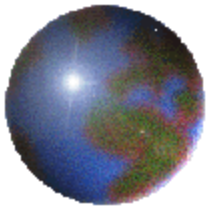

An Integrated System For Water Resources Monitoring, Economic Evaluation and Management

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Topics

- Water resources monitoring
  - Technology
  - Water quality variables
  - GIS
- Water resources management
- Socio-economic analysis
  - The concept of economic value
  - Monetary valuation of water resources

Water resources monitoring

- Technology
  - WATERMAN - System for Monitoring and Control of the Situation of Waste Receivers and Automatic Alarming
  - Covers the need for an integrated and complete system for the monitoring and management of water resources for a whole river basin
  - Originates from a COPERNICUS pilot project

Water resources monitoring

- Water quality variables
  - Basic variables
  - Suspended particulate matter
  - Organic pollution indicators
  - Indicators of eutrophication
  - Indicators of acidification
  - Specific major ions

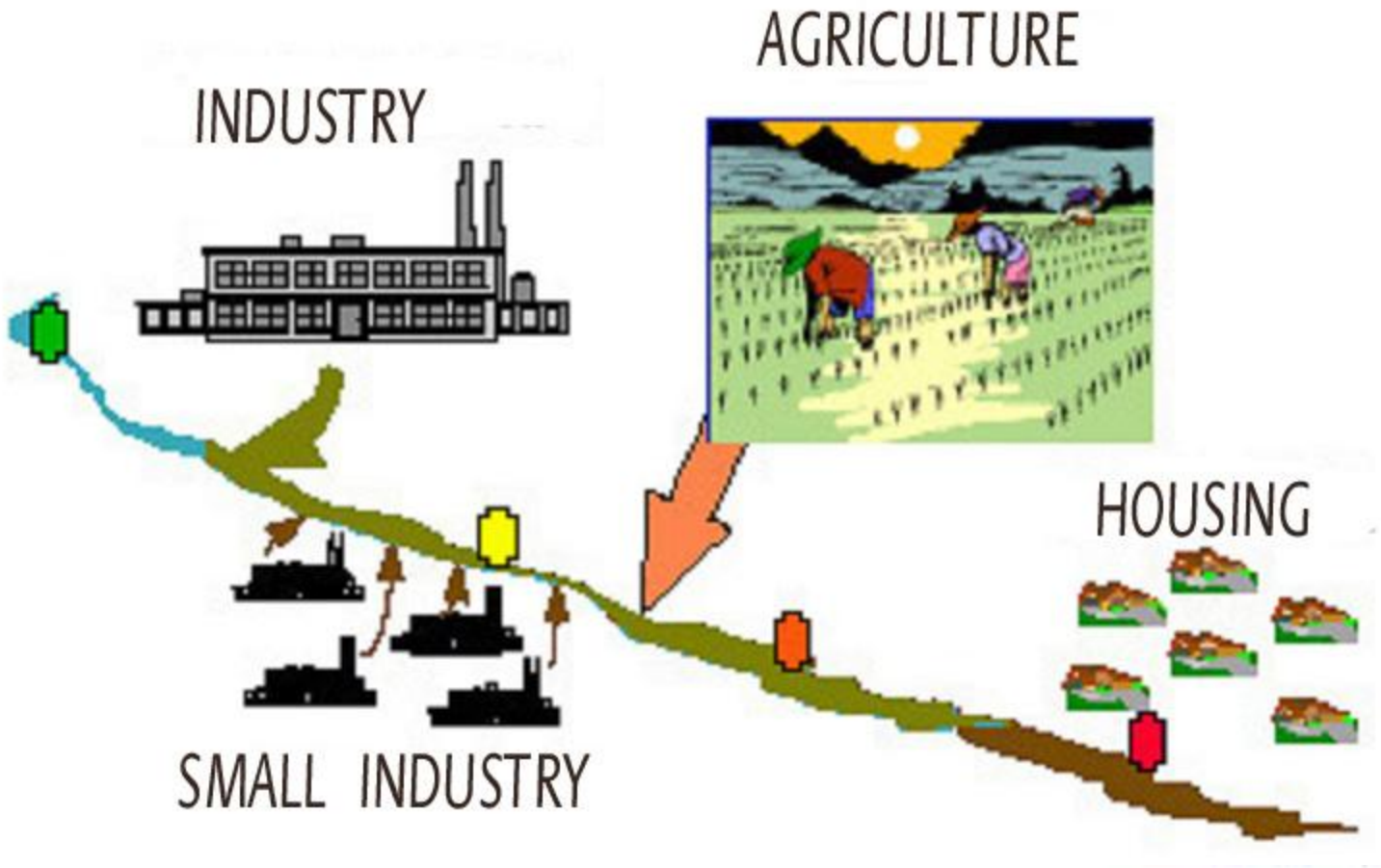
Water resources monitoring

- Water quality variables
  - Metals
  - Organic micropollutants
  - Indicators of radioactivity
  - Microbiological indicator organisms
  - Biological indicators

Water resources monitoring

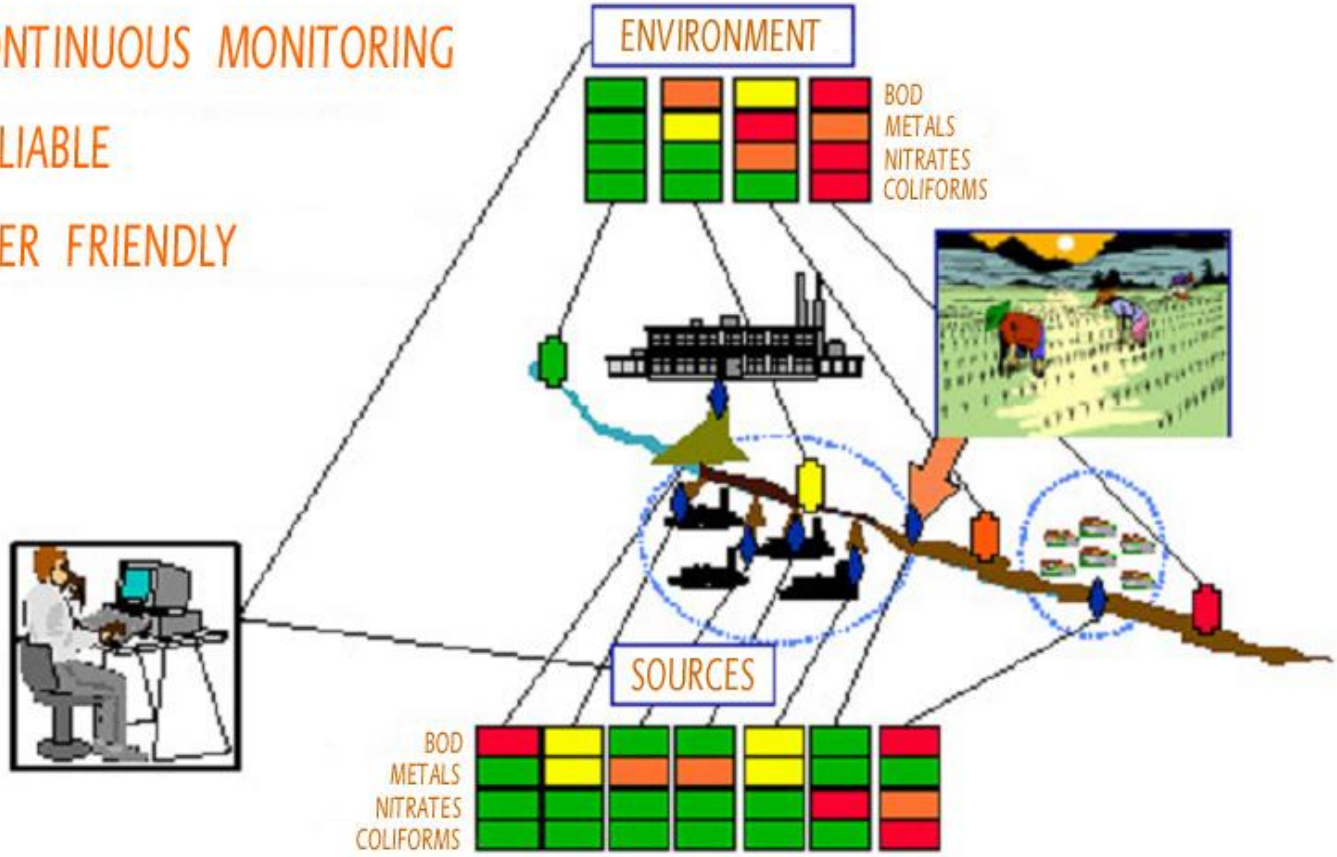
- GIS
  - A map with 'point-click' access to information, such as
    - sources of pollution with emissions and facility characteristics
    - inspection data
    - outstanding complaints
    - enforcement actions

Water resources management



Water resources management

- CONTINUOUS MONITORING
- RELIABLE
- USER FRIENDLY



Socio-economic analysis

- The concept of economic value
  - Use value
  - Non use value
    - Existence value
    - Vicarious value
    - Option value
    - Quasi-option value
    - Bequest value

Socio-economic analysis

- Monetary valuation of water resources
  - Market based
    - Market Price
  - Based on adjacent/corollary markets
    - Property value
  - Based on shadow market analysis
    - Contingent valuation (WTP, WTA)

Socio-economic analysis

- Monetary valuation of water resources
  - Surface Water uses/services
    - Provision of drinking water
    - Provision of water for crop irrigation
    - Provision of water for livestock
    - Provision of water for food product processing
    - Provision of water for other manufacturing processes
    - Provision of cooling water for power plants

Socio-economic analysis

- Monetary valuation of water resources
  - Surface Water uses/services
    - Provision of erosion, flood, and storm protection
    - Transport and treatment of wastes and other by-products of human economic activity
    - Support of recreational swimming, boating, fishing, hunting, trapping and plant gathering
    - Support of commercial fishing, hunting, trapping, plant gathering

Socio-economic analysis

- Monetary valuation of water resources
  - Surface Water uses/services
    - Support of on-site observation or study of fish, wildlife, and plants for leisure, educational, or scientific purposes
    - Support of indirect, off-site fish, wildlife, and plant uses (e.g. viewing wildlife photos)
    - Provision of clean air through support of living organisms

Socio-economic analysis

- Monetary valuation of water resources
  - Surface Water uses/services
    - Provision of clean water through support of living organisms
    - Regulation of climate through support of plants
    - Provision of non-use services associated with surface water or wetlands or ecosystems

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