

A scenic photograph of Lake Baikal at sunset. The sun is low on the horizon, creating a golden glow and long rays of light that reflect on the water. In the foreground, there are large, rugged rock formations and a small pebbly beach. The sky is filled with dramatic, dark clouds.

Course "Water Resources Management", Lecture 5: Strategic and mid-term planning for water resources and systems

This lecture was prepared as per request from the Lake Baikal Foundation and delivered in Nov. 2022 to students of the "Global Challenges Management (Management of changes)" bachelor programme at the Academy of Economy and Public Administration

Course Program

Date	Format/Quantity	Teacher / Topic
7/11	In person - 2	V. Palagin L1. Integrated Water Resources Management at the national and trans-boundary levels. Balance of needs and interests, Unity in Diversity. Water security concept. L2. Water-related national legislation (Water Code, law on WSS etc.) and international: legally binding agreements (Conventions and Protocols, SDGs, EU Directives) and voluntary instruments (e.g. OECD Recommendation on Water).
14/11	Online -1 14.00 – 15.30	A. Martusevich L3. Specificity of water services and the need for water sector regulation (environmental, technical, sanitary-epidemiological, economic / tariff)
	Online -1 15.40 – 17.10	V. Palagin L.4. Водная стратегия РФ (международный аспект)
21/11	Online - 2 14.00 – 15.30 15.40 – 17.10	A. Martusevich L5. Strategic and mid-term planning for water resources and systems. S1. Implementation mechanisms (Incl. Monitoring and Evaluation.), and the role of private sector participation (PSP).
29/ 11	In person - 3 14.00 – 15.30	V. Palagin S2. Water sector regulation in Russia: key elements, eventual gaps. Alternative approaches to Environmental regulation: BAT, discharge norms (MACs, TAEs etc.) and the overall pollution load on water objects.
	15.40 – 17.10	S 3. Detailed analysis of the federal projects on Baikal, Volga, WSS; links with programmes in other sectors - agriculture, forestry, municipal waste management.
	17.20 – 18.50	S4.Trans-boundary (TB) agreements on water for which Russia is a Party. Detailed analysis of TB water issues & water co-operation (incl. on multi-purpose water infrastructure). Conflict resolution in Water management, and practices in Central Asia.
6/12	In person - 3 14.00 – 15.30	V. Palagin L6. Water Policy instruments and the role of Economic instruments for water management: tariffs, taxes (and state support); and transfers. Ultimate and repayable sources: the role of state support and the financial sector.
	15.40 – 17.10	S5. Case study of economic instruments and assessing their effects/impacts. Cost effective and counter productive state support measures. The role of sound tariff policy.
	17.20 – 18.50	S6. Risks and uncertainty. Managing key risks in (or impacting) the water sector. Resilience concept and the impact of climate change and the growing volatility of climatic parameters on water resources and systems.
9/12	Online – 1 15.40 – 17.10	L V. Palagin L*. Зеленое управление Sustainable and Inclusive Green Development and Circular Economy concepts. Water, food and energy security nexus.
12/12	Online - 2 14.00 – 15.30	A. Martusevich L.7. Knowledge and information base for decision making, and useful decision support tools: monitoring and statistics data; scenario analysis and water policy outlook; modelling; various guidelines and recommendations.

Content

- **Introduction:** Water is a strategic resource of the 21th century. Strategic resource requires strategic approach and planning
- Strategic process; Hierarchy of strategic and mid-term plans; national Water Strategy (NWS)
- Strategic analysis, tools and resulting documents
- Making Strategic Choice and setting Strategic Goal
- Tools to support making and implementing strategic decisions
- Planning Water resources & systems at **Basin & Local levels**
- Tools useful for mid-term planning at basin and local levels
- Implementation challenge, mechanism and success factors
- Additional sources of Info

Introduction

Water, food and energy security has clearly become a national security issue in many countries. High food and energy prices and turbulences on respective markets have many causes, including the severe drought observed in 2022 in many countries and provinces - from France to China, complemented by breakdowns of logistic chains through which fertilisers, fossil fuels, cereals and other food-stuffs used to be delivered, initially triggered by covid related restrictions and then exacerbated by the Russia-Ukraine military conflict.

Food and energy security was the main topic of the G20 summit, two weeks ago.

Water is in the center. Water shortages have negative impact not only on food production but also on the energy sector

E.g. France, 2002: a dozen of NPPs stopped operations in the summer due to the shortage of water for cooling. (30% of electricity consumed in Germany is imported from France, hence the domino effect...)

Water is a strategic resource of the 21st century

(becoming at least as important as oil & gas)

Strategic resource requires strategic approach and planning: both **strategic and mid-term**, **at different levels of the water governance system**: national, basin, province and local.

Strategic process



* - note that some 70% of strategic failures is due to poor implementation

- Each stage has its own specific tasks and uses specific tools
- It is not a linear process and iterations are quite possible
- **Stakeholder engagement & ownership is a key success factor**

Hierarchy of strategic and mid-term plans on water

- **National level: Water Strategy** coherent with the over-arching policy documents as well as other sector strategies (for agri-food, housing and utility services, hydro-energy, water transport; social (health, social support) etc.), supported by a feasible Strategic Financial Plan (SFP) and integrated into the overarching policy (NSSD and the like) and budgetary frameworks.
- **Supported by RBMPs at basin level, province level strategies and local plans** at the level of municipalities, water operators and industries (water intensive or significantly impacting water resources)

National Water Strategy

- Typically, it covers both (a) Water resources (**WR**) and aquatic ecosystem; and (b) Water infrastructure for various uses
- Should take into account **specificity and complexity** of water resources (WR), water infrastructure & services, and water management, as well as inter-linkages between water and other sectors (agri-food, energy etc.)
- The **nexus** calls for *systems thinking* and *policy coherence*
- **A few specific features of the water sector** (see Lecture 3):
 - water is essential for life and has no full substitute – *inter alia* it implies that **affordability constraints** should be carefully assessed and addressed in a cost-effective manner;
 - water has some features of a good (e.g. bottled water) and a service;
 - the “public good” dimension of water services, hence the key role of public investments and other state support measures;
- *transportability* of water – limited and costly, hence importance of the geographic distribution of WR;
- many parts of water infrastructure are *natural monopoly* sectors requiring regulation;
- many water courses and water bodies are **trans-boundary (international relations)**;
- the water sector is most sensitive to climate change;
- water might be **a source of a big damage** from *water-related hazards* – *natural (e.g. mudglows) or man-made (e.g. collapse of a poorly built dam)*.

National Water Strategy - 2

- **Strategic importance of water** jointly with **increased risks and uncertainties**, especially in the context of *transition economies (experiencing significant structural changes, migration etc.)*, climate change effects and the present geo-political, economic and fiscal situation calls for the Water Strategy to be:
 - **ambitious but realistic** (not least from financial point of view);
 - linked with the NSSD and sectoral policies, integrated into the broader macro-economic policy and budgetary frameworks (policy coherence and integration);
 - **adaptive and resilient** to major risks and unpleasant surprises (this topic will be discussed in more detail later today).
- **Strategic time horizon**: typically, 50-100 years, and more;
mid-term: 7-30 years; short term: 3-7 years.
Work plans for immediate actions (Action plan): 1-3 years.
In EECCA: *Strategies* are often designed for 5-15 year time horizon
(short to mid-term documents, in fact)

Stage 1: Strategic Analysis

- **Objectives:** to clearly understand: *where were are* (diagnosis of the present situation); what are *present trends* (inter alia, present and future demands for, and availability of, water resources, future water mass balance; demand for water infrastructure services) *and pressures, what are main challenges, key risks and uncertainties* facing the water sector;
- and where we would like to be (**desirable future**) in a foreseeable future; and how to get there (a preferred and alternative scenarios)? How to address eventual deficit of the water mass balance? (e.g. by drastically improving water use efficiency, by developing resource base and prioritisation of uses, or through import of some water-intensive goods (“*virtual water*”).
- What could be strategic objectives and targets; what are main water uses, **key trade-offs and strategic choices to make** - now and on our way to the targets; who are main stakeholders and what are their interests? What are strategic *implementation constraints* (e.g. political acceptability)?

Stage 1: Strategic Analysis -2

- Who might be *agents of positive change*? Who would (likely) support the desirable change, and who will resist it? And what are options for mitigating or minimising eventual resistance? Etc.
 - How different strategic choice would impact key stakeholders; which changes in behavior of key actors it would require and how to ensure desired change in behavior (through which incentives)?
 - Institutional, legal and regulatory frameworks required
- ➔ Ultimately, the Strategy should clearly answer these questions

Analitical tools & Resulting document

Resulting document

- A background paper with strategic analysis and a good summary of key findings for policy & decision - makers. *Inter alia*, it should outline *key strategic choices to be made*, upon which selection of strategic targets and the preferred implementation scenario would depend.
- The paper should be discussed with key stakeholders. In the future it could be annexed to the final output document

Analytical tools to support making and implementing strategic decisions:

- **SWOT** analysis
- **Cost-Benefit Analysis (CBA)**. General rule: **to allocate water where it generates most value for the society**, taking into account key risks and uncertainties;
- **PEST** analysis (Political, Economic, Social-cultural, Technology factors and constraints) - important for the “*political economy of change*”
- **IWRM principles**

Tools to support making and implementing strategic decisions - 2

- **Force Field Analysis: forces *for* and *against* change** (useful to identify conflicting trends and forces, and potential conflicts; potential supporters and allies, and those potentially resisting); and
- **Stakeholder analysis**
- Analysis of **risks and uncertainties** with a view to plan risk management & resilience measures
- **Brainstorming on the future, and foresight** discussion
- **Methodology for assessing economic instruments, not least *state support measures* (subsidies)**
- **Computer-based tools for strategic planning**
(e.g. FEASIBLE model for SFP for WSS; or WHAT-IF model for MPWI)
- **Ability-to-pay and willingness-to-pay assessment** methodology

Some tools support several stages of the Strategic Process

Making Strategic Choice and setting Strategic Goal

- Based on the background analysis and being informed by it, **decision-makers should make strategic choice** - ideally, after consultations with key stakeholders through a policy dialogue
- **Strategic Goals** should be **clear, simple and meaningful, consistent and long-term**. The choice can be fully autonomous, or taking into account **international commitments** (e.g. SDGs, EU Directives (for MS and AA), Paris Pact on Climate, Water Conventions and other MEAs, bilateral agreements on water; etc.)
- Outcomes (what to do and what should never be done/*taboos*) informs the next stage: **Planning**

Examples: Egypt and Denmark

Planning: strategic and mid-term

- Setting **SMART strategic and mid-term targets**
- Developing **scenarios** to achieve the targets, with milestones and interim targets, and selecting a preferred scenario
- Planning required changes in the water governance system; institutional and regulatory frameworks, economic instruments
- Designing **implementation mechanism and selection of appropriate instruments** (administrative, economic and information instruments)
- Planning proper **incentive structure** to ensure desired changes in behavior of key actors
- Planning required resources (financial, human)

Planning: strategic and mid-term -2

- Policy integration (NSSD, relevant sector strategies: WSS, agri-food, energy, water transport; social & public budget); and ensuring policy coherence
 - lack of coherence could be very costly: example from Moldova
- Planning: (i) good **data bases for decision-making** (e.g. Water Cadaster; Performance Indicators of operators) and (ii) changes in the **monitoring and evaluation (M&E) system** (monitoring and evaluation of water resources as well as of performance of key actors involved in Strategy implementation)
- Planning actions to address the “*political economy of change*” (of implementation) including *conflict resolution* and eventual *compensation mechanisms*.

Resulting policy document

Resulting policy document - the National Water Strategy (NWS),
duly approved & supported by:

- **Action plan** for overall strategy implementation: who does what, how and by when (interim deadlines and milestones). Ideally, it should include a more detailed **mid-term action and investment plan** for the first years of strategy implementation.
- Equally, the Strategy should articulate **what should never be done** (*taboos*)
- A plan on communicating the strategy and mobilising political support to its implementation. The analytical background paper, and other annexes, could also be attached to the main document.

Tentative Table of content of a national water strategy see Table 2.2 in:
Деревяго, И.П., Дубенок С.А. (2020)

Planning Water resources & systems at Province, Basin & Local levels

RBMP (river basin management plan)

Strategy at province / oblast level - well linked with, & similar to, the NWS; province level Master plan for WSS

RBMP (river basin management plan)

Mid-term municipal infrastructure development plan at local/municipal level

Mid-term plans at water operator's level: SBP & FOPIP

Water Planning by industrial enterprises

RBMP incl. Programme of measures (for the whole basin or a basin district)

- Analysis of available WR (quantity & quality) and main water uses - trends
- Presentation & analysis of a baseline scenario
- Water-related development targets in the basin (or basin district), estimated financial needs (capex and opex)
- Financial & economic assessment of the Programme of measures; , available sources of finance, the present and foreseen future cost coverage, etc.

Planning at the municipal & water operator's levels

Rayon & Municipality/human settlement level:

- Rayonal Master Plan for WSS
- Master Plan (Генплан) of the city/human settlement in question
- Multi-year investment programme for communal infrastructure in the municipality in question

Water operator:

- Strategic business plan (SBP), FOPIP (financial & operational performance improvement programme) - typically required under investment projects co-funded by development banks
- (for water utilities in Russia) mid-term Operational and Investment programmes of vodokanals - required for tariff setting

Water intensive enterprise: mass balance, water norms, ENV plan

For more details see Section 5 in: Региональный проект USAID по водным ресурсам и окружающей среде (в Центральной Азии), Комендантова Н., Ровенская Е., Мартусевич А.П., Сиваев С.Б., Турсуналиева Д.М. Учебный модуль № 4 (проект от 27.07.2022)

Tools useful for mid-term planning at basin and local levels

At the national & water sector level:

- Communication strategy
- Capacity development tools (to develop capacity for Strategy implementation)
- Guidelines for applying regulations, administrative, economic and information instruments
- Ability-to-pay and willingness-to-pay assessment methodology (to plan and implement social support measures targeted to vulnerable consumers of water services)
- Methodology for assessing economic instruments, not least *state support measures* (subsidies)
- **Various information tools:** Data base on water resources and water infrastructure; Performance Indicators and benchmarking; State statistics & sectoral reporting system, performances data disclosure etc.

Tools ... at basin and local levels -2

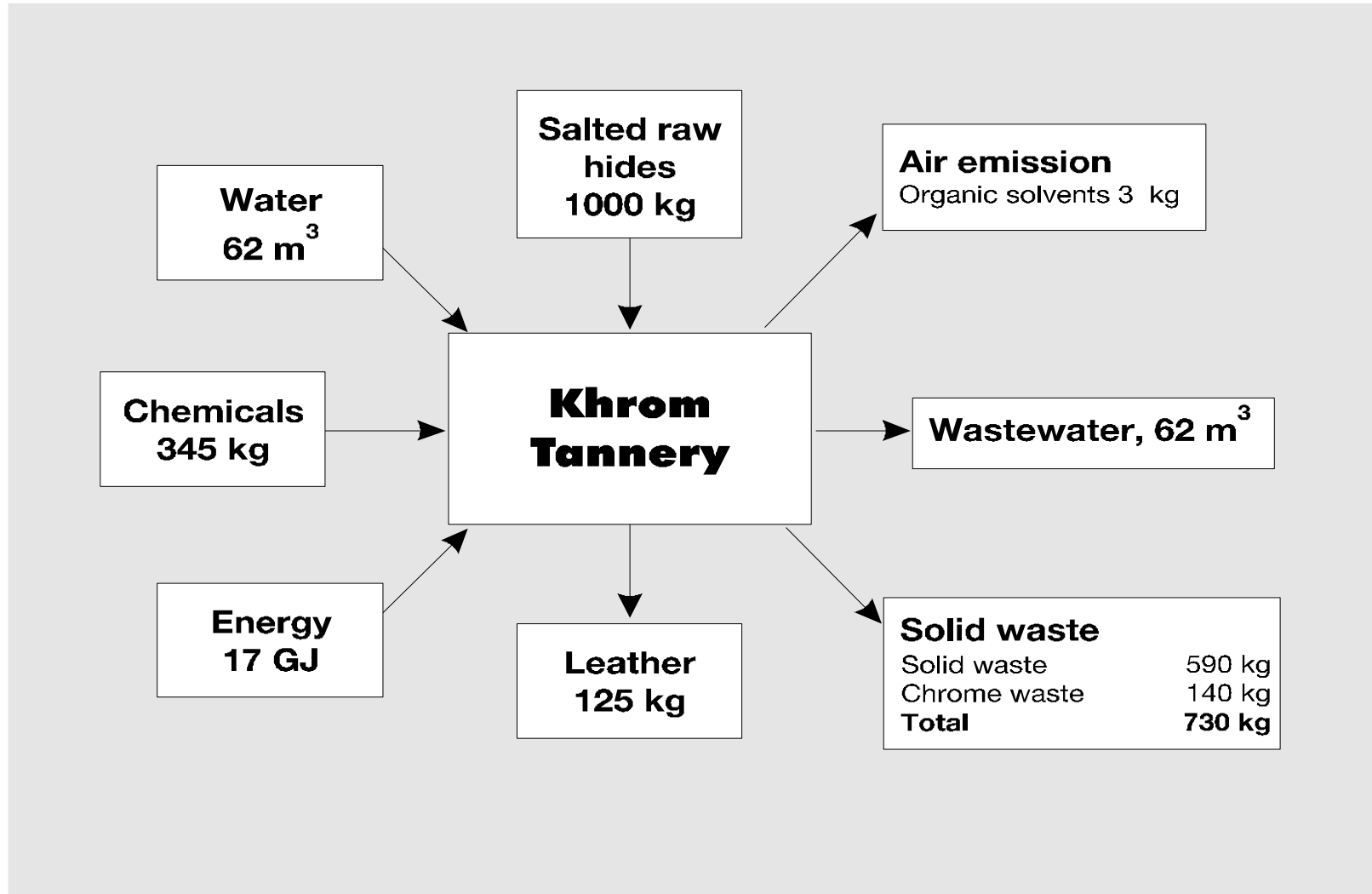
At the basin and local levels (municipalities and operators):

- Data bases and Guidelines for sustainable business models
- OECD Principles for Private Sector Participation in Water Infrastructure
- Guidelines for reform of WSS and for performance-based contracts between the owners and operators of water infrastructure systems
- Guidelines for applying regulations, administrative, economic and information instruments
- Water mass balance
- Performance data disclosure system; Performance Indicators and benchmarking tools;
- Computer-based models: FPTWU, WHAT-IF, FEASIBLE ...

At the level of industrial enterprises (significantly impacting WR):

- Mass & Energy balance (see below), BREF note for respective industry
- Water consumption and wastewater discharge norms (example of Belarus)

Mass & Energy balance - the case of a tannery



Implementation challenge

!! (about) 70% of strategic failures is due to poor implementation

Implementation is a multi-sector and multi-stakeholder task, requiring good co-ordination and good governance, strong political will and leadership (example of introducing PSP in WSS in Armenia)

The key role of sound regulation (see Lecture 3): technical, economic, environmental, sanitary-epidemiological; and of compliance enforcement

Communicating the Strategy to key stakeholders and to general public: public information and public awareness campaign (as part of the Action plan) to **mobilise political support and diminish eventual political resistance**

Other measures to mitigate or minimise eventual political resistance (e.g. compensation for eventual losses if the society wins from the change overall).

Right incentives (incl. through water abstraction fees, tariffs, state support measures, and fines)

Regular M&E of the implementation undertaking corrective measures as required.

Implementation mechanism - will be discussed at Seminar 1

Option 1: implementation through routine work of line government bodies (for RBMP - through Basin Council and basin Agencies;

for SBP of water operator - by the operator) using their own resources;

Option 1.b ..eventually complemented by resources of development institutions - DIs (incl. national (e.g. VEB) and multilateral development banks - MDBs)

Option 2: creating a dedicated implementation agency (or unit) supervised by respective HL officer (vice PM, vice mayor etc.), and allocating earmarked funds for the implementation (eventually attracting loans fm DIs):

At municipal level it could be a Programme (or Project) implementation unit (PIU) funded from the local public budget & a loan

Whatever body is responsible for the implementation, its tasks would include:

- smartly preparing specific actions envisaged in the Strategic or Mid-term Plan (example fm Surgut City)
- outsourcing (selecting Contractors and Suppliers, typically through competitive procedures, preparing and signing Contracts)
- monitoring, evaluation (M&E) and reporting
- undertaking (or proposing) required corrective measures.

Success factors for the implementation

Implementing a strategic or mid-term plan is a multi-sector and multi-stakeholder task, **70% of strategic failures is due to poor implementation**

Success factors for the implementation:

- realism, focus on priority issues, visible benefits for many (not just for a lucky few)
- strong political will and leadership (example of introducing PSP in Armenia)
- Integration in the over-arching policy DOCs (NDS and equivalent) and the budgetary process (mid-term and annual public budgets)
- communicating the Strategy or Plan to key stakeholders and the general public: conducting a public information and public awareness campaign (as part of the Action plan) to mobilise political support and diminish eventual political resistance
- undertaking other measures to mitigate or minimise eventual political resistance (e.g. compensation for eventual losses if the society as a whole wins from the change overall)
- creating right incentives

Success factors for the implementation - cont.

- **setting an effective implementation mechanism** (appointing responsible bodies & clearly assigning responsibilities; good co-ordination and good governance)
- **allocation of sufficient resources:** human and financial
- **a key role of sound regulation:** technical, economic, environmental, sanitary-epidemiological; and of compliance enforcement (see lecture 3)
- **Selection of sustainable business-models (BMs)** for operators of water systems, incl. PSP/PPP, where appropriate & feasible

In case of PSP/PPP: preparing & signing a **balanced contract** with appropriate performance indicators.

- **Regular M&E** of the implementation undertaking corrective measure as required. **Using Proper Indicators to measure performance and progress**, regular reporting against the established set of indicators. performance indicators: (i) for the water sector as a whole; and (ii) for water system operators;

Additional sources of info:

Региональный проект USAID по водным ресурсам и окружающей среде (в Центральной Азии), Комендантова Н., Ровенская Е., Мартусевич А.П., Сиваев С.Б., Турсуналиева Д.М. Учебный модуль № 4: «Стратегическое и среднесрочное планирование в водохозяйственном комплексе (ВХК): проблематика, методы и инструменты, вопросы выполнения» (проект от 27.07.2022)

ОЭСР СРГ ПДОС (2011), РУКОВОДСТВО ПО ИСПОЛЬЗОВАНИЮ КОНТРАКТОВ, ОСНОВАННЫХ НА ПОКАЗАТЕЛЯХ ДЕЯТЕЛЬНОСТИ, МЕЖДУ МУНИЦИПАЛИТЕТАМИ И ВОДОХОЗЯЙСТВЕННЫМИ ПРЕДПРИЯТИЯМИ: Опыт стран Восточной Европы, Кавказа и Центральной Азии и основные выводы исследования
<https://www.oecd.org/env/outreach/48656745.pdf>

Фонд ИЭГ (2009), "Review of key principles for the establishment of well-balanced long-term contractual relations in the municipal sector" (подготовлен для ЕБРР),
<https://www.ebrd.com/sites/Satellite?c=Content&cid=1395236888537&pagename=EBRD%2FContent%2FContentLayout>

Дервяго, И.П., Дубенок С.А. (2020), Экономические инструменты управления водными ресурсами и объектами и водохозяйственными системами в Республике Беларусь : тематические материалы проекта «Водная инициатива ЕС плюс для Восточного партнерства» – Минск : БГТУ, 2020.



Thanks for your participation!

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