

BRIEFING NOTE:

A Regional Approach to Reducing Pollution in the Adriatic Sea

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The Adriatic Sea is a cultural and economic anchor of the Mediterranean region, best known for its deep blue water, sandy beaches, and biodiversity. The 75 million residents of its six riparian countries (Italy, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, and Albania) depend on the Adriatic for recreation and economic activities such as tourism, transport, and fishing (see box below).

Unfortunately, this critical water body is increasingly endangered by contamination. Pollution generated by solid and liquid waste has created eutrophication,¹ degraded groundwater and destroyed natural habitats and landscape. These factors combined threaten local economic growth, especially in the five countries that comprise the eastern Adriatic. Such complex issues cannot be addressed by any of these countries acting alone.

This shared challenge requires a unified response. The Water Partnership Program (WPP) was instrumental in identifying pollution hotspots for priority investments in the eastern Adriatic. These investments, aimed at addressing the sea's major economic, environmental and coastal management challenges, are now being planned through the Adriatic Sea Environment Program (ASEP), to be funded by several regional stakeholders investing up to an estimated €400 million. ASEP has been launched with the approval of the first regional project for Croatia and Bosnia and Herzegovina, intended for piloting viable solutions to address transboundary pollution in the Adriatic.

Background

The Adriatic is a semi-enclosed sea, forming a distinct sub-region within the Mediterranean. It is the most important tourist and recreational area in Europe and a major maritime route for goods transported to central and southeastern European markets.

Over 50 million people live within the sea's catchment area, of which about 20 percent live on the coast. The migration of people towards coastal areas and the growing number of sea-related activities are putting considerable pressure on the marine ecosystem. The Adriatic has an abundance of endemic flora and fauna, including some rare and threatened species along the eastern coast, which is relatively less polluted than the western.² But these ecosystems are subjected to heavy metal contamination and an excessive flow of nutrients from agricultural drainage and urban wastewater, stemming from coastal sources as well as from rivers draining into the sea, especially the Po River in Italy. Additional risks include oil spills, solid waste, and water discharged by ships.³

1. Eutrophication refers to excessive levels of nutrients in a water body that cause a dense growth of plant life (especially algae) and animal death from lack of oxygen.
2. Sea currents flow through the Adriatic in a counterclockwise direction, thus bringing cleaner waters up the eastern coast and returning increasingly polluted water down the western coast.
3. Large quantities of drifting waste (particularly plastics) are transported northwest by the Sirocco, a Mediterranean wind that comes from the Sahara and reaches hurricane speeds in North Africa and Southern Europe.



The Water Partnership Program (WPP) is a World Bank program funded by the governments of the Netherlands, Denmark and the United Kingdom. The WPP aims to enhance the World Bank's performance on reducing poverty through the mainstreaming of pragmatic approaches for Water Resources Management and development, the improvement of quality and effectiveness of Water Service Delivery, and the mainstreaming of water services and management in climate-resilience, inclusive green growth.

ENVIRONMENTAL BENEFITS OF THE ADRIATIC SEA



TOURISM

30 million visitors per year, half of whom visit the eastern Adriatic shoreline, generating €14 million in revenue.



MARITIME TRANSPORT

19 seaports each handling more than 1 million tons of cargo per year.



FISHERIES

High socioeconomic value for coastal and island communities. Adriatic tuna and shellfish farming have the potential for significant development.



BIODIVERSITY

7,000 animal and plant species, many of which are endemic to the sea.

As members of the European Union (EU), Italy and Slovenia already meet its environmental standards. However, four countries on the eastern Adriatic are candidate countries for EU accession, and membership requires tougher environmental standards.⁴ A member country since just 2013, Croatia is looking to maximize the opportunities membership brings, especially the absorption of a large amount of EU Structural Funds. Building local capacity to absorb such funds would ensure that Croatia can make the investments needed to meet pollution reduction targets.

In response to demand from countries to address these challenges, the World Bank developed the Croatia and Bosnia and Herzegovina Adriatic Sea Environmental Pollution Control Project (ASEPCP), aimed at providing technical assistance and generating funding proposals to reduce pollution throughout the basin. The ASEPCP, which will benefit an estimated 235,000 people, is the first project in a regional pollution control initiative. The project team requested support from the Water Partnership Program (WPP) to help identify areas with high pollution loads and then prioritize and plan investments across the eastern coast.

The Adriatic Sea is often used as an informal dumpsite and its water quality is degraded by both point source pollution (e.g. effluent from wastewater treatment plants) and non-point source pollution (e.g. agricultural run-off), which greatly affects ecosystems, fishing, and recreational use of the water.



Source: Albania. © Genti Shkullaku, World Bank/Flickr

Step 1: Identifying the Hotspots

A WPP-funded rapid assessment of hotspots concluded that 18 percent of all pollution hotspots⁵ in the Mediterranean are found in the Adriatic, which is significantly more than would be expected given its relative size. While most of the hotspot sites lie on the eastern coast, in absolute numbers the more developed and densely populated western coast contributes significantly more to the pollution of the Adriatic Sea. Agricultural activities in the Po River basin are recognized as the major cause of the eutrophication in the North Adriatic coastal zone.

To identify the most urgent sub-projects, the study looked at 41 potential pollution hotspots across the basin and classified 27 of them as hotspots. Six of these are priority sites requiring immediate action to avoid further environmental degradation, and all six are located on the eastern shore.

The study confirmed that the principal environmental problems and main pollution sources of the Mediterranean had remained more or less unchanged since 2006.⁶ The largest investment needs for reducing pollution at the country level are for wastewater and solid waste management, while the main regional challenge is controlling ballast waters from maritime transport (one of the main culprits in the spread of invasive species). Another major hurdle is the lack of continuous environmental monitoring data needed to make better-informed decisions and evaluate the results of environmental protection activities. The adoption of joint environmental monitoring systems and a regional platform for exchanging data was identified as a priority intervention.



The WPP study identified 27 pollution hotspots (orange dots) in the Adriatic and 6 priority hotspots (red dots), all of which are located on its eastern shores.

4. Montenegro and Serbia are formal candidates, while Albania and Bosnia and Herzegovina are potential candidates.

5. As identified by the European Economic Area in "Priority Issues in the Mediterranean Environment" (Copenhagen: EEA, 2006).

6. As identified by the European Economic Area in "Priority Issues in the Mediterranean Environment" (Copenhagen: EEA, 2006).

Step 2: Prioritizing Investments

The WPP study estimated the investments needed to reach compliance with EU standards and regulations at €1.76 billion, of which €853 million are already being implemented as part of a larger umbrella strategy to clean up the Mediterranean by 2020. Several institutions are providing financial and technical support toward these efforts. In the Adriatic, the major contributors include the Mediterranean Action Plan (MAP), the Adriatic Ionian Initiative, and the Strategic Partnership for the Mediterranean Large Marine Ecosystem (MedPartnership).⁷ Despite these efforts, an additional €910 million still needs to be raised, about half of which would be needed for the priority hotspots (see graphs below).

As a result of the study, the World Bank has prioritized investments in Croatia and Bosnia and Herzegovina under the \$30 million ASEPCP loan. The loan includes a \$6.8 million grant from the Bank's Global Environment Facility. The grant will be used to establish a pipeline of bankable investments to reduce pollution from land-based sources and technical assistance will be provided to help both countries acquire funding for as well as design and implement pollution reduction projects. The grant will also finance a regional subproject to strengthen regional and national pollution monitoring networks and capabilities, and to harvest good practices and draw lessons from the subprojects as they are implemented.

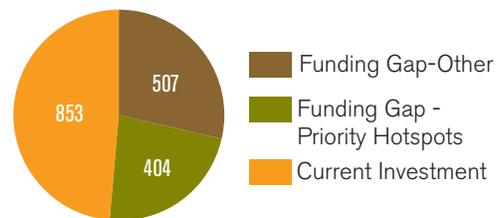
METHODOLOGY FOR HOTSPOT ASSESSMENT

The WPP study defined a pollution hotspot site as a coastal area that is a recipient of pollution, regardless of its source. This means that pollution sources can be located far inland but still contribute to marine pollution at the hotspot site. The methodology for ranking the sites takes into account the impact of pollution on ecological, socioeconomic, and public health factors. Six weighted criteria were used in the ranking process: size of the population affected; potential for public health hazards; potential for economic losses; potential impact on biodiversity and ecosystem services; and degree of trans-boundary and trans-regional effects. Pressures most likely to arise in the future from existing development strategies for the coastal regions (tourism, fisheries, oil winning, and the like) were also taken into account.

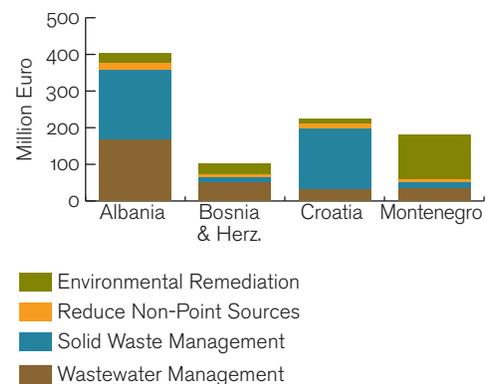
WPP'S ASSESSMENT OF INVESTMENT NEEDS IN THE EASTERN ADRIATIC

Country	Major Challenges as Identified by the WPP-funded Hotspot Assessment
Montenegro	<ul style="list-style-type: none"> Main pollution source: untreated wastewater; others include nutrient loads from river discharges Wastewater management infrastructure has improved over the last decade but funding is required for treatment capacity and sewerage networks in the coastal municipalities
Croatia	<ul style="list-style-type: none"> Main coastal pollution source: solid waste; there are almost no sanitary landfills on the coast and there are numerous dumping sites Major source of nutrient loads is the Neretva River, which discharges agricultural run-off and untreated municipal wastewater originating upriver in Bosnia and Herzegovina
Albania	<ul style="list-style-type: none"> Main pollution sources: solid waste and untreated wastewater; there are no coastal sanitary landfills; waste is being dumped close to rivers and streams or near the sea Prevailing sea currents carry waste from Albania towards the coasts of Italy, Croatia, Montenegro, and Greece
Bosnia & Herzegovina	<ul style="list-style-type: none"> No pollution hotspot sites identified, but the coastal zone is an endangered area Major municipal point-source pollution sources located inland, within the Adriatic Sea basin

CURRENT INVESTMENT AND FUNDING GAP (MILLION EURO)



INVESTMENT NEEDS BY COUNTRY AND TYPE



7. The MAP currently involves 21 countries bordering the Mediterranean and the European Union. The MedPartnership is led by UNEP/MAP and the World Bank and financially supported by the GEF and other donors, including the EU and all participating countries.

