

# Green in the desert

The Sustainability Lab merges Beduin tradition with modern technology

• By ARIEL DOMINIQUE HENDELMAN

Sustainability is a word that is tossed around rather carelessly, slapped onto the label of any endeavor that aspires to resonate with consumers. The prevailing accepted definition came out of the UN's Brundtland Commission in 1983, and defines sustainability as development that takes care of current needs without jeopardizing the needs of future generations. Dr. Michael Ben-Eli, who spent many years as an international management consultant on issues of sustainable development to agencies such as the World Bank, became dissatisfied with the large gap between the rhetoric and what was actually happening on the ground. Ben-Eli recalls, "I began to understand the weaknesses of a lot of these large institutional structures both in the public and private sector. They are extremely fragmented internally; reflecting sectorial expertise. Each department is in its little silo."

For Ben-Eli, who received a lifetime achievement award and an induction into the International Green Industry Hall of Fame in March for Wadi Attir, his revolutionary sustainability project in the Negev, it was the recognition of a flawed system that prompted him to do something new. He saw that the development of sustainability was unable to progress because it required a more comprehensive, holistic approach. "This is where the idea for the Sustainability Lab came around, with the concept of sound science, creative exploration and radical innovation," he says.

It was at this point, in 2006, that Ben-Eli began to devote all of his efforts to the Sustainability Lab. The first item on the agenda was redefining the term sustainability. "When you think about the previous definition and its deeper meaning, it has to do with a particular kind of interaction between a population and the environment's carrying capacity. It could be an amoeba in a petri dish or humans on the planet. This interaction is interesting because it's circular, where the two parts continuously define one another," he says. Sustainability is thus a term in motion. The demand on resources and the byproducts that must be absorbed by the environment are the two main factors, which create a fragile balance.

It is this balance that is off-kilter in today's world. Ben-Eli's new definition is that sustainability pertains to a particular dynamic equilibrium within the interaction between a population and the carrying capacity of its environment, so that the population expresses its full potential without producing irreversible effects on the environment. "That means something very profound," Ben-Eli says, "that the con-



Michael Ben-Eli in the goat pen at Wadi Attir, his sustainability project in the Negev. (Photos: Courtesy)

cept of sustainability is not a mere adjective; it connotes a system state."

The question then became how to derive a set of principles from this new definition. Ben-Eli came up with five: material, life, social, economic and spiritual. "The material domain is the science and technology of how we deal with the physical world," he explains. "Life is how we deal with other forms of life. Social is how society organizes itself. Economic is what we can measure. Spiritual asks what we feel about why we are in the first place; are we predators or stewards?"

The five principles are abstract enough to be applied to any circumstance, but a project was needed to showcase their full integration. Wadi Attir is that project. Begun in 2008, following Ben-Eli's return to his native Israel to visit the Blaustein Institute for Desert Research, Wadi Attir was born from the desert. Ben-Eli was on a tour of Beduin areas around Beersheba, which he used to know well when he was in training for the IDF officers' academy 30 years earlier. Being back there for the first time, he saw a mess of unrecognized villages and poverty. He adds, "On one side of the road there is this fantastic technology, and on the other side there is all this misery. Nobody was trying to put the two together."

Now, eight years after its initial development, Wadi Attir is moving to the implementation stage with its main initiatives: goat and sheep herding for organic farming, medicinal desert plants, indigenous vegetables, a visitor training and education center, and an integrated green technology system. Wadi Attir's model for sustainable agriculture in an arid zone is replicable in any other desert climate. Ben-Eli and his team drew from the tradition and knowledge of the Beduin, while leveraging it with the most advanced technologies available. "People who we sometimes look at as primitive have had hundreds of years of experience in these ecosystems," Ben-Eli emphasizes. "This knowledge has been passed from generation to generation and not necessarily in the ways that we are used to, like in books, but rather from father to son, healer to healer, in songs and rituals. This knowledge is absolutely critical if we want to understand the planet."

By developing a green infrastructure where waste turns into resources, the refuse of one function becomes the resource to another. The site also features a hybrid solar/wind power generating system that supplies nearly all the thermal and electrical needs of the farm. Wadi Attir's holistic philosophy permeates its every aspect. The project coalition is comprised of Beduin, academics, the government (which is now involved after five years of development and is funding the project on a matching basis), local NGOs and donors from abroad. The project team consists of 25 people, almost half of them women. Female empowerment plays an integral role in the indigenous vegetable program, which is led entirely by women. This branch focuses on collecting and preserving desert-appropriate and nutrient-rich seeds from Beduin families who saved them. "People buy these fluffy, genetically engineered tomatoes nowadays that are of much lower nutritional value, and nobody is using these seeds," Ben-Eli says.

The women leading this program are being trained to treat the seeds and maintain gardens. They will eventually reintroduce them into Beduin homes. "When we started Wadi Attir, I didn't realize how severe the issue of nutrition is in the Beduin community today," Ben-Eli says. "Like many other aboriginal groups that moved to a Western diet, they've been decimated very quickly by all the ills of Western society."

Another important branch of Wadi Attir is the goat and sheep herding for organic products. Soil enhancement and designated grazing areas have improved traditional herding practices, as well as a low-impact approach to raising farm animals. Yet another aspect of Wadi Attir is the medicinal desert plant initiative. Using knowledge from Beduin healers, in particular Ali Alhawashla, who serves as the project's director, the Negev's wild plants are being investigated for their health-related and cosmetic benefits on a large scale for the first time.

The revolutionary nature of Wadi Attir is perhaps best exemplified in nature itself. Before Ben-Eli and his team arrived, the project site was a wasteland, with depleted soil devoid of organic matter. Today, thanks to a unique method of capturing rainwater, the area has been completely restored. Where once there were scorpions, now there is a rich ecosystem. Life has been allowed to thrive. In turn, the Beduin of the Negev, some of the most marginalized members of Israeli society, have a chance for a better future.

In recalling his recent lifetime achievement award and induction into the Green Industry Hall of Fame, Ben-Eli recalls, "It was a gratifying and wonderful surprise. I hope that we get to a point when every human on the planet will be worthy of this recognition."

With Sam Geil, International Green Industry Hall of Fame board chairman – with Ben-Eli having been inducted and receiving a lifetime achievement award this past March.

