

PME REGULATIONS AND STANDARDS

WATER RESOURCE MANAGEMENT IN SAUDI ARABIA



Presented By:
Abraham Jacob
Operations Manager
The Environmental Consulting Bureau



PME REGULATIONS AND STANDARDS: WATER RESOURCE MANAGEMENT IN SAUDI ARABIA

Presentation Outline

- Water Resource Management in Saudi Arabia
 - Issues of Concern
 - Regulatory Framework
- PME Environmental Regulations
 - PME Regulations and Natural Resource Management
 - General Requirements related to Natural Resources
 - EIA Requirements related to Natural Resources
 - Environmental Protection Standards



PME REGULATIONS AND STANDARDS: WATER RESOURCES MANAGEMENT IN SAUDI ARABIA

Water Resources Management

- Water Supply in the Kingdom are drawn from:

- Surface Water Resources
- Groundwater Resources
- Desalinated Water
- Reclaimed Wastewater

- Key Issues of Concern

- Pollution
- Excessive Demand
- Groundwater Depletion
- Loss of Quality

Growth of Water Use in Saudi Arabia, 1980–2010 (millions of cubic metres)					
Domestic and industrial (per cent)		Agricultural (per cent)		Total	
1980	502	21.3	1,850	78.7	2,352
1990	1,650	6.06	25,589	93.94	27,239
1992	1,870	5.9	29,826	94.1	31,696
1997	2,063	11.17	16,406	88.83	18,469
2000	2,900	20.57	11,200	79.43	14,100
2010	3,600	19.67	14,700	80.33	18,300

Sources: MOP 1990; Dabbagh and Abderrahman 1997 (agricultural and total use, 1990 and 1992).



Water is a Natural Resource which must be protected today for the generation of tomorrow!

PME REGULATIONS AND STANDARDS: WATER RESOURCES MANAGEMENT IN SAUDI ARABIA

KSA Regulatory Framework

- Ministry of Water and Electricity:
 - Responsible for Policies, Regulations and Standards
 - Responsible Water Resources Research, Drinking Water Supply, Construction, Operation and Maintenance of Water Resource Projects
 - Desalination Plants
- Other Key Governmental Agencies working with MAW
 - Presidency of Meteorology and Environment
 - Ministry of Agriculture
 - Ministry of Municipal and Rural Affairs
 - Ministry of Finance and Industry
 - Research Institutions in the Kingdom



PME REGULATIONS AND STANDARDS: WATER RESOURCES MANAGEMENT IN SAUDI ARABIA

PME REGULATIONS AND STANDARDS

- General Environmental Regulations of 2001
 - Key Objectives (summarized from Article 2)
 - Protect and Preserve Environment
 - Protect Public Health
- Conserve and Develop Natural Resources.
 - Rationalize use of Natural Resources
- Environmental Planning as part of Development Planning
 - Increase Awareness & Collective Responsibility



PME REGULATIONS AND STANDARDS: WATER RESOURCES MANAGEMENT IN SAUDI ARABIA

PME REGULATIONS AND STANDARDS

- General Requirements in Article 8

Article Eight:

Taking into consideration the regulations and directives, public agencies and persons shall:

1. Rationalize the use of natural resources to preserve and develop renewable resources and prolong the duration of use of non-renewable resources.
2. Achieve harmony between consumption rates and patterns and the carrying capacity of resources.
3. Apply technologies for the recycling and re-use of resources.
4. Develop conventional technologies and systems compatible to the local and regional environmental conditions.
5. Develop technologies of traditional building materials.



PME REGULATIONS AND STANDARDS: WATER RESOURCES MANAGEMENT IN SAUDI ARABIA

PME REGULATIONS AND STANDARDS

- General Requirements in Article 10

Article Ten:

Environmental considerations must be incorporated in the process of planning for development projects, programs and developmental plans for various sectors and the general developmental plan.

10-2 The concerned agency shall take into consideration the environmental aspects in the planning process at the stage of projects, programs and developmental plans to manage the natural resources and its development, rationalize the use of natural resources and implement plans deemed necessary for it.



PME REGULATIONS AND STANDARDS: WATER RESOURCES MANAGEMENT IN SAUDI ARABIA

PME REGULATIONS AND STANDARDS

- Environmental Impact Assessment
- *Appendix 2 of the Regulations: Fundamentals and Standards for Environmental Impact Assessments of Industrial and Development Projects*
- Assessment Requirements related to Natural Resources

Extent of depletion of natural resources by the installation, particularly agricultural lands and mineral resources.

Quantify and rate the significant impacts on natural resources.



PME REGULATIONS AND STANDARDS: WATER RESOURCES MANAGEMENT IN SAUDI ARABIA

PME REGULATIONS AND STANDARDS

- Environmental Performance Standards
- *(Appendix 1 of the Regulations)*
- Water and Wastewater Standards

Pre-Treatment:

- Applicable for Discharge to a WWTP
- Standards Provided in Table 14 of Appendix 1
- Standards include – Phsiochemical (TSS), Organic (COD) and Non Organic (Metals)

Receiving Water Guidelines:

- Applicable for Receiving Water Bodies
- Standards provided in Table 12 of Appendix 1
- 5% Allowable Change from Baseline Conditions

Direct Discharge:

- Applicable for Discharge to a Water Body
- Standards Provided in Table 13 of Appendix 1
- Standards include – Phsiochemical (TSS), Organic (COD, BOD), Non Organic (Metals) and Biological Parameters (Coliform)

No explicit standards currently on

1. **Water Conservation**
2. **Groundwater Quality**
3. **Discharge of effluent on land**



PME REGULATIONS AND STANDARDS: WATER RESOURCES MANAGEMENT IN SAUDI ARABIA

PME REGULATIONS AND STANDARDS

- Presentation Highlights and Conclusions
 - PME regulations require conservation and protection of natural resources
 - PME regulations require consideration of natural resources in development planning
 - PME regulations require assessment of impacts on natural resources in the Environmental Impact Assessment (EIA) process
 - PME's Environmental Protection Standards for Wastewater Pre-treatment, Direct Discharge and Receiving Water Guidelines are designed to protect water resources



PME REGULATIONS AND STANDARDS

WATER RESOURCE MANAGEMENT IN SAUDI ARABIA



Presented By:
Abraham Jacob
Operations Manager
The Environmental Consulting Bureau

