The GCC – Saudi Arabia



# Chemical Regulatory Framework in The Middle East

Regulatory Framework of The GCC – GSO Standards & Technical Regulations



GSO 1810:2007 – Labeling For Chemical Products

GSO ISO 11014:2013 – Safety Data Sheet For Chemical Products – Content And Order Of Section

GSO 2654:2021 – The Global Harmonized System (GHS) In Gulf Cooperation Council (GCC) Countries

GSO TC01/DS  
2654:2024

# GHS Implementation in The Middle East (West Asia)



# GHS Implementation in The Middle East (West Asia)

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- A few countries have implemented GHS
  - Israel
  - Türkiye
- Gulf Cooperation Council (GCC) countries published a standard in January 2022
- Requirement for capacity building, training, and guidance for enforcement



# GHS Implementation in The Middle East (West Asia)



## Gulf Cooperation Council (GCC)

- GSO 2654:2021 The Global Harmonized System (GHS) in Gulf Cooperation Council (GCC) Countries

GSO TC01/DS  
2654:2024

## Israel

- SI 2302 Part 1 – Dangerous Substances and Mixtures: Classification, Labelling, Marking and Packaging
- SI 2302 Part 2 – Transportation: Classification, Labelling, Marking and Packaging

## Türkiye

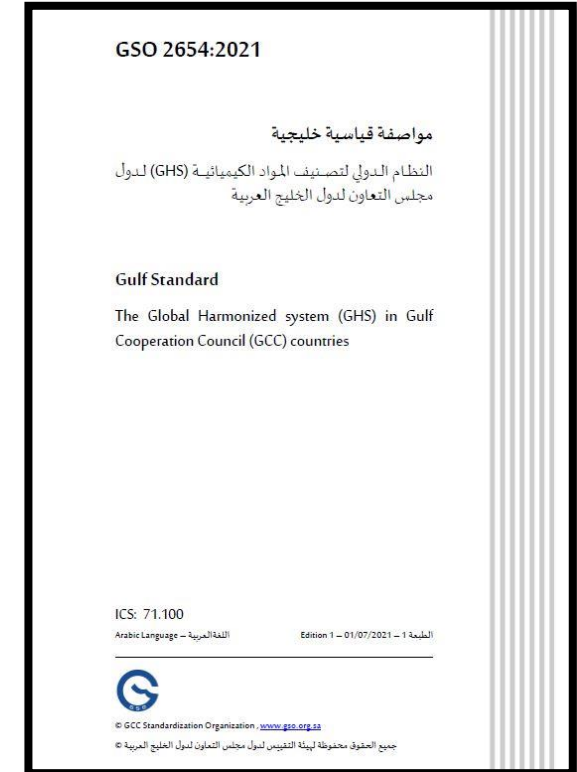
- Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals (KKDIK)
- SEA Regulation (Regulation on Classification, Labeling and Packaging of Substances and Mixtures)

# GHS Implementation in The Middle East (West Asia)



## GSO 2654:2021 – GHS In Gulf Cooperation Council (GCC) Countries

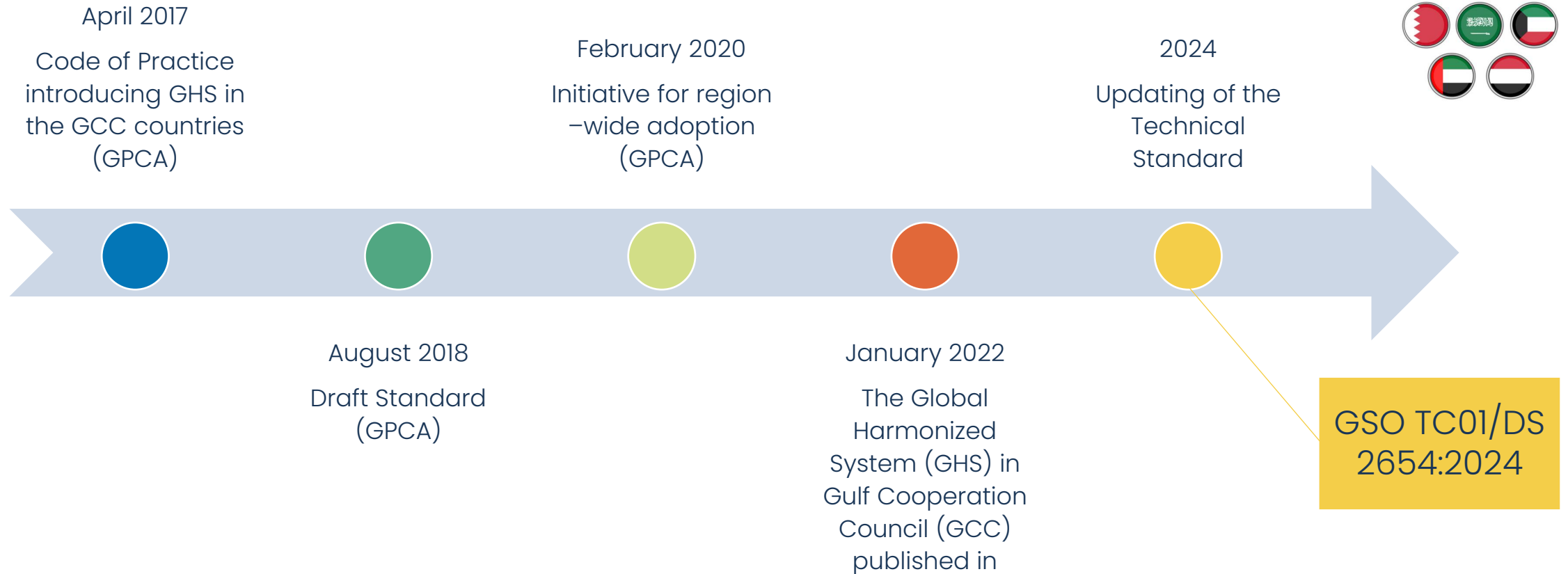
- Adopts hazardous substances provided in Table 3, Part 3, Annex VI of Regulation (EC) No 1272/2008 on Classification, Labeling, and Packaging of Substances and Mixtures are adopted (CLP)
- Makes references to the GHS (Rev. 7, 2017) → Safety Data Sheets and Labeling (Arabic and English)
- Must still be adopted by the GCC member states' national legislation in order to become a mandatory standard
- Currently, being reviewed to be updated (GSO TC01/DS 2654:2024)



# GHS Implementation in The Middle East (West Asia)



## GSO 2654:2021 – GHS In Gulf Cooperation Council (GCC) Countries



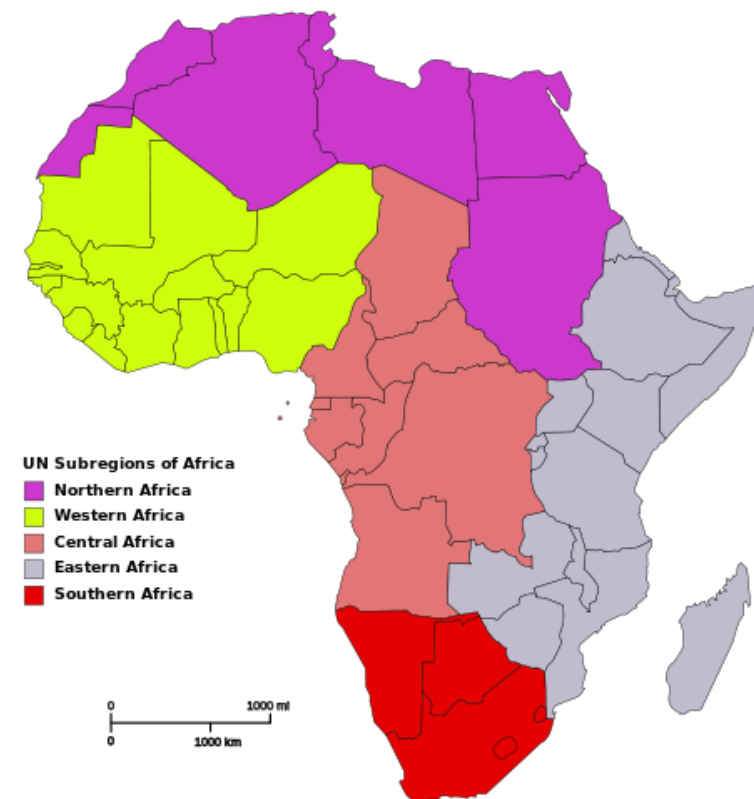
# Chemical Regulatory Framework in Africa



# Chemical Regulatory Framework in Africa

## Regions of Africa

- Five regions/subregions
- The African Union (AU) recognises eight Regional Economic Communities (RECs):
  - Arab Maghreb Union (UMA)
  - Common Market for Eastern and Southern Africa (COMESA)
  - Community of Sahel–Saharan States (CEN–SAD)
  - East African Community (EAC)
  - Economic Community of Central African States (ECCAS)
  - Economic Community of West African States (ECOWAS)
  - Intergovernmental Authority on Development (IGAD)2
  - Southern African Development Community (SADC)
- Other REC: The West African Economic and Monetary Union (UEMOA)



Source: <https://pitt.libguides.com/>

# Chemical Regulatory Framework in Africa

## Background of African Chemical Industry

- Part of number of Multilateral Environmental Agreements (MEAs)



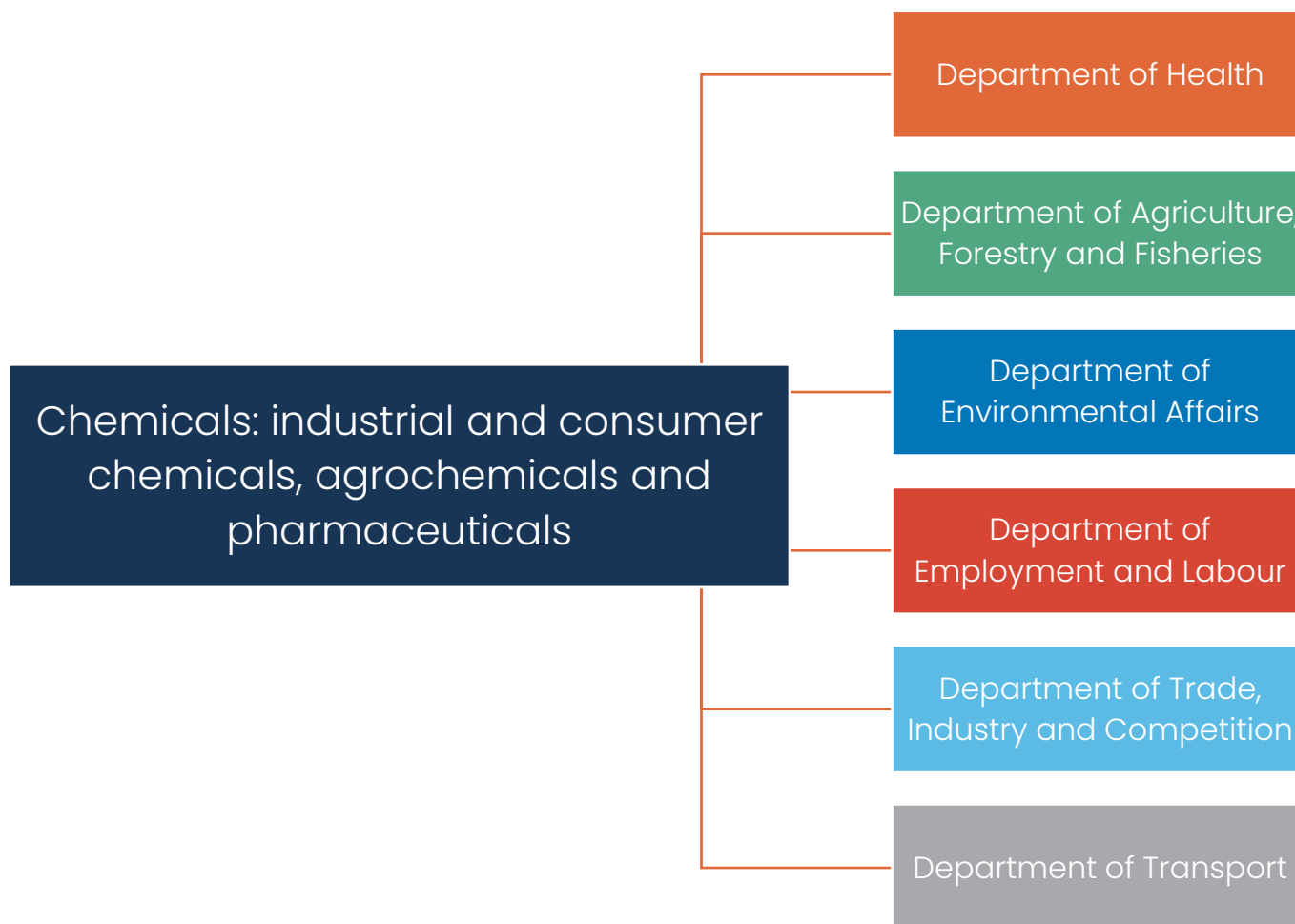
- No single-point of reference
- Involvement of various Governmental Departments



# Chemical Regulatory Framework in Africa



## Regulatory Framework for Chemicals – South Africa

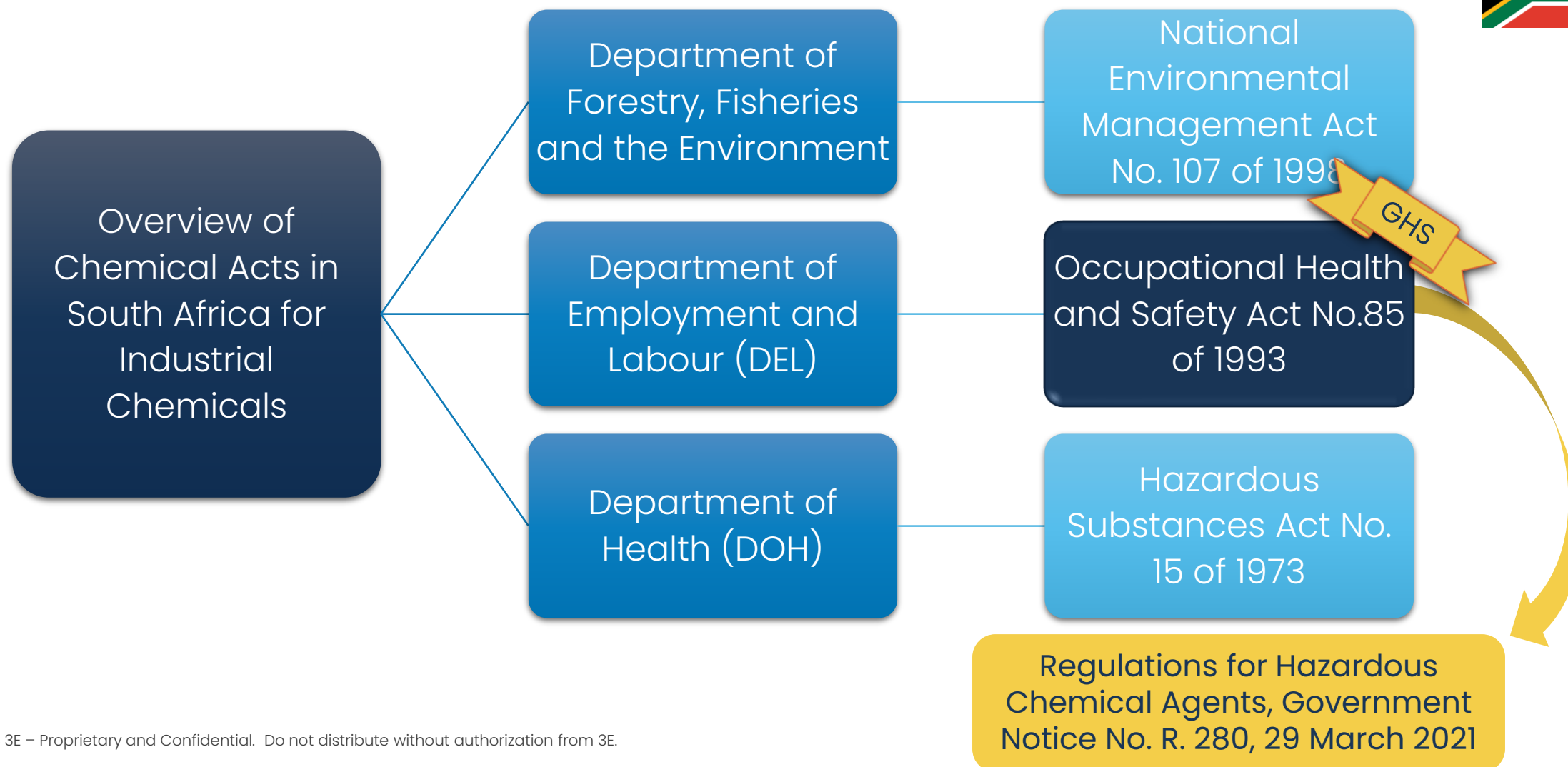




# Chemical Regulatory Framework in Africa



## Regulatory Framework for Chemicals – South Africa



# Chemical Regulatory Framework in Africa



## Other Important Acts– South Africa



Fertilizer, Farm Feeds, Agricultural Remedies and Stock Remedies Act

Explosives Act of 1956

Drugs and Drug Trafficking Act No 140 of 1992

The Non-Proliferation of Weapons of Mass Destruction Act No 87 of 1993

The National Environmental Management: Waste Act No 59 of 2008

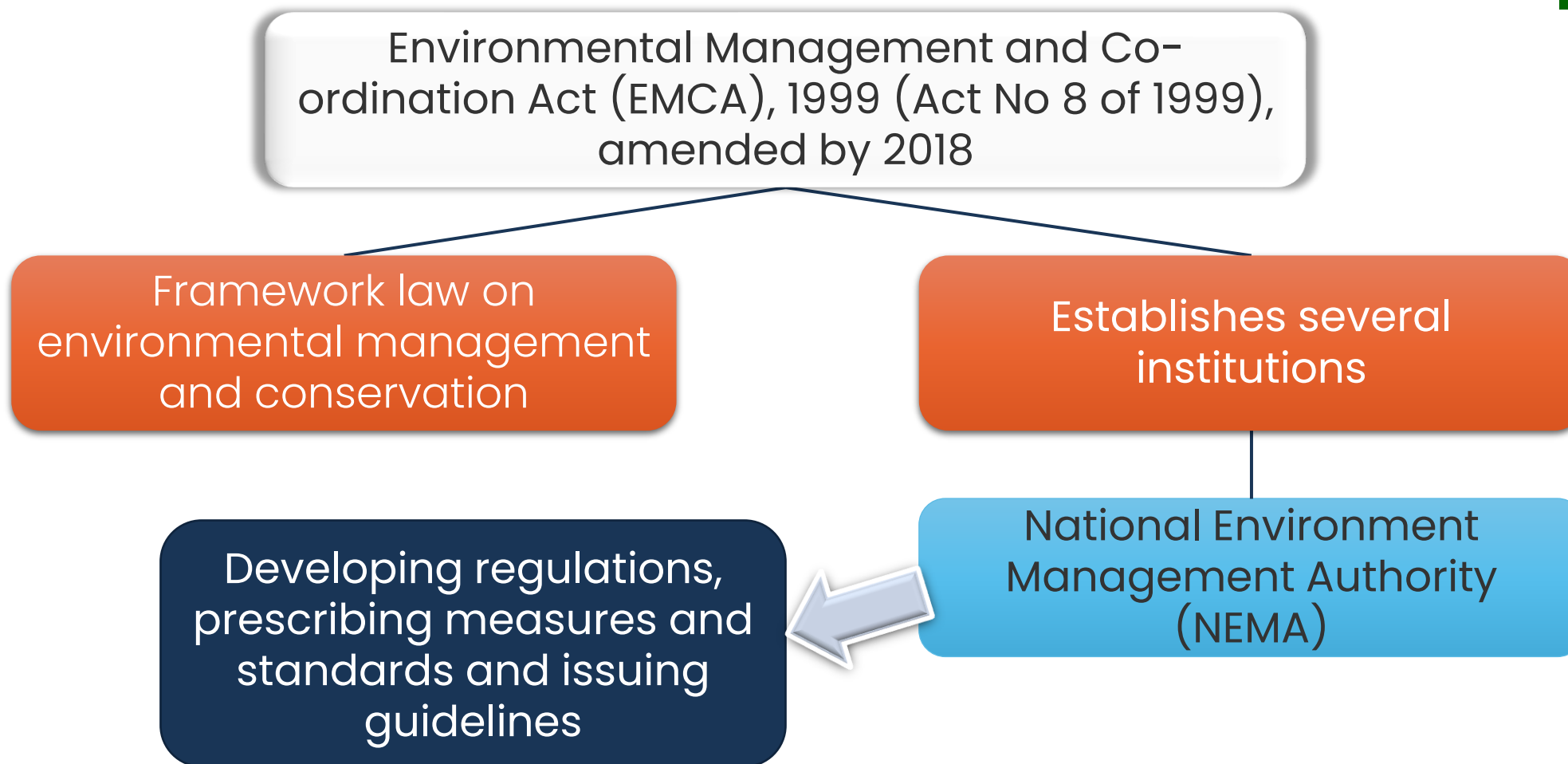
The Foodstuffs, Cosmetics and Disinfectants Act No 54 of 1972

National Health Act No 61 of 2003

# Chemical Regulatory Framework in Africa



## Regulatory Framework for Chemicals – Kenya



# Chemical Regulatory Framework in Africa



## Regulatory Framework for Chemicals – Kenya



# Chemical Regulatory Framework in Africa



## Regulatory Framework for Chemicals – Kenya



Food, Drugs and Chemical Substances Act (Cap. 254),  
enacted in 1965

The Occupational Safety and Health Act of 2007

National Drug Policy and Authority Act of 1993 (Chapter 206)

# GHS Implementation in Africa



# GHS Implementation in Africa

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- A few African countries have implemented the GHS and others have standards
- Currently not operational in most African countries
- Requirement for capacity building, training, and guidance for enforcement
- A 4-year multi-stakeholder pilot project to implement GHS in 4 African countries initiated by United Nations Environment Programme (UNEP)



# GHS Implementation in Africa



## Mauritius

- Dangerous Chemicals Control Act, 2004 (Act No. 16 of 2004)

## South Africa

- Regulations for Hazardous Chemical Agents, Government Notice No. R. 280, 29 March 2021
- South African National Standard SANS 10234 aligned with UN standards

## Zambia

- Zambian Standard (ZS) 708 – Globally Harmonized System of Classification and Labelling of Chemicals
- Environmental Management (Licensing) Regulations (S.I. No 112 of 2013)

# GHS Implementation in Africa



## Status in Other African Countries

### Gambia

- Participated as a pilot country in the UNITAR/ILO Global GHS Capacity Building Programme (2005-2007)
- Follow-up GHS implementation activities

### Senegal

- Participated as a pilot country in the UNITAR/ILO Global GHS Capacity Building Programme (2005-2007)
- GHS implementing regulation (standards and interministerial order) was drafted in 2007

# Chemical Regulatory Framework in Africa



## GHS Implementation in Africa – 2022–2026 Pilot Project



### UNEP Pilot Project on GHS Implementation in Arica

- Reduce barriers to trade by harmonizing standards
- Organization

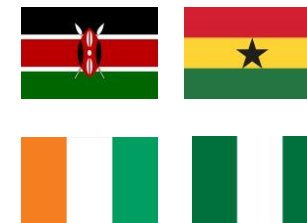
Funders	Partners	Recipient Countries
<ul style="list-style-type: none"><li>◦ European Commission</li><li>◦ International Council of Chemical Association (ICCS)</li></ul>	<ul style="list-style-type: none"><li>◦ UNITAR</li><li>◦ ECHA</li><li>◦ UNEP</li><li>◦ SAICM</li></ul>	<ul style="list-style-type: none"><li>◦ Kenya</li><li>◦ Ghana</li><li>◦ Ivory Coast</li><li>◦ Nigeria</li></ul>

- Support in drafting legislation, cost recovery mechanisms and ensure enforcement of the legislation

# Chemical Regulatory Framework in Africa

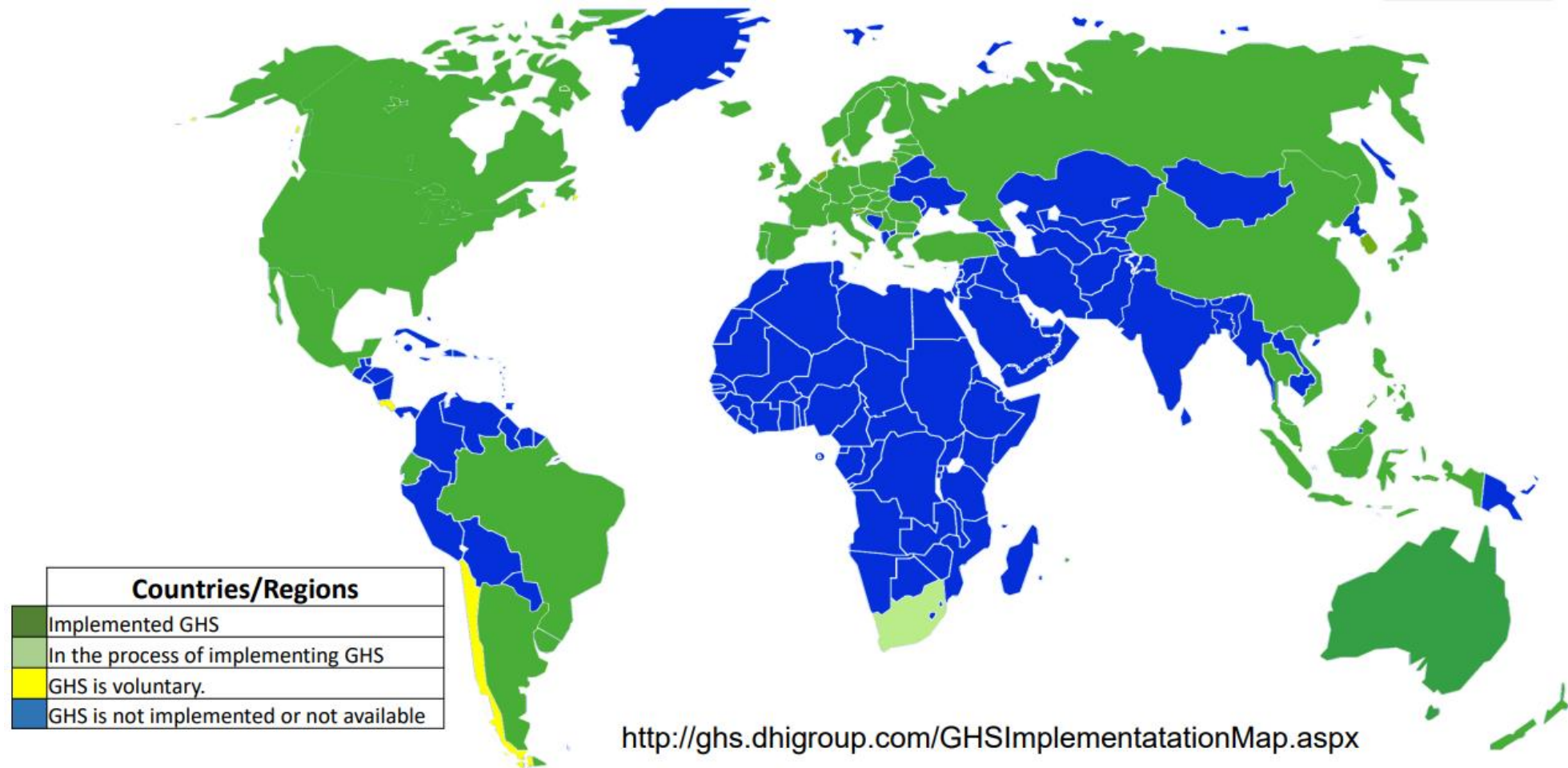


## GHS Implementation in Africa – 2022–2026 Pilot Project



- Inception workshop for the GHS in Africa project
  - Date: 4–5 October 2024
  - Location: Nairobi, Kenya
  - Objectives include:
    - Exchange information on the current status of GHS implementation in the recipient countries
    - Share experience from countries having implemented GHS
      - South Africa
      - Malaysia
      - GCC
    - Agree on a communication plan and knowledge management approach

# GHS Implementation Overview



Source: [https://www.saicm.org/Portals/12/documents/GHS/3.3%20GHS%20Africa%20-%20Oct%202022\(2\).pdf](https://www.saicm.org/Portals/12/documents/GHS/3.3%20GHS%20Africa%20-%20Oct%202022(2).pdf)

# What are the main challenges?

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# Green Chemistry Initiatives





# Green Chemistry Principles

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Prevent Waste

Atom Economy

Less Hazardous  
Chemical  
Syntheses

Design Safer  
Chemicals

Safer Solvents &  
Auxillaries

Design for Energy  
Efficiency

Use Renewable  
Feedstocks

Reduce  
Derivatives

Catalysis

Design for  
Degradation

Real-time  
analysis for  
Pollution  
Prevention

Inherently Safer  
Chemistry for  
Accident  
Prevention

# Green Chemistry Initiatives



## Examples from the Middle East (West Asia)

### Türkiye



Research and Development Initiatives: Nanotechnology and Green Materials



Conferences and Symposiums: regularly hosts international conferences focusing on green chemistry and sustainability



National Policies and Frameworks: Updated Nationally Determined Contributions (NDC)



Educational and Outreach Programs: Universities have integrated green chemistry principles into their curricula



Industry Collaborations: collaborations between academia and the chemical industry to develop and implement green chemistry solutions

# Green Chemistry Initiatives



## Examples from the Middle East (West Asia)

### Saudi Arabia Vision 2030



#### Saudi Green Initiative (SGI):

- Net zero emissions by 2060 through the Circular Carbon Economy approach
- Accelerating the country's transition to a green economy



#### Research Activities:

- Scientists at King Abdullah University of Science and Technology (KAUST) report a new synthetic biology process that follows the principles of green chemistry.

# Green Chemistry Initiatives



## Examples from the Middle East (West Asia)

### United Arab Emirates

#### Development of Green Hydrogen:

- National Hydrogen Strategy
- Green Hydrogen Projects

#### Sustainable Construction and Green Building:

- Green Building Regulations
- Management of Construction and Demolition Waste

#### Collaborative Initiatives for Sustainable Aviation Fuel (SAF)

#### Air Quality and Emission Monitoring:

- Monitoring, Reporting and Verification Systems
- National Air Quality Strategy

#### Promotion of Renewable Energy:

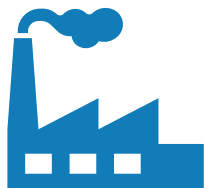
- Dubai Clean Energy Strategy 2025
- Investment in Research and Development

# Green Chemistry Initiatives



## Examples from Africa

### Egypt



#### Egypt Green Project:

- In collaboration with Scatec, Orascom Construction, and The Sovereign Fund of Egypt
- Africa's first integrated green hydrogen plant in Ain Sokhna



#### Policy Support and Funding::

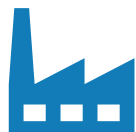
- Government Incentives: substantial incentives for renewable energy projects including Green Hydrogen Incentives Law
- European Union Support: The EU has pledged €7.4 billion to support Egypt's green economy initiatives.

# Green Chemistry Initiatives



## Examples from Africa

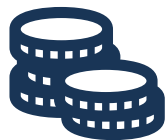
### South Africa



Development of Green Hydrogen:  
- The South African Hydrogen Fund (SA-H2)



Public-Private Partnerships



Green Fund



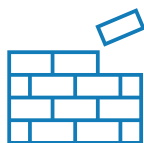
National Policies and Frameworks

# Green Chemistry Initiatives



## Examples from Africa

### Kenya



#### Sustainable Construction:

- Kenya Green Building Society (KGBS)



#### Research and Education:

- Support for Universities and Research Institutions



#### Policy and Regulatory Frameworks:

- Legislative Reforms

# Takeaways

- Integration of Multilateral Environmental Agreements (MEAs) in the MEA region is a work in progress
- Consideration of country specific regulations across various ministries and departments is required
- Reference to UN rules and regulations on chemicals and other international regulations are made
- Several countries show commitment to green chemistry by its integration into broader sustainability and economic development strategies
- There is a focus towards green hydrogen development
- Implementation of national visions, legislative reforms and initiatives is an ongoing process



# Thank you

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