

Water Management





Water is a vital resource for human survival, health and dignity and is a fundamental component for human development. But it is a finite and vulnerable resource. Due to population growth, increasing economic activity and intensifying competition for water among users, the world's freshwater resources are under increasing pressure and many regions of the world face an impending water crisis.

Current concerns about climate change accentuate this issue and demand improved management of water resources in order to cope with more severe flood and drought events. Since the enacting of the Millennium Development Goals and the Johannesburg Programme of Implementation, policies have increasingly addressed "integrated water resources management" (IWRM) as an issue of the utmost importance.

IWRM is a systematic process promoting sustainable development by means of the allocation and monitoring of water resources use in the context of social, economic and environmental objectives. Optimally, IWRM should be based on a participatory approach, involving users, planners and policymakers at all levels.

Consulting expertise

Integrated water resources management

- Transboundary / basin / watershed level water resources management
- Supply and demand assessment
- Linking water issues to issues relating to other vital resources
- Hydrological modelling of the complete water circle
- Consulting in water policy and associated regulatory and institutional frameworks
- Utilisation of inter-sectoral approaches to decision-making
- Hydrogeological investigations

Mapping and monitoring

- Baseline mapping and monitoring
- Land use/cover mapping and change detection
- Water resources inventory
- Degradation, desertification and vulnerability mapping
- Coastal zone mapping
- In-situ data
- DTMs and derived products

Integrated water resources GIS / databases

- Institutional and user needs assessment
- Data harmonisation and integration
- System design, implementation and maintenance
- Web mapping and web-based GIS
- Tailor-made design or customisation

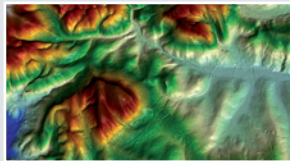
Institutional support

- Requirements analysis
- Advice on human resources
- Training and know-how transfer
- Water sector policy capacity building
- Cross-sectoral consulting



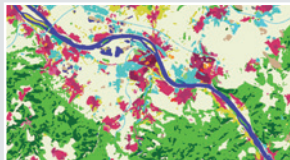
In summary, GAF offers a comprehensive portfolio of proven products, services and expertise that cost-effectively meets the diverse requirements of environmental professionals and practitioners, as well as policy and decision makers worldwide. The solutions offered are continually evolving in order to meet the demands of a dynamic sector that will confront complex challenges in the years ahead. GAF is ready to address these challenges with a unique combination of technical capacity, human skills and applied expertise, all adapted to and focused on the future.

Services offered by GAF



Geo-data store

- Earth observation data:
 - raw imagery and products
- Digital elevation models
- Land cover data



Data processing

- Digital image processing
- Mapping and monitoring
- Digital cartography and map production
- Virtual reality (3D)



Information systems

- System analysis, integration and migration
- GIS/DB design and implementation
- Application development
- Spatial data structure concepts



Software development

- Development of customised spatial software
- Standalone, internet and enterprise GIS
- SDI development
- Standards based development and integration



Integrated services

- Solutions combining space & non-space technologies
- Integration of SatCom, SatNav and earth observation
- Application knowhow based on cutting edge technologies and high quality data resources



Management consulting

- Institutional/sector assessment
- Know-how transfer and capacity building
- Project definition/supervision
- Research and sector analysis studies