

Leipzig Logbook

Position paper for future-oriented management and design of inland waterways





Inland Waterways International

Preface

Dear Readers,

The WCC Leipzig 2022 with its program of lectures and excursions impressively illustrated that inland waters are confronted with manifold challenges worldwide: Climate change, associated drought but also floods, increasing pressure of use, decreasing biodiversity and unstable water quality, changing meanings and uses of water bodies ... There is urgent need for action in many fields.

At the same time, the speakers at the WCC were also able to show that there are already many excellent approaches to action, e.g. in the transformation of post-mining landscapes, the harmonization of different uses, the renaturation of water bodies, and the development of new technologies, flood protection adapted to floodplains and locations, socially just and environmentally friendly utilization options, international networking, and so on.

Nevertheless, much remains to be done!

For the city of Leipzig and the Central German region it is a major concern to promote the use of the water bodies as space for experience, recreation and health care, but also reconcile their functions for flood protection, for ecology and the implementation of the European Water Framework Directive. For this reason, too, it is a special pleasure and honor for the "Water City Leipzig", in the middle of the "Neuseenland", to have hosted this special international conference. As a result of the cooperation of various actors in the field of inland waters, the Leipzig Logbook was created in order to remind decision-makers of their responsibility for the present situation and for future generations.

Especially in urban regions, water bodies are the gateways to sustainability and a vital local resource for the sustainable development of a community, which must be preserved, developed and promoted!

We would like to express our sincere thanks to all our regional, national and international supporters. Without them the WCC Leipzig 2022 would not have been possible to this extent and variety.

A ponted

Deputy Mayor Heiko Rosenthal *WCC – Scientific organization*

Rudy Van der Ween Inland Waterways International

Background

The Leipzig Logbook is a position paper that has been compiled in the context of the **World Canals Conference Leipzig, 30.05.**–03.06.2022.

The World Canals Conference (WCC) is an **international platform** for the topic of inland waterways under the patronage of **Inland Waterways International (IWI)**¹. For more than 30 years, it has brought together hundreds of experts, scientists, representatives from politics and administration, associations, companies, water sports enthusiasts and tourists from all over the world.

The WCC ² was held in Germany for the first time in 2022 and was prepared by an **extensive consortium of specialists from the Central German region.** The core topic in Leipzig was the transition from the lignite mining area to a diverse and liveable water landscape in Central Germany. The extensive conference and excursion program demonstrated and illustrated how, in the midst of any structural change, tourism, regional development, flood and environmental protection, as well as urban renewal can be effectively promoted and interlinked and at the same time meet the challenges of climate change. Waterways can do a lot – they are multi-talented (transport route, recreation and exercise space, retention space, place of biodiversity, place of relaxation and well-being, and much more). To take advantage of these talents (potentials), a strategy of multicoding is needed. In this process, sectoral interests are brought together, overlapped and linked. The multitalent waterway is a joint task for many stakeholders. No easy task, but it is worth tackling.

¹ www.inlandwaterwaysinternational.org

² www.wccleipzig2022.com

Objectives of the position paper ... recognize, summarize, share ...

More than 270 people from more than 20 countries took part in WCC 2022 in Leipzig. The **extensive lecture, workshop and excursion program** clearly showed, that there are both major challenges and potentials with regard to inland waterways.

Accordingly, this document would like to clarify the need for action on the one hand and pass on approaches for action on the other hand.

This position paper was **jointly prepared by IWI and the scientific organizers of the WCC 2022** based on the submitted conference contributions. It stands for a common set of principles and framework conditions for a **high future-oriented quality, diversity and multifunctionality** of waterways. Crucial are sustainable and inclusive principles of action, professional ethics, authenticity, intellectual integrity, transparency, social responsibility, respect, and sensitivity to cultural uniqueness and local significance – which the editors consider indispensable for the development of waters and waterways and adaptation to climate change.

The Leipzig Logbook is a **handbook** for representatives from politics and administration, as well as decision-makers, those responsible and those committed to waterways – locally, regionally and worldwide. It provides impulses for new strategies of future-oriented work and the further handling of inland waterways.

Call for action

The Leipzig Logbook wants to motivate the multitude and diversity of actors around waterways to bundle their interests and efforts and to strengthen their positions in order to further promote the integrated development of waterways.

We call on You – use the Leipzig Logbook to claim taking responsibility for the development of water bodies by officials and decision-makers.

Core Theses

The ten following theses formulate the demands on water bodies and how these can be brought into line with the use of water bodies as waterways in terms of freight transportation and recreation.

- Future-oriented inland waterways require integrated approaches that reconcile and jointly address the impacts of climate change, as well as the increasing usage competition and pressure on the resources.
- The multifunctionality (use, experienceability, ecological functions and climate adaptation) of water bodies should be ensured through their close-to-nature design.
- 3. Drinking water supply always has priority over other anthropogenic uses.
- 4. Industrial, commercial, land use and residential development as well as tourism should be planned in an integrative manner, designed in a way that protects water bodies, and adapted to the available water resources in terms of quantity and quality.
- 5. Waterways are public space. The access must be equally guaranteed. The development of a waterway network requires public participation.

- 6. Water has a special significance in the city. Urban water bodies greatly contribute to health protection and health care. In order for them to fulfill these functions, structural conditions must be created and secured.
- 7. It is purposeful for stakeholders to coordinate their efforts for the integrated development of canals and inland waterways in order to protect them and to improve their quality.
- Functioning waterway infrastructure is a foundation for recreational boating and water tourism. It must be modernized in line with demand, the investment backlog must be cleared and its network character preserved.
- Transition The management of a structural change can only be achieved through the cooperation of all key players. Learning by doing, courage, innovation and committed people are the prerequisite.
- Internationality, networking, exchange and joint research must be expanded and supported with resources.

Future-oriented inland waterways require integrated approaches that reconcile and jointly address the impacts of climate change, as well as the increasing usage competition and pressure on the resources.

With the brochure "For clean waters in Saxony" 1 the Free State of Saxony shows the major importance of water. "Clean and near-natural waters serve us in many ways, e.g. as food, for recreation, for flood protection or as a raw material. Agriculture, fisheries, the energy industry, and industry are all dependent on water. About three of all jobs worldwide depend on water."

Water serves as both a **source of life** and a **cultural** asset. In order to meet the demands of water management, water tourism, as well as flora and fauna, under changing climate conditions and the already noticeable consequences of climate change, water bodies require an **integrated approach** to their development and design. Water bodies take these requirements into account and only on the basis of integrative planning and management the challenges of this multifunctionality can be mastered.

The following four main areas are of importance depending on navigability or use as a transport route:

- Nature conservation (improvement of ecology, structure, connectivity, floodplain connection, habitat preservation and restoration, ...)
- Water management (reduction of material load, improvement of hydromorphology, flood retention and flood protection, low water management, ...)
- Stream control (especially important during low water, ecological optimization of transverse structures, ...)
- Traffic (maintenance or optimization of the traffic function and usability, ...)



San Antonio River Walk © desmarsol/Pixabay

1 State Agency for Environment, Agriculture and Geology. 2017

... from the program of WCC Leipzig 2022

- * The overall strategy for the Elbe (DE)
- * Water management challenges on the **Unstrut river (DE)**
- * Urban riverbank development, ecosystem restoration and flood protection on the San Antonio River (USA)
- * Implementation of nature-based flood protection measures in Brno (CZ)
- * Waterways in transition: organization, uses and ecological development (DE)
- * Climate change and water bodies in **Central Germany (DE)**
- × Values and valuation concepts of waterways in the course of time (GB)
- * Aquathermal energy as a sustainable heat source for the energy transition (NL)





Climate change in particular calls for a **rethinking** – in political and economic decisions, in the discussion of values, and in the basic understanding of the importance of nature-based solutions. Technical measures are not sufficient. Engineering-biological development of water bodies, rainwater management and the concept of sponge city of decentralized intermediate storage are just some of the forward-looking approaches. In principle, the development of water bodies should be designed climate-sensitive, close to nature, and promote biodiversity.

The multifunctionality (use, experienceability, ecological functions and climate adaptation) of water bodies should be ensured through their close-to-nature design.

Various societal needs, such as preparing for the consequences of climate change, implementing the EU Water Framework Directive, or even restoring a mostly self-regulating water landscape in areas impacted by mining, call for the **renaturation** of reclaimed and, in individual cases, the **restoration** of removed water bodies. In the past, in industrial landscapes the use of water bodies often took precedence over their preservation as ecosystems. In regions, that have not yet been developed waterways are used as transportation routes.

... from the program of WCC Leipzig 2022

- * River restoration of the "Lower Havel Lowlands" (DE)
- Multifunctional use and management of river floodplains and waterways in the UNESCO biosphere reserve "Mittelelbe" (DE)
- × Flood protection at an inland waterway in Bydgoszcz (PL)
- × Floodplain development and its multifunctional use (DE)
- × Reconstruction of the Emscher, structural change through water management (DE)
- Life and Resilience the challenges of the backwaters in Kerala (IN)

In the course of the implementation of appropriate measures, a high level of attention should be paid to the near-natural design of the water bodies. The increase in **high and low water phases**, which is already visible due to climate change but is expected to become even more dominating in the future, calls for a development of watercourses that is both resilient and close to nature, preferably using engineering-biological construction methods. Space should be given to the rivers. The preservation or restoration of floodplains as an ecosystem and **retention area** is one of the most important measures. In order to protect against the effects of floods in residential areas, this does not preclude watercourse development, even by means of individual technical measures, but may be necessary in individual cases to protect life, limb and significant material assets. The **passability** of water bodies ensures the passability for fish, microorganisms and plants. For this reason, existing obstacles, such as weirs, downward gradients or hydroelectric power plants, must be made passable through technical measures. With the possibility of reservoir management, the open pit lakes created in the course of mining rehabilitation can make a significant contribution to balancing during periods of high or low water. However, they also make an important contribution to the expansion of tourist offers.

Species diversity in water bodies is not only mandatory for the implementation of the EU Water Framework Directive and a desirable goal for the observer, but essential for keeping water bodies clean, as water chemistry and oxygen content can be significantly supported by the biological components.



Drinking water supply always has priority over other anthropogenic uses.

As the **number 1 food product**, drinking water is one of the most important foundations for sustaining human life. Therefore, the WHO has developed and continues to develop guidelines for drinking water quality as the authoritative international reference in drinking water hygiene and regulation and continues to update them. The EC Drinking Water Directive and its implementation in national law regulate the protection and improvement of the quality of drinking water.

Clean drinking water or potable water is defined as water intended for drinking, food preparation, personal hygiene and cleaning of dishes and laundry. Its longterm consumption or use must not pose a risk to human health. The resource should be well protected so that as little technical processing as possible is required.

Our water resources, both surface and groundwater, are subject to **multiple pressures of use**. Decreasing water supplies often counteract society's pressure for industrial and landscape development. Therefore, drinking water protection areas for the protection of resources used as drinking water were established. In the future, water resources that have not yet been protected under water law should also be designated as "priority and reserved areas for drinking water supply" using the instruments of spatial planning in accordance with their **need for protection**, and thus protected under spatial planning. In addition, there should be centralized control and, measures should be implemented that

- Strengthen groundwater recharge through retention and infiltration of precipitation water in the area,
- Stabilize water supply, slow down and reduce flood runoff, raise low water, and
- **Increase water storage** ability and capacity in open land (e.g. renaturation of running waters).

In regions of structural change, this also includes in addition:

• Climatically robust rehabilitation of post-mining lakes, remediation of mining-influenced water-courses



Waterworks Song Duong, Vietnam © Aone Deutschland GmbH







... from the program of WCC Leipzig 2022

- * Waterways as a drinking water resource for metropolitan cities (VN)
- * Management of aquatic plants to improve water quality (DE)
- * "Wasserhaushaltsportal Sachsen" provision of data on effects of climate change on the water regime (DE)
- * Management of water treatment plants to improve water quality (DE)

Drought at Elbe, Dresden © André Künzelmann/UFZ

Industrial, commercial, land use and residential development as well as tourism should be planned in an integrative manner, designed in a way that protects water bodies, and adapted to the available water resources in terms of quantity and quality.

All industrial, commercial, and residential development, agricultural cultivation, transportation on waterways, and touristic use require **water in sufficient quantity and quality.** Water resources, both groundwater and surface water, are in short supply in many regions. In addition, a deterioration in water quantity development is to be expected in connection with climate change. Domestic and industrial wastewater discharges and the improper or excessive use of fertilizers and pesticides in agriculture cause pollution of water bodies and impede or modify the development of fish, microorganisms and plants in water bodies.



Waterway junction at Magdeburg © Federal Waterways and Shipping Administration, WSV

Therefore, it is recommended to develop a **water management strategy** and consider it before approving new uses. Economical usage of water is a top priority. Existing rights of use should be reviewed regularly in terms of need, actual use and with reference to the development of water resources in terms of quantity and quality.

... from the program of WCC Leipzig 2022

- Nature conservation assessment of water tourism at mining lakes of the Rhenish lignite area (DE)
- Water tourism and nature conservation conflicts, methods and solutions (DE)
- × Status of the development of "green", emission-free navigation in Northern Europe (NO)
- Optimization of wastewater treatment and rainwater management to improve water quality (DE)
- × Sustainable revitalization of the port area in Tbilisi (AE)
- * Emission-free operation of ferries (DE)
- * Securing the future of inland navigation in Europe – Action Plan NAIADES III



For example, the following measures contribute positively:

- Riparian buffer strips with **water-friendly agriculture** minimize the input of pollutants into water bodies and protect agricultural land from soil runoff.
- The discharge of domestic and industrial wastewater into watercourses is only possible after adequate **purification** in state-of-the-art wastewater treatment plants. This is the only way to reduce negative impacts on aquatic biology due to the content of chemicals, pharmaceutical residues, microplastics, etc., and to avoid a rise in temperature.
- Increasing heavy precipitation is more and more pushing wastewater treatment plants to their capacity limits. Due to this, and also to save water with drinking quality, the implementation of **near-natural solutions for rainwater management** should be promoted. At the same time, these can also fulfill other functions for people and nature (green-blue infrastructure in urban areas).
- Different water sports and recreational uses must neither interfere with each other nor be to the disadvantage of the environment and nature conservation. For this clear rules of conduct must be formulated.
- In the case of touristic use, especially motor-driven navigation, attention must be paid to ensure that neither motor oils nor fuels or cleaning agents pollute the waters. A lifetime limitation of fossil drives (e.g. until the year 2030) should be implemented. **Environmentally friendly and ecological alternatives** of electromobility or zero-emission propulsion systems on the water are to be preferred. They should be continuously promoted, as should the expansion of the corresponding charging infrastructure.

Waterways are public space. The access must be equally guaranteed. The development of a waterway network requires public participation.

Sustainable watercourse development needs **public participation**. This begins with creating transparency regarding water use and development, but also includes ensuring benefits and usability for a broad public. From the conception, through the planning to the maintenance of the functionality of a waterway network, a broad **interest and understanding** must be created to use and appreciate the **commitment** of many people.

Not in every case is the development of water bodies understood as a service of general interest. But even in comprehensible projects of flood protection and nature conservation, interests and opinions clash. Uncontrolled, this costs energy and money on all sides. A sustainable and integrative approach to the development of water bodies must therefore take into account the various aspects of protection and usages right from the start. At the same time, it must sensitize the broad public to their personal **responsibility**. This is also associated with the opportunity of pooling resources. In this way, citizens can recognize it as their own responsibility to develop a consensus on use and planning. For this to happen, the citizens must be given access to all relevant information. At the same time. processes must be open-ended – unless not restricted by higher law. Citizenship and the public are explicitly not only the relevant NGOs and associations, but also initiatives and regional businesses.

Future waterfront development, especially in urban settings, must always place a high priority on **multidimensionality** in the context of **social equality.**

Fields of action such as education, health promotion, implementation of measures for greater environmental justice, as well as civic engagement and adaptation to climate change, can be implemented on/near water bodies particularly effectively.



River swimming in Basel © Lucia de Mosteyrin Muño:



... from the program of WCC Leipzig 2022

- × Waterway regeneration and development of public recreational uses at the Scottish Canals (GB)
- * Swim-City Basel urban river swimming (CH)
- * Waterway connection Karl-Heine-Canal, Saale-Leipzig Canal (DE)
- * Citizen Science projects for data collection, e.g. for water quality monitoring (DE)
- * Historic "Elsterfloßgraben": preservation and use by the help of volunteers (DE)
- × Watercourse revitalization with the help of citizens in the Hamburg region (DE)
- * Delaware and Hudson Canal (USA)
- * Qualification needs for the skilled workers of tomorrow (DE)



Public participation in watercourse development in Scotland © Scottish Canals



Water has a special significance in the city. Urban water bodies greatly contribute to health protection and health care. In order for them to fulfill these functions, structural conditions must be created and secured.

Sustainable, attractive and healthy urban and regional developments require surface waters. These can be of natural origin or anthropogenically modified. Waters are **integrating and connecting elements**, structuring, creating identity, but also have ecological, experiential and socio-cultural aspects; not to mention their great role for leisure and recreation.



Karl-Heine canal, Leipzig © PK | Fotografie www.pkfotografie.com Philipp Kirschner

The so-called urban blue has a variety of positive health effects.

- Regulating and providing ecosystem services

 (e.g., mitigation of air pollution or noise; fresh air supply) as well as a strong climate-ecological balancing function (e.g., on humidity and cooling effects) contribute to mitigating the impacts of climate change.
- Waters have strong **psycho-social effects** through aesthetics, symbolic meanings, and the creation of regional identity.
- Physical **activity, recreational** functions and compensation to the stimuli of modern life are proven.
- Social interaction, experiential education and socio-cultural aspects are very much alive in urban water landscapes.

Urban water bodies thus represent ideal, versatile, and popular locations for physical activities close to home and places for social interaction. With the challenges of climate change, but also the increasing density of cities, urban water spaces must be made sustainably usable or maintained as spaces for recreation, activities and social interaction. **Access, stay and use** for the urban population must be guaranteed.

In combination with urban green, **blue-green infrastructure** is a **key factor for the quality of life** in cities and urban regions as well as for future sustainable developments. It offers the best conditions to implement approaches for adapting to climate change, supporting preventive health care, and improving environmental justice.

... from the program of WCC Leipzig 2022

- Verband Region Stuttgart: Rivers in metropolitan areas as gateways to sustainability (DE)
- × Studies on the effects of urban blue infrastructure on the health of urban populations (UK)
- * Opening of waterways and revitalization of old port facilities in Gent (BE)
- * Success factors for the redevelopment of urban water bodies (FR)
- "Water city Leipzig": natural river courses, floodplain forest and revitalized canals (DE)
- × Open space oriented urban development
 the green-blue infrastructure as a driving force in Leipzig (DE)
- × Urban blue space and health: Roadmap for canal renewal (GB)



It is purposeful for stakeholders to coordinate their efforts for the integrated development of canals and inland waterways in order to protect them and to improve their quality.

Many canals and inland waterways represent and illustrate a **cultural heritage**. This may be related to social structures, identity, cultural history, technological innovations, and landscape development.

To address this historical legacy and, at the same time, future challenges, an integrated approach combining these different aspects is required. This means, development of inland waterways should always incorporate **sustainable and integrated principles of action**, professional ethics, authenticity, intellectual integrity, social responsibility, respect, and sensitivity to cultural uniqueness and local significance.

... from the program of WCC Leipzig 2022

- × Historical heritage and industrial culture at the Finow Canal (DE)
- * Historic Karl-Heine Canal in Leipzig (DE)
- × Water supply for the restoration of the Ulster Canal in Ireland (IE, GB)
- × Multifunctionality of Flemish Waterways (BE)
- × Transformation and regional cooperation of the former coal transport route Bata Canal in Moravia (CZ)
- * Historic Vistula Bridge in Tczew (PL)

The following four dimensions of quality represent an appropriate basis for action:

- The **natural** quality: e.g. water quantity and quality or condition of soil, geology, flora and fauna
- The quality of **use:** such as the accessibility, the variety of uses, the economic value, the multiple use of the space
- The **cultural** quality: such as cultural history and cultural innovation, engineering design and architectural features
- The quality of **experience:** such as spatial diversity, activity space, quiet environment, open spaces, etc.; an individual or in a group

Existing EU cooperation or research funding programs, such as Interreg, the European Route of Industrial Culture, UNESCO (including Intangible Cultural Heritage), etc. could also be used as supportive measures.



Functioning waterway infrastructure is a foundation for recreational boating and water tourism. It must be modernized in line with demand, the investment backlog must be cleared and its network character preserved.

In Germany, the Federal Ministry of Transport presented the "Master Plan for Leisure Navigation" in June 2021 as a roadmap for the future recreational boating and water tourism. This includes an urgently needed, broad-based and sustainable strategy that encompasses the fields of action infrastructure, shipping, digitization, environmental protection and nature conservation, as well as communication/cooperation.



1 Annual gross revenue from tourism demand on federal waterways in Germany: 4.2 billion euros. Source: BMWi, The economic potential of water tourism in Germany, 2016.

2 The average age of locks on secondary waterways in Germany is 105 years, and 75 years for weirs.

- Water tourism is an important economic factor¹ and a driving force for the development of rural areas. Moreover, waterways create recreational quality for the inhabitants of rural areas and sustainably strengthen them as living space.
- The basic prerequisite for recreational boating and successful water tourism is a **functioning** waterway infrastructure. However, there is a considerable investment backlog – presumably not only in Germany – on the secondary waterways used primarily for tourism.²
- The fields of action also include measures to provide a needs-based and customer-oriented infrastructure, such as **upgrading** the infrastructure in the area of sports and recreational boating, as well as support in improving water tourism infrastructure under the responsibility of third parties.
- In order for such plans and concepts to have a practical impact, the necessary **financial and human resources** must be made available. Infrastructure measures must be implemented swiftly in order to clear the investment backlog and preserve the network character of the waterways.



... from the program of WCC Leipzig 2022

- Development of water tourism infrastructure in North Brandenburg, "Water Tourism Initiative" (DE)
- * Infrastructural challenges of water tourism (DE)
- * Economic potentials and impacts of tourism on inland waterways (DE)
- × New model and adapted infrastructure for touristoc use of the Elblag Canal (PL)
- * Technical Heritage of the Elbe-Moldau Waterway (CZ)



Transition – The management of a structural change can only be achieved through the cooperation of all key players. Learning by doing, courage, innovation and committed people are the prerequisite.

The Central German lignite mining region, as the national starting point for this branch of industry, was shaped in equal measure by the high technologies of its time, jobs and value creation, and dramatic environmental pollution over a period of around 150 years.

As a result of economic and monetary union and German reunification in 1990, there was an unprecedented structural break, for the management of which there were no conceptual inputs at this time. Through the cooperation of all key actors (politics and administration on state and municipal level, mining companies, science, associations and citizens) the "planning vacuum" could be overcome within a few years and conditions for the development of a new water tourism destination could be created. This was gradually implemented in the course of lignite remediation on the basis of an administrative agreement between the federal government and the states that was concluded in 1992 and is still in force today. Active mining was reduced to a fraction of its initial level in 1989/1990 and given a state-of-the-art power generation base with the new Lippendorf and Schkopau power plants.

"From miner to sailor" was the motto of the development of the Central German Lake District with the Leipzig Neuseenland as the core area. A significant contribution to making the process "successful" and thus also to bringing about a **change in the region's image** made structures and activities such as regional conferences, urban planning competitions, lignite planning as part of regional planning, the Leipzig Green Ring, water tourism usage concepts and the Leipzig Neuseenland steering group.

At times, this was associated with an approach based on the principle of "learning by doing", since in many cases "blueprints" for design were lacking and setbacks, for example due to geotechnical events, had to be overcome. Nevertheless, it can be stated today that the **historic opportunity** to transform an industrial landscape into a leisure and recreational landscape has been seized, contributing substantially to the attractiveness of the "Boomtown Leipzig" and its surrounding area. As a result of a broad discourse and subsequent legal stipulations, it is now politically certain that the "lignite age" will end in Germany between 2030 and 2038, and in central Germany by 2035 at the latest. At the same time, the structural strengthening frameworks that have been put in place are aimed at maintaining "social peace" by creation of replacement jobs, and bringing innovation to fruition and completing our "post-coal landscapes". This process has potentials and uncertainties, the latter also against the backdrop of current debates on security of supply in the energy sector, which require the most proactive action possible and the bundling of forces.

It will depend on the success of the activities in the Rhineland, in Central Germany and in Lusatia, and thus on the largest "landscape construction sites" in the world, whether and to what extent **positive impetus** can be given to comparable developments in our neighbouring countries of Poland and the Czech Republic.

... from the program of WCC Leipzig 2022

- × Challenges and best practices of the transition in the Central German and Lusatian mining areas (DE)
- Strategies for safeguarding water quality in the the post-mining waters of the Leipziger Neuseenland (DE)
- * Structural change and labor market in the Appalachian coal mining region (USA)
- × Development of a lake landscape in the Rhenish lignite mining area (DE)
- Development potentials and challenges of water management in the former coal region Ústi (CZ)
- Transformation of sand and clay pits into living environments for nature, recreation, tourism and culture in Antwerp (BE)
- Transformation of a coal mining landscape into a tourism landscape in the Ha Long Region (VN)
- Geiseltalsee from coal mining to wine growing (DE)



KAP Zwenkau, aerial view 2017 © Andreas Berkner 📲



Richwood, West Virginia, Appalachia © Jeffrey Greenberg/Universal Images Group via Getty

Internationality, networking, exchange and joint research must be expanded and supported with resources.

Events such as the World Canals Conference contribute significantly to raising awareness of the importance, of canals and inland waterways, and the opportunities they offer, as well as the players involved, are brought into sharper focus for decision-makers.

In order to meet the complexity of global challenges, international networking, professional exchange of experience and knowledge transfer are indispensable. The experiences and insights of other countries and regions form a very large information pool from which a great deal can be learned through good networking and communication platforms.

People who work with waters are particularly aware of the dimensions that transcend nationalities and states, and are therefore particularly well suited to recognize and make use of the opportunities offered by integrative approaches. Stakeholders for the development of waterways and inland waters should make even greater use of the opportunities offered by international informal and formal networks for the exchange of best practice experience, as well as European and international **funding programs** for research and exchange of experience.

In addition, policy makers are called upon to promote **cross-disciplinary and cross-border** cooperation, joint international research and global exchange.



... from the program of WCC Leipzig 2022

- Elbe/Labe transboundary river with challenges in low and high water and other uses (DE/CZ)
- * Qualification needs of engineers and specialists of tomorrow (DE)
- * Joint research of PIANC and IWI on waterway planning (NL)
- × Global Water Partnership supports Integrated Water Resources Management to achieve SDG 6 (AM)
- EU-funded projects NEYMO and NEY-MO-NW - transboundary water management in the framework of the German-Polish Border Water Commission (PL/DE)
- Transboundary implementation of the European Water Framework Directive (EU WRRL) with the Commission for the Protection of the Elbe and the Oder (PL/DE)
- * Canal Cities in China and Worldwide (CN)



Canal cities in China © WCCO – World Historic and Cultural Canal Cities Cooperation Organization



Flood at river Elbe © City of Dresden, Environmental Office

Authors

The Leipzig Logbook was compiled on the basis of the submitted conference contributions in collaboration of a Germany-wide collective of authors from the scientific organization of the WCC.

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Despite the challenges of the Corona pandemic as well as the war in Europe, those involved have shown endurance, that have made the extraordinary scope and special quality of WCC Leipzig 2022 possible.

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