

Groundwater Management Advisory Team (GW•MATE)

What is GW•MATE?

The Groundwater Management Advisory Team:

- Is a multi-disciplinary expert team
- Works as an advisory group to the World Bank and the Global Water Partnership
- Provides support globally for development of capacity in groundwater resource management and groundwater quality protection
- Disseminates best-practice elements internationally through provision of Guides & Books, a Briefing Notes Series and a Case Profile Collection, together with the organization of short courses and study tours



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Why is GW•MATE needed?

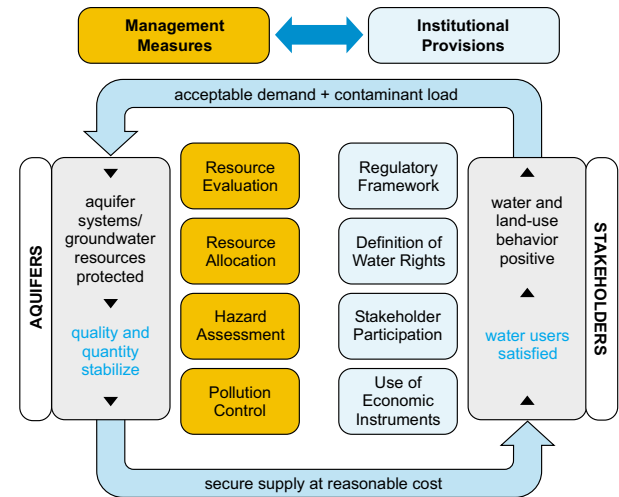
Groundwater is of major importance for potable water supply in both urban and rural areas of the developing world, and also provides the water resource for much agricultural irrigation and industrial production.

In many countries there are serious impacts or threats from uncontrolled groundwater pumping and/or from pollution due to inadequate control of land use and waste disposal with large socioeconomic and environmental costs affecting human health, employment opportunities and food production.

GW•MATE helps tackle these issues through ensuring that the management dimension of groundwater resources receives attention by:

- focusing on management and protection issues in development projects and policy dialog
- advising on the implementation of management systems, including the mobilization of stakeholders
- evaluating global experience, taking account of hydrogeologic and socio-economic diversity and disseminating best-practice elements internationally

Management of Groundwater Resources & Protection Promoting a Virtuous Cycle



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What are the global knowledge products by GW•MATE?

- Groundwater in Urban Development: assessing management needs and formulating policy strategies. World Bank Technical paper 390^{ab}
- Groundwater in Rural Development: facing the challenges of supply and resource sustainability. World Bank Technical Paper 463^{ac}
- Groundwater Quality Protection: a guide for utilities, municipal authorities and environment agencies. World Bank Publication^{ab}
- Arsenic Contamination of Groundwater: Towards a More Effective Operational Response. World Bank/WSP Publication^a

(versions in ^aEnglish, ^bSpanish, ^cChinese)

Publication Arrangements

Available electronically on the World Bank Water website (www.worldbank.org/gwmate) and the Global Water Partnership website (www.gwpforum.org)

CASE PROFILE COLLECTION

The GW•MATE Case Profile Collection has evolved over the past years and is intended to make available the knowledge acquired and lessons learned by GW•MATE experience around the world. This collection now spans cases of groundwater management experience from Argentina and China to Kenya and Thailand.

1. THAILAND – Strengthening capacity in groundwater resources management
2. YEMEN – Rationalizing groundwater resource utilization in the Sana'a basin
3. PARAGUAY – Actual and potential regulatory issues relating to groundwater use in Gran Asunción
4. ARGENTINA – Mitigation of groundwater drainage problems in the Buenos Aires Conurbation: technical & institutional way forward
5. BRAZIL, KENYA – Subsurface dams to augment groundwater storage in basement terrain for human subsistence
6. ARGENTINA – Integrated approaches to groundwater resource conservation in the Mendoza aquifers
7. VENEZUELA – Yacambu, Quibor: a project for integrated groundwater and surface water management
8. CHINA – Towards sustainable groundwater resource use for irrigated agriculture on the North China Plain
9. BRAZIL, PARAGUAY, URUGUAY, ARGENTINA – The Guarani aquifer initiative for transboundary groundwater management
10. MEXICO – The 'Cotas': progress with stakeholder participation in groundwater management in Guanajuato
11. INDIA – Tamil Nadu: resolving the conflict over rural groundwater use between drinking water and irrigation supply
12. NEPAL – Approach to mitigation of groundwater arsenic contamination including new groundwater legislation
13. KENYA – The role of groundwater in the water supply of Greater Nairobi
14. BRAZIL – Groundwater use in Metropolitan Fortaleza: evaluating its strategic importance and potential hazard
15. SUB-SAHARAN AFRICA – Groundwater development: a strategic overview of key issues and major needs
16. BRAZIL – Promoting management of an inter-state aquifer under development for irrigated agriculture: the case of the Chapada do Apodi in Northeast Brazil



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BRIEFING NOTE SERIES

The **GW•MATE Briefing Note Series** provides a concise introduction to the theory and practice of groundwater resource management and protection.

0. SERIES OVERVIEW

1. **GROUNDWATER RESOURCE MANAGEMENT:** an introduction to its scope and practice
2. **CHARACTERIZATION OF GROUNDWATER SYSTEMS:** key concepts and frequent misconceptions
3. **GROUNDWATER MANAGEMENT STRATEGIES:** facets of the integrated approach
4. **GROUNDWATER LEGISLATION & REGULATORY PROVISION:** from customary rules to integrated catchment planning
5. **GROUNDWATER ABSTRACTION RIGHTS:** from theory to practice
6. **STAKEHOLDER PARTICIPATION IN GROUNDWATER MANAGEMENT:** mobilizing and sustaining aquifer management organizations
7. **ECONOMIC INSTRUMENTS FOR GROUNDWATER MANAGEMENT:** using incentives to improve sustainability
8. **GROUNDWATER QUALITY PROTECTION:** defining strategy and setting priorities
9. **GROUNDWATER MONITORING REQUIREMENTS:** for managing aquifer response and quality threats
10. **GROUNDWATER DIMENSIONS OF NATIONAL WATER RESOURCE AND RIVER BASIN PLANNING:** promoting an integrated strategy
11. **UTILIZATION OF NON-RENEWABLE GROUNDWATER:** a socially-sustainable approach to resource management
12. **URBAN WASTEWATER AS GROUNDWATER RECHARGE:** evaluating and managing risks and benefits
13. **GROUNDWATER RESOURCE DEVELOPMENT IN MINOR AQUIFERS:** management strategy for village and small town water supply
14. **NATURAL GROUNDWATER QUALITY HAZARDS:** avoiding problems and formulating mitigation strategies
15. **GROUNDWATER DEPENDENT ECOSYSTEMS:** characterization procedures and conservation measures

Who are the GW•MATE Core Members?

- 1 **Program Director:** Prof. Dr Stephen Foster (UK): Groundwater Evaluation, Management, Protection & Policy
- 2 **Program Manager:** Dr Catherine Tovey (World Bank): Water Management & Institutions
- 3 Ing Héctor Garduño (Mexico): Water Resources Institutions & Planning
- 4 Ir Albert Tuinhof (The Netherlands): Groundwater Development & Management
- 5 Dr Marcella Nanni (Italy): Water & Environmental Legislation
- 6 Dr Ricardo Hirata (Brazil): Groundwater Resource Evaluation & Protection
- 7 **Program Coordinator:** Siet Meijer (World Bank): Water & Environmental Economics

GW•MATE Contact Details

World Bank
Dr Catherine Tovey
World Bank
1818 H Street NW
Washington, DC 20433, USA
tel: +1 202 458 7839
e-mail: ctovey@worldbank.org

Global Water Partnership
Dr Alan Hall
GWP Secretariat
Hantverkargatan 5
SE-11221 Stockholm
SWEDEN
e-mail: alan.hall@gwpforum.org

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