TRUE COST OF WATER:
monetization of water risks, shared value creation, and local acceptability of extractive projects

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Veolia designs and implements solutions for managing water, waste and energy resources, playing a role in sustainable development while giving its clients a competitive edge. The Group works alongside cities and industries, helping them optimize their resource usage, with a view to improving economic, environmental and social efficiency.

Mr Clere is a recognized leader in the water industry, having developed a decision-making tool called "True Cost of Water", which monetizes risks linked to water. He has more than ten years' experience in developing shared value initiatives worldwide.

KEYWORDS

- EXTRACTIVE SECTOR
- WATER-RELATED RISKS
- MONETIZATION OF WATER COSTS
- CREATION OF SHARED VALUE

Among industrial sectors, water-related risks are undoubtedly most closely associated with the extractive industries. To date, the response by the sector has been limited to funding philanthropic projects and implementing Corporate Social Responsibility. However, Veolia has developed a decision-making tool that monetizes water risks, with a view to not only reducing costs and preventing risks, but also creating new business and social opportunities.

INTRODUCTION

"You don't manage what you don't value." This observation was the starting-point from which Veolia developed a decision-making tool, called True Cost of Water, for monetizing the total cost of water-related issues. This initiative was motivated by the realization that, in most of the sectors of our economies, resource-related risks—such as drought, pollution, scarcity, and conflicts over usage—are increasingly becoming realities.

The extractive sector is one of the sectors most affected by water-related issues not only because of the nature of the business, which is strongly resource-intensive, but also because of the sector's exposure to particular scrutiny from public authorities and civil society. Given the multiplicity of water-related risks in the extractive sector, whether operational, financial, regulatory or reputational, the way the resource is managed has become an issue of unprecedented importance in the local acceptability of such projects.

In this context, True Cost of Water is a tool that aims not only to reduce water costs and guard against the related risks, but also to identify opportunities for creating shared value by building bridges between the extractive industry and local communities.

1. THE EXTRACTIVE SECTOR AND THE MANAGEMENT OF WATER RISKS: SOME BACKGROUND

1.1. AN EVER-GROWING NUMBER OF WATER-RELATED RISKS

In a study published in 2014, the British non-profit organization CDP demonstrated that 68% of the top 500 companies worldwide considered water to be a potential risk for their businesses, a figure that reflects a new and genuine awareness in the world of business about the challenges of water management[1].

Water-related risks can be divided into four main categories:

- **Operational risks:** mainly related to the scarcity of the resource;
- **Financial risks:** materialized by increasing water prices;
- **Regulatory risks:** with the introduction of ever more stringent standards in terms of water treatment, surplus management, etc.;
- **Reputational risks:** potentially jeopardizing the license to operate in the event of water-related incidents.

Water-related risks have already materialized in certain sectors, leading several companies to put in place strategies and performance indicators in order to minimize risks and optimize management of the resource. Realizing that business as usual is no longer a viable option, the agri-food industry, for example, has in recent years increased its "water stewardship" commitments and policies.

1.2. THE VERY PARTICULAR EXPOSURE OF THE EXTRACTIVE SECTOR

The extractive sector is undoubtedly among the industrial sectors with the greatest exposure to water-related risks, for four main reasons:

- **Water quantity:** the volumes of water extracted and used during operations;
- **Water quality,** which can be impaired by the sector's industrial processes;
- **Water usage,** which can cause conflict when the extractive industry moves into an area;
- **The heightened visibility** of the sector, which is subject to special scrutiny by governments, NGOs and local communities.

1 *From water risk to value creation,* CDP Global Water Report, 2014

When these risks materialize, the human and environmental consequences can be dramatic. The recent collapse of a dam holding back polluted water in Brazil, for example, triggered a deadly mudslide in the village of Bento Rodrigues. The mismanagement of these risks can prove very costly for the industry: from the loss of $1 million on a uranium mine in Namibia following two consecutive days of cuts in the water supply, to the loss of the operating license to expand existing projects after cases of water contamination in Chile.

1.3. THE RESPONSE OF THE EXTRACTIVE SECTOR THUS FAR LEAVES SOME ISSUES UNRESOLVED

The extractive sector—aware of the existence of water-related risks and the related issues in terms of local acceptability—has traditionally responded through two channels: 1) by funding philanthropic projects and 2) by implementing Corporate Social Responsibility (CSR) initiatives.

However, these two approaches — which should not be definitively discarded, as they are important as vehicles of acceptability and as ways of optimizing the extractive sector's contribution to development — suffer from two limitations:

- **An operational limitation:** despite being innovative and positive approaches, the free water redistribution models set up by the extractive sector are sometimes treated with suspicion by local actors, who fear that the water is not treated with the same care as it would be if it were a paid service;
- **A limitation in terms of impact and image:** civil society has, in the past, been quite critical of certain projects undertaken by the extractive sector, often seeing them as too sporadic, or as a form of "greenwashing".

By observing the implementation modalities of these two types of solution, Veolia arrived at the following conclusion: to be effective, water management programs must begin by monetizing water risks. The True Cost of Water tool, which monetizes all water-related costs — direct and indirect — was therefore conceived as an innovative solution for managing these risks optimally, and even generating new opportunities.

"68% OF THE TOP 500 COMPANIES WORLDWIDE CONSIDER WATER TO BE A POTENTIAL RISK FOR THEIR BUSINESSES."

2. VEOLIA'S TRUE COST OF WATER: OBJECTIVES AND METHODOLOGY

2.1. A DECISION MAKING TOOL FOR CALCULATING THE TOTAL COST OF WATER AND PROMOTING VALUE CREATION

When it set out on the task of monetizing the cost of water-related risks, Veolia quickly came to the following realization: while most companies take into account the "direct costs" of water — gaining access to the resource and building the necessary infrastructure — and perhaps some indirect costs included in the CSR or PR budgets, they mostly ignore the costs involved in managing the externalities. Among these costs — which could be described as "hidden" costs — are the costs relating to water shortages or to reductions in the allocation of the resource in conflict zones.

This lack of an overarching approach was one of the reasons behind the creation of True Cost of Water, which aims to monetize both direct costs and externalities in order to optimize decision-making in terms not only of risk management, but also of the creation of new opportunities, and therefore of value.

Ultimately, True Cost of Water meets a threefold objective:

- **Reducing costs:** evaluating savings that can be made in the water chain;
- **Guarding against risks:** assessing, in financial terms, the means available for better managing water-related risks;
- **Creating opportunities:** switching from a logic of risk to a logic of opportunity, enabling value to be created—both business value (e.g. by generating new revenue streams) and social value (e.g. by identifying social issues faced by neighboring communities).

2.2. IN PRACTICE: THE MONETIZATION OF WATER COSTS IN FOUR MOVEMENTS

In practice, the True Cost of Water approach relies on four different levels for monetizing the total cost of water resources:

- **Level 1—Direct costs:** from the purchase of the resource to the construction and management of infrastructures for treating wastewater;
- **Level 2—Indirect costs:** costs built into the P&L of a project, ranging from the payment of potential environmental penalties to the entire PR and CSR budget;
- **Level 3—Risk impact:** when water-related risks materialize, they impact projects in different ways (environmental penalties to be paid, downtime or loss of license to operate , etc.).

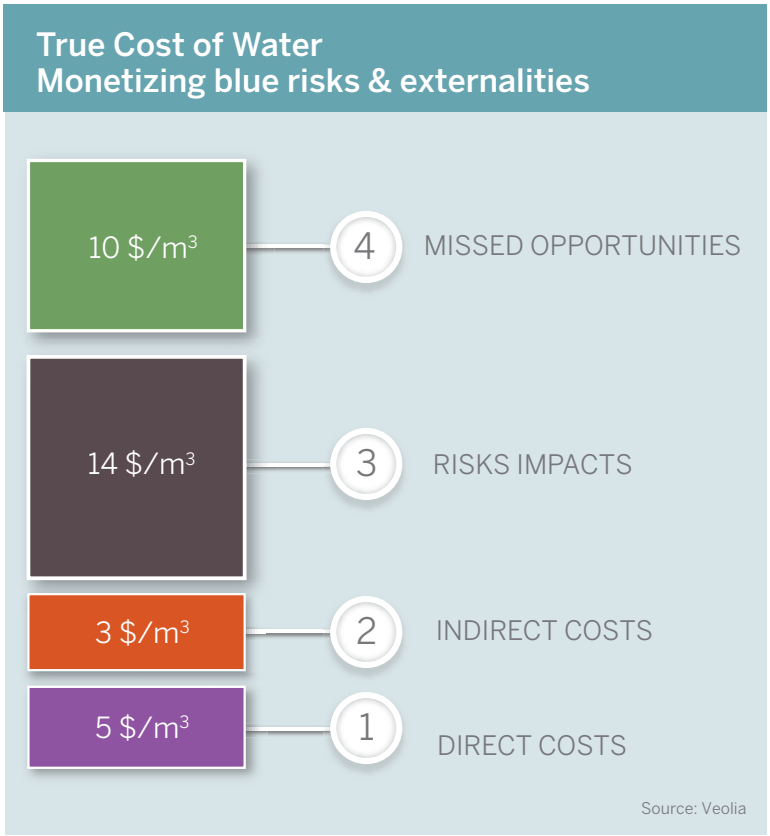
Two strategies then need to be adopted:
- Working upstream to minimize the probability of these risks occurring;
- Improving robustness and resilience.

- **Level 4—(Missed) opportunities:** identifying opportunities for creating added value (e.g. selling water to the stakeholders), or shared value, by associating the stakeholders directly.
The True Cost of Water monetization method makes clear the cost, and the financial implications, of not investing in value creation programs.

The True Cost of Water approach offers several advantages:

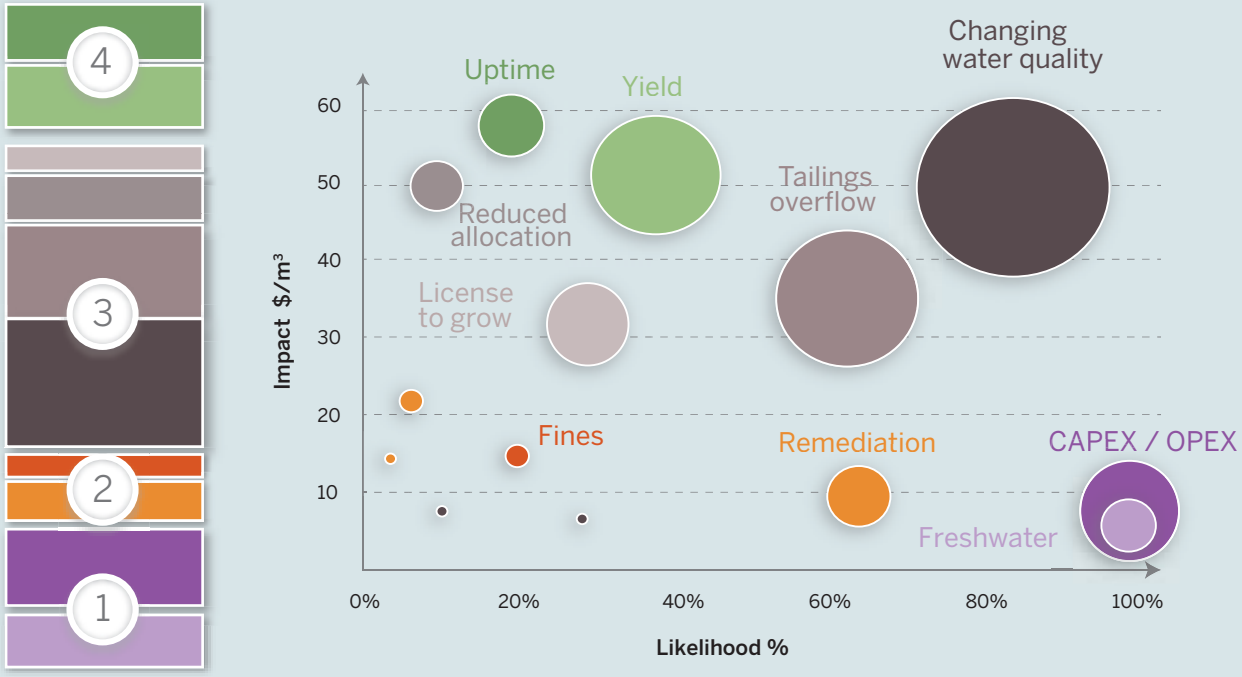
- **A detailed understanding** of all the costs associated with water management, as well as the costs inherent in inertia (missed opportunities);
- **A financial approach** that quickly identifies the cash-flow impact of implementing a proactive risk management method;
- **A risk-management method made easier and more ambitious** by fostering the creation of value—or even shared value, which does more to enhance the local acceptability of extractive projects.

THE FOUR LEVELS OF THE TRUE COST OF WATER APPROACH



CRITICALITY OF WATER-RELATED RISKS

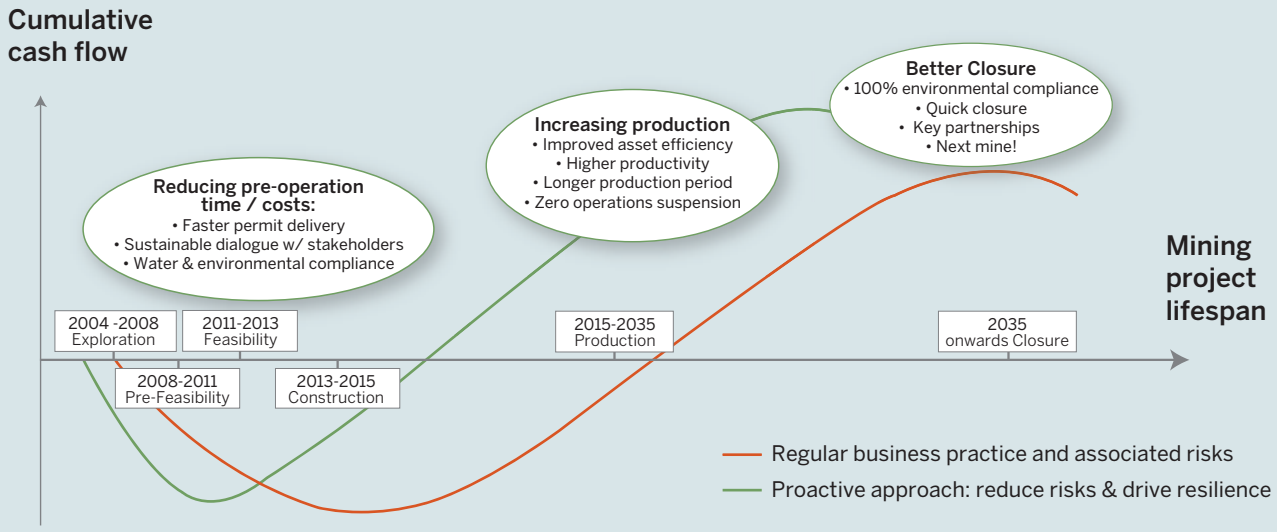
1+2+3+4 = True Cost of Water



Source: Veolia

MODELING OF THE IMPACT OF A PROACTIVE WATER RISK MANAGEMENT APPROACH ON CASH FLOWS FOR A MINING PROJECT

Impacts of proactive water managementon cash flow



Source: Veolia

3. THE TRUE COST OF WATER ACTION PLAN: FROM VALUE REDISTRIBUTION TO SHARED VALUE CREATION

Ultimately, the True Cost of Water tool aims to move beyond the monetization of water-related risks on extractive projects to the design of comprehensive action plans for managing these risks and reinforcing local acceptability by the same measure. For several years now, Veolia has sought to open up new perspectives for extractive industry players by encouraging them not just to create value and redistribute it at the local scale, but rather to create shared value by seeking to establish and reinforce the links between the extractive industry and local actors.

3.1. 1st GENERATION MODELS: VALUE REDISTRIBUTION

Historically, the solutions Veolia has offered to extractive companies have been based on value redistribution. By monetizing water-related risks and opportunities, they focus on proposing models that enable local actors to reuse (after appropriate treatment) wastewater from extractive sites. These **simple reuse solutions** may offer free redistribution of the water, or redistribution for payment. While the first approach follows more of an CSR philosophy, the second effectively creates added value.

By way of illustration, Veolia recently proposed a water redistribution model on oil drilling sites in **California**, a state hard-hit by drought. The aim is to treat the "produced water" generated as a by-product of oil extraction and to sell it to local water authorities. The treated water is then made available to other industrial groups and local farmers. This type of forward thinking by oil industry players reflects a paradigm shift in the extractive sector, finding new perspectives in the management of water resources.

3.2. 2nd GENERATION MODELS: SHARED VALUE CREATION

The ultimate goal of True Cost of Water is to be an integral part of a shared value creation approach, in order to offer new perspectives in water risk management strategy.

The **shared value** approach can be summarized as all of the policies and practices that help improve economic performance while at the same time addressing social and societal needs, whether directly or indirectly related to extractive operations. To pick up on the example of the local farmers, it is no longer about simply redistributing water to the farmers, but about bringing them in on the approach by responding in a more direct way to the social and societal needs that they may have. It is, in other words, about simultaneously creating business value for the company and social value for the stakeholders.

In **Morocco,** for example, Veolia has implemented a technology that reuses municipal wastewater for a phosphate exporting mine that was running into difficulties on its site due to water shortages that were affecting its business continuity. The project created both:

- Business value for the mine, by providing water security through investing in work on the wastewater treatment station;
- Social value for communities, by optimizing the local water cycle and reusing the resource.

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A similar partnership was also set up in the municipality of Tarragona in **Spain,** to enable a petrochemical facility to recover wastewater from the municipality while at the same time ensuring a better domestic water supply during the summer.

In **South Africa,** at a coalmine facing problems of water scarcity, Anglo American also put in place an innovative solution for treating wastewater and producing drinking water[2]. While selling on some of the treated water to the municipality, to mitigate the water shortages afflicting local communities (and covering 12% of daily water needs), Anglo American also offered its water treatment services to a BHP Billiton facility in the area. Thanks to these two levers, 60% of the infrastructure's operating costs are now covered. This solution, once again, created business value together with social value.

Clearly, by monetizing risks and opportunities, shared value creation is now emerging—alongside philanthropic projects and CSR initiatives—as a new instrument for reinforcing the local acceptability of major extractive projects. The logic of profit and competitiveness that underpins shared value creation is what gives it its strength and its ability to replicate projects on a larger scale.

CREATING SHARED VALUE: AN APPROACH OUTLINED BY MICHAEL E. PORTER AND MARK R. KRAMER[1]

In a paper published in the *Harvard Business Review* in 2011, Michael E. Porter and Mark R. Kramer, Harvard professors and co-founders of FSG, introduced the concept of "creating shared value". Observing that capitalist economics was going through a crisis of legitimacy, with companies coming under ever-greater criticism for their economic, environmental and social impacts, the two authors underline the importance for companies to adopt a long-term approach. This means taking into account not only medium-term factors like financial performance, but also the social and societal needs that might one day impact their business (degradation of natural resources, well-being of communities, etc.). Creating Shared Value is consequently defined as a way of generating economic value while producing social value. Three main levers are identified for creating shared value: 1) the renewal of products and services, 2) the redefinition of the value chain and 3) integration into a territorial network (equivalent to a competitiveness cluster).

1 Michael E. Porter, Mark R. Kramer, *Creating Shared Value,* Harvard Business Review, 2011

2 To find out more: https://sharedvalue.org/groups/anglo-american-emalahleni-water-reclamation-plant