

Water Resources Management

– challenges, opportunities, and above all
cooperation

Study Tour on Effective Management of Water Services and
Public-Private Partnerships for Service Delivery
-Experts from Tajikistan-

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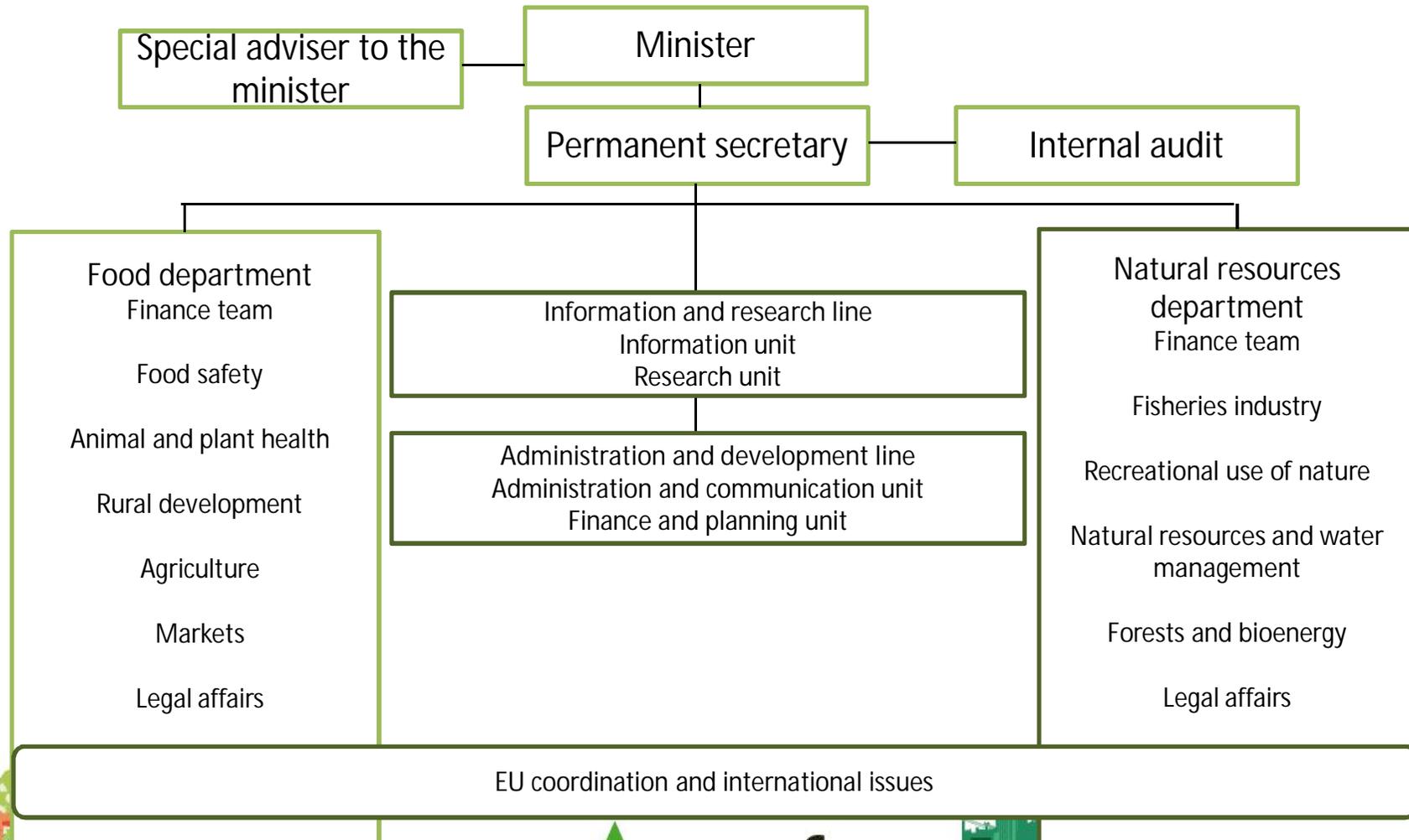
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food and natural resources

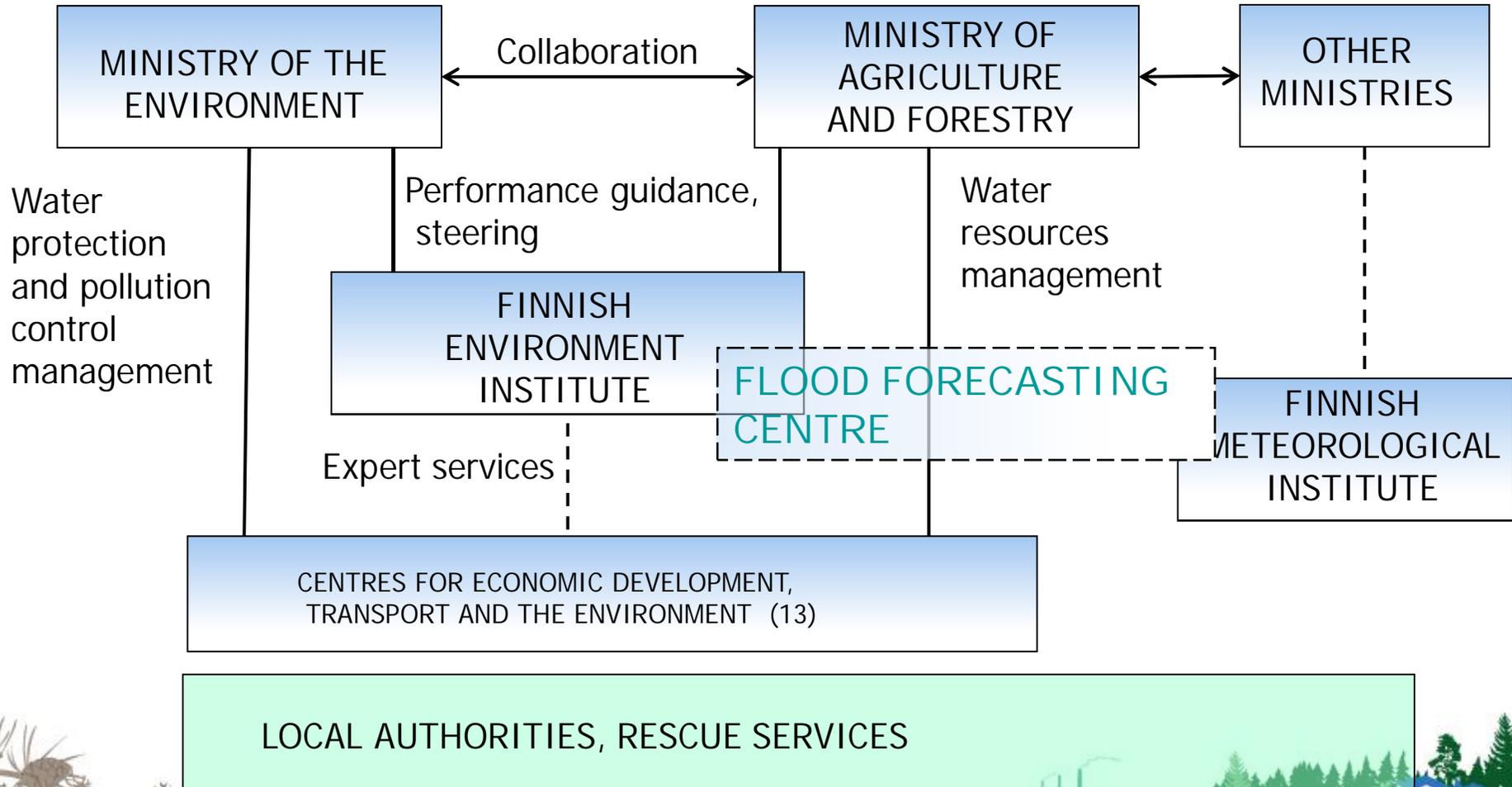


Ministry of Agriculture and Forestry

- bread and well-being from nature



Water Administration in Finland



Division of tasks between ministries

- Ministry of Agriculture and Forestry
 - water resources management
- Ministry of the Environment
 - water protection management
- Ministry of Social Affairs and Health
 - quality of drinking water
- Ministry of Employment and the Economy
 - hydropower
- Ministry of Transport and Communications
 - waterborne traffic, meteorology
- Ministry of Foreign Affairs
 - international agreements and development co-operation



Water Resources Management

- Water supply and sewerage
- Flood risk management
- Multipurpose regulation and use of river systems
- Operation and maintenance of hydraulic structures owned by State
- Dam safety
- Water resources in agriculture, drainage and irrigation



Finland – home of clean water and environment

FINNISH WATER FORUM



- Home of clean water and environment
 - 70% of the territory is forests, 10% water
 - 200 000 lakes, 200 000 islands
 - 320 000 km of coastline
 - 650 rivers
 - only 2 % of available water resources used
- One of the world's leaders in
 - natural resources and environmental management
 - cleantech
 - information technology
 - good governance

FINLAND:
Super
power of
water and
forest



CLC2006 land use/land cover (generalised 25ha):
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Finland – 40 years experience in integrated water resources management

- Long term goals and strategies since 70's
- Good governance and legislation
- Ecological knowledge, public awareness
- Technology
- Political will across the society
- Transboundary agreements and commissions with Russia, Sweden and Norway
 - information sharing and jointly agreed management practices
- Recently national strategies merging with EU strategies and directives



Finland –forerunner in adaptation to climate change

- First National Adaptation Strategy in 2005,
 - One of the first in the world
- Motivation for early action
 - Temperature rise 1.5 – 2 times higher in Finland than a global average
- New National Climate Change Adaptation Plan adopted November 2014
 - Included in Climate Change Act March 2015
- Examples of adaption measures in water resources in 2009 – 2015
 - Revision of Dam Safety Act, Water Act and Water Services Act
 - New Flood Risk Management Act
 - Revision of flood damage compensation system
 - Flood Forecasting and Warning Centre (2014)
 - Land use guidelines, stormwater management guidance and flood preparedness in building guidance

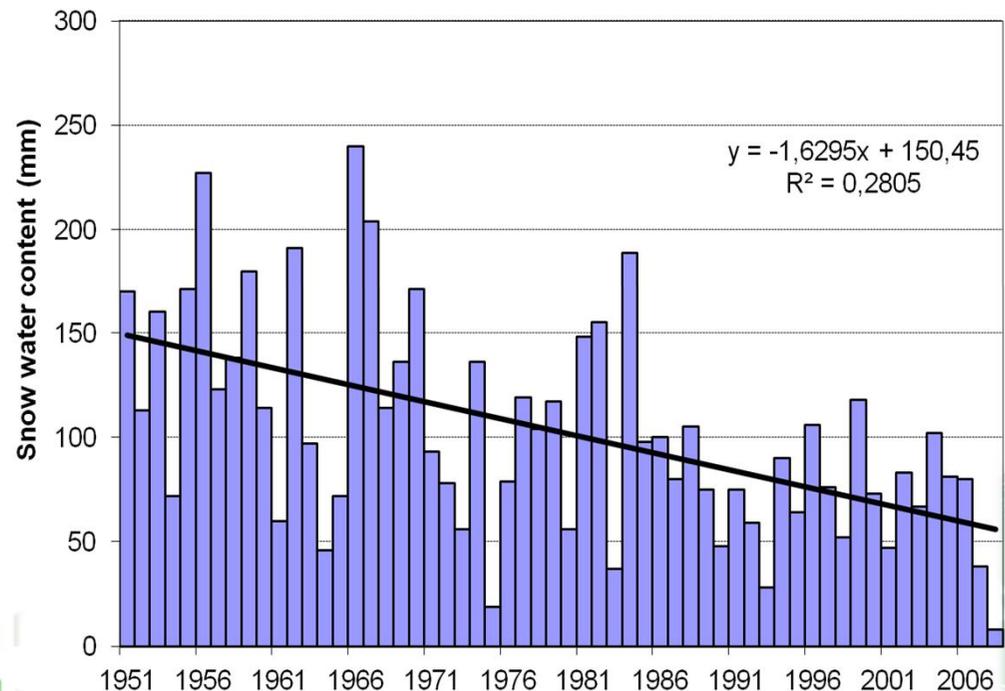


Impacts of Climate Change

- shorter snow cover period and less snow
- increase of precipitation, esp. in winter
- increase of intensity and frequency of heavy rains and other extreme weather phenomena

- less severe spring floods
- more autumn and winter floods
- flash / urban floods
- ice-jams, risk of frazil ice
- prolonged dry periods in summer

Vantaa River Basin in Southern Finland



Legislative framework

Water Act 2011

Use of water resources

- Water abstraction
- Water regulation
- Hydropower
- Water related construction etc.

Water Services Act 2014

Water supply and sewerage

- Organization
- Management
- Network connection
- Charges and costs

Specific Acts on

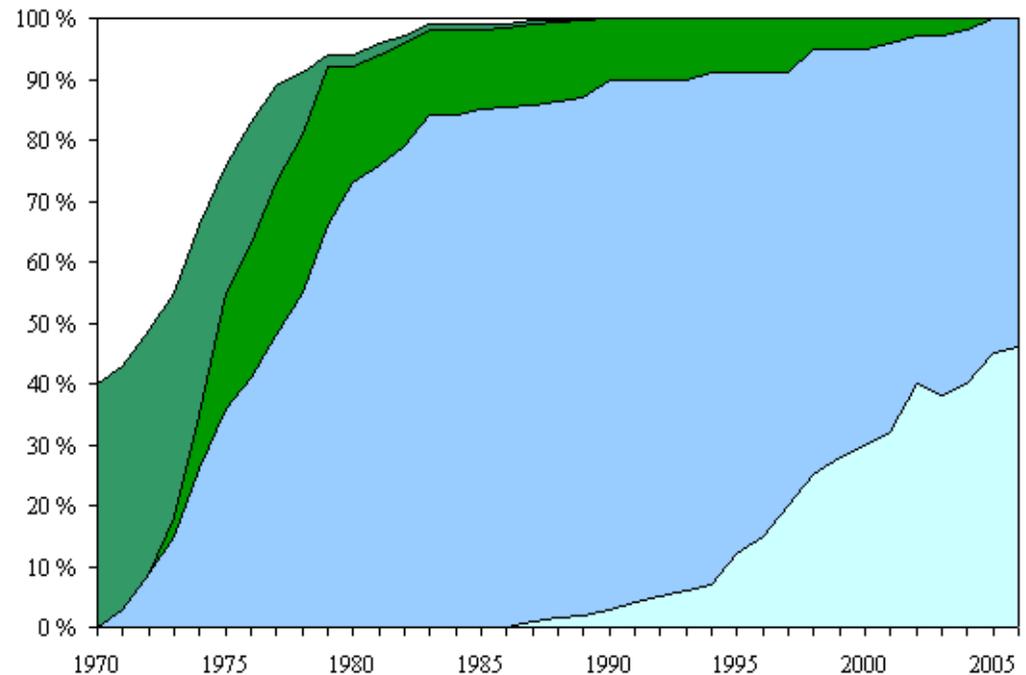
- River basin management plans
- Flood risk management plans
- Dam safety
- Environmental protection
- Marine protection

EU Water Legislation



General principles in permitting

- Integrated approach
 - weighing of interests
- Precautionary principle
- Polluter pays principle
- Best Available Technology / Environmental Practice
- Environmental Impact Assessment

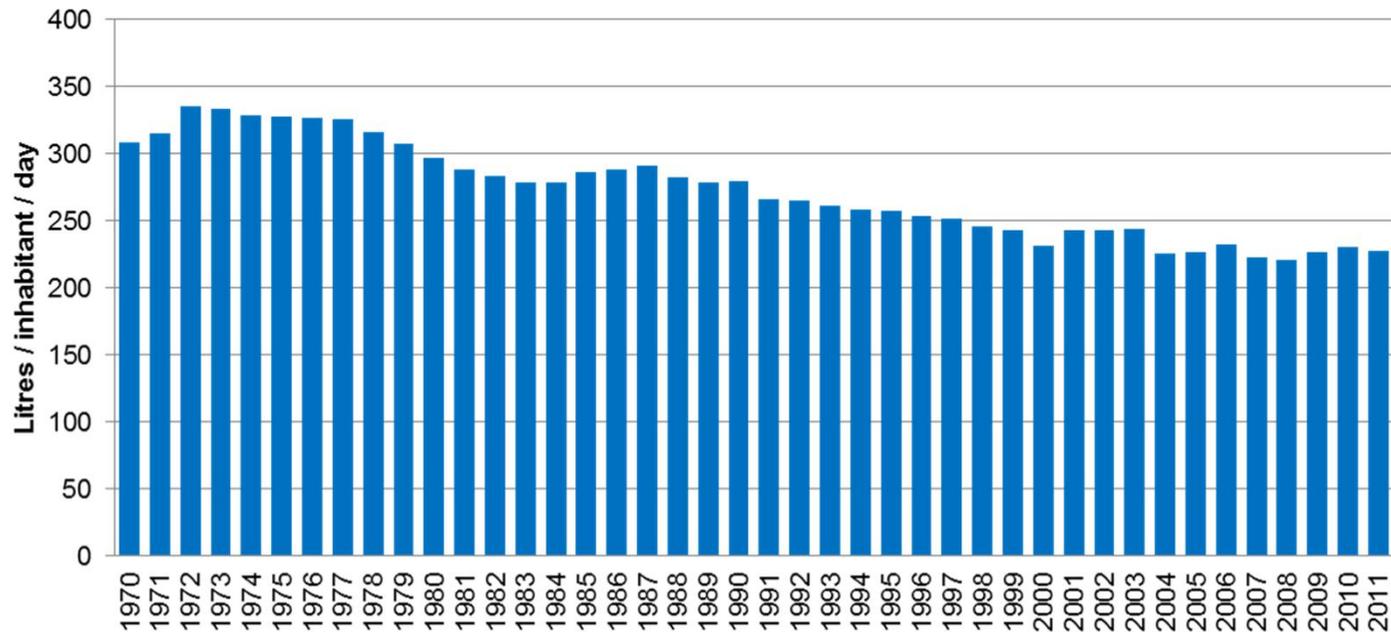


Development of wastewater treatment

- Biol. and chemical removal of phosphorus and nitrogen
- Biol. and chemical removal of phosphorus
- Chemical removal of phosphorus
- Biological treatment
- Mechanical treatment



Water use / inhabitants



Average production of water utilises around 230 litres/inhabitants / day



Water Abstraction

- Surface water and groundwater is governed, not owned, by the owner of the water or land area
- Water abstraction permit is granted if
 - sustainable use
 - the benefit gained from the project to public or private interests is considerable in comparison to the losses (weighing of interests)
 - Permit regulations
- Prioritisation of water abstraction
 1. Domestic use close to abstraction site
 2. Community water services in the region
 3. Industrial use in the region, or community water services outside of region
 4. Other water use purposes outside of region



Water Services

- Municipalities are responsible for development and organization of water services
- Charges of water services
 - Recovery of the costs, a minimum return on the capital
 - Reasonable and equitable
- 92 % of the population connected to water supply networks, 85 % to sewer networks
 - Those without access to water services live in sparsely populated areas and
 - get their drinking water supply from private wells
 - use try toilets or need to fulfill minimum requirements for wastewater treatment



Key Elements of Water Security in Finland - and internationally

- Water is a necessity, enabler and hazard at the same time
 - provides drinking water and health
 - is a valuable natural resource, maintains ecosystems and provides food, feed, fiber and energy
 - may cause lost of lives, health problems, dehydration, spread diseases, pollution, degrade land and damage infrastructure
- Water security at local level and individual level
 - to have an access to safe drinking water and sanitation
 - to have enough water for maintaining livelihoods and producing food
 - to be protected from water-related disasters



Key Elements of Water Security in Finland - and internationally

- Water security at regional and macro-regional level
 - managing water resources integrated and sustainable manner
 - disaster risk reduction
 - increasing water efficiency
 - leakages, water saving, pricing and water productivity
 - both demand and supply side management
 - understanding the linkages and policy coherence between disciplines, e.g. Water – Food and Energy
 - special attention to the transboundary basins



The Problem of scale in human-environment relationship – case Baltic Sea

- The phosphorus load from Finland to the Baltic Sea is only 3,8% and the nitrogen load 3,7%, respectively
- The impact of various measures on the runoff to the Baltic Sea is very limited, sometimes non-existent
- Agriculture is responsible 60% of nutrients and sediment load to waters, but 90% of load comes outside of growing season
- How to produce more with less environmental impact?



Ministry of agriculture and forestry in internet and social media

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