



# SUWANU EUROPE

Development of Regional Action Plans for the fast implementation of water reuse to the 8 pilot Regions of the SUWANU EUROPE project:

## **Steps for the implementation of the Local Action Plan for Braunschweig, Germany**

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## 1.1 Methodological Framework

For almost 70 years a close network between all relevant stakeholders has been developed within the Braunschweig water reuse scheme with AV-BS as head organisation. The figure below represents the organisational structure of the Braunschweig water reuse scheme and the basis for the Regional Working Group.

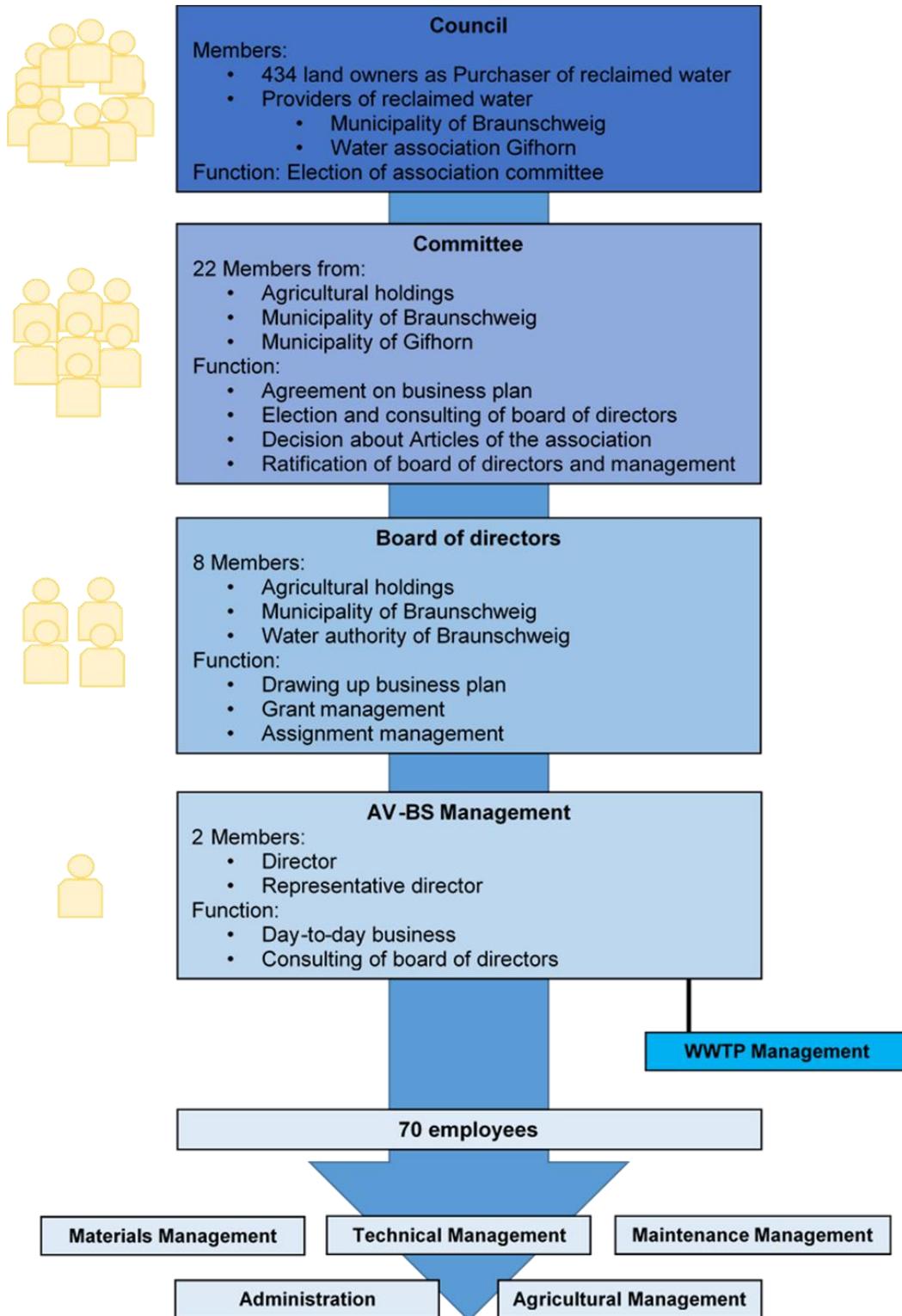
As the figure shows the actors of the Braunschweig water reuse scheme are from different sectors like the agricultural sector, water authority, municipalities, water, and wastewater associations and private companies (for further details see D2.5). All these actors are relevant for a successful water reuse scheme and are involved in the elaboration of the Regional Working Plan.

Within the Braunschweig water reuse scheme there are several events and activities on a frequent basis organised by AV-BS where all relevant actors come together and discuss about recent trends and future tasks. The following activities are well established:

- Meeting of the senior management of AV-BS and WWTP operator on a weekly basis
- Meeting of AV-BS directors with municipality and water authority of Braunschweig on a weekly basis
- Meeting of the board of directors and AV-BS directors on a monthly basis
- Meeting of the Committee on a yearly basis
- Meeting of the Council on a yearly basis
- On-site visit/presentation of AV-BS' technical infrastructure for Committee, Council, the board of directors and farmers on a yearly basis
- Meeting of the AV-BS directors and the Council on a yearly basis

Regarding the elaboration of the Regional Action Plan, the management of AV-BS developed a first draft of specific regional results and actions coherent with the General Action Plan. Basis for the first draft were the opportunities, threats, and weaknesses identified in the regional SWOT analysis and the conclusions and results from the open discussion held within the participatory workshop. Within the second elaboration step, the draft was presented to the board of directors who made suggestions for further improvements and missing results and actions. Furthermore, the draft was communicated to the reclamation facility operator who also brought in new ideas and perspectives. Besides the farmers' associations 'Landvolk Braunschweig' and the federal agricultural authority were asked to participate in the elaboration and had the chance to express their opinion on the first draft. The mentioned institutions and stakeholders are all members of the established Regional Working Group and already took part in the participatory workshop and several Regional Working Group meetings. During the evaluation process farmers and farmers' association emphasized especially the actions 1.3.1, 1.3.2, 2.1.1, 3.3.1, 3.3.2, 4.3.1, 4.3.2, and 5.2.1. The water and agricultural authorities put their focus on the actions 1.1.1, 1.1.2, 1.2.1, 2.1.1, 2.2.1, 4.1.1, 6.1.1 and 6.2.1. Irrigators and reclamation facility operator underlined the actions 1.1.1, 1.1.2, 1.5.1, 2.2.1, 3.1.1, 3.1.2, 3.2.1, 3.2.2, 4.2.1, 5.1.1, 6.1.1, 6.2.1, and 6.3.1 as important. As a third step, the suggestions for improvement of the mentioned stakeholders were taken into account and the AV-BS management finalised the Regional Action Plan for the Braunschweig water reuse scheme on basis of the stakeholders' needs and requirements. The final Regional Action Plan shall be presented to the mentioned stakeholders and RWG members within an RWG meeting and the

meeting of the board of directors. Furthermore, the Regional Action Plan shall be communicated to the Committee and Council within the yearly meeting at the end of the year. For further dissemination, the Regional Action Plan shall be accessible for all relevant stakeholders at the AV-BS website.



## 1.2 Legal framework

**Result 1.1:** Strict regulations among European and National legislative frameworks regarding reclaimed water quality standards are enforced.

### **Action 1.1.1: Enforcement of German regulation regarding water reuse in agriculture**

*There exists no single regulation on water reuse in agriculture in Germany as most authorities and the German government sees no need for regulatory tools due to abundant water resources in Germany. As shown in the regional SWOT the stakeholders identified the missing of regulation as a potential risk for already existing water reuse initiatives. There are however several regions in Germany, like the Braunschweig region, which have negative climate balances during vegetation period which makes irrigation necessary. Regarding consistent standards all over Germany, a national regulation on water reuse in agriculture shall be elaborated and enforced. Therefore regional representatives and environmental task forces of the Parliament should be invited as a first step in order to present the advantages and benefits of water reuse to them. Moreover, the RWG and AV-BS will take part in the formulation of federal water policy frameworks with a focus on challenges by climate change bringing in its expertise on water reuse. Key actors of this action will be water and farmers associations, public authorities, and policy makers.*

### **Action 1.1.2: Development of regional risk management plan for Braunschweig water reuse scheme**

*As the EU proposal for “Minimum requirements for water reuse in agriculture” asks for the implementation of risk management systems the Braunschweig water reuse scheme should be revised and proper risk management plans should be developed by reclamation operators and irrigators together with farmers and food retailers. Already existing safety measures will be checked and if necessary adapted regarding consistent standards. Within the regional SWOT, the implementation of a multi-barrier-system was identified as an opportunity regarding concerns of authorities and residents. Participation in research projects with a focus on the implementation of advanced treatment steps can be a chance to integrate scientific knowledge and expertise on the water reuse risk management. Key actors of this action will be reclamation operators, irrigators of reclaimed water, public authorities, food retailers, and research institutes.*

**Result 1.2:** National legislation complies with the European legislation regarding wastewater treatment and reuse of reclaimed water.

### **Action 1.2.1: Harmonization of national and European legislation regarding micro-pollutants**

*Since 2016 the German government has established a national strategy on minimizing the deposition of micro-pollutants into the aquatic environment. Micro-pollutants from various products like human and veterinary pharmaceuticals, biocides, chemicals, and care products shall be removed or eliminated within the wastewater treatment process. As the EU proposal for “Minimum requirements for water reuse in agriculture” focuses in particular on microbiological standards it should be enforced that either the EU proposal will be adapted regarding micro-pollutants’ fate or that the national legal framework on water reuse will go beyond the proposed microbiological quality parameters and will integrate micro-pollutant aspects. As shown in the regional SWOT the detection of high concentration of pharmaceuticals in the groundwater under*

*irrigation fields was identified as a weakness by the stakeholders which underlines the importance of quality effluent standards regarding micro-pollutants. Therefore the RWG will invite and meet regional EU parliament members in order to present them the Braunschweig water reuse scheme and its challenges. Furthermore, AV-BS and RWG will take part in the national stakeholder process on the strategy regarding micro-pollutants through their network. Key actors of this action will be reclamation operators, irrigators of reclaimed water, public authorities, and research institutes.*

**Result 1.3:** The European and national legal framework facilitates the use of recycled phosphorus fertilizer from wastewater in agriculture.

**Action 1.3.1: Harmonization of national and European legislation regarding secondary phosphorus fertilizer from wastewater**

*Besides water reuse, the circular economy in the wastewater sector shall also establish a strategy on the reuse of nutrients. Within the Braunschweig water reuse scheme it's foreseen to recycle phosphorus and nitrogen out from the wastewater stream and to provide regional farmers with secondary fertilizers. Within the RWG meetings, it was found out that secondary phosphorus fertilizer produced in Braunschweig does not fulfill the quality requirements given by the national legislation but by the European legal framework. Therefore the national fertilizer regulation should be adapted to the European legislation in order to reduce regulatory obstacles for a circular economy in the water sector. Through collaboration with the "German Environment Agency" and with the national fertilizer advisory committee by holding stakeholder dialogues an adaption of the national legislation should be enforced. Key actors of this action will be wastewater operators, public authorities, and policy makers.*

**Action 1.3.2: Establishing a regional cluster on secondary phosphorus fertilizer**

*As explained above in 1.3.1 circular economy in the wastewater sector shall also establish a strategy on the reuse of nutrients. The Braunschweig region locates several plants producing struvite meaning a secondary phosphorus fertilizer and can thereby serve as a demonstration site for producing and application of recycled phosphorus fertilizers. Together with the other wastewater operators producing struvite AV-BS and the RWG can combine strengths and work together as a regional cluster on the further establishment of secondary phosphorus fertilizers. Frequent workshops for national and European stakeholder groups will work on reducing bureaucratic obstacles and efficient marketing strategies. Key actors of this action will be wastewater operators, farmers' associations, public authorities, research institutes, and fertilizer industries.*

**Result 1.4:** National legislation unifies existing regional policies on water reuse, avoiding fragmentation.

**Action 1.4.1: Harmonization of the national and federal legal framework**

*Germany is a decentralized country, where both the national and federal administrations promote their own regulatory framework. As already explained in 1.1.1 in Germany there exists no single regulation on water reuse neither at the national level nor at the federal level. On the other hand, this circumstance can be an opportunity to establish harmonized national and*

*federal regulations that take at the same time the regional heterogeneities into account. Within Germany, the annual average precipitation varies from 500 mm in the northeast to more than 1000 mm in the south. Due to the EU proposal for “Minimum requirements for water reuse in agriculture” there will be a need for action for both the national and federal administration. Key actors of this action will be reclamation operators, irrigators of reclaimed water, farmers’ associations, public authorities, and policy makers.*

**Result 1.5:** Stakeholders participate in legislation discussion at the EU level.

**Action 1.5.1: Continuation of established stakeholder dialogues**

*As shown in the regional SWOT analysis concerns of residents, consumers, farmers, and food retailers are one of the main risks for water reuse in Germany. To overcome the obstacles of these stakeholder groups the already established stakeholder dialogues shall be extended in order to provide them the opportunity to participate actively in the regional legislation process. In the Braunschweig region there are frequent stakeholder dialogues regarding ‘adaption measures due to increasing droughts in rural areas’ and ‘application and marketing of secondary fertilizers’. Key actors of this action will be reclamation operators, irrigators of reclaimed water, farmers’ and consumers’ associations, public authorities, food retailers, and policy makers.*

### 1.3 Administrative procedures

**Result 2.1:** The bureaucratic procedures to acquire the license for reuse in agriculture are clear brief and inexpensive.

**Action 2.1.1: Establishing of central license contact partner**

*Management and licensing of groundwater resources is normally done by the federal water agency which operates the observations wells and defines the groundwater amount that farmers are allowed to extract. In order to centralize knowledge and management of the regional water resources the licensing of water reuse should also be in the area of responsibility of the federal water agency. This can guarantee a more efficient management of water resources. Key actors of this action will be reclamation operators, irrigators of reclaimed water, farmers’ associations, and public authorities.*

**Result 2.2:** Harmonized standards for administrative requirements of water reuse are enforced at the national level.

**Action 2.2.1: Coordination within federal and regional administrations**

*As the Braunschweig water reuse scheme affects both administrations on federal and regional level the coordination between the institutions should be designed more effectively. The area of responsibility should be clearly defined so that there no uncertainties regarding task areas and contact persons for administration staff as well as for irrigators and farmers. Application and management for water reuse license shall be organized by one administration in order to reduce administrative expenses and facilitates access for irrigators and farmers. Key actors of this action will be reclamation operators, irrigators of reclaimed water, farmers’ associations, and public authorities.*

## 1.4 Public and private incentives

**Result 3.1:** Public administration invests in infrastructure for the treatment and distribution of reclaimed water.

### **Action 3.1.1: Long-term public financial support of Braunschweig water reuse scheme**

*As shown in the regional state of play analysis and the regional SWOT the Braunschweig water reuse scheme including treatment, distribution and irrigation is mainly financed by wastewater fees paid by the citizens of Braunschweig since the irrigation of the reclaimed water and the soil passage afterward can be seen as additional treatment step to protect the aquatic environment of high micro-pollutants concentrations. In the case of the Braunschweig water reuse scheme the agricultural holdings cannot afford the distribution and irrigation of the reclaimed water on their own and will have an ongoing need for public support. Therefore the effectiveness of treatment and environment protection by the implemented irrigation system has been frequently proven and if necessary the system has to be adapted to new requirements. State-of-the-art technologies and processes like advanced treatment steps or risk management plans will be tested within research projects and if needed successively integrated into the existing infrastructure in order to guarantee excellent reclaimed water quality parameters. Furthermore, the established frequent meetings of the key actors' wastewater operators, irrigators, farmers, and public administration will go on in order to harmonize needs and long-term perspectives.*

### **Action 3.1.2: Elaboration of a communication campaign that promotes the link between reclaimed water and water scarcity issues**

*As shown in the regional state of play analysis the Braunschweig region has a negative climate balance during vegetation period which makes agricultural irrigation necessary especially due to the low water holding capacity of the existing sandy soils. A positive perspective of water reuse within the general public is one of the main pre-conditions of a long-term public financial support of the Braunschweig water reuse scheme. Therefore a communication campaign shall raise awareness about the impact of water scarcity in the region and the importance of increasing the water sources in order to lessen the pressure on the water sources and lessen the economic pressure of the agricultural holdings. Key actors of this action will be reclamation operators, irrigators of reclaimed water, farmers' associations, and public authorities.*

**Result 3.2:** Public and private stakeholders agree to reduce the cost of energy for the production of reclaimed water.

### **Action 3.2.1: Implementation of thermal pressure hydrolysis accompanied by an energy audit**

*As shown in the regional state of play analysis the wastewater treatment plant in Braunschweig received in 2019 a new sludge treatment including thermal pressure hydrolysis. It's foreseen that a new unit that will cook the sludge at high pressures will improve the dewatering process of the sludge afterward and will increase methane generation by about 10 % during digestion afterwards. Both benefits shall decrease the energy demand of the reclamation process. The implementation shall be accompanied by an energy audit that compares the energy demand before and after the installation and will identify room for further energy costs improvement. Key actors of this action will be reclamation operators and research institutes.*

### **Action 3.2.2: Assessment of energy demand for advanced treatment steps**

*In order to improve the quality of the reclaimed water regarding microbiological and micro-pollutant standards advanced treatment processes shall be implemented within the Braunschweig water reuse scheme. As shown in the regional SWOT analysis the installation of advanced treatment processes like UV-disinfection, ozonization, activated carbon or performic acid can be seen as an opportunity regarding the extension of the agricultural portfolio. Since the listed advanced treatment steps are usually cost- and energy-intensive the processes shall be tested within research projects on the reclamation facility in order to assess their performance compared to their energy demand. The assessment shall be used as a basis for decision-making regarding further investments. Key actors of this action will be reclamation operators and research institutes.*

**Result 3.3:** Public authorities, reclaimed water operators and administration provide direct economic incentives to farmers that use reclaimed water for irrigation.

#### **Action 3.3.1: Financial support of farmers regarding the reduction of groundwater extraction**

*As shown in the regional state of play and the regional SWOT analysis the Braunschweig region has a negative climate balance during vegetation period. If the trend of the last years continues and the duration of drought periods increases the groundwater table during vegetation period can fall to levels which means serious risks for the environment and agriculture. Therefore public authorities shall reward farmers who reduce their irrigation demand of groundwater due to the installation of water saving equipment or cultivation of less water intensive crops. Potential financial losses shall be compensated by providing reclaimed water in order to extend the irrigation area. Key actors of this action will be reclamation operators, irrigators of reclaimed water, farmers' associations, and public authorities.*

#### **Action 3.3.2: Increased agricultural promotion for areas irrigated with reclaimed water**

*Germany receives yearly about 6.3 billion € of EU subsidies in order to promote the national farming holdings. About 4.7 billion € are used for direct payments per hectare. For promotion, an agricultural field has to fulfill certain cross compliances. Within the 'Greening direct payments' which are about 30 % of the direct payments, a farmer can receive direct financial aid if the cultivation methods supports climate and environment protection. Accepting irrigation with reclaimed water as the "Greening method" would mean additional direct payments for farmers irrigating with reclaimed water. Therefore the RWG will invite and meet regional EU parliament members in order to present them the Braunschweig water reuse scheme and its challenges. Key actors of this action will be reclamation operators, irrigators of reclaimed water, farmers' association, public authorities, and policy makers.*

## **1.5 Investments**

**Result 4.1:** The cooperation networks between the public and private sectors are established, and both invest in research to increase water quality, distribution, and overall use of reclaimed water.

#### **Action 4.1.1: Continuation of participation in research projects with public and private partners**

*As shown in the regional state of play analysis the Braunschweig water reuse scheme and AV-BS are frequent partners in international and national research projects with a wide variety of partners. Regarding the further establishment of the cooperation network with research institutes and industry partner AV-BS is currently engaged in several application processes for national funding programs regarding the development of advanced treatments processes and water reuse technologies. Both research projects have public and private partners and will start with the beginning of 2021 if the application is successful. On the one hand, a pilot plant consisting of ozonization, filtration, and UV-disinfection shall be installed at the reclamation facility and on the other hand, a hydroponic water reuse system shall be further developed together with farmers and food retailers. Key actors of this action will be reclamation operators, irrigators of reclaimed water, farmers' association, research institutes, and private companies.*

**Result 4.2:** A supervisory board, with representatives of all the stakeholders, has been established to expand and monitor the evolution of know - how and the technology for reclaimed water.

**Action 4.2.1: Participation in stakeholder dialogues regarding regional water resources strategy**

*As shown in the regional state of play and the regional SWOT analysis the Braunschweig region has a negative climate balance during vegetation period. If the trend of the last years continues and duration of drought periods increases the groundwater table during vegetation period can fall to levels which mean serious risks for environment and agriculture. For this reason the federal agricultural authority initiated a frequent stakeholder process with focus on the effects of climate change regarding water demand of plants and soils. It's expected that irrigation demand of the regional farmers will increase which makes an efficient strategy regarding distribution and use of the regional water resources necessary. Members of the RWG and AV-BS will take part in the stakeholder dialogue as representatives of water reuse concepts and will promote reclaimed water as alternative water resource. Key actors of this action will be reclamation operators, irrigators of reclaimed water, farmers' associations, public authorities and research institutes.*

**Result 4.3:** Farmers are informed and advised about the new water treatment technologies and their application in agriculture.

**Action 4.3.1: Providing info material by e-learning via online courses**

*Within task 3.5 of the SuWaNu-Europe project, several online courses will be developed regarding various aspects of water reuse and reclamation. The training courses will mainly consist of audio-visual material based on the info-packages and the practical knowledge identified and structured in previous tasks of SuWaNu-Europe. The online courses will be all-time available and can reach a high number of farmers interested in the current progress in the field of water reuse. Key actors of this action will be reclamation operators, irrigators of reclaimed water, and farmers' associations.*

**Action 4.3.2: Frequent info meetings for farmers regarding water reuse trends**

*As shown in the RWG report farmers, irrigators, and reclamation operators of the Braunschweig water reuse scheme have frequent meetings on a yearly basis. Purpose of the meeting is to*

*inform about the current developments and investments within the Braunschweig water reuse scheme and to discuss future challenges and decisions. Besides the listed issues the meeting shall be used for providing information about developments in the water reuse sector regarding technology, legislation, and administration. It's supposed that a yearly frequency is sufficient regarding the pace of the water reuse sector developments. Key actors of this action will be reclamation operators, irrigators of reclaimed water, and farmers' associations.*

## 1.6 European network

**Result 5.1:** European countries promote international exchange and dialogue to expand the use of reclaimed water.

### **Action 5.1.1: Receiving European delegations presenting water reuse scheme on-site**

*As the Braunschweig water reuse scheme with 3000 ha of connected fields irrigated with reclaimed water every year is supposed to be one of the largest water reuse initiatives in Europe operators and irrigators of the Braunschweig water reuse scheme are interested in sharing their knowledge and expertise gained in 50 years of water reuse in Braunschweig. Personal interaction between stakeholders of water reuse shall combine strengths and expertise on European level in order to present the interests and needs of irrigators and farmers all over Europe in a united way. Key actors of this action will be reclamation operators, irrigators of reclaimed water, and farmers' associations.*

**Result 5.2:** Farmer's organizations across Europe communicate and compare their experience with the implementation of reclaimed water for irrigation.

### **Action 5.2.1: Organization of workshops within international conferences**

*Conducting workshops with focus on water reuse issues from the agricultural perspective within international farming or water conferences shall bring farmers and their associations together. Within the workshops, the farmers will have the opportunity to share their knowledge on water reuse and irrigation and to get to know different approaches to water reclamation. The workshops' content can base on fact-sheets and information material elaborated within the Suwanu-Europe project. Key actors of this action will be reclamation operators, irrigators of reclaimed water, and farmers' associations.*

## 1.7 Social acceptance

**Result 6.1:** The general public is aware of the benefits regarding the use of reclaimed water in agriculture.

### **Action 6.1.1: Providing possibilities for on-site experiences to stakeholders**

*As experiential education has been proven to be more successful than conventional education and communication campaigns to improve the public acceptance of water reclamation projects various opportunities shall be provided to get to know the Braunschweig water reuse scheme. Events like open days for residents and consumers or on-site visits for international delegations and farmers make a concrete experience of water reuse possible. Stakeholders have the*

*possibility to get to know the reclamation and irrigation infrastructure, the irrigated products, and the people who are responsible for the operation and maintenance of the system. Key actors of this action will be reclamation operators, irrigators of reclaimed water, farmers' associations, residents, and consumers.*

#### **Action 6.1.2: Raising the young generation's interest in water reuse**

*In order to give young people a better understanding of water reuse and reclamation, various educational strategies shall be elaborated. Collaboration networks with regional schools and universities shall be established which provides the possibility of internships for single students and as well on-site visits for groups making meetings with irrigators and farmers possible. Besides info material about the impact of water scarcity in the region and the benefits of water reuse shall be provided to the students in order to understand the need of irrigation with reclaimed water. Moreover, a social media campaign in a clear and understandable format shall be started providing visual and info material about the daily business and background of water reuse. Key actors of this action will be reclamation operators, irrigators of reclaimed water, farmers' associations, and students.*

**Result 6.2:** Public opinion is aware of the benefits of water reuse to face water scarcity and protect the environment.

#### **Action 6.2.1: Establishment of a website portal with open access to all relevant information about water reuse**

*All stakeholders shall have free access to relevant information about the Braunschweig water reuse scheme in order to guarantee transparency and establish public trust in the benefits of water reuse. The open database shall provide information about quality parameters like microbiological effluent values or nutrient concentrations as well as about quantity parameters like the amount of fresh water that has been saved due to the use of reclaimed water. Besides information about the regional climate (negative climate balance, soil with low water holding capacity) and the need for irrigation with reclaimed water due to water scarcity in the region shall be published. Key actors of this action will be reclamation operators, irrigators of reclaimed water, and farmers' associations.*

#### **Action 6.2.2: Commissioning scientific studies about water reuse risks**

*Scientific results from independent research institutions can be an effective instrument against public concerns regarding risks originating from the irrigation of reclaimed water. With respect to the Braunschweig water reuse scheme, various studies shall be executed with a focus on micro-pollutants like pharmaceuticals, multi-resistant bacteria, and microplastic distributed via irrigation water. As shown in the regional SWOT analysis the listed issues were identified as a potential risk for the Braunschweig water reuse scheme. Furthermore, the effectiveness of the established multi-barrier system (see action 1.1.2) shall be assessed by an independent institute. Key actors of this action will be reclamation operators, irrigators of reclaimed water, and research institutes.*

#### **Action 6.2.3: Guided tours through local bird biotope**

*As shown in the regional state of play analysis a bird biotope is part of the Braunschweig water reuse scheme. During winter time when there's no need for irrigation water, the reclaimed water*

*is given to a detention lagoon of 275 ha which forms a unique habitat for local and migrating birds. The detention lagoon is regarded by ornithologists from all over Germany due to its bird biodiversity. Guided tours through the detention lagoon for local residents and stakeholders shall raise awareness about the benefits of the water reuse scheme regarding environmental protection. Key actors of this action will be reclamation operators and irrigators of reclaimed water.*

**Result 6.3:** The general public accepts and consumes products irrigated with reclaimed water.

**Action 6.3.1: Collaboration with food retailers within research projects**

*As the products irrigated with reclaimed water has to meet first of all the need and quality standards of the food retailers a strong collaboration with them shall be established. Within the Braunschweig water reuse scheme, no products for direct consumption that have higher hygienic standards compared to processed food products are currently cultivated. AV-BS is however partner of a hydroponic water reuse research project which produces vegetables for direct consumption. Within this research project, stakeholder dialogues shall be used to start a collaboration between farmers interested in hydroponic water reuse, food retailers, and consumer associations. The stakeholder process should ensure transparency regarding the hygienic safety of products irrigated with reclaimed water. Key actors of this action will be reclamation operators, irrigators of reclaimed water, farmers' associations, consumers' associations, and food retailers.*

**Action 6.3.2: Providing on-site experiences to stakeholders within the research project**

*As experiential education has been proven to be more successful than conventional education and communication campaigns to improve the public acceptance stakeholders shall have the opportunity to visit the above mentioned hydroponic water reuse research plant in order to get to know the technology and irrigated products on-site. Key actors of this action will be reclamation operators, irrigators of reclaimed water, farmers' associations, residents, and consumers.*

## 1.8 Conclusions

The outcomes of the participatory workshop (D2.4), of the regional state of play analysis (D1.1), of the regional SWOT analysis (D2.1) and of the previous RWG meetings set the basis for the formulation of the Regional Action Plan for the Braunschweig water reuse scheme. The outcomes were used to elaborate a first draft of the Action Plan which was evaluated by all relevant stakeholders afterward. Within the elaboration process of the Regional Action Plan, the RWG members taking part in the evaluation were very engaged and interested. AV-BS as the main author of the RAP tried to include the needs and ideas of all stakeholders and RWG members. As the needs and requirements of the different stakeholders from sectors like agriculture, irrigation, authorities, and wastewater are not always consistent compromises had to be found which all stakeholders are comfortable with. On the other hand, the intensive discussion about single aspects broadened the perspectives of the stakeholders and led to an increased understanding of the different working conditions.

The key issues and goals of the Regional Action Plan can be described as the following:

- Enforcement of national regulation on water reuse

- Integration of micro-pollutants parameters in national and European water reuse legislation
  - Establishment of a risk management plan for Braunschweig water reuse scheme
  - Regulatory and financial support of the application of secondary phosphorus fertilizer
  - Development of long-term public financial support of Braunschweig water reuse scheme
  - Elaboration of communication campaign presenting benefits of water reuse and Braunschweig water reuse scheme in particular
  - Enforcement of financial support and incentives for farmers practicing water reuse
  - Further collaboration with research institutes regarding challenges of Braunschweig water reuse scheme
  - Further establishment of stakeholder involvement regarding water reuse in Braunschweig region
  - Development of experiential education forms reducing concerns regarding water reuse
- Regarding the dissemination of the RAP, the single actions shall be communicated to all relevant stakeholders via open web access to the elaborated document and within the training workshops (D3.2). Furthermore, the RAP shall be presented to the Council and Committee of the Braunschweig (see chapter 1.1) water reuse scheme within the yearly meetings of these groups.