

## Water Management Mastery and Sustainable Solutions

*Manama (Bahrain)*

*22 December 2024 - 2 January 2025*

UK Training

**PARTNER**



## Water Management Mastery and Sustainable Solutions

Code: PS28 From: 22 December 2024 - 2 January 2025 City: Manama (Bahrain) Fees: 6200 Pound

### Introduction

Water is an essential and finite resource crucial for sustaining human life, supporting ecosystems, and driving economic development. However, increasing demands, pollution, and climate change are exerting significant pressure on water resources globally. To address these challenges, Integrated Water Resource Management (IWRM) provides a holistic approach to managing water resources in a sustainable and equitable manner. IWRM seeks to balance the needs of various stakeholders and sectors while ensuring the long-term health of water resources.

This course is designed to provide participants with an in-depth understanding of IWRM principles, strategies, and best practices, with a particular focus on water conservation projects that promote production economy growth. The course will cover key topics such as water resource management, demand management, water-efficient technologies, policy and governance frameworks, and stakeholder engagement, all aimed at improving sustainable water management practices across various sectors, including agriculture, industry, and urban areas.

### Course Objectives

- Understand the core principles of IWRM: Gain a solid understanding of sustainable water management practices and the integral role of water management systems in addressing global water challenges.
- Explore water resource management challenges: Identify the main challenges and opportunities in water resource management while focusing on enhancing the growth of the production economy.
- Learn about water-efficient technologies and strategies: Discover the latest water management technologies and best practices that improve water quality management and optimize water use across agriculture, industry, and urban settings.
- Assess water resources and demand: Develop skills in water resource assessment, mapping water demand, and designing and implementing water management plans.
- Understand policy and governance: Examine the role of policies, governance frameworks, and stakeholder engagement in shaping water management solutions for sustainable development.
- Practical experience through projects: Gain hands-on experience through case studies, group activities, and designing water conservation projects tailored to different economic sectors.

### Course Outlines

#### Day 1: Introduction to Integrated Water Resource Management IWRM

- Understanding the core principles of IWRM.
- Importance of IWRM in sustainable water management.
- Global water challenges and the need for integrated approaches.
- Introduction to water scarcity, climate change, and pollution issues.
- Role of stakeholders in managing water resources effectively.

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## Day 2: Water Resource Assessment and Mapping

- The hydrological cycle and water availability across different regions.
- Techniques for assessing water resources e.g., water balance, flow measurements.
- Tools for mapping water demand and supply.
- Identifying and addressing regional disparities in water availability.
- Data collection methods for water resource management.

## Day 3: Water Demand Management

- Understanding water demand patterns across agriculture, industry, and urban areas.
- Approaches to water conservation and reducing consumption.
- Demand-side management strategies: pricing, incentives, and public awareness.
- Balancing water needs for economic growth and ecological sustainability.
- Water use efficiency techniques for different sectors.

## Day 4: Water-Efficient Technologies and Practices

- Overview of cutting-edge water-saving technologies in agriculture, industry, and urban areas.
- Techniques for optimizing water use in irrigation e.g., drip irrigation, precision farming.
- Water-efficient technologies in industrial processes e.g., closed-loop cooling, water recycling.
- Urban water management solutions e.g., rainwater harvesting, smart water meters.
- Role of innovation in enhancing water reuse and recycling.

## Day 5: Water Policy and Governance Frameworks

- International and national water policies and regulations.
- Institutional frameworks for water governance e.g., decentralized vs. centralized systems.
- Role of governance in shaping water management outcomes.
- Stakeholder engagement in policy formulation and decision-making.
- Exploring the role of public-private partnerships in water management.

## Day 6: Water Conservation Projects for Production Economy Growth

- Case studies of successful water conservation projects in agriculture, manufacturing, and urban infrastructure.
- Integrating water management into business and production planning.
- Aligning water conservation strategies with economic development goals.
- Designing water-efficient supply chains and value chains in production industries.
- Measuring the impact of water conservation on economic growth and productivity.

## Day 7: Group Project Development Part 1

- Introduction to group project work on designing water conservation projects.
- Identifying a real-world water management challenge in a selected sector agriculture, industry, or urban.
- Conducting a needs assessment and baseline study.
- Mapping out water resource use and demand in the chosen context.
- Setting project goals, objectives, and measurable outcomes.

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## Day 8: Group Project Development Part 2

- Developing a comprehensive water conservation plan.
- Selecting appropriate water-saving technologies and strategies for the chosen sector.
- Designing an implementation timeline and resource allocation plan.
- Identifying stakeholders and establishing roles and responsibilities.
- Preparing a risk management and mitigation strategy.

## Day 9: Group Project Presentations and Peer Review

- Presenting group projects to peers and facilitators.
- Providing constructive feedback on peer projects.
- Analyzing the feasibility and potential impact of proposed water conservation projects.
- Discussing lessons learned and areas for improvement.
- Reflecting on the application of IWRM principles in project designs.

## Day 10: Wrap-up and Future Directions

- Recap of key principles and strategies learned throughout the course.
- Review of best practices in sustainable water management.
- Emerging trends and challenges in water management e.g., climate change, urbanization.
- Future directions in IWRM and water conservation projects.
- Final discussion on how participants can implement IWRM principles in their own contexts.

## Conclusion

By the end of this course, participants will have acquired the skills needed to apply water management strategies in a sustainable and effective manner. They will be able to:

- Implement water management techniques to ensure sustainable usage across various sectors.
- Gain a complete understanding of the water resource management process from assessment to implementation.
- Execute water conservation projects that support sustainable economic growth.

This course is essential for professionals in water management, whether in government, industry, or agriculture, to design water management systems that promote sustainability and economic growth. Join us to develop water management solutions that contribute to a more sustainable future.

Join us to gain practical insights into water management solutions and help shape a more sustainable future for our water resources.



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