**Developing a research & teaching partnership with Whiskey Hill Farms**

In an effort to develop the Sustainable Urban Farming Initiative (see https://sustainablesystemsfoundation.org/sustainable-urban-agriculture-initiative/), SSRF is working with Whiskey Hill Farms in Watsonville to develop a research and teaching program that will train, develop and support a new generation of small and minority farmers from California's Central Coast, and provide experiential education at the farm.

Small peri-urban farms are very important in the United States' agricultural mix and those that grow fruits, vegetables and greens can produce more and healthier food per acre, use resources and labor more efficiently, build local economies more evenly, provide access to land and markets to new and minority farmers, and educate students and community members more effectively. But the cost of entry into this sector is formidable and barriers to success are significant, due to lack of capital for purchasing land—especially in per-urban areas—and obstacles to expanding markets that can lead to increased sales and revenues. And the number of small farms is in decline.

According to the USDA (2017 Agricultural Census), in 2017, 47% of the nation's 2 million farms were less than 49 acres in size, and almost three-quarters were less than 200 acres. Seventy percent of the nation's farms had less than $25,000 in annual sales. And of the country's 2.7 million principal farm producers, a mere 3.3% were identified as being of Hispanic, Latino or Spanish origin and of their 86,300 farms, 61% were smaller than 49 acres, and 78% brought in less than $25,000 in annual sales.

The small-scale urban and peri-urban agricultural sector in the Monterey Bay region (Santa Cruz, Monterey and San Benito counties), where regional organic and agroecological farming got their start, resembles the larger picture in many respects. It is highly competitive, fragmented and information poor. It is characterized by informal relationships vulnerable to disruption, low levels of communication among producers and customers, and a lack of knowledge about best practices, production planning and agricultural technologies appropriate to scale. The COVID-19 shutdown illustrated a number of fragile points in national food supply chains, and these have affected small-scale farms and gardens in unanticipated ways, by eliminating customers such as restaurants and specialty markets, making access to farmers' markets more difficult. The table below shows farms sizes and incomes for the three counties; note that the number of small (less than 50 acres) and low income (less than $10,000/yr. in sales) farms is around 40-50% for the region.

**Farms sizes & incomes for California Central Coast counties (2017)**

| **Farm characteristics** | Monterey | Santa Cruz | San Benito |
|---|---|---|---|
| Number of farms | 1,104 | 625 | 610 |
| Total acres | 1,340,142 | 63,900 | 520,127 |
| Average farm size (acres) | 1,214 | 102 | 853 |
| # of Farms less than 50 acres | 503/47% | 279/45% | 366/50% |
| Average market value of products sold | $3,726,396 | $970,464 | $267,059 |
| Farms with sales less than $10000/yr. | 436/39% | 261/41% | 319/52% |

Source: 2017 USDA Census of Agriculture County Profiles

Minority Latinx farmers are a significant and growing community on the California Central Coast. In 2017, the USDA Agricultural Census reported more than 11,000 Latinx farmers in California (by some estimates, the current number may be as high as 14,000), the majority of whom rent and farm small tracts of land, and experience language and infrastructure barriers to maximizing the wholesale value of their produce. The population of the Central California Coast (Santa Cruz, Monterey & San Benito counties) is close to 800,000, of which approximately half are Hispanic. Of these, more than 200,000 are farmworkers and their families. The poverty rates for the region is around 10% and, although median incomes are close to that for the state as a whole, this is due to high-earning sectors in all three counties (California DataPile).

Clearly, there is a pressing need to support small farmers serving local foodsheds and increasing the economic viability of such operations through increased productivity, new markets and higher sales and revenues. If small farms can utilize and incorporate the latest generation of small-scale agricultural technology into their operations, both productivity and revenues can be significantly increased and the lives of farmers and their families can be improved considerably. But such technologies are unlikely to be utilized without adequate research into their efficacy and training of farmers in their application.

This project is designed to support small farmers of today and the future. It will include research on small-scale agricultural technologies for increasing the productivity and incomes of small peri-urban farms, providing students with actual application of scientific principles to farming and the skills and knowledge needed to deploy ag-tech to such farms. It will develop improved business models and market opportunities through a collaborative information, knowledge and data sharing among the region's farmers Students will participate in experiential education, through training workshops, two-week summer schools, online learning and internships on local farms. Participants will receive a small stipend for completing the program and the opportunity to apprentice with local farmers.

Whisky Hill is a highly-productive and technologically innovative 14 acre organic farm near Watsonville, California. It is located on the former site of a cut flower operation and currently operates six football field-sized greenhouses, with a growing regime that mimics the natural world of multi-layered polyculture. Using compost made from the leftovers of Blume Distillation's medical-grade alcohol distillery in which to grow crops, the Farm's cultivation techniques regenerate soil fertility and maximize productivity.