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Title: Determining the social barriers to engaging in aquaponics and sustainable agricultural systems in São Carlos, Brazil

This research seeks to determine the major social, technical, economic, physical, and environmental factors involved in engaging in sustainable agriculture and aquaponics systems in São Carlos, Brazil. Aquaponics is an agricultural system that combines hydroponics and aquaculture to produce vegetables and protein simultaneously. Current research argues that aquaponics can help promote food security, community resiliency, and sustainable agriculture by integrating these versatile and necessarily organic systems into the urban environment. However, research to date does not assess social barriers to engaging in sustainable agriculture and aquaponics practices. During May 2018, 21 interviews were conducted with the owners of small farms ("agriculturas familiares") within 30 kilometers of São Carlos, Brazil. Interviews were also held with the municipal Secretary of Agriculture, restaurants that procure local produce, and local environmental NGOs. The interviews revealed that there is significant doubt within the community if the system will work and be profitable. Lack of initial financing and time to build the systems were also significant barriers to creating the systems. A literature review demonstrated that these concerns are common when vulnerable populations are considering new farming technologies. Future research will use the currently built aquaponics system at Sítio São João (in São Carlos) to connect with the community and illustrate the profitable success and ease of the system. Researchers will also work with farmers to build aquaponics systems and conduct social life-cycle assessments to determine how the systems enhance their livelihood. Cities hoping to promote aquaponics and sustainable farming technologies should develop financing mechanisms and a demonstration system to reduce these economic, physical, and social barriers to engagement.