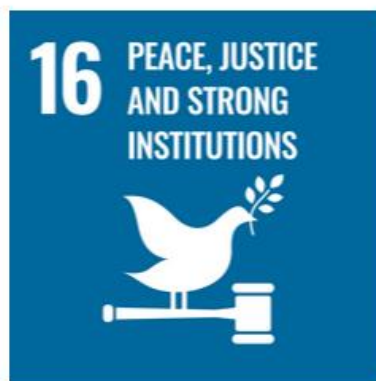
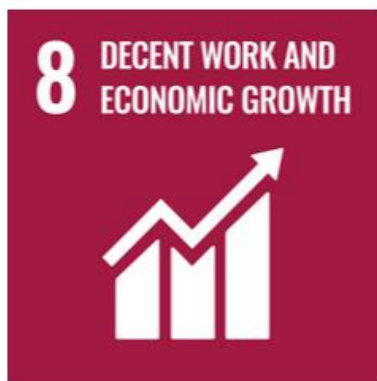


# Global Water Policies

Bo Libert





# SDG 6 – Clean water and sanitation

To ensure access to safe water sources and sanitation for all

- Access to water, sanitation and hygiene is a human right
- The demand for water has outpaced population growth, and half the world's population is already experiencing severe water scarcity at least one month a year
- Water is essential not only to health, but also to poverty reduction, food security, peace and human rights, ecosystems and education
- Countries face growing challenges linked to water scarcity, water pollution, degraded water-related ecosystems and cooperation over transboundary water basins.

# Targets SDG 6 - 1

6.1 By 2030, achieve universal and equitable access to safe and affordable **drinking water** for all

6.2 By 2030, achieve access to adequate and equitable **sanitation** and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

6.3 By 2030, improve **water quality** by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

**6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity**

# Targets SDG 6 - 2

**6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate**

6.6 By 2030, protect and restore **water-related ecosystems**, including mountains, forests, wetlands, rivers, aquifers and lakes

6.A By 2030, expand **international cooperation** and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies

6.B Support and strengthen the **participation of local communities** in improving water and sanitation management

# Which sectors use the most water?

- About 70% of the world's freshwater is used for agriculture (more than 90% in Uzbekistan)
- Industry 20 %, and municipalities account for remaining 10%
- Heavy water users in industry are thermoelectric power plants, textile and food industry

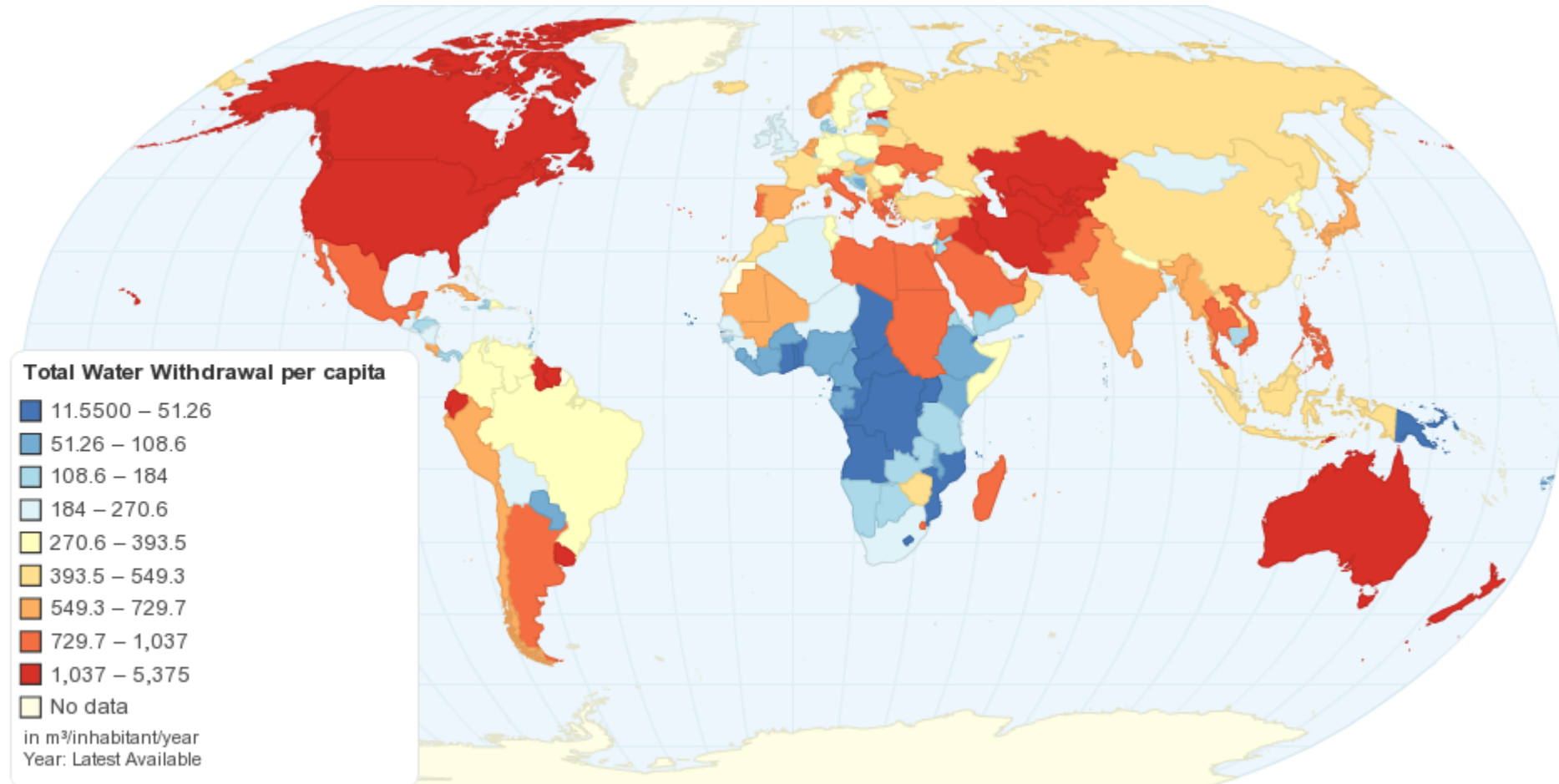


# Which regions have problems with water stress?



Kummu, M.; Guillaume, J. H. A.; de Moel, H.; Eisner, S.; Flörke, M.; Porkka, M.; Siebert, S.; Veldkamp, T. I. E.; Ward, P. J. (2016).

# Which regions use the most water?



The Food and Agriculture Organization of the United Nations  
2010, AQUASTAT online database



# Water problems

- Overuse of water
- Pollution
- Eutrophication (N and P)
- Risk of water disasters
- Impact of climate change

# The impact of climate change on irrigation

- Crops need more irrigation water because of warmer temperatures
- Seasonally less water available as glaciers are disappearing
- More evaporation from reservoirs and canals

This is why measures are needed to adapt to climate change: More efficient irrigation methods, better infrastructure, new crops...

# What is Integrated Water Resources Management?

Integrated Water Resources Management (IWRM) promotes the coordinated development and management of water, land and related resources to **maximize economic and social welfare in an equitable manner, without compromising the sustainability of vital ecosystems**

## 3. *The Four Principles of IWRM*

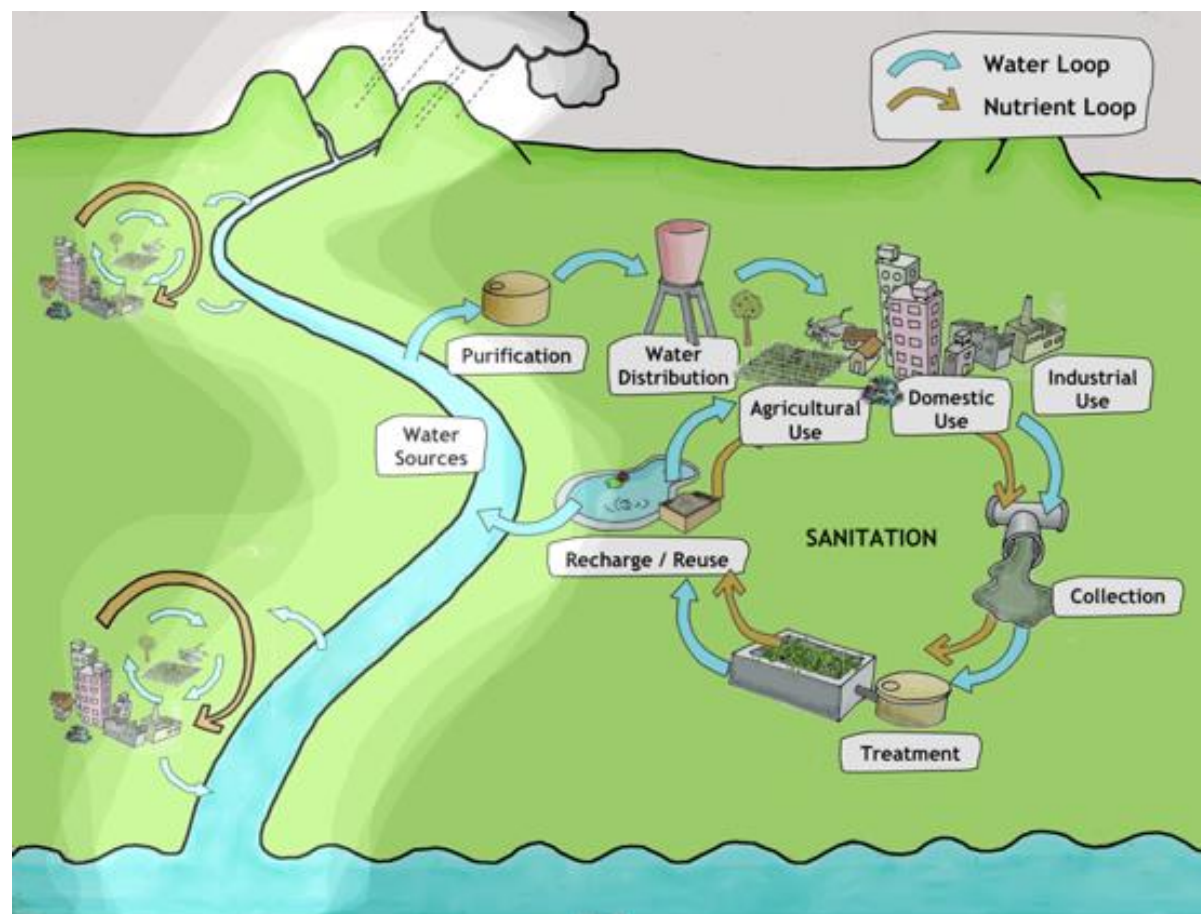
### The Dublin Principles as a Guide to the Implementation of IWRM

- I. Fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment.
- II. Water development and management should be based on a participatory approach, involving users, planners and policymakers at all levels
- III. Women play a central part in the provision, management and safeguarding of water.
- IV. Water has an economic value in all its competing uses and should be recognized as an economic good

(GWP 2008:13)

## 5. SSWM and IWRM

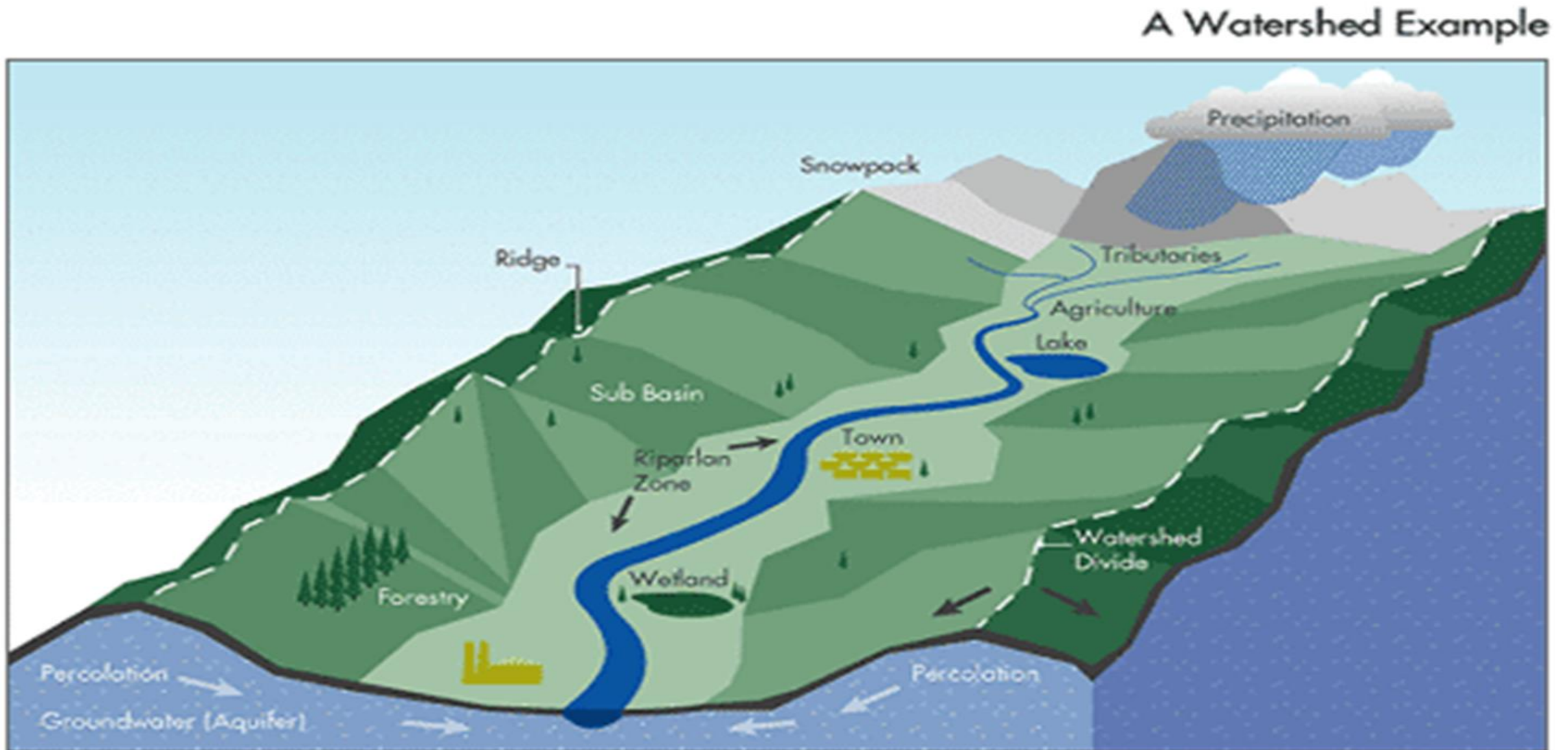
### Integrated, holistic Approach



Source:  
sswm.info

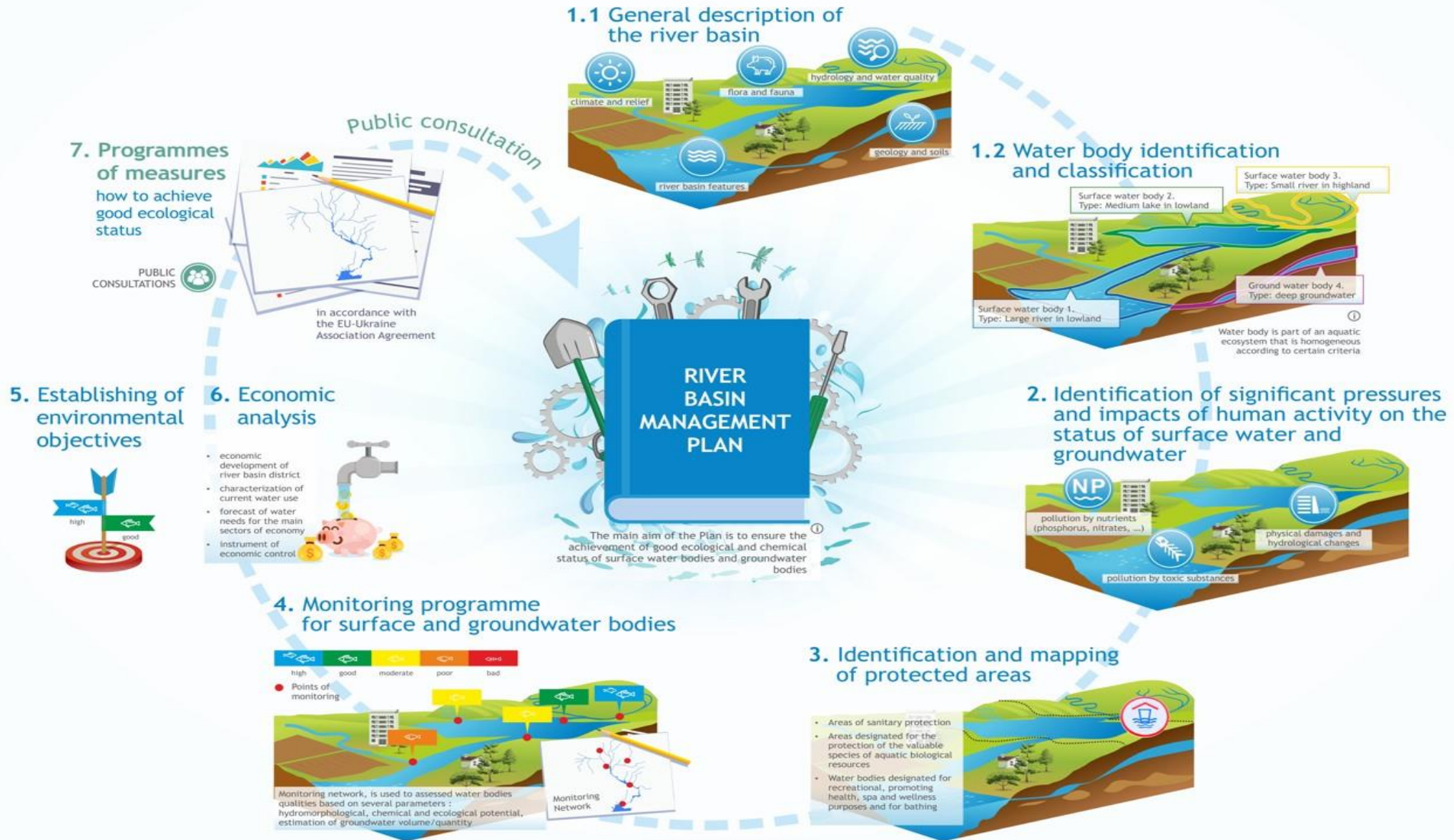


# Management of water according to basin or watershed boundaries



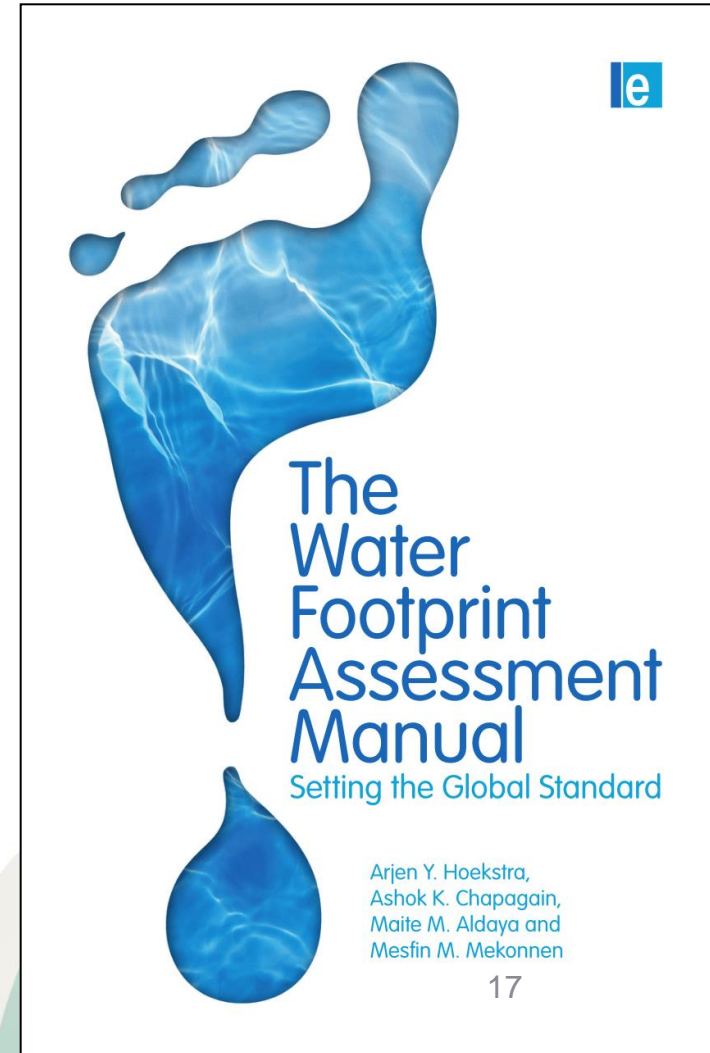
# EU Water Framework Directive

# RIVER BASIN MANAGEMENT PLAN



# Water Footprint Assessment

- Geographical and time specific
- Can be applied to
  - Product/Crop
  - Process
  - Consumer(=us)
  - Company
  - Country
  - River basin
  - World





# Components of Water Footprint



## Green water footprint

- Rainwater



## Blue water footprint

- Surface or groundwater

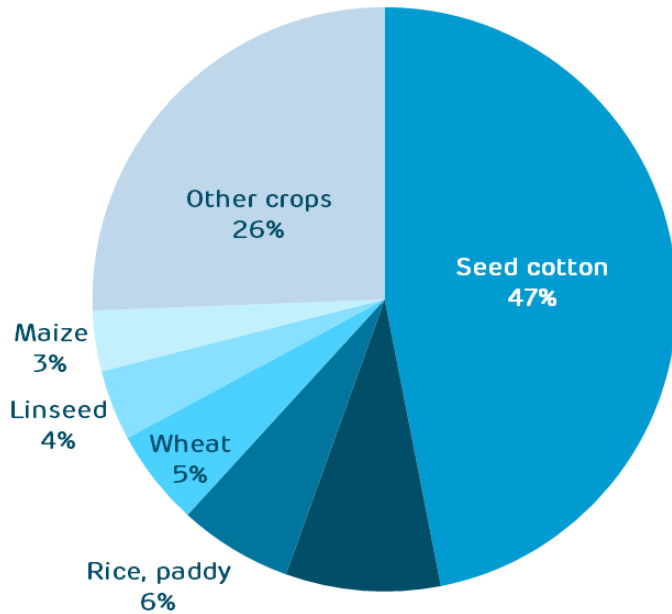


## Grey water footprint

- Polluted water

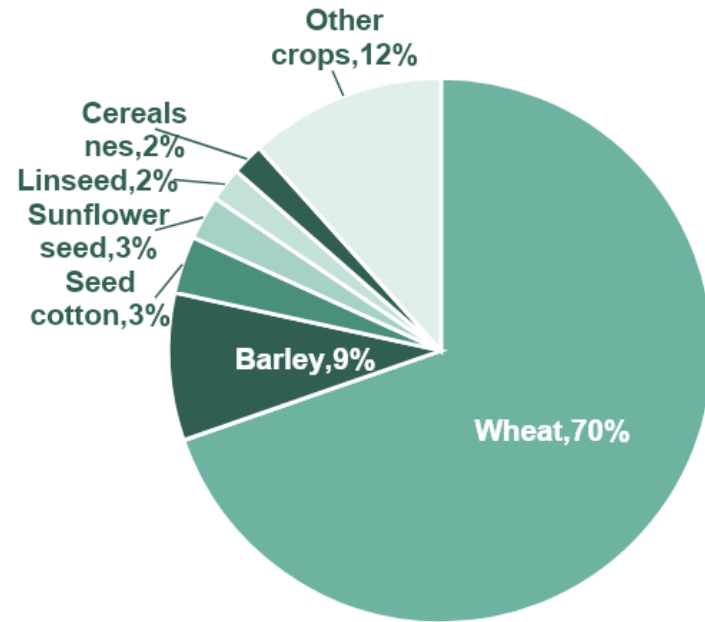


# Major crops: blue & green WF




Cotton is the main crop using blue water.

Wheat is the main crop using green water.



# Water footprint reduction

- Increase crop production per m<sup>3</sup> = increase food security
  - Smart virtual water trade = use 'national advantage' to export products with a low WF and import products with a high WF
  - Increase economic value per m<sup>3</sup> by processing or alternative crops
- 

# Conclusions

- **SDG 6** is central to water management but several other SDGs are linked to the availability of clean water
- Basin-wide **Integrated Water Resources Management** is a central principle
- Measurements of the **Water Footprint** gives information to be used for an improved water management



## Questions to be discussed

- What can be done by national authorities to save water?
- What can be done by you, individually, to improve the water situation?