Growing a Rooftop Garden

By Morgan Cooper

When I first met my husband, there was a moment very early on when I knew we were a great fit. We both believed in living healthy lives that were based on nutritious, or nourishing, foods. From a deep commitment to nature and a love of gardening, to a passion for cooking with fresh ingredients, we shared many things in common. I think it was probably when we started talking about having children that we really became committed to accessing and growing organic produce. We thought about how we wanted to raise our children, what kinds of values we would teach and live by. The old Arabic proverb, "We plant so we may eat," seemed a great motto. But to plant, one must start with good soil.

We had been composting in our café for years, thereby cutting our waste in half and transforming the other half into rich, fertile compost.

Bees visit the rooftop habitat.

Compost is not only fabulously nutrient-dense, it's also full of seeds. While the seeds should die from the heat produced in the composting process, some seeds escape and survive. We added compost to our rooftop canary palms' soil and one seed that survived in the compost sprouted into an amazing tomato plant with a thick, short stalk that produced over 20 good-sized tomatoes. And it clicked: rooftop vegetable garden! Realizing that our 500 square meters of garden that was already planted with over 50 edible trees and vines wouldn't suffice for growing vegetables, we looked up. The 250 square meters that is our rooftop was a great space for putting more trees in pots and vegetables in boxes. The engineer in my husband gauged the building's integrity and identified where to place the boxes so that even when heavy with water, they wouldn't damage the building.

There's been a learning curve. The early boxes were bulky and not strong. There was significant soil erosion. Nonetheless, they worked. Last year we built some new designs that were brilliant: lightweight, economical, simple to build. We now have 6 boxes on our roof, measuring about 21 square meters. At the moment we have kale, lettuce, chicory, arugula, beets, carrots, turnips, Swiss chard, *khubayza*, sorrel, nettles, and more.

It makes sense to me that we should nourish ourselves. In our home, we do that with a lot of organic produce. Why organic? In Palestine, much of what we access in the market is sprayed with dangerous chemicals. Not everything, of course, but most things. And this is a culture where we feast on raw tomatoes and cucumbers with our breakfast of *hommos* or *jibna bayda*. But did you know that cucumbers and tomatoes are two of the most heavily pesticide-sprayed crops? And those chemicals can be found in your blood, which means they are going to your brain. And your breast milk. For my family, that's a big deal.

There is a fundamental pleasure to be had in harvesting greens to add to an omelet made with fresh eggs from the backyard. (We also raise chickens and sheep in our backyard; yes, in the middle of Ramallah.) There is an even deeper pride in feeding your child the most nourishing breakfast you can offer. I take very seriously the responsibility my husband and I share for our family's well-being.

It's not easy to access organic produce locally. That's because there's basically no market for it. I've talked to many organic farmers. I hear the same challenges over and over. If you do grow organic vegetables, you sell them in the market at the same price, and consumers never know the difference. Or take the case of Marda Permaculture Farm, a small organic farm in the Nablus area, where permaculture is taught and practiced. At this time, I am its major buyer. Murad calls and tells me what he has and I order what we can use in the house and café. When I asked him where he sold his produce before I came along, he said that he had had a tough time. He would sell in his community, and if there was anything left over, he would give the produce to poor families. And while that is very admirable, a farmer should be able to earn a livelihood as well.

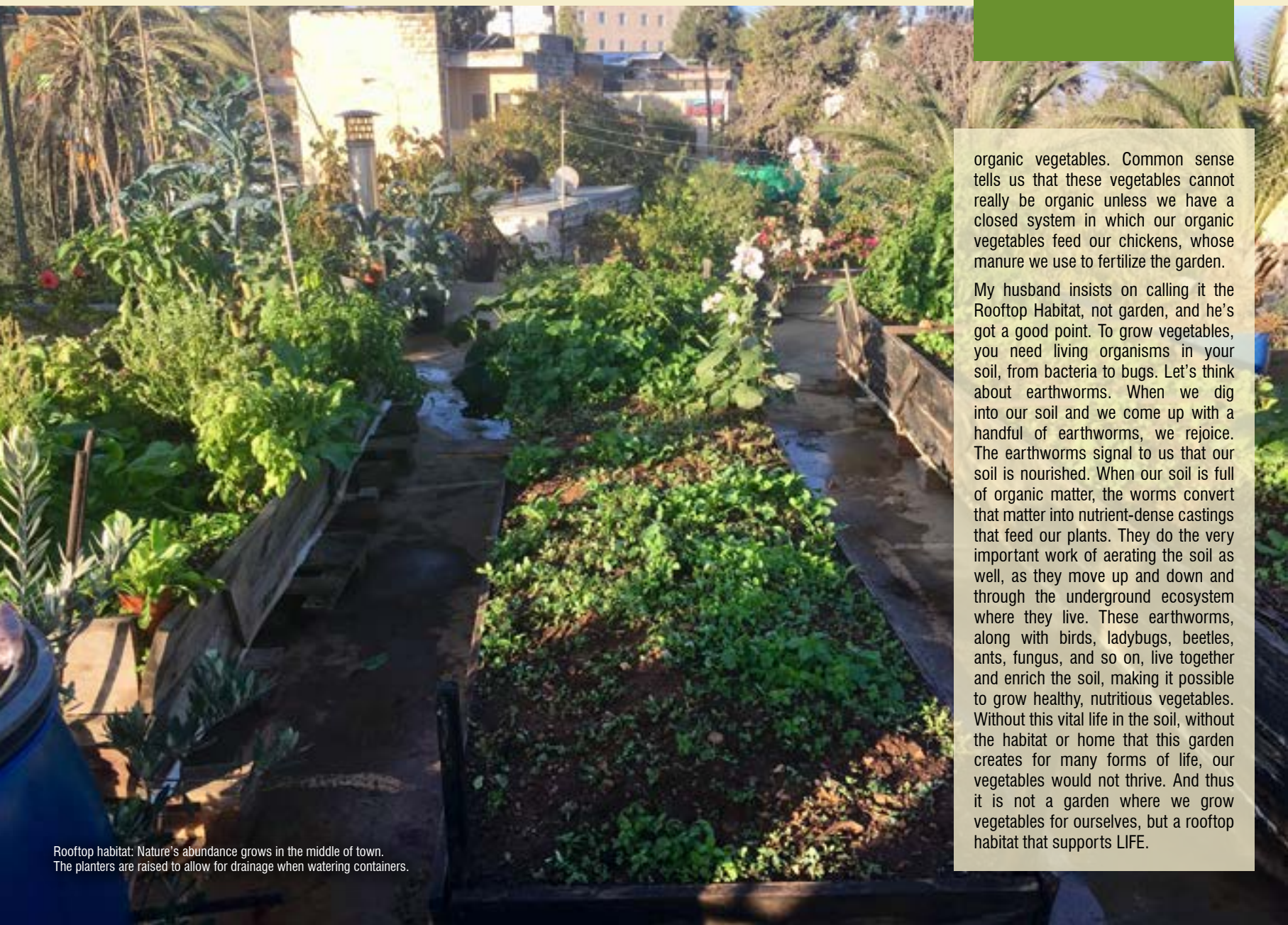
What's the problem with labeling produce organic in Palestine? Well since there's no market, there is also

no accountability when you do grow and sell organic produce. Sometimes you have to simply accept and value that something is local or *baladi* and know that it's likely not organic, even though the seller is telling you otherwise. Even in our rooftop garden, which is basically for our own personal use and for use in our café kitchen, we say it's organic but it's really not.

This word organic is more complex than one might think. In addition to the produce not being exposed to pesticides and herbicides, the seed should be heirloom or *baladi*. The manure added in must also be organic. Think about what the goat or cow is being fed. It's likely wheat or barley from the market, which is not organic. And the goat or cow is likely given antibiotics and other medications, and traces from those enter the soil via the fertilizer. What about the compost? Even here at the café where we compost our food scraps, many of the vegetables come from the *hisba* (local produce market) and are not organic. The pesticides used in growing these vegetables make it into our compost and thus into the soil that feeds our organic vegetables. Common sense tells us that these vegetables cannot really be organic unless we have a closed system in which our organic vegetables feed our chickens, whose manure we use to fertilize the garden.

So what do we mean when we say organic? Basically, that the produce has not been exposed to chemical pesticides or herbicides.

My husband insists on calling it the Rooftop Habitat, not garden, and he's got a good point. To grow vegetables, you need living organisms in your soil, from bacteria to bugs. Let's think about earthworms. When we dig into our soil and we come up with a handful of earthworms, we rejoice. The earthworms signal to us that our soil is nourished. When our soil is full of organic matter, the worms convert that matter into nutrient-dense castings that feed our plants. They do the very important work of aerating the soil as well, as they move up and down and through the underground ecosystem where they live. These earthworms, along with birds, ladybugs, beetles, ants, fungus, and so on, live together and enrich the soil, making it possible to grow healthy, nutritious vegetables. Without this vital life in the soil, without the habitat or home that this garden creates for many forms of life, our vegetables would not thrive. And thus it is not a garden where we grow vegetables for ourselves, but a rooftop habitat that supports LIFE.



Rooftop habitat: Nature's abundance grows in the middle of town.
The planters are raised to allow for drainage when watering containers.

In Ramallah, and actually in most cities today, construction roars on. Here in Ramallah it is at the cost of our beautiful old houses and town heritage. The destruction renders our town increasingly unidentifiable from year to year, not only for Ramallah people who are losing landmark buildings, but also for the wildlife here. We seem thoroughly unconcerned with the impact of development on our environment; we don't see it as a vital issue that we should take on at this moment. That is a great mistake on our part! A cement future that refuses green spaces is unhealthy and untenable for human and animal populations.

Radishes are delicious and full of vitamins and minerals.

The potential of rooftop gardens in Palestine is exponential. Every building is marked by ugly plastic water tanks where we store our weekly supply of rationed water. We could simply put pots around the base of the tanks and plant green beans that could climb on those tanks and feed our families. It's not an issue of beautifying our cities, though that is a wonderful benefit! It's also about the question of food sovereignty. We should know where our food comes from. It's our basic human right to have access to fresh, nourishing foods. And ultimately, a rooftop garden or even a few pots with some cherry tomatoes on a balcony contribute habitats to the wildlife in our cities. We need bees to pollinate our plants or there would be no fruits or vegetables, and bees need us to stop destroying and start planting!

People have a misconception that a rooftop garden will trap moisture in the roof. Our roofs, however, are designed to hold the rains or snows that may sit on them for three to four days. A well-designed rooftop garden would have planters raised with only small legs that touch the building, which is exactly the same concept as a water tank on a holder, a feature of every Palestinian rooftop. Another misconception we often hear is that the weight is dangerous for the stability of the building. To break that down, our garden beds are 1 x 4 meters and 40 centimeters deep. That's around 150–250 kilos per square meter, unlike our water tanks which weigh 1 ton per square meter. And yet no one is worried about the weight of the water tanks piled on top of our roofs. Ultimately, the common concerns around rooftop gardens are not issues. And there are wonderful initiatives such as Mostadam, a relatively new environmental consultancy committed to sustainable design through permaculture practices, which can help you to realize the gardening potential of whatever space you have.

We often invite customers and friends to see our rooftop garden. People are always amazed by what can be built and grown in limited spaces. Whether you have a kitchen window, a veranda, or a rooftop space, you can grow food. And if you don't have any tiny space, or don't know where to start, or don't have time to start, you can simply visit us.

If you aren't ready to build a garden on your roof but you still want the perk of organic vegetables, support farmers and growers. Café La Vie in Ramallah brings produce from farms every Saturday, and friends are invited to place orders of their own; you can subscribe to Om Sleiman's weekly organic produce program, or you can volunteer at the Friends Upper School Community Garden.

In our homes, even if we don't grow any vegetables, we have a grave impact on organic vegetable production. Chemicals travel. When you use chlorine to clean your kitchen sink, the chemicals enter the wastewater. That wastewater is processed to be re-used for agricultural water. Did you know that chloride can react with other organic chemicals to produce organochlorines that can cause cancer? It's all connected.

That's why we need to be conscious people who find it problematic when we can't pronounce or understand ingredients. And we should be very skeptical when a tomato has no taste or a cucumber has no seeds. Those of us who want healthier foods in order to have healthier lives can together create a demand to support farmers such as Hakoritna, Marda, Mostadam, Om Sleiman, and Mashjar Juthour, or businesses such as Adel Fair Trade Corporation.

The really exciting news is this: there are more farmers in Palestine interested in growing organic. And we are increasingly more conscious of our health, at least I hear this echoed in the community around me. Just today I heard of a new organic farm in Ras Karkar. There's a hydroponics farm starting in Deir Ibziya. That means there is more organic produce available. But the question remains: How do we access it? And then there's the farmers' question: How do they access us?

Our wildlife and certainly our human future are impacted by the small choices we make in our daily lives.

Some have formed cooperatives such as Organic in Ramallah, and community-supported agriculture initiatives (CSAs) are amazing to participate in! Om Sleiman runs a weekly CSA seasonal box program. In addition to accessing organic produce, organic farmers also network and not only share information but also seedlings, seeds, compost, wiggler worms, and more! Change is in the air, and it's certainly in the soil.

Morgan Cooper is an urban farmer, lacto-fermenter, and designer (she is founder of Little Olea for babies and Handmade Palestine market). She left academia in 2010 to "get her hands dirty," building an arboretum with her husband and running Café La Vie in Ramallah. Currently, she's working on an aquaponics "wall" in the café garden that will provide more organic vegetables for the café kitchen. She lives with her husband Saleh Totah in his native Ramallah. They have one wild child who loves to eat freshly picked carrots with a bit of healthy soil in the cracks.

Article photos courtesy of the author.