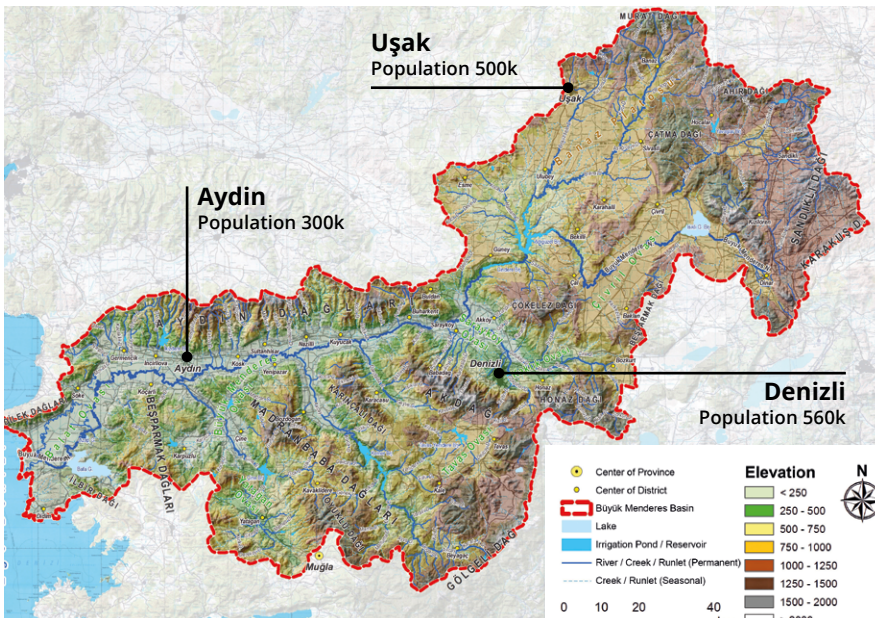




# BÜYÜK MENDERES RIVER BASIN – TURKEY



The Büyük Menderes River is located in South-Western part of Turkey, in Western Anatolia. The basin covers ten cities and 185 municipalities.

The river delta has been recognized as an important Bird and Biodiversity Area for breeding and wintering water birds. The key economic sectors are textile, leather, agriculture (mainly cotton, fig and olive), most of which are export oriented, as well as tourism and fisheries.

Country	Turkey
Turkey Area	783.562 km <sup>2</sup>
Turkey Population	81.9 million
Basin Area	24.873 km <sup>2</sup>
Basin Population	2,5 million

## TEXTILE SECTOR

The textile sector is an important contributor to the socio-economic development of the Büyük Menderes basin with textiles factories mostly located in Uşak, Denizli and Aydın. The basin holds 40% of the national leather production, mainly concentrated upstream in Uşak. The textile is the leading sector in Denizli: the province is a hub of textile sector in Turkey (60% of all textile exports; with a >10% p. a. growth rate). Aydın province, an area in which both agriculture and geothermal energy sectors are comparatively dominant, is responsible for 14% of the national cotton production.



**7<sup>th</sup> most  
populated basin  
in Turkey**



**40% of national  
leather production  
in Uşak**



**60% of national  
textile exports  
in Denizli**



**14% of  
national cotton  
production in Aydın**

## Main Challenges in the Basin

## Potential Impacts from the Sector

## Implications for Business

### WATER QUANTITY

Surface and groundwater are used for domestic, industrial and agricultural purposes in Büyük Menderes basin. Both water sources are under pressure due to population growth and climate change.

Textile sector uses high level of water during dyeing processes; between 20 and 230 m<sup>3</sup> of water is used for 1 ton of textile fabrics.

Scientific projections indicate decrease in seasonal water availability in the near future in the Büyük Menderes basin due to climate change; and the level of groundwater, which is the major source of water for textile in the basin, has been decreasing.

### WATER QUALITY

Discharge of municipal and industrial wastewater is an issue for water quality. In the lower parts of the river basin, pollution is getting more serious and the river eco-system is deteriorating.

This ecosystem decline will negatively affect the lives of people and the environmental health of the basin.

The textile sector generates highly polluted wastewater, which is often discharged without proper treatment.

Upstream water pollution from textile and leather industries can have negative impacts on agriculture downstream, including cotton production and food crops.

Water quality issues may make water sources unusable or requiring heavy treatment before use, creating operational disruptions or higher water access costs, as well as serious reputational issues for those sourcing from the region.

### WATER GOVERNANCE

The responsibilities of different government institutions often overlap when it comes to the management of the basin, making it difficult for stakeholders to understand and therefore comply with regulations.

Textiles mills, tanneries and cotton growers in the region often lack capacity on environmental regulations, and therefore have low awareness of (and preparation for) changes in government requirements from producers.

The Büyük Menderes River Basin Plan, finalized in 2019, is expected to demand the sectors to reduce their impacts on the environment. Unprepared businesses may not be able to adapt and could face fines and reputational issues.

## PROJECT INFORMATION

### WWF-TURKEY BÜYÜK MENDERES WATER STEWARDSHIP STRATEGY (2019–2023)

Through the implementation of Water Stewardship in the textile sector, this programme aims to serve as a model of conservation and sustainable use of water resources, that can be scaled up to other basins in Turkey.

The programme has three main long term aspirational goals:

- Bring the water quality from “low” to “good” status (according to the Ministry of Environment and Urbanization standards), especially in highly polluted critical spots;
- Create a basin wide partnership with agreed conservation targets in key biodiversity areas; reduce water, chemicals and energy use in industry production; and establish government monitoring systems for private sector companies and civil society partner organizations;
- Contribute to the protection of freshwater habitats and species through effective wetland management and restoration.

### TIMELINE

WWF-Turkey has been working in Büyük Menderes Basin for a decade and in 2015, WWF-Turkey developed a basin strategy for the Büyük Menderes basin which aims to achieve conservation and sustainable use of water resources. The “Water Stewardship Programme in Büyük Menderes” has started in 2017 and will last until the end of 2023.

## INTERNATIONAL PARTNERS

WWF Turkey's Water Stewardship Programme for textiles was initiated with H&M group in 2017, and key partner IKEA has joined in 2018, with additional brands supporting a Collective Action Committee within the programme. This phase of the programme, lasting until 2020, focuses on collective action and supporting strong environmental governance.

## NATIONAL, REGIONAL AND LOCAL PARTNERS

Ministry of Industry and Technology (MIT) ■ Ministry of Environment and Urbanization (MEU) ■ Ministry of Agriculture and Forestry (MAF) ■ Denizli Chamber of Industry (DSO) ■ Denizli Industrial Park (DOSB) ■ Southern Aegean Development Agency (GEKA) ■ Garanti Bank

## ACTIVITIES

Type of activity	Objectives by 2023	Activities 2019 – 2021	Key Performance Indicators
<b>Cleaner production</b>	Strengthen cleaner production implementation in textile sector in Büyük Menderes and Ergene basin.	<ol style="list-style-type: none"> <li>1. Impact reduction by performing feasibility studies at facility level in Büyük Menderes and Ergene.</li> <li>2. Disseminate WWF's Key Performance Indicator 'Cleaner Production Guide for Textile Sector' in Büyük Menderes and Ergene basins.</li> <li>3. Assess chemical substitution in textile to reduce hazardous chemicals (in collaboration with ZDHC).</li> <li>4. Promote wider adoption of SAC Higg-Index.</li> <li>5. Introduce Büyük Menderes case as a model to Ergene basin.</li> </ol>	Textile companies in the Büyük Menderes basin mitigate their impact on water quality by at least 20% by 2023.
<b>Financial Mechanisms</b>	Implement financial, technical and political mechanisms to reduce the impact and risks of the textile industry in the Büyük Menderes basin.	<ol style="list-style-type: none"> <li>1. Facilitate dialogue with stakeholder groups including public authorities, finance institutions and basin stakeholders to develop a sustainable business model based on stakeholder experience.</li> </ol>	A business model, where cleaner production is adopted as a norm, is created to be replicated in the textile sector in other Turkish regions.
<b>Collective Action and Water Governance</b>	Develop good basin governance model in Büyük Menderes to be replicated in other basins in Turkey.	<ol style="list-style-type: none"> <li>1. Establish Multi-Stakeholder Platform (MSP) in Denizli to identify a road map for good governance model for the basin.</li> </ol>	Case studies of successful interventions that can be replicated in other sectors and in other basins in Turkey – demonstrating an industrial approach that addresses water quantity, quality and ecosystem protection.
<b>Landscape approach in Büyük Menderes</b>	Demonstrate a landscape level biodiversity protection approach, integrating biodiversity-friendly land, water and resource use into regional development and basin management planning, and policies.	<ol style="list-style-type: none"> <li>1. Develop adaptive and participatory conservation plan for Büyük Menderes.</li> <li>2. Develop road map for restoration and improvement of the ecological status and socio-economic welfare around Bafa Lake Nature Park, Büyük Menderes Delta.</li> <li>3. Develop a model of conservation of ecosystem services of Büyük Menderes in production processes.</li> </ol>	A landscape-level conservation planning and monitoring framework established in Büyük Menderes Basin.
<b>Sustainability in the textile supply chain</b>	Achieve sustainable supply chain between cotton and textile sector.	<ol style="list-style-type: none"> <li>1. Engage with cotton and farming stakeholders in the basin and bring them into collective action.</li> <li>2. Develop and implement step-wise approach to achieve water stewardship in cotton production.</li> </ol>	Minimum 2,000 farmers receive training on BCI; Minimum 500 farmers have BCI certificate.



## MAIN ACHIEVEMENTS TO DATE

### Case 1: Developing Cleaner Production Guideline

In 2018, a dedicated “*Cleaner Production Guide for Textile Sector*” was developed in English and Turkish. Feasibility studies were conducted at 4 facilities in Denizli and Aydın to identify the potential for saving of water, energy and chemical use. In one factory, savings of 40km<sup>3</sup>/year of freshwater, 220 ton/year of chemicals and 7000 MWh (~4,500 barrels of oil) were estimated with cleaner production measures. For the 50 wet processing factories in Büyük Menderes, the total savings from applying these best practices could be ~ **€4–10 million/year** through investment of ~ **€5–12 million**, with investment fully recovered within **6 months – 2 years**.

### Case 2: Creating financial mechanisms to transform the Büyük Menderes Basin

Together with the Southern Aegean Development Agency (GEKA) of the Turkish government, WWF-Turkey has launched a program to encourage investment in cleaner production technologies among local suppliers in Büyük Menderes basin in 2018. In 2018, GEKA supported feasibility studies in Industrial Parks in the region, and in 2019 they launched the “Cleaner Production Support Program” to provide grant support to SMEs to invest in cleaner production technologies at facility level.

### Case 3: Collective Action to Achieve Sustainability in the Textile Supply Chain

A comprehensive programme has been rolled out to ensure transformation of the textiles industry, including the creation of a national level dialogue on textiles sustainability issues. The Büyük Menderes case study has been shared with members of parliament from the region as an introduction to sustainable water management, and a ‘Brands Committee’ was created in 2019 in Istanbul, with 25 domestic and international brands participating to support a green transition for the textiles industry.



## BENEFITS FOR PARTNERS

### 1. Participation in shared solutions and multi-stakeholder work

Benefits for public authorities include the involvement of multiple stakeholders into decision making processes in a way that is designed to ultimately strengthen self-regulation, applicability of policy decisions, and support from non-state actors to deliver on shared goals such as long term water planning and the SDGs. For financial institutions, the benefits are new, attractive and investment opportunities with reduced risk that deliver quick return on investment whilst having quantifiable sustainability co-benefits.

### 2. Benefits for Suppliers

WWF provides sites with the technical and financial support needed to address water risks and to mitigate impacts at facility level, helping decrease the cost of production (through water and energy efficiency and chemical optimisation). Producer sites are also included in multi-stakeholder platforms to address basin governance challenges, which gives them a voice in the process and helps address shared water risks to business, ecosystems and communities in the region.

### 3. Benefits for Brands

By joining the programme, textiles brands can enrol their suppliers sites in the programme to reduce their value chain water risks, as well as having a strong role to play within the transparent public-private dialogue in the basin. These activities help address water risk and strengthen good water governance and regulations in the region.

## THIS PROJECT CONTRIBUTES TO THE ACHIEVEMENT OF:

6 CLEAN WATER AND SANITATION



7 AFFORDABLE AND CLEAN ENERGY



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



17 PARTNERSHIPS FOR THE GOALS



#### Imprint

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