

EXECUTIVE SUMMARY

FINANCIAL TOOLS FOR
RIVER RESTORATION IN ISRAEL

By Amit Ashkenazi

Koret-Milken Institute Fellow

KORET-MILKEN INSTITUTE FELLOWS PROGRAM



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About the Koret-Milken Institute Fellows Program

The Koret-Milken Institute Fellows Program accelerates Israel's economic growth through innovative, market-based solutions for long-term economic, social, and environmental issues. The program focuses on connecting government, philanthropic, and business resources that are vital to national growth and development.

Directed by the Milken Institute Israel Center, the Koret-Milken Institute Fellows Program awards annual fellowships to outstanding graduates of Israeli and international institutes of higher education. Fellows serve yearlong internships at the center of the nation's decision-making—the Knesset, government ministries, and other Israeli agencies—and aid policymakers by researching and developing solutions for various economic and social challenges.

In addition, fellows craft their own policy studies aimed at identifying barriers to economic and employment growth in Israel. The fellows' studies, carried out under the guidance of an experienced academic and professional staff, support legislators and regulators who shape the economic reality in Israel. The program offers the ultimate educational exercise, combining real-life work experience with applied research five days a week.

Throughout the year, fellows receive intensive training in economic policy, government processes, and research methods. They acquire tools for writing memorandums, presentations, and policy papers, and they develop management, marketing, and communication skills. The fellows participate in a weekly workshop, where they meet senior economic and government professionals, business leaders, and top academics from Israel and abroad. They also participate in an accredited MBA course that awards three graduate-level academic credits that are transferable to other universities in Israel. The course, which focuses on financial and economic innovations, is taught at the Hebrew University of Jerusalem's School of Business Administration by Professor Glenn Yago, Director of the Milken Institute Israel Center and Director of Capital Studies at the Milken Institute in California.

Fellows Program alumni can be found in senior positions in the public and private sectors. Some serve as advisers to government ministries while others work at private-sector companies or go on to advanced studies at leading universities in Israel, the United States, and Great Britain. Within the program's framework, more than 80 research papers have been published, catalyzing reforms, reducing barriers, bringing about economic growth, and improving the quality of life for Israeli citizens.

The Koret-Milken Institute Fellows Program is nonpolitical and nonpartisan. It is funded by the Koret Foundation, the Milken Institute, and other leading philanthropic organizations and individuals in the United States and Israel.

More about the program: [**www.kmifellows.org**](http://www.kmifellows.org)

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Introduction

In the past 60 years, Israel's rivers and streams have deteriorated from ecological, scenic assets into drainage ditches that collect garbage and other pollutants. Overuse has dried up many of these waterways, and sewage has damaged the environment around them. Especially in the center of the country, streams are not available for public or recreational use.

In Israel, river and stream restoration has been seen as an economic burden, and little emphasis is placed on these waterways as potential assets that can provide a return on investments in restoration and can even become profitable.

One possible solution can be found in a state revolving fund, a tool that has been used in the United States for more than two decades to improve water quality. The premise of this mechanism is that a restored stream provides services that were not previously available and that those services can be converted into a source of revenue. This research will explore the prospects for establishing a revolving fund for river restoration in Israel and will analyze existing and potential financial resources that could be used to establish such a fund.

The Issues

The study identified a number of barriers to restoring Israel's streams.

Gaps between Legislation and Enforcement

- **Responsibilities are scattered:** Two "stream authorities" are authorized by the Minister for Environmental Protection. In addition, there are "stream administrations" that unite various organizations connected with stream restoration but that lack their own legal authority and responsibility. There are also "drainage authorities" that bear responsibility for stream restoration in addition to their regular duties. To promote restoration, we need laws and regulations that clearly define the powers, responsibilities, and measures of success for bodies that are not stream authorities but are responsible for restoration. These bodies also need more personnel to help advance and implement their master plans.
- **Regulation of polluters is insufficient:** Israel needs stricter regulation of factory processes and materials that might directly or indirectly threaten water quality. For example, an accidental chemical spill at the Sano factory in November 2008 polluted the Yarkon River and damaged a sewage treatment plant. Although the business licensing process includes references to the environment, the protection and back-up systems required of factories are insufficient. Working with the industries to improve these systems could create processes that will produce not only environmental but also economic benefits.



- **Potential tax revenue has not been tapped:** No mechanism exists for turning public use of Israel's streams into a revenue stream. For example, it is estimated that more than 2 million tourists a year vacation in areas overseen by the Upper Galilee Regional Council. Because access to the streams is free, the council only receives revenue from property taxes paid by the businesses operating on and around the stream. While public access to nature's assets must be preserved, it is still possible to charge for their use and raise money for their preservation. For example, following the model of tourism improvement districts, a 5 percent tourism tax could be added to recreational activities in the area, with the revenue dedicated to restoring the local streams.

Coordination Is Complex

- **Government ministries:** The chain of government organizations involved in stream restoration could yield great benefits if their efforts were well-coordinated, but that has not been the case. The division between the various functions required for restoring streams and maintaining them afterward complicates the planning, implementation, and budgetary processes for such projects and hinders the effort to maximize the benefits. However, the overlap of roles and organizations increases the potential resources that could be directed to restoration if agencies' activities were clearly defined.
- **Local authorities:** The creation of water and sewage corporations during the last decade was supposed to solve the problems of water management in the local authorities. In some places, the change succeeded in improving water quality and reducing damage to streams. Personal responsibility for contamination was placed on the managers of polluting companies, and resources were allocated for purification and maintenance for the purpose of selling the purified water. However, the corporations created a disconnect between the heads of the local authorities and the bodies managing the water within the locality, leading to the local authorities losing revenue. In some cases, it resulted in higher prices to the consumer. These consequences may complicate recruiting local authorities to stream restoration projects.

Financing Difficulties

- **Government budgeting:** Even public projects performed in accordance with government decisions do not receive full government funding. For example, the government will pay just 5 percent of the cost for the Ariel Sharon Park, where the Ayalon River passes through, leaving the government company that is developing the park responsible for obtaining the remaining funding.
- **Lack of business plans:** Most stream restoration projects lack a business plan that clearly and transparently details total costs and expected revenue after a project's completion. A business plan is essential for advancing and implementing a project with government ministries and for obtaining funding outside the government budget.



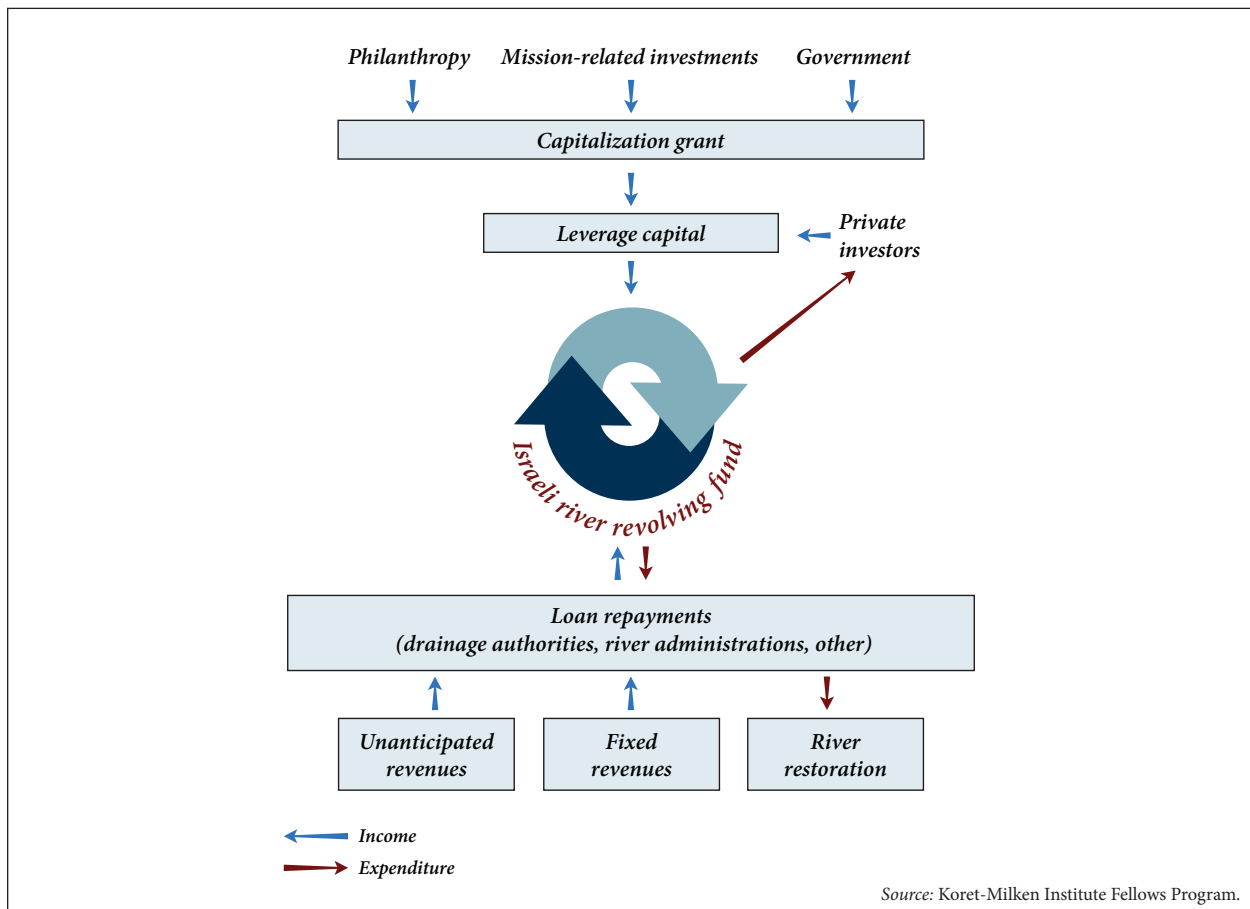
Gaps in Conceptual Infrastructure

- **Indirect profit vs. direct profit:** The Knesset passed the Polluter Pays Law in 2008, requiring that punishments for polluters take into account the damage caused, the benefit reaped, and the profits produced while polluting. The law marks a milestone in the government's ability to deal with various forms of pollution and creates a significant source of income for environmental restoration. It requires quantifying the direct and indirect damages of the pollution and forcing the polluter to pay his share of the cleanup. However, this approach affects only one side of the equation: recouping the economic loss. The other side—increasing revenue from a restored environmental asset—remains to be addressed.
- **Separating the river from the riverbank:** The Ministry of Finance, like other bodies, divides a stream into its various components—the water on one hand and the riverbank on the other. The water is a local product, and the riverbank is public land that must be managed in compliance with the policies of either the local authority or the Israel Land Administration. This approach also applies to stream restoration. Water quality is ensured through binding government standards, and riverbank restoration is implemented when the land is developed. This approach is severely flawed. When the riverbank is restored, the stream is accessible to a larger number of individuals, groups, and businesses. This accessibility creates an awareness of the stream's importance and a willingness to invest in its waters and surroundings. However, if the waters remain polluted, accessibility and awareness are impaired, and the economic benefits are lost. The same is true if the waters are rehabilitated but the riverbank is not. As long as the river and riverbank are seen as separate, restoration efforts are likely to fail.
- **Restoration in reverse order:** The Jewish National Fund believes that restoring a stream begins with rehabilitating its water and that restoring the riverbank comes later. However, the reality is that properties with many visitors or beneficiaries find it easier to raise funds for project development and future maintenance than for water rehabilitation. Reversing the order of things so that rehabilitating the riverbank comes first allows us to break out of the funding pattern and increases the chances of restoring the entire stream.
- **Experts are few and far between:** The agencies responsible for restoring streams lack enough hydrologists and ecologists with academic training. The problem emanates from both the absence of relevant training courses in institutions of higher education and the dearth of employment opportunities in the field. As a result, the professional considerations and knowledge base about water in Israel are not renewed, enriched, or changed as they are in other professions.



The Solution: A Revolving Fund

Israel should consider emulating the state revolving fund used in the United States as a way to fund and manage stream restoration projects. The United States, also facing high costs and less revenue, began using the financing tool in the 1980s to implement projects that would allow local authorities to meet the water standards determined by the federal government.





Fund Goals and Principles

The Americans based the revolving fund on the principle of future financial reimbursement. The federal government allots money to individual states, the states add to it, and the fund is born. The state can leverage this money by selling bonds to the private sector and putting the proceeds into low interest loans for water projects. The funds are repaid through tax money or new revenue resulting from the rehabilitation project. The money was used for such projects as:

- Removing pollutants from a stream
- Funding pollution prevention programs, such as helping farmers and manufacturers prevent pollution or connect to existing water purification infrastructure
- Purchasing the land surrounding treated areas
- Rehabilitating riverbanks
- Restoring environmental wetlands
- Educating the public
- Paying the administrative costs of the fund for communities and authorities receiving loans
- Providing new funding for existing loans for water infrastructure, with the goal of reducing loan costs
- Purchasing insurance for local debt liabilities

Conditions for Creating a Revolving Fund in Israel

A revolving fund in Israel could solve the problem of financing stream restoration projects and sort out the organizational problems if all the required measures are carried out.

First, responsibility for stream restoration has to be clarified both legally and organizationally. The body responsible for the restoration must be given all the tools for centralizing the resources needed to meet the loan terms. These will include the power to impose and collect participation fees in the project and to establish tax mechanisms to transfer receipts to the new body for loan repayments. The role of the responsible body, its administrative powers, the enforcement methods available to it, and the number of additional personnel required must be defined.



Second, the money must be raised. Some of this capital already exists in budget allotments for water and sewage. Additional sums can be raised from government ministries such as the Ministry of Tourism and the Ministry of Construction and Housing, from the jurisdictions that will benefit from restoration projects, and from bodies such as the Jewish National Fund, which already invests in rehabilitation projects.

Government allocations to related funds in 2009

Name of fund	Government allocation in 2009 (NIS)	Comments
The Quarries Rehabilitation Fund	300,496,725	The sum remains with the accountant general until the High Court of Justice's decision
Cleanliness maintenance fund	135,658,000	Data taken from the Ministry of Finance budget website
Aid for water and sewage corporations	194,551,000	Data taken from the Ministry of Finance budget website
Marine Pollution Prevention Fund	12,382,000	Data taken from the Ministry of Finance budget website
Total	643,087,725	

Third, an effective mechanism for managing the loans must be created. The fund managers must be experts in financial management, must filter the projects according to their implementation level or other criteria selected by the government, and must aid the debtors in planning long-term loan repayments.



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