AIRPORTS COUNCIL INTERNATIONAL

The voice of the world's airports

AIRPORT ENVIRONMENTAL MANAGEMENT

04-08 October 2015 | **Abu Dhabi, UAE**

Module 9 : Water use, treatment and minimisation

Module objectives

- Review drivers for action
- Identify different uses of water at airports
- Highlight different approaches to minimising water use
- Discuss the implications of water use for airport development.

Water is life

Water – drivers for action

- A secure, adequate, economic supply is essential for airports:
  - To maintain customer service standards
  - To meet service partner requirements
  - To maximise airport operational capacity

Airport operator requirements

- Drinking and catering
- Cleaning and toilets
- Systems maintenance
  - engineering
- Grounds maintenance
  - landscaping

Passenger service expectations

- Drinking
- Cleaning
- Lavatories
- Catering
- Retail

Service partner requirements

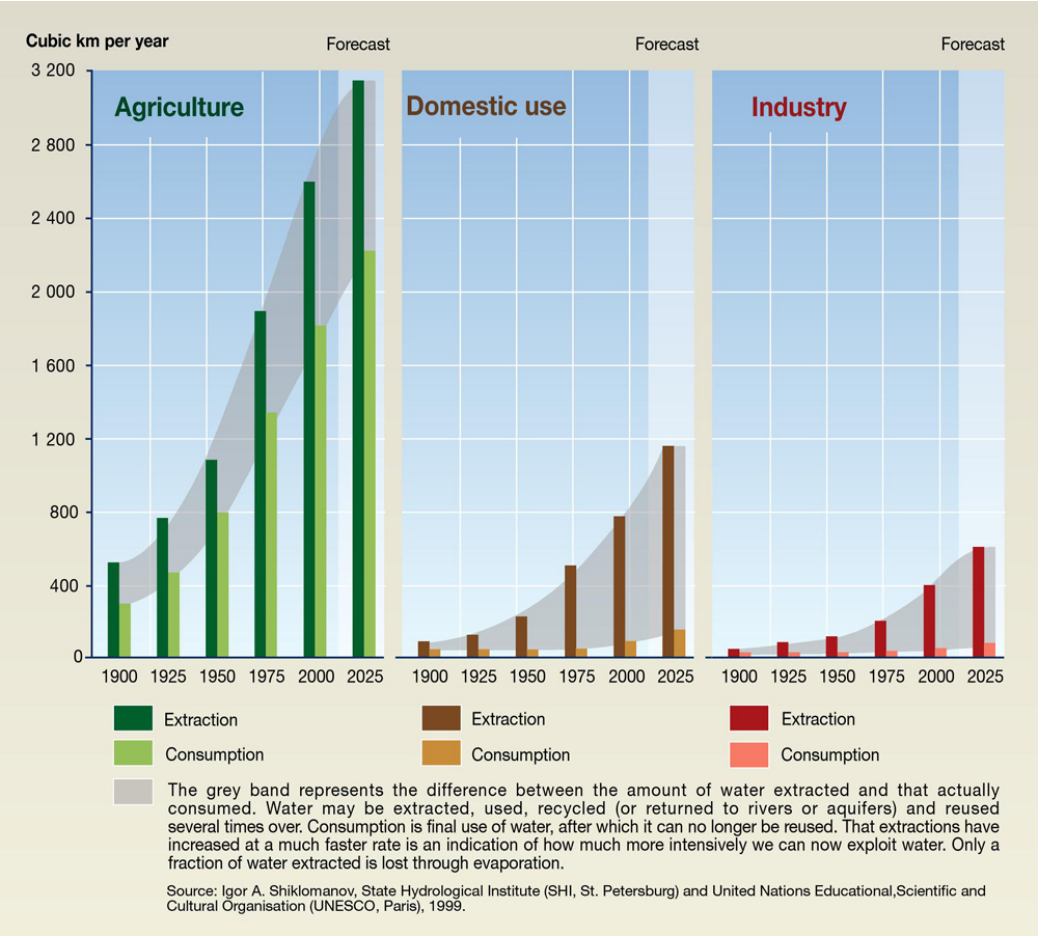
- Airlines
- Engineering
- Retail
- In Flight Catering
- Freight handlers
- Vehicle washing

Sustainable development challenge

- Demand is increasing
- Supply is declining or increasingly costly

Demand for water is growing

- Aviation growth
- Wider economic growth
- Increasing consumer consumption and expectation

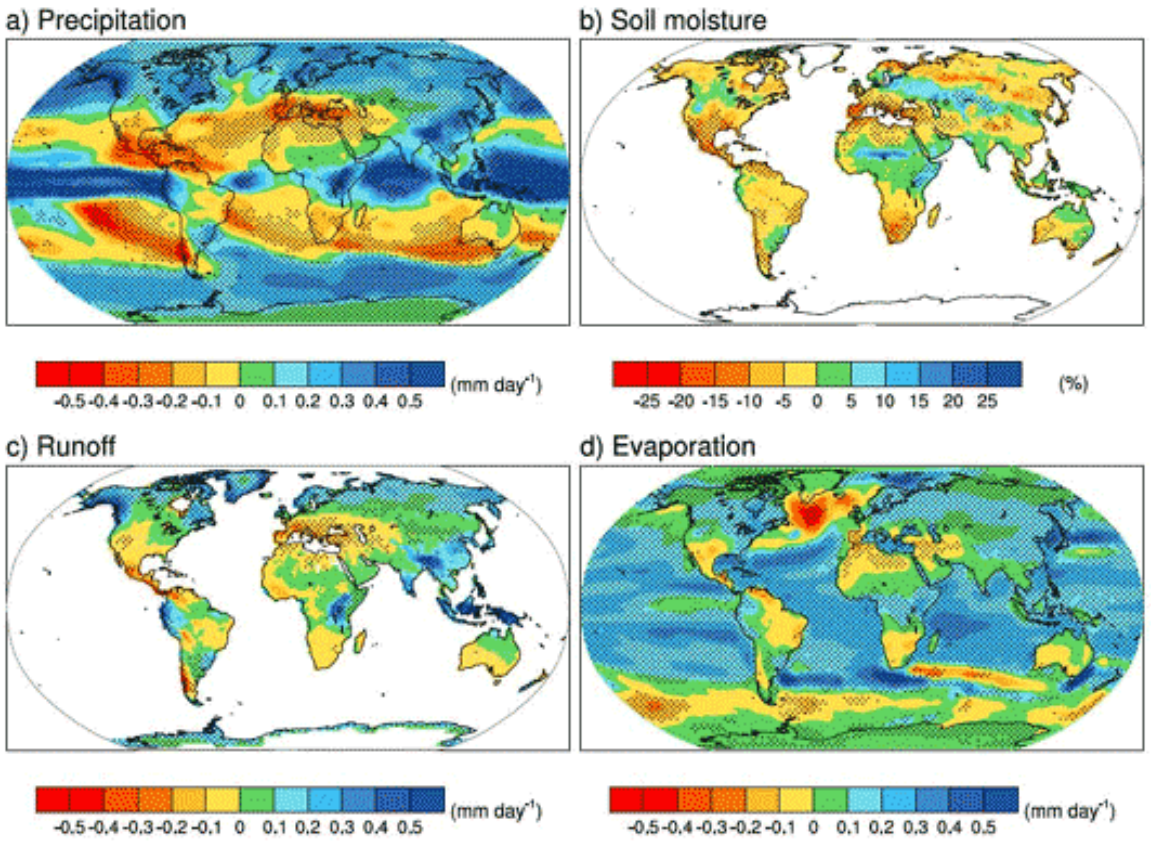


Competition for water growing

- Domestic
- Agriculture
- Industry
- Tourism
- AIRPORT

Water resources are declining

- Natural resources being over exploited
- Landscape changes
  - loss through runoff
- Climate change
  - Increased demand
  - Less rainfall



Model Projections of Hydrological Changes by end of 21st Century in A1B Emissions Scenario (based on average over all IPCC models).

Managing water consumption

The water management hierarchy

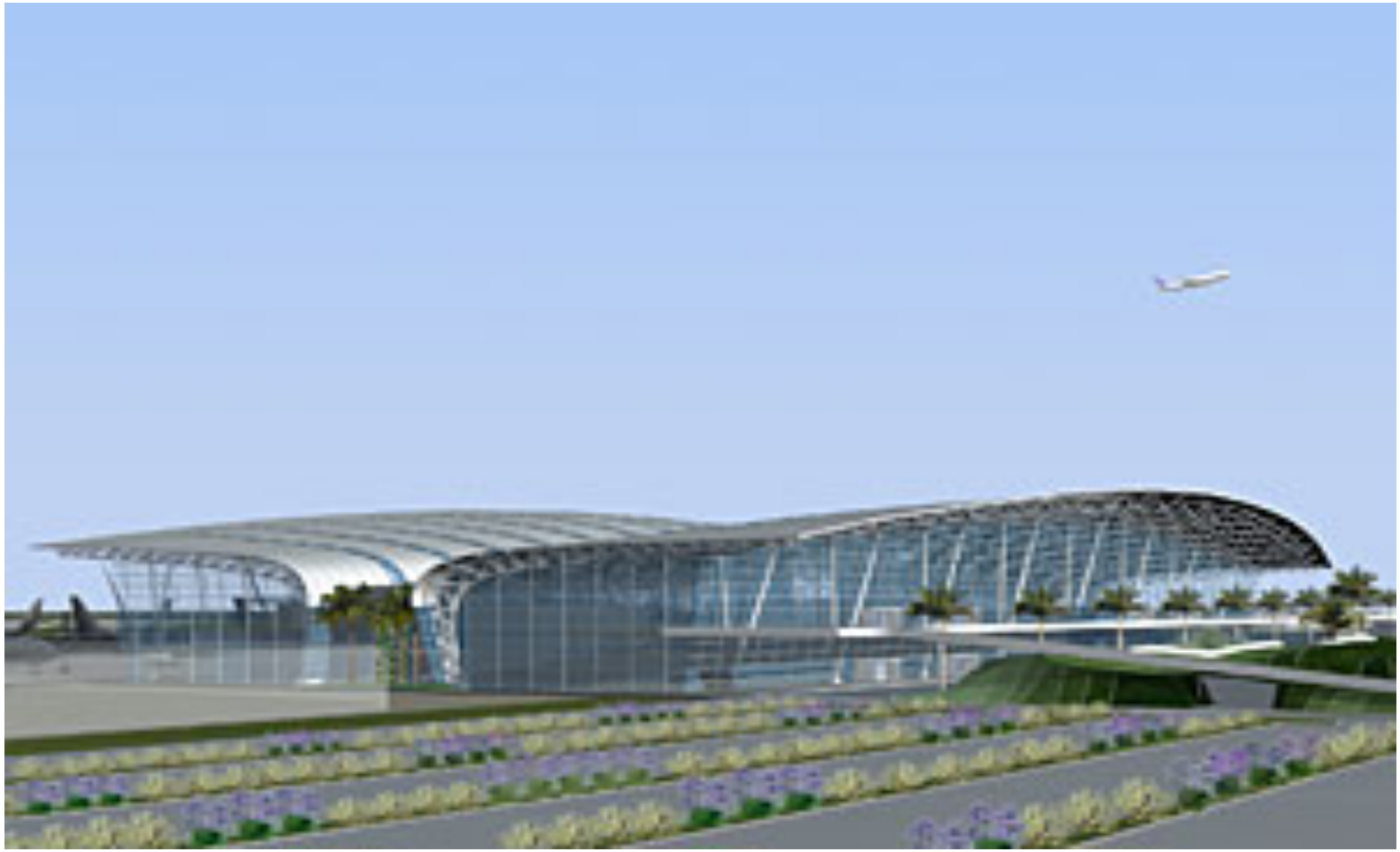
1. Minimise use
2. Recycle ‘grey’ water
3. Water harvesting and storage
4. Take water from grid supply

- Direct investment in desalination?

Reduce use

- Turn off!
  - raise awareness
- Low water operating practices
- Technology
  - Waterless apron cleaning
  - Automatic off systems

Water harvesting



'Grey' water recycling

- Dual drainage system
- Lightly soiled water processed for use in toilets, watering and vehicle washing.

Or

- Purified for reuse
- Potential for solar purification?

Desalination

- Potential value in direct investment?
- Off site infrastructure feed national grid to 'guarantee supply' ?
- Energy & financial costs?

Water management

- Policy
- Strategy
- Cost / benefit analysis
- Targets
- Indicators and Monitoring

Exercise: Policy – Which one is for you?

- To ensure that water does not limit the long term sustainable growth of the Airport.
- To ensure that the Airport is self sufficient in meeting its water demand.
- To ensure the Airport is able to meet its water needs without adversely affecting other sectors of the socio-economy of the UAE.

Key management indicators

- Total consumption / area of business
- Absolute volumes
- Per passenger consumption / Per freight tonne

Summary of tools available

- Reduce demand.
- Reuse / recycle waste water.
- Rainwater capture and storage.
- Investment in desalination?
- Government reserve supplies for aviation.

  (Would this include airport retail?)

Collaborative environmental management

- Most consumption by service partners/ passengers
- Successful management requires their participation
- Collaborative environmental management necessary
- Environmental clauses in commercial contracts
- Public engagement / awareness building

Any questions?