

TevaBiz

Mainstreaming Biodiversity
Considerations in Businesses:
An innovative approach for
nature conservation in Israel

www.tevabiz.org.il

alon@spni.org.il

We are grateful to the
Common Sense Fund
and Isodore C and Penny
Myers Foundation for
their generous support.

The Challenge

The challenge – protecting nature – our life supporting system.

Nature and ecosystems are planet earth's life supporting system.

Functional nature provides people with many essential services **free of charge**:

Oxygen
for
breathing

Clean
water

Carbon
fixation
and climate
protection

Food
provision
Pollination for
crops/fisheries

Disease
/ plague
control

Agricultural
pest control

Medications

Mental
health¹

National
heritage



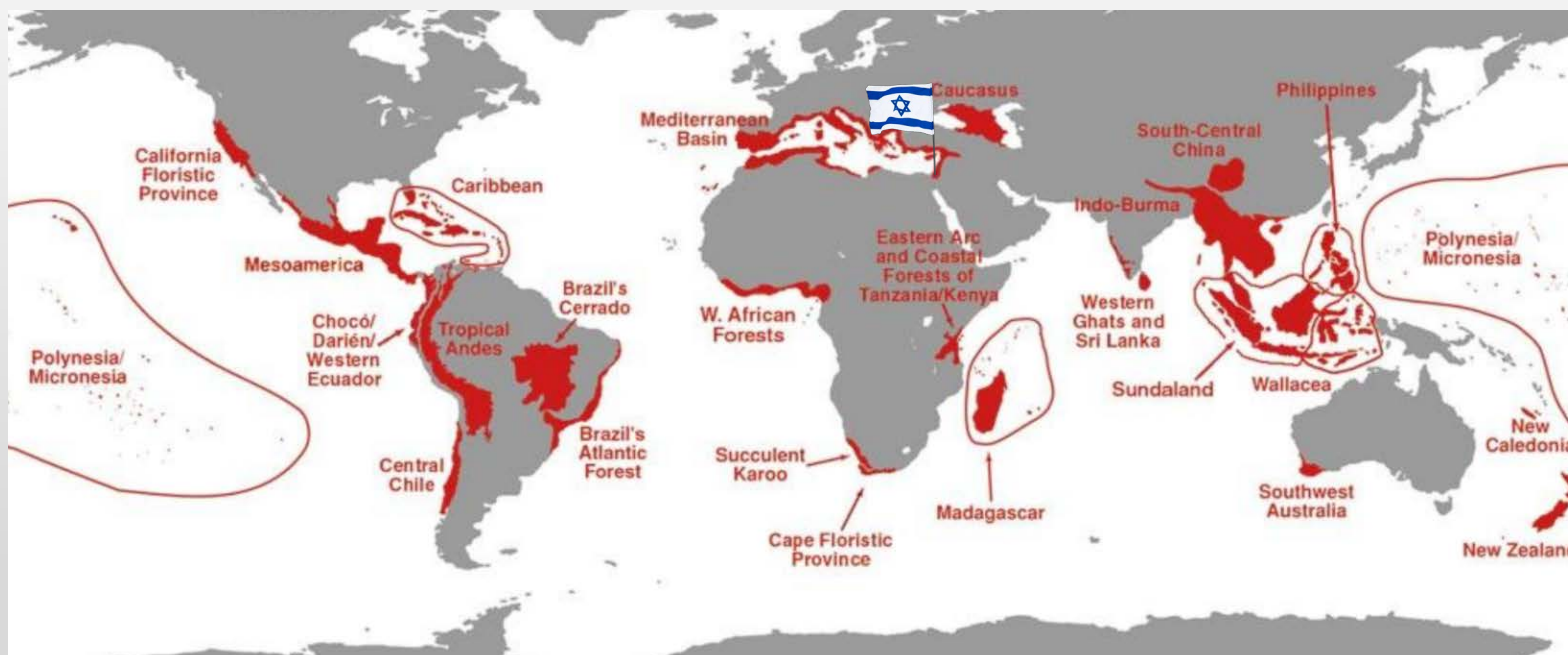
1. www.ynet.co.il/articles/0,7340,L-5712893,00.html

The challenge – protecting nature – our life supporting system.

Israel is part of an exclusive club

The global biodiversity hotspots

Less than 2% of the world's terrestrial areas



Map of global hotspots | From: Myers et al., Nature, 2000

Nature protection is safeguarded by the Convention on Biological Diversity and the UN sustainable development goals.

The challenge – protecting nature – our life supporting system.

The Convention on Biological Diversity determined a series of goals¹ to protect nature, many of which require close work with the business sector.



United Nations Sustainable Development Goals. The goals the TevaBiz initiative is helping to achieve are framed in black.

1. Aichi targets, convention on biological diversity: 4/ By 2020, at the latest, Governments, **business** and stakeholders at all levels have taken steps to achieve or have implemented plans for **sustainable production and consumption** and have kept the **impacts of use of natural resources** well within safe ecological limits 7/ By 2020 areas under **agriculture, aquaculture** and forestry are **managed sustainably, ensuring conservation of biodiversity**. 12/ By 2020 the extinction of known **threatened species** has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

The Business Sector – An Essential Partner for Protecting the Environment

The business sector in Israel, which also includes government companies, has **a significant environmental footprint**. This is particularly true for the infrastructure, agriculture, mining and tourism sectors, which usually operate in open areas, therefore **significantly affecting biodiversity**.

Harming nature exposes the business sector to financial, public and regulatory **risks** that include project delays, negative effects on the brand, legal actions and the like.

Biodiversity is a multidimensional issue, professionally complex and **not effectively regulated at present**.

Nature is a classic "public good"; therefore, the business sector has difficulty regulating its effect on nature, thus **requiring a different approach in promoting the issue**.



Heavy mechanical equipment excavating bedrock for forging roads | Photo: Alon Rothschild

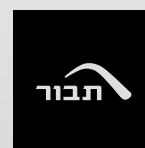
The Business Sector – An Essential Partner for Protecting the Environment

*"The **ordering idea** [of the initiative] is **very right**... We should remember that **it is not a simple challenge to understand biodiversity in depth**, why it is necessary. It is not very simple to understand on a day-to-day basis, and even more so, for someone who is not an environmentalist. It is also right to want to **identify the significantly influential bodies**, the Mediterranean Coastal Cliffs Preservation Government Company Ltd., Netivei Israel, Mekorot, IEC, bodies that are the major infrastructure bodies, which, in the end, have a tremendous influence on biodiversity. Finally, the fact that it is **not done by regulation**, is not binding, although there may be thoughts of taking things companies have done and require them by laws or regulations. To understand that this is very complex. That true, it is voluntary, that you are helping an organization run itself better. We also see what is happening in the world, how the issue of corporate responsibility pervades, and this is happening here as well, particularly in organizations that look at what is happening abroad, or in companies that are subsidiaries of international companies. There it is common."*

(Senior executive, environmental organization)
From the TevaBiz Project Evaluation, 2021

Operational Model

13 Companies = 17 Projects



The Business Sector – An Essential Partner for Protecting the Environment

TevaBiz is involved with the core issues affecting biodiversity, in which there is no effective regulation to safeguard biodiversity.

Factors Affecting Biodiversity

Changes in land use
Habitat fragmentation
Invasive species
Light pollution
Soil erosion



Business Sectors

Infrastructure
Agriculture
Mining
Tourism

TevaBiz – A Winning Collaboration

TevaBiz is a unique cooperative venture between the business sector, the civil society via the SPNI (NGO) and government agents (Ministry of Environmental Protection – MOEP, and Nature and Parks Authority – INPA). In the framework of this initiative, which has been **operational for ten years, 17 projects, with 13 leading Israeli companies** have been implemented.

The initiative creates a **process of strategic consultation** that integrates needs and stakeholders from the business sector, the regulators, and the environment, and provides the company with a **set of tools and operational practices** to **improve the interface** between the business company and nature and its stakeholders.

The heart of the process is the **joint work of an ecologist with content specialists** from the business company.



TevaBiz – A Winning Collaboration

"This is an extremely beneficial initiative, process. After years of conflict between my organization and environmentalists, not that there were no collaborations, but the general "vibe" was of conflict. Suddenly there is this thing, of, well, let's work together, despite the doubts. It came from the SPNI, and pretty much changed the world"

(Environmental manager, infrastructure company)
From the TevaBiz Project Evaluation, 2021

"You can see that the team, with its commitment, just sweeps everyone along, ...that they are attentive to the needs of the organization, they understand the professional need, but also understand our place"

(Professional manager, infrastructure company)
From the TevaBiz Project Evaluation, 2021

The Funding Model

Process management and consulting fees in the initiative are covered by public **(the SPNI, MOEP and the INPA)** and philanthropic funds . We are grateful to the Common Sense Fund, the Isodore C and Penny Myers Foundation together with an anonymous foundation for their generous support.

Some of the necessary resources for **implementing pilot studies**, and all the resources required for **post-project mainstreaming and implementing recommendations** are funded by the business corporation.



Achievements

Mainstreaming Environmentally Friendly Lighting in Large Infrastructure Companies

Promoting an Environmental Lighting Code vis-à-vis Planning Agents and the Major Sectors that Affect the Night Sky.

*"Now there are clear practices for lighting, which we did not have before. There is an orderly procedure. This is the theory and these are the instructions of the Chief Engineer. **The instructions are very clear. This is how it will work.** A whole area, which even if we were involved in it before, now there is a concept, guidelines, lighting types, lighting plans"*

(Environmental manager, infrastructure company)
From the TevaBiz Project Evaluation, 2021

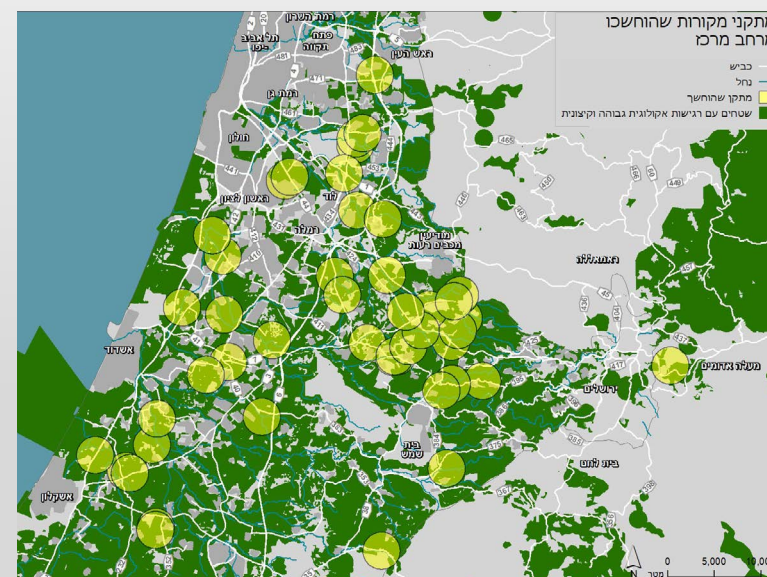
1. Mainstreaming Environmentally Friendly Lighting in Large Infrastructure Companies



Mekorot – Israel's National Water Company

01

Darkening 66 Mekorot installations in sensitive natural areas, and **darkening 100 additional installations** by the end of 2024 (ROI – 1 year).



Map showing some of the 66 Mekorot installations that were darkened in sensitive areas in Central Israel.

1. Mainstreaming Environmentally Friendly Lighting in Large Infrastructure Companies



Mekorot – Israel's National Water Company

02

Upgrading lighting in 29 installations in sensitive areas (ROI – 2.5 years). A successful upgrading pilot was conducted in the "Eshkol" site. **Energy saving in electricity consumption – 85%.**

1. Mainstreaming Environmentally Friendly Lighting in Large Infrastructure Companies



Mekorot – Israel's National Water Company

03

Integrating environmentally friendly lighting guidelines in the framework of the company's "Chief Engineer Procedure", which is compulsory in all new installations.

1. Mainstreaming Environmentally Friendly Lighting in Large Infrastructure Companies



Netivei Israel – Israel's National Road Company

01

Integrating environmentally friendly lighting guidelines in a tender for **replacing 100,000 lightbulbs on Israel's roads.**



The pilot for upgrading lighting was implemented at the Samar Junction, Highway 90, as part of a project with the NRC. On the left is the situation pre-upgrade, with unnecessary light spill into open areas (about 30 m from the road), vs. the post-upgrade situation (12 m).

1. Mainstreaming Environmentally Friendly Lighting in Large Infrastructure Companies



Netivei Israel – Israel's National Road Company

02

Highway 90 pilot implementation:

1. Reducing light spill into open areas from 30 m to only 12 m and **eliminating sky glow.**
2. **Energy savings of 47% in electricity consumption.**

2. Problem Characterization and Providing a Solution for the Issue of Bird-Power Line Collisions Together with the IEC



Flamingo that collided with a power line. Hula Valley | Photo: Nadav Yisraeli

2. Problem Characterization and Providing a Solution for the Issue of Bird-Power Line Collisions Together with the IEC



2015-2017: The first field study to describe the problem in the Yizre'el Valley, with the IEC, identified that every year approximately 200 birds collide with one kilometer of power lines. The study was conducted with special tracking dogs and included installation of marking means on part of the power line, compared to a control area with no markings.

Areas sensitive to bird-power line collisions



2017-2019: **Countrywide bird-power line sensitivity map**, characterization of recommended marking methods and preliminary cost estimate.



2021: Promoting a broad applicative study in the Yizre'el Valley.

3. Environmentally Friendly Farming – From Theory to Practice



Restoration of *Onosma gigantea*, an endangered plant, to the field margins of the Barkan Winery | Photo: Merav Lebel

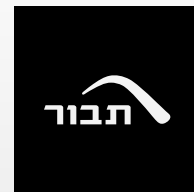


Planting *Ballota philistaea* in the Or HaNer fields. A joint project with the Cotton Board | Photo: Lihi Barkan.

3. Environmentally Friendly Farming – From Theory to Practice

01

The **first ecological vineyard in Israel** (discontinuing herbicides, wildflowers planted as cover plants, restoring trees to the vineyard edges, restoring rocky plots as habitats for reptiles in the vineyard).



02

Restoring endangered plants to field margins in the Akko Valley (MILOPRI), the southern coastal plain (Cotton Board) and the lowlands (Barkan Winery); **rehabilitation of a winter pond** near an avocado grove.



03

Mainstreaming environmentally friendly protocols in agricultural cultivation.



3. Environmentally Friendly Farming – From Theory to Practice



Planting cover plants for soil conservation and preventing erosion in streambeds, Israel Cotton Board | Photo: Yael Brenner

3. Environmentally Friendly Farming – From Theory to Practice

"It took a long time to change the farmer's outlook, not to fight weeds, not to use herbicides, to tell them – we collected the equipment that you purchased for a hundred thousand shekels, buy a lawn mower. It took time until the ideal soil cover was developed, so when you see the green and there is no erosion, no pesticide pollution, when they saw the results of the transformation, it was fast... it was easy to convince them to move from stage to stage, plant trees, restore wildlife, because the benefits were constantly accumulating."

(Senior manager, agricultural company)
From the TevaBiz Project Evaluation, 2021

4. Characterization and Integration of Invasive Species Prevention and Coping Protocols in Infrastructure

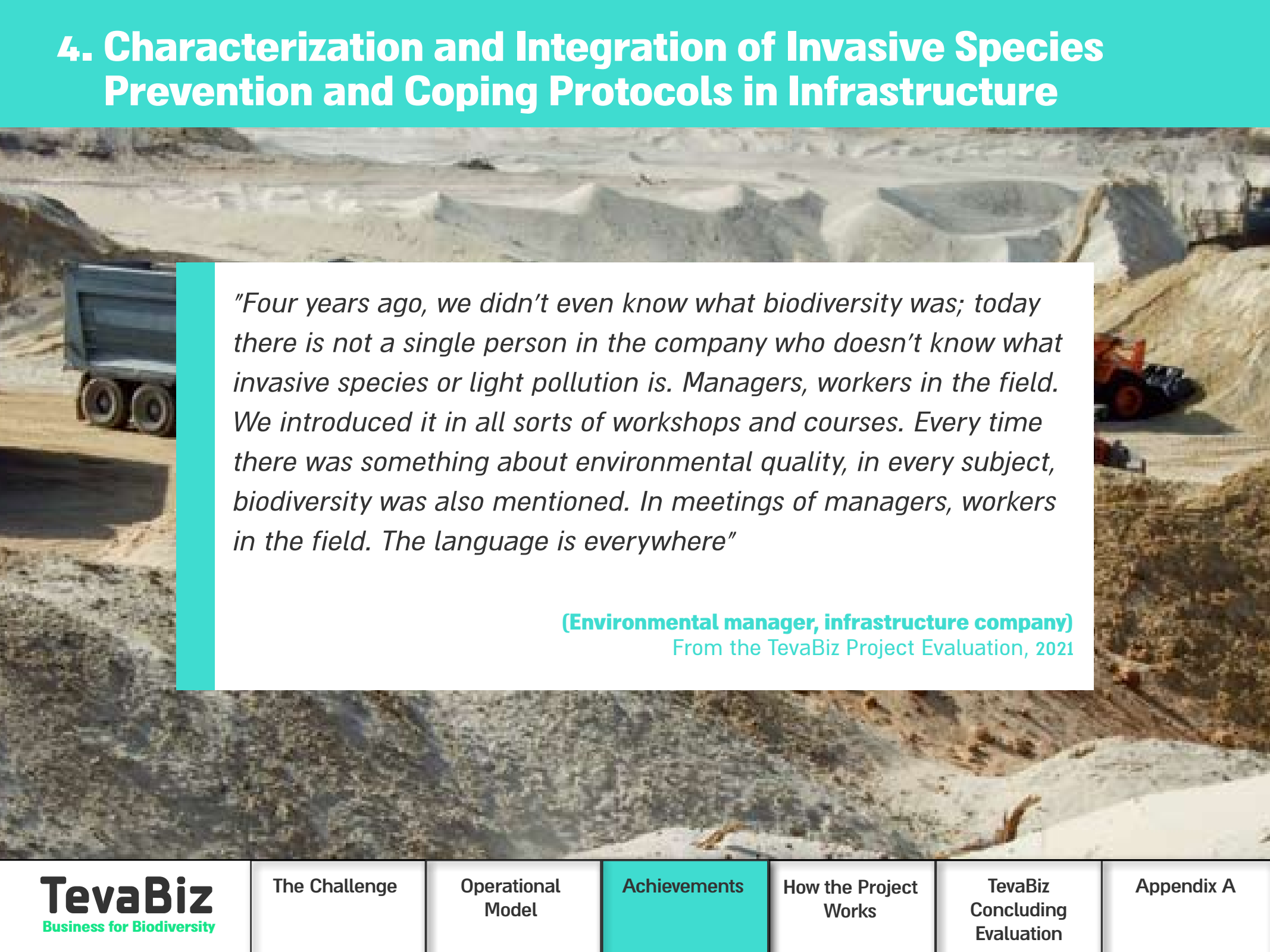
The guidelines were integrated in the work procedures of Netivei Israel and Mekorot.



Guidelines for preventing invasive plants were **voluntarily assimilated in Israeli quarries** as part of a joint project with the Hanson Quarries. As a result, after the applicability and effectiveness of the step was proven, their integration became compulsory in the MOEP licensing procedure for quarries.



4. Characterization and Integration of Invasive Species Prevention and Coping Protocols in Infrastructure



"Four years ago, we didn't even know what biodiversity was; today there is not a single person in the company who doesn't know what invasive species or light pollution is. Managers, workers in the field. We introduced it in all sorts of workshops and courses. Every time there was something about environmental quality, in every subject, biodiversity was also mentioned. In meetings of managers, workers in the field. The language is everywhere"

(Environmental manager, infrastructure company)

From the TevaBiz Project Evaluation, 2021

5. Characterization of an Environmentally Friendly Tourist Park – Timna

*"We did the work, and now I have a plan for years in advance. **There is a standard for lighting, and every lighting element I purchase is according to the plan.** Even if it costs three times, or six times the amount, now that **I understand the significance of light pollution, see the improvement** in the sites we finished working on, I work accordingly and budget differently. I implement it in every new development in the field. As far as I am concerned it is done for years ahead"*

(Manager, tourism company)

From the TevaBiz Project Evaluation, 2021

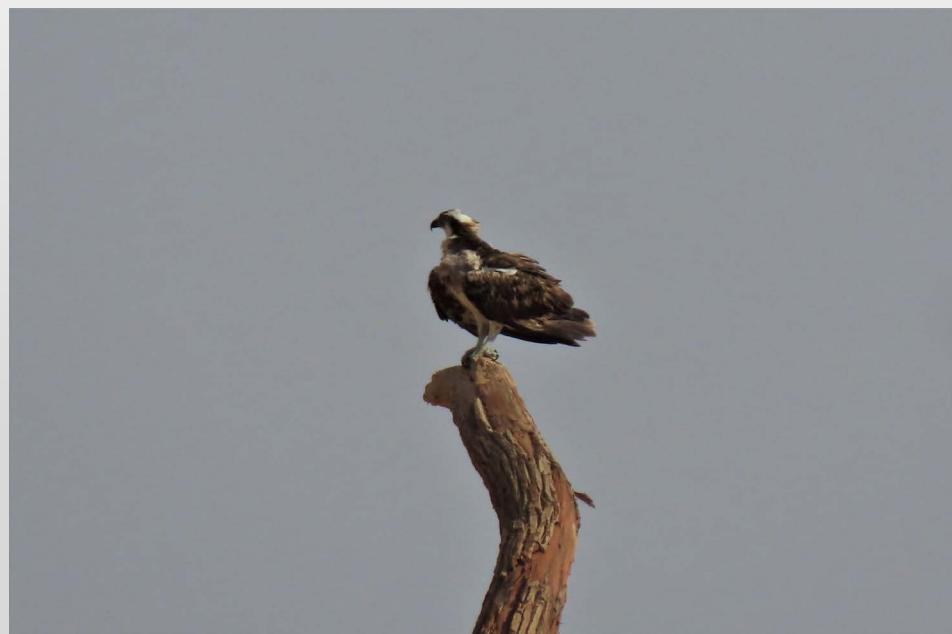
Photo: Lihi Barkan

6. Upgrading Sewage Reservoirs for Birdwatching

A management program to adapt a sewage treatment plant for birdwatching at a strategic location on a global bird migration route.




Reservoir at the Eilat Sewage Treatment Plant. The banks were adapted for birds | Photo: Shahar Shalev



Osprey on an observation platform placed in the reservoir | Photo: Shahar Shalev

Benefits of the Project for the Business Sector

Benefits of the Project for the Business Sector



*"I am very well aware how **hard it is for businesses and companies** in general, and government companies, which are very performance-oriented in particular, **to change their environmental behavior**. In general, **this is a successful initiative**. **It certainly made changes** in the participating companies, in the direction it wanted. I give them very high scores. We do see policy being adopted, involvement in topics with great effects (on the environment and biodiversity), work with professionals. I see change happening"*

(Environmental manager, environmental organization)
From the TevaBiz Project Evaluation, 2021

Benefits of the Project for the Business Sector

The project helps the business sector and government companies in Israel **to prepare for risk management** focusing on actions that harm biodiversity, and to **create new market possibilities** while preparing for upcoming regulation. If there is no system-wide action regarding biodiversity, **it is doubtful whether businesses will continue to receive public licenses** and legitimacy to work – in Israel and abroad.



Evrona oil spill | Photo: Roi Talbi

Benefits of the Project for the Business Sector

1.Brand Differentiation:

Companies such as the **Tabor Winery**, **MILOPRI**, the **Israel Cotton Board** and the **Barkan Winery**, which are in a competitive market, differentiate their brand by working to improve their effect on biodiversity in their core areas, among other activities. Thus, the Tabor Winery and MILOPRI brand their products as ecological on their packaging and in marketing processes. The **Eilat Regional Economic Development Company** that operates **Timna Park**, which competes with other tourist attractions, and is now mainstreaming an environmental management program that will increase its attractiveness to nature lovers.



Benefits of the Project for the Business Sector

2. Preparation for Regulation and Requirements from Investors / Parent Companies from Abroad

The parent companies of the quarrying companies **Hanson and Lime & Stone** operate in a global market and are subject to strict environmental standards, as well as strict requirements by their stakeholders regarding nature conservation, including shareholders. These companies became part of the "environmentally safe quarry" project that implemented a code to prevent and eradicate invasive plants in quarries, therefore preventing the spread of invasive plants into open areas.

The companies thus complied with the standards required by their parent companies abroad and even preceded



the environmental regulation: they implemented the code from 2013, while the MOEP required all the quarries in Israel to implement the environmental code as part of their licensing process in 2017. Thus, these companies preceded the regulation and gained an advantage over their competitors (as the costs of coping with invasive species grow the longer the problem is ignored and the species in the quarry are not treated).

Benefits of the Project for the Business Sector

3. Risk Management and Improving Planning and Operation Processes in Infrastructure Projects:

Infrastructure companies such as **Mekorot, IEC, Netivei Israel, Petroleum & Energy Infrastructures Ltd.** and the Mediterranean Coastal Cliffs Preservation Government Company Ltd., are subject to environmental / ecological regulation in the process of project approval by planning committees and at the time of implementation. Requirements that are not coordinated between the various environmental agents (MOEP, INPA, environmental consultants in the Planning Administration, etc.) sometimes complicate the approval process and delay projects. These delays have vast financial consequences for the infrastructure companies.

As part of the projects, an agreed upon work protocol was signed between the company and the regulatory agents (MOEP, INPA, the SPNI that serves as the representative of environmental bodies in the planning committees, and occasionally with additional regulators, e.g. the Water Authority). This protocol commits all the sides and shortens the processes allowing a smooth coordinated approval of some of the project aspects – **improved efficiency means a reduced budget and higher process certainty for the business.**

Benefits of the Project for the Business Sector

*"The best thing [about TevaBiz] is the **establishment of processes related to road illumination**. We work with the Ministry of Defense, with everyone. They say this is what they do in TevaBiz, and **now it is very easy to say** – define your needs, characterization of item purchases, plan, **behave according to what they did in Netivei Israel**, it does not really matter where you illuminate... actually this was a case of **scientific knowledge development that was translated into action**. Every plan that comes before the district planning institutions, every plan submitted to the INPA for approval or for an expert opinion, so now, instead of writing a long letter, you just say – there is a TevaBiz document that specifies, illuminate in this and this manner, and there is a common language everyone understands"*

(Manager, environmental organization)
From the TevaBiz Project Evaluation, 2021

Benefits of the Project for the Business Sector

4. Improving Efficiency and Saving Resources

Combining processes to improve efficiency, such as replacing lighting with cost-effective lighting, while enforcing non-polluting lighting standards, can be very cost-effective for a business. Thus, the **Petroleum & Energy Infrastructures Ltd.** conducted a successful pilot of replacing lighting in one of its installations, according to the environmental requirements of the project, and is expected to save about 80% of the annual expenditure for electricity at the installation.



The fence lighting at the Petroleum & Energy Infrastructures Elro'i facility, before the upgrade. The lights face the horizon and light the open areas unnecessarily | Photo: Gili Guzani



The fence lighting at the Petroleum & Energy Infrastructures Elro'i facility, after the upgrade. The lights face downwards and light the required area efficiently, with no peripheral light pollution | Photo: Gili Guzani

Benefits of the Project for the Business Sector

*"I believe that this is an **extremely important project**. ...One of the major problems facing humankind is biodiversity. We destroyed nature and are paying a very high price... **This concept of approaching not via regulation**, which is sometimes necessary because there is now choice, but to come instead from a **voluntary place**, and to come to businesses that **see the added value for the business, that is where the greatest success lies**... when we say that you have to deal with lighting for the benefit of the environment, some people will connect to the idea, and others not, but the connection between nature and profit, that is the main thing, and is very important"*

(Senior manager, business company)
From the TevaBiz Project Evaluation, 2021

How the Project Works

How the Project Works

The Project Cycle: Two Years + Long-term implementation



How the Project Works

*“I have extensive experience and I can say that this is one of the most successful processes I have encountered, and **I will explain why**, this is not just a feeling. Firstly, they [the SPNI] take the initiative, and **make us, as companies, compete** to be the first to do, to publicize, and this is great. They publish a call for proposals and challenge companies, don’t wait for regulation, and do it in a **very participative manner**. Secondly, there is the financing. Although we have a lot of money, the fact that you are told that there is a project I am suggesting, and I will also put down one hundred thousand shekels, no one will refuse that. **They both challenge you and pay**. Thirdly, they put someone in charge. We had Lihi, who takes complete charge. I lead the project in our company, but my job has many pressures and stress. She managed to ensure that the process we agreed on happened; we decide together, she manages the process, publishes protocols, and ensures that the tasks are done. Furthermore, they know **how to bring in outside partners**, the INPA, the MOEP, and when additional partners were needed, they were brought in. **They always ensured that I got everything I needed as the process leader**. They completely understand us. We never felt that they were trying to pressure us needlessly, trying to force us. That was excellent. They understood us, we them, each body gave in here and there, and at the end we achieved something good we could all live with”*

(Senior manager, infrastructure company)
From the TevaBiz Project Evaluation, 2021

How the Project Works

TevaBiz – Work Model

- 01** Process management – integration vis-à-vis regulatory bodies (environment, planning, etc.)
- 02** Creating concrete solutions for ecology in the business and operational world, and translating them into the language of procedures and implementation.
- 03** Building trust and bridges by dialogue and connecting.
- 04** Recruiting and training workshops for managing organizational change processes.
- 05** Conferences to publicize the project products, media exposure.



How the Project Works

"The opening workshop was excellent, about recruiting people, it really recruited me. There were representatives of the participating bodies, Netivei Israel, a large winery, a quarry, us, and it was a professional workshop on what biodiversity and light pollution are, and how to promote the concept in the organization, and empowerment of management and leadership. Really great. It gave me drive and tools. It was interesting. It was really good, and it is really important to keep it as part of the project. Later on I sent more people [from my company] to participate and it really gave a lot to everyone that came"

(Environment manager, infrastructure company)
From the TevaBiz Project Evaluation, 2021



How the Project Works



*"Another thing that was **significant and impelled us forward** was the conferences in which we participated. The fact that you come, tell, lecture, **managers from other infrastructure companies come, the director general of the office**, other agents; you present what you did, what you committed to, what you achieved. This leads to another way of thinking, to another type of push. The understanding that **you are part of something big**. The conferences with all the stakeholders, the environmentalists, where we presented to organizations, lighting planners, project managers, all this contributed greatly to success".*

(Environment manager, infrastructure company)
From the TevaBiz Project Evaluation, 2021

How the Project Works

Media Exposure of the Project Products



Ynet, 26.5.19



Walla, 24.5.19



Haaretz, 21.5.19



Yedioth Ahronot, 19.11.13



Walla, 8.8.20



Ynet, 15.12.20

TevaBiz **Concluding Evaluation**

Major Insights

*"They were amazing. **They understand every problem, whether in the internal integration, or with the regulators,** we were pleasantly surprised. An outside consultant that helps manage, **and they really got into all the details with us.** They went with us to the regulators, inside the company, outside the company. They never left me on my own. Always asking, how can we help, who do we have to talk to. They created a feeling of a true partnership, which is a condition for success... There were no calculations of hours, of money, of inputs. And if we needed twenty additional brochures, they produced another twenty. They did not set a limit on anything. Every request was fulfilled. We always received an immediate response"*

(Manager, infrastructure company)
From the TevaBiz Project Evaluation, 2021

TevaBiz Project Concluding Evaluation

In 2021, the initiative underwent a comprehensive assessment to understand the perceptions and positions of all the stakeholders involved in the project regarding its success, to identify and map strengths and weaknesses in its operation and to indicate recommended future activity.

01

A qualitative study – based on 36 semi-structured in-depth interviews, with managers and individuals from companies participating in the initiative as well as from different environmental organizations.

- Dr. Dror Osnat

02

Comprehensive expert ecological assessment in three selected companies.

- Dr. Didi Kaplan

03

Global literature review and case study compilation.

- Dr. Didi Kaplan

Selected Quotations from the Concluding Evaluation

*"The interviews make it clear that the importance and success of TevaBiz is a result of the successful **identification of the need, from the initial involvement in creating an essentially voluntary cooperation with private companies** to benefit biodiversity. This, as well as **creating points of agreement between the "green organizations"** – involving the government sector in formulating recommendations and points of agreement in projects, putting the subject on the agenda, launching **new modes of action and developing significant and relevant knowledge**. There was agreement with the basic assumptions of initiative and its goals. The day-to-day operation, and the personal and professional admiration for the professionalism, commitment, availability and attention to the needs of the private companies on the part of the steering team, also received outstanding positive evaluations."*

*"The interviewees also noted a long list of effects and outcomes on different levels in the framework of implementing TevaBiz. There is a broad consensus that the project **changed awareness and perceptions** in the companies regarding the importance of preserving biodiversity in general, as well as regarding the specific effects of topics such as light pollution, invasive species, changes in agricultural practices and the effect of infrastructure, including electrical and transport infrastructure, on biodiversity. The in depth acquaintance with environmental aspects contributed to finding a tailored solution suited to the concrete needs of each organization."*

Major Insights

A. An extremely successful initiative

- Correct identification of needs – recruiting business companies to deal with biodiversity preservation.
- Excellent conduct of the project team.
- The achievements of the initiative are particularly noteworthy in light of the lack of awareness regarding biodiversity in the public at large and in the business sector, the lack of effective government regulation in the field, the relatively small budget, and compared to the standard of similar projects in the world.
- The cooperation between environmental organizations is a significant advantage and allows for successful mainstreaming and regulatory effectiveness.

B. The initiative creates significant results and effects

- Conceptual and attitude change in the participating companies.
- Development and adoption of relevant expert knowledge in a variety of fields significant to nature conservation.
- Integrating the knowledge developed in applicative tools: guidelines, protocols, implementation in pilot projects, while creating significant positive environmental effects.
- Transferring knowledge between bodies/organizations (e.g. via planning institutions) and horizontal effects within the business sector.

Major Insights

C. Creating action through cooperation and dialogue and not through conflict

- **Recruiting** committed and effective **"agents of change"** from the business sector.
- **The call for proposals and financing the consulting process** method is a catalyst that allows business companies to join a significant process.
- Recruiting management / senior jobholders in organizations is a **major essential stage in success.**
- **Creating a win-win benefit system**, for nature and the business sector (investment return on lighting by electricity saving, agricultural soil conservation, green branding, etc.).

Selected Quotations from the Concluding Evaluation

*"This assessment study shows that the **TevaBiz initiative is very successful, despite a challenging beginning and structural contexts**, including the generally poor state of global nature and biodiversity, the relative weakness of Israel in this field, and the lack of significant system-wide involvement in promoting biodiversity preservation (including lacking regulation and the absence of government incentives to promote the issue), low public environmental awareness in general and of biodiversity specifically. Nevertheless, it has had **many successful results**. The intrinsic conflict in the initiative is the promotion of operational guidelines to minimize negative effects on nature – which is a public good – by private corporations active in the business/economic field."*

*"The relatively **limited amount of resources that were allocated to the project**, highlight its many achievements even more. The results of the initiative still have **significant potential that is waiting to be realized**."*

Major Insights

D. Recommendations

- To carry on with the project and not stop it, and to leverage and expand it to enable:
 - New projects
 - **Continued long-term monitoring and integration** of completed projects.
 - **Assimilating project products** both "vertically" to the regulating and planning elements, and "horizontally" to other companies in the same business sector.
- **To intensify the organizational commitment** of environmental bodies to the initiative.
- **To formalize and expand** budget and organizational **resources**.
- **To expand the efforts to recruit** government agencies in general, and the Government Companies Authority specifically.
- **To publicize and market** the successes of the initiative.

Appendix A

Companies and Projects Participating in TevaBiz

Company	Subject, activity and years ³	Products
Mekorot	Invasive species protocol (2014-2017)	<ul style="list-style-type: none"> Guidelines and pocket guide for dealing with invasive species; approved by Mekorot, the Israel Water Authority, the INPA, MOEP and SPNI. In new projects, the guidelines are included in the instructions for the contractor.
	Light pollution reduction in the company installations (2017-2019)	<ul style="list-style-type: none"> Formulation and approval of internal guidelines for planning environmentally friendly lighting – "chief engineer instructions" for lighting systems. Pilot project to upgrade lighting at the Eshkol facility that led to 86% savings in electricity, and darkened 3 hectares of natural areas. 63 installations (out of 164) located in ecologically sensitive areas were darkened.
Israel Electrical Company (IEC)	Protocol for dealing with invasive species and light pollution in the company installations (2014-2017)	<ul style="list-style-type: none"> Document with recommendations including expert guidelines for ecologists involved in planning and establishment, and guidelines for conducting invasive plant surveys was completed. The document is a work plan for an interdisciplinary team working on the topic in the framework of sustainability in the IEC. The national survey on invasive species and light pollution in electrical company substations was completed, including specific mapping of invasive species and light pollution potential in installations located in open areas, and determining priorities in the framework of the proposed work plan.

3. Activity years refer to the years in which the core project was conducted, and not to the subsequent monitoring and integration following the completion of the core stage.

Company	Subject, activity and years ³	Products
Israel Electrical Company (IEC)	Reducing bird collisions with power lines (2015–present)	<ul style="list-style-type: none"> • The first field study in Israel was conducted to assess the scope of the problem of bird collisions with power lines. Rate of collisions was found to be 200 birds/km/year in the area studied. • A GIS model was developed to identify the areas most sensitive to collisions with birds. • A review of literature was conducted, following which three preferred methods for marking power lines to reduce the scope of the problem were identified. • Based on previous products a proposal was submitted to the Israeli Open Spaces Conservation Fund (OSCF), which was approved. A broad applied research project funded by the IEE, the OSCF, the INPA and the SPNI to evaluate the effectiveness of the marking and installation methods from an ecological, operational and economic aspect. • A successful feasibility study was conducted for the installation of the marking methods using a drone – a new installation method for Israel. • The recommendations are already being implemented in the framework of planning institution discussions regarding the planning of new power lines.

3. Activity years refer to the years in which the core project was conducted, and not to the subsequent monitoring and integration following the completion of the core stage.

Company	Subject, activity and years ³	Products
National Road Company	Protocol for dealing with invasive species (2015–2018)	<ul style="list-style-type: none"> Guidelines and a pocket guide for dealing with invasive species was prepare and approved by the National Road Company, the INPA, MOEP and SPNI. The document was integrated in the internal National Road Company guidelines (task manual for ecologists, manual for planners, etc). The regulation for treating captive invasive species was approved, but its implementation has been delayed.
	Light pollution reduction along NRC roads (2017–2019)	<ul style="list-style-type: none"> The guidelines and technical specifications for environmental friendly lighting were approved by the NRC, the Ministry of transport, the INPA, MOEP and the SPNI. The guidelines were integrated in the internal National Road Company guidelines (manual for ecologists, manual for environmental planners, etc). A GIS model was developed to identify the areas most sensitive to light pollution. The NRC published a tender for replacing all the existing lighting (about 100,000 bulbs) that includes reference to environmentally friendly lighting for ecologically sensitive areas. A pilot project to upgrade lighting at the Samar Junction was implemented. This led to a 47% reduction in electricity consumption and darkened 3.6 hectares of natural areas. All this while maintaining the quality of lighting necessary for safety. All the NRC lighting planners received instruction on how to comply with the minimal lighting required, which would lead to a reduction of light pollution.

3. Activity years refer to the years in which the core project was conducted, and not to the subsequent monitoring and integration following the completion of the core stage.

Company	Subject, activity and years ³	Products
Tabor Winery	Biodiversity-supporting vineyards (2012–2015)	<ul style="list-style-type: none"> • A protocol for management of ecological cultivation of the Tabor Winery vineyards was prepared and implemented in over 75% of the vineyard area (over 140 hectares). • A vineyard atlas was developed that constitutes a spatial analysis and ecological guidelines for implementation in each vineyard, with the proposed solutions adapted to the location of the vineyard and the ecological sensitivity of the site. • Actions included discontinuing herbicide spraying between the vineyard rows, preserving natural field margins, restoration of rocky plots and streams in the vineyards and planting native tree species at the edges of the vineyard. • The vineyard initiated a broad-scope ecological branding campaign as a result of the project.

3. Activity years refer to the years in which the core project was conducted, and not to the subsequent monitoring and integration following the completion of the core stage.

Company	Subject, activity and years ³	Products
MILOPRI	Biodiversity compliance protocol (2017-2019)	<ul style="list-style-type: none"> • Protocol for biodiversity management in avocado orchards referring to the reintroduction of endangered and indigenous plants, integrating a mixture of cover plants, reducing herbicide use and dealing with invasive species. • Three refuge gardens were established for endangered species (2 of heavy soils and 1 of light soils). • A winter pond was rehabilitated (and now functions as one of the refuge gardens). • Hundreds of seedlings, belonging to six endangered species (3 of light soils and 3 of heavy soils), were planted. The plantings were conducted in four separate orchards. • The MILOPRI lands were classified into three levels of conservation according to the potential of connectivity of the plots to natural areas. • Manuals were written for each of the growers. Each manual referred to all the actions needed for each specific plot according to the final report that was approved by MILOPRI, the INPA, MOEP, the Ministry of Agriculture and the SPNI. • A marketing brochure in English was prepared for export branding.

3. Activity years refer to the years in which the core project was conducted, and not to the subsequent monitoring and integration following the completion of the core stage.

Company	Subject, activity and years ³	Products
Hanson Israel	Protocol for dealing with invasive species (2013-2016)	<ul style="list-style-type: none"> • An ecological code for dealing with invasive species was formulated and integrated in the company quarries. • This eco-code was integrated as compulsory guidelines in the business license by the MOEP for all the quarries in Israel. • Three nature sites near the quarry were rehabilitated, while strengthening the connection between the quarry and the adjacent community and the affinity of the workers to the company and their company pride.

3. Activity years refer to the years in which the core project was conducted, and not to the subsequent monitoring and integration following the completion of the core stage.

Company	Subject, activity and years ³	Products
Timna Park Eilat Regional Economic Development Company	Ecological management plan for Timna Park (2017-2019)	<ul style="list-style-type: none"> • An ecological value map of the park was prepared that integrates the ranges and main activity areas of the fauna and flora of the park and classifies the park according to three sensitivity levels. • A plan for environmental management of the park was developed that includes: detailed guidelines for managing events and productions, environmentally friendly lighting, prevention of hydrological fragmentation, sanitation, reduction of vehicular movement effects, ecotourism, etc. • The lighting on the trees at the lake was replaced with environmentally friendly lighting and the entrance lighting is now in the process of being changed. • The approach paths at the site were structured to protect ecologically sensitive areas. • The park appointed a warden who roams the park sites daily to ensure visitors understand the park rules and the importance of park nature conservation. • Park trashcans were replaced to comply with sanitation requirements. • Sediments are removed by the park staff, with a focus on minimizing damage to natural surface runoff and to the soil crust and vegetation near the paved/dirt roads.

3. Activity years refer to the years in which the core project was conducted, and not to the subsequent monitoring and integration following the completion of the core stage.

Company	Subject, activity and years ³	Products
Tara Dairy	Sanitation and prevention of light pollution in cowsheds (2017-2018)	<ul style="list-style-type: none"> • Fencing specifications to prevent access of eruptive species to food sources in cowshed. • Guidelines for intelligent planning of cowshed lighting were formulated, which include identifying needs and adapting lighting while preventing light leakage into open areas around the cowshed. • The project was discontinued after it became clear that the company did not intend to invest resources in the pilot project or in the broad implementation of the recommendations.
Petroleum & Energy Infrastructures Ltd.	Light pollution prevention (2015-2017)	<ul style="list-style-type: none"> • Pilot project to improve lighting at the Elro'i facility, which led to a savings of 80% in electricity consumption and darkening of 13.5 hectares of natural areas. • Subsequent to the pilot success, it was decided to upgrade the fence lighting at all the company facilities. Up to now, seven facilities have been upgraded and the remaining ones are in the process of being upgraded.
	Ecological management plan for the Eshel facility (2015-2017)	<ul style="list-style-type: none"> • Preservation of assemblages of the endangered endemic plant <i>Allium kollmannianum</i> by means of rope fencing, signage and preventing herbicide spraying, based on a designated company procedure. • A person responsible for plant conservation at the facility has been appointed, and paths opened to allow visits to the plants. • Selective elimination of invasive species in order not to harm the endemic vegetation.

3. Activity years refer to the years in which the core project was conducted, and not to the subsequent monitoring and integration following the completion of the core stage.

Company	Subject, activity and years ³	Products
Mediterranean Coastal Cliffs Preservation Government Company	Ecological management plan and guidelines for planning cliff protection (2015–2017)	<ul style="list-style-type: none"> • Ecological and environmental guidelines were approved for implementation in all the stages of the project. Guidelines include reference to the location of workstations in the sea and on land and activity in them including timing of activity, noise and light pollution, water turbidity and preventing penetration of invasive species. • An ecological management matrix was developed that includes correspondence between the suggested solutions for protecting the cliff and the sensitivity and value of the site. • A conservation toolbox was developed that includes specific guidelines for each protective solution proposed for the cliff, including technical specifications for ecological guidelines.
Open Seas	Fish cage sanitation 2016	<ul style="list-style-type: none"> • A survey was conducted to gather data on the topic and on protective and preventive measures in other parts of the world and recommendations were formulated. • A work framework for monitoring sharks around the fish cages was developed. • A management plan for waste disposal (dead fish, the main factor attracting sharks) from fish cages in the open sea was prepared, as a major means of reducing the conflict. • The management plan for waste disposal from fish cages was integrated in the regulation proposal – in the regulations for preventing animal diseases (fish farming); the plan was approved and is integrated regularly in detailed plans submitted to marine agriculture planning authorities.

3. Activity years refer to the years in which the core project was conducted, and not to the subsequent monitoring and integration following the completion of the core stage.

Company	Subject, activity and years ³	Products
Israel Cotton Board	Cotton farming to preserve biodiversity (2020-present)	<ul style="list-style-type: none"> • Literature survey – cotton farming and preserving biodiversity • Pilot projects in three areas that included renewal of field margin vegetation, including endangered species as well as streambed stabilization and soil conservation (in progress). • The results of the project will be analyzed to determine policy and treatment protocol, followed by an implementation program.
Barkan Winery	Biodiversity-supporting vineyards (2020-present)	<ul style="list-style-type: none"> • Evaluation of existing protocols • Pilot projects in three vineyards: planting cover plants with endangered species (<i>Onosma gigantea</i>). • A pilot project to remove fences to reduce damage to Mountain Gazelles is planned (awaiting approval). • The pilot results will be analyzed and protocols and an implementation plan will be prepared.

3. Activity years refer to the years in which the core project was conducted, and not to the subsequent monitoring and integration following the completion of the core stage.

Company	Subject, activity and years ³	Products
Ein Netafim	Biodiversity preservation and improvement – local and migrating birds (2020–present)	<ul style="list-style-type: none"> • Current status characterization – documenting diversity, mapping endangered sites and locating a site for a tourism walkway for birdwatching. • Consolidating approved action plans, including treatment and management of reservoir bank vegetation, installing lookouts for birds of prey, establishing resting sites for water birds and preparing a plan to promote environmental tourism. • Future plans include additional conservation measures at the site, including dealing with shallow water areas, advancing local plant floating islands, installing designated equipment for preventing bird collisions with power lines.
Golan Economic Corporation	Reducing marginal effects in settlements and tourism projects (2020–present)	<ul style="list-style-type: none"> • Analysis of existing situation. • Proposing spatial guidelines for planning. • Specifications for integration in tenders.

3. Activity years refer to the years in which the core project was conducted, and not to the subsequent monitoring and integration following the completion of the core stage.

www.tevabiz.org.il