

COST-BENEFIT ANALYSIS AND BUSINESS MODELS

Tailored CBAs and business models assess the economic, social, and environmental benefits of ACQUAOUNT's solutions, supporting long-term adoption and scalability.

The CBA's purpose was to define business models for IWRM's continued operation and scale-up. Specific IWRM interventions (e.g., new irrigation technologies, water pricing policies, wastewater recycling plants, stakeholder engagement programs) and alternative approaches (e.g., "business as usual," different investment levels, alternative management structures) were clearly outlined and assessed.

The CBA has provided a comparative analysis of these alternatives. We had concrete findings on which IWRM interventions, or combinations thereof, yield the most favorable cost-benefit ratio.

Aggregated results suggest that ACQUAOUNT would bring extraordinary benefits to beneficiaries at both micro (farm) and macro (basin) levels. For instance, it showed that investing in drip irrigation technology at the farm level, combined with community-based water management, offers higher net benefits than solely focusing on large-scale infrastructure projects.

Through meticulous data collection, expert interviews, and participatory consultations, the CBA reveals compelling evidence of ACQUAOUNT's viability and significant financial returns across all participating countries. Notably, the Net Present Value (NPV) calculations underscore the project's robustness, showcasing a remarkable second-year break-even point for all countries. This swift return on investment validates ACQUAOUNT's cost effectiveness and sets a precedent for transformative water resource management interventions worldwide.

The CBA comprehensively accounted for various cost components to provide a holistic economic evaluation of the Integrated Water Resources Management (IWRM) interventions. Primarily, the analysis considered the **investment costs** associated with the implementation of new technologies and infrastructure, which would encompass the capital expenditures required for setting up smart water services, advanced irrigation systems, and any related digital platforms. Beyond the initial investment, significant attention was given to **operational and maintenance (O&M) costs**, covering the ongoing expenses for running and sustaining the IWRM solutions, including energy consumption, repair work, human resources involved in management, and data handling. Furthermore, the CBA aimed to capture **social costs** where applicable, such as any potential short-term disruptions or adjustments required from local communities or farmers during the transition to new water management practices. While the project primarily focuses on generating environmental benefits, the analysis also implicitly or explicitly considered any **environmental costs** or trade-offs, if identified, although the overarching goal was to mitigate negative environmental impacts and promote sustainable water use. By meticulously

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quantifying these diverse cost categories, the CBA provided a robust foundation for assessing the true economic feasibility and sustainability of the ACQUAOUNT project's IWRM approach across the Mediterranean region.

The CBA meticulously dissected the economic implications across participating countries, revealing nuanced insights for each. For Italy, the project's interventions, while demonstrating a strong overall economic feasibility, particularly at the basin level, exhibited a more extended payback period at the farm level; this suggests that while the aggregated benefits are significant, individual agricultural producers might experience a slower direct financial return, potentially necessitating targeted support mechanisms or longer-term incentive structures to foster widespread adoption of the IWRM practices.

Conversely, Jordan showcased remarkably positive economic returns, with the implemented IWRM strategies proving highly effective in optimizing water resource allocation and boosting agricultural yields, leading to considerable farm-level profitability and enhancing national water security, reflecting a robust and efficient translation of project inputs into tangible economic benefits.

In Lebanon, the analysis also confirmed strong economic viability, with the project delivering substantial benefits that consistently outweighed its costs; however, similar to Italy, the scale and complexity of basin-level interventions might influence the exact financial timelines and magnitude of benefits across different regions within the country, yet the overarching positive Net Present Value (NPV) unequivocally affirms the project's beneficial impact on water management.

Finally, Tunisia demonstrated compelling economic advantages, with the IWRM strategies implemented generating significant positive returns on investment; these outcomes underscore the effectiveness of the project in fostering improved water efficiency and strengthening agricultural resilience across various operational scales within the nation. Crucially, beyond these quantitative financial metrics, all countries consistently accrued significant non-tangible benefits, including enhanced climate resilience through better water management practices, substantial capacity building among local stakeholders and water professionals, and effective knowledge transfer across communities, further solidifying the holistic and transformative impact of the ACQUAOUNT project beyond solely economic gains.

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