



THE UNIVERSITY OF ARIZONA  
COLLEGE OF SOCIAL & BEHAVIORAL SCIENCES  
**Center for Regional  
Food Studies**

# **State of Tucson's Food System**

**DECEMBER 2015 — DECEMBER 2016**

*For the Mayor's Commission on Food Security, Heritage,  
and Economy and the participants in the UNESCO  
City of Gastronomy initiative for Metro Tucson*

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## INTRODUCTION

On December 11, 2016, the United Nations Educational, Scientific and Cultural Organization (UNESCO) announced designation of the City of Tucson as a *City of Gastronomy* in the Creative Cities Network. The City partnered with the University of Arizona's College of Social and Behavioral Sciences' Southwest Center, Edible Baja Arizona magazine, and many other community partners to successfully apply for recognition of Tucson Basin's rich agricultural heritage, thriving food traditions, and culinary distinctiveness through a UNESCO *City of Gastronomy* designation.

This publication is the first annual report of the Tucson initiative's advances and accomplishments to date, and is a requirement of being part of the UNESCO Creative Cities Network. However, the achievements listed here include some efforts which began prior to, and in some cases independent of, the Mayor's Commission on Food Security, Heritage, and Economy, and the UNESCO designation. *Credit must therefore be given directly to the grassroots organizations, non-profits, educational institutions and businesses which worked tirelessly toward accomplishing these advances, and not necessarily to the Commission itself nor to nascent UNESCO-related programming.* Nonetheless, these efforts are consistent with the goals of the Commission and the UNESCO initiative, and worthy of celebration. These achievements are organized into five categories, followed by currently compiled benchmarks on the state of Tucson's food system. Most statistics are from either the 2015 or 2016 calendar year.

## PREPARING THE GROUND FOR NEW INNOVATIONS

1. The Mayor's Commission on Food Security, Heritage, and Economy was formed just prior to the UNESCO designation, but met at least ten times since December 11, 2015 to discuss the designation each meeting, in addition to many other issues of interest to our community. Its twenty-plus members report on activities in nearly every segment of Tucson civil society, and the Commission has initiated plans to expand

its representation to include more grassroots and neighborhood alliances from underserved and ethnic constituencies. It has set up five topical work groups to tangibly tackle key issues in the community this next year, and has agreed to evaluate the appropriateness of, and potentially promote, a voluntary Good Food Procurement Pledge already adopted by businesses and institutions in five other Metro areas in the U.S.



SIGNPOST AT LAS MILPITAS DE COTTONWOOD COMMUNITY FARM IN TUCSON.

2. A new Center for Food Studies was announced by Dean JP Jones of the University of Arizona's College of Social and Behavioral Sciences at the Mayor's December 11 press conference. The Center has since co-hosted two conferences, five visits by journalists, and three workshops; published three white papers and two scholarly articles; and raised support for five City of Gastronomy student internships. The new Center and the Mayor's office immediately began to collaborate with a dozen other co-sponsors to host the premiere event



Designated UNESCO Creative City in 2015

The UNESCO Creative Cities Network was created in 2004 to promote cooperation among cities that have identified creativity as a strategic factor for sustainable urban development. The cities in this network work together toward a common objective: placing creativity and cultural industries at the heart of their development plans at the local level and cooperating actively at the international level.

Learn more at: [www.tucsonaz.gov/gastronomy](http://www.tucsonaz.gov/gastronomy)

"Tucsonans can make the most of the designation by supporting our local food growers and producers, as well as our local restaurants. Check out chollabuds, mesquite flour and other native foods. Volunteer and donate to groups working to eliminate hunger and food deserts, such as the Community Food Bank. Visit the Mission Garden - maybe be inspired to start a garden yourself. Just be more aware of the food you eat and the entire, amazing supply chain that brings it to you."

- Jonathan Rothschild, Mayor of Tucson

"This designation was pursued by the City of Tucson in collaboration with The University of Arizona, Edible Baja Arizona, and other community partners to increase recognition of our region's deep and multicultural agricultural history, living food traditions, innovations in all parts of our food system, creative approaches to addressing food insecurity, thriving food scene, and culinary distinctiveness."

- Jonathan Mabry, City of Tucson

CLOSEUP OF UNESCO SIGN AT TUCSON MEET YOURSELF.

of Tucson as a City of Gastronomy in February 2016. The event, *Food Justice, Faith and Climate Change*, was designed to set the stage for more cross-cultural and interfaith collaboration of food justice issues. It included a food justice film festival, a two day conference, and a reception that collectively engaged 250 participants, featuring speakers from Native American, African-American, Latin-American and immigrant/refugee organizations and faith groups from all over the Southwest, as well as from six other states.

**3. Tucson had the largest representation of any city to the first formal meeting of the UNESCO City of Gastronomy Network, which took place in Parma, Italy in May 2016.** Strong ties have been established with several of those "sister cities," a few of which have already attended events in Tucson since May. The City, the University of Arizona and Visit Tucson participated in four days of events in Parma and Modena, and in press interviews.

**4. Local First Arizona, a statewide business coalition for sustainable living economies, hosted in Tucson its Farmer + Chef Connection event in September 2016.**

It is the state's only event aimed at building wholesale food networks at a local level. In 2016, 450 participants attended, up 12% from the 2015 event. The event's cornerstone was the Supplier's Marketplace, a vendor's showcase of Arizona-based products, which attracted over 200 buyers to the 75 vendors, including 21 vegetable growers, 6 wineries, 7 ranchers or meat fabricators, 5 dairies, 18 artisanal food or beverage processors, and 3 distributors.

**5. Tucsonans also participated in the September meeting of the UNESCO Creative Cities Network as a whole in Ostersund, Sweden.** Jonathan Mabry, the City's Historic Preservation Officer and liaison to UNESCO, Felipe Garcia from Visit Tucson, and Giuseppe Biagini from the Tucson-based U.S. Chapter of the International Traditional Knowledge Institute (ITKI-US)

participated in several sessions and offered invitations to other cities to visit Tucson. The need to identify effective models for connections between Cities of Gastronomy was addressed during a working session for the 18 Cities of Gastronomy. During that session, Parma, Italy was elected to a leadership role to address this goal, and Tucson was elected to assist.

**6. Also in September, Melanie Wallendorf and Matthew Godfrey at the University of Arizona Eller College of Management published online their study of how Tucson's farmers' markets affect food accessibility.** They found that the number of operating farmers markets has remained relatively stable since the designation, at approximately 20 in the urban area; however, some of their locations have shifted in the last year, such that an all-time high of 40% of the population of the Tucson urban area now lives within less than one mile a farmers market, including many low-income residents in former "food deserts" that lacked easy access to fresh, local produce.

**7. In October, Tucson Meet Yourself, an internationally-celebrated festival of multi-ethnic food, music, dance and art traditions, hosted and curated a three day exposition that featured 10 organizations' work on the City of Gastronomy initiative.** The many exhibits in the 50 foot by 30 foot tent on the City of Gastronomy initiative were visited by more than 6,070 Tucsonans. Co-sponsors of the exhibit included the City itself, Tucson Meet Yourself, the UA Center for Regional Food Studies, Mission Gardens, the Arizona-Sonora Desert Museum, Compost Cats, Desert Harvesters, Native Seeds/SEARCH, Slow Food Tucson, the TUSD School Garden Program, Trees for Tucson, and other non-profits. This year's Festival attracted upwards of 100,000 attendees, many of whom sampled foods from one or more of the 53 vendors of cultural food traditions representing ethnic communities in our Metro area. The Compost Cats diverted from the landfill 33% of the waste from Tucson Meet Yourself through a rigorous student outreach and monitoring effort.

**8. In November, the University of Arizona and ITKI-US co-hosted, with the City, its first conference: Food and Water in Arid Lands: Dialogues across Traditional and Contemporary Knowledge.** It was attended by approximately 300 participants over the two days of the

event, including guests from Oman, Saudi Arabia, Peru, Zimbabwe, Italy, Canada, Mexico, and New Zealand; 18 international organizations; 22 Native Nations/Indigenous-related organizations; 78 community organizations (including non-profit, corporate, and civic); 9 other institutions of Higher Education; representatives from four Cities of Gastronomy (Gaziantep, Turkey; Parma, Italy; Ensenada, Mexico; and Tucson); and 44 different University of Arizona units, departments, centers, or programs. Work groups established agendas for further dialogue on four topics.



CHRIS LOWEN OF THE COMMUNITY FOOD BANK OF SOUTHERN ARIZONA SHOWS DR. ANDREW MUSHITA OF ZIMBABWE HOW MICRO-OLLA IRRIGATION WORKS AT THE LAS MILPITAS DE COTTONWOOD COMMUNITY FARM IN TUCSON.

**9. At the conference, a special session with participation by delegations from Tucson and three other Cities of Gastronomy (Ensenada, Mexico; Gaziantep, Turkey; and Parma, Italy) followed up on the need to identify effective models for connections between Cities of Gastronomy.** This need, first expressed at the conference in Sweden, led to a draft "Memorandum of Agreement on Priority Areas for Partnerships, Collaborations, and Exchanges among Cities of Gastronomy" that is scheduled for formal adoption by all of the 18 Cities of Gastronomy at the

2017 annual meeting of the UNESCO Creative Cities Network. The priority areas for developing connections include academic, communications, education, economic development, food security and food justice, policies, sustainability, tourism, and Traditional Knowledge.

**10. Through a 'Greening the Food Deserts of Tucson, Arizona' grant through the Haury Program in Environmental and Social Justice, Stephanie Buechler and Daoqin Tong completed one of the most detailed assessments of urban food deserts in Tucson compared to any place in the U.S.** Their fall 2016 stakeholders meeting was the first of several. The mapping and interviews of community and backyard gardens was completed December 31.

**11. A new Tucson City of Gastronomy non-profit was established in December 2016 and has set up committees on defining its mission, branding strategies, mission and business relations.**

**12. Also in December, Jonathan Mabry of the City's Historic Preservation Office and the Kellogg Program at the University initiated the tracking of changes in Tucson food and beverage businesses from year to year.** That month, the Arizona Daily Star had reported that 16 new restaurants and bars as well as 7 microbreweries opened in 2016, but listed 20 restaurants and bars that closed their doors for the last time. At least six of the closures noted were in the downtown area, suggesting that property rental costs and lack of awareness of the parking garages and Sun Link streetcar options might still be hampering some of the food and beverage business owners committed to the so-called Downtown Renaissance. Others point to the difficulty that most Tucsonans have to pay sit-down restaurant prices for food, given the high percentage of families still living below or near the poverty level. However, Mabry's more complete analysis of food-service permit data provided by the Pima County Health Department shows that the Star article missed a number of significant trends in food businesses during 2016. The permit data shows increases in restaurants (6%); bars (26%); food markets of all sizes (6%); mobile food vendors (12%); caterers (24%); food manufacturers (14%); bottlers (150%); food distributors (12%); and

permits for vendors at farmers' markets and special events (5%). In addition, the number of craft brewers in the Metro area reached 17, representing a 42% increase from 2015, and the number of local distillers doubled, to a current total of six. The permit data also show that the 21 culinary arts programs, mostly in K-12 schools, represent a doubling in 2016. *These statistics generally show that in 2016 Metro Tucson's food economy grew far faster than many other economic sectors.* While it is not technically possible to identify whether this trend was at least partly stimulated by the City of Gastronomy designation in late 2015, the designation and the publicity it generated were undoubtedly important factors in assuring new openings, if not in reducing closures.

## **SOWING THE SEEDS OF NEW INITIATIVES**

**1. In fall, a Tucson area food and social justice collective, *Flowers and Bullets*, worked to receive approval from the Tucson Unified School District for designing and implementing a nine acre midtown farm and training center at the Julia Keen School campus in Barrio Centro.** It will focus on healthy food production, education and capacity-building for socially-disadvantaged youth and adults. Other organizations, such as the Community Food Bank of Southern Arizona, Sonoran Permaculture Guild, the University's Architecture, Planning and Landscape Architecture and Social and Behavioral Sciences Colleges, and the non-profit Tucson Meet Yourself are offering assistance and support for the grassroots collective as it begins to open community gardens, training and demonstration sites, and a forum for further food justice dialogue.

**2. The Arizona Daily Star reported on new initiatives to help economically disadvantaged people gain entry to the rapidly growing food business sector of the local economy.** Food business entrepreneurs with little or no capital are finding new sources for startup loans, including conventional loans from the Community Investment Corporation, and microloans from the Southern Arizona Community Food Bank of Southern Arizona, which lends specifically to low-income food entrepreneurs. The YWCA of Southern Arizona launched

the Kitchen business incubator program with a new community kitchen in South Tucson. At its House of Neighborly Service, this Microbusiness Advancement Center is providing space for minority and low-income women to obtain business training and mentoring to start restaurants.

3. In 2016, the Trees for Tucson urban forestry program of Tucson Clean and Beautiful provided 7605 native and/or edible trees for planting in Metro Tucson, with a strong focus in the southern, low income neighborhoods of the Metro area. It has also initiated efforts toward tree planting and education outreach with participants incarcerated at the Wilmot

Correctional Facility. In addition, it released an Edible Trees for Tucson color poster which features thirty species of carbon-sequestering perennials suitable for edible landscaping.

4. Explicitly seeking to leverage the UNESCO designation “to enhance the community’s food-based economy and advance community sustainability in the area of food,” the City of Tucson partnered with the Community Foundation for Southern Arizona and the Community Food Bank of Southern Arizona to obtain grant funding from the Funders’ Network for Smart Growth and Livable Communities. The grant is to conduct a food system assessment using “citizen



COMMUNITY FOOD BANK EXHIBIT AT TUCSON MEET YOURSELF.



AMANDA HILTON OF PIMA COUNTY FOOD ALLIANCE AND UNIVERSITY OF ARIZONA AT TUCSON MEET YOURSELF.

folklorists” applying ethnographic methods to identify barriers, needs, and investment opportunities for strengthening the food-based economy and addressing the food and economic security issues of *La Doce Barrio*, centered around south 12th Avenue.

**5. Heightened coordination is seen among the many Tucson groups intent on reducing food waste and diverting still-edible food to the hungry.** This includes weekly drop-offs of Market on the Move to 15 sites in Tucson and Produce on Wheels to 21 sites. These sites are all being mapped and put up on websites for better access to members of the public willing to purchase 50 pounds of fresh produce for \$10.00. Efforts to take food refuse, spoiled foodstuffs, crop stubble or yard trimmings to make compost for local use are now helping in replenishing soil fertility in gardens and on farms. From January to November 2016, twenty-five University of Arizona students employed by the student organization Compost Cats rescued 4.5 million pounds of total organics — much of it food waste — from

Tucson restaurants, zoos and cafeterias to be processed into compost by San Xavier Food Co-op employees on the Tohono O’odham reservation on the southern edge of Metro Tucson. Altogether since 2011, this student group has rescued 15 million pounds of food waste, 1.47 million pounds in just this last year (or 30% of its five year total), while employing more than sixty students and ten members of the Tohono O’odham tribe to collect, process, and bag saleable compost. In addition, through Fairfield Industries’ Tanks Green Stuff brand of compost, over fifty outlets in Metro Tucson are selling this compost, virtually replacing most out-of-state compost sold in local hardware stores and garden shops. Jason Tankersley of Fairfield employs ten staff in this endeavor, including two former Compost Cat student interns, doubling the jobs created over the last few years.

**6. A new collaboration among the University’s Kellogg Program, School of Geography and Development, Biosphere Two, and Tucson Unified School District is establishing four trial “agrivoltaic” gardens beneath solar arrays, to evaluate whether there is higher productivity, better worker comfort, and reduced radiation contributing to the urban heat island effect.** There are already 3,500 solar-photovoltaic arrays constructed in Tucson, with perhaps as many as half of them on bare ground at public institutions and non-profits where food could potentially be grown.

## PUBLICATIONS AND PUBLICITY

1. According to Visit Tucson, “free” newspaper and magazine articles, as well as radio, social media and television features on Tucson as a City of Gastronomy, have brought in the marketing equivalent of at least \$13.3 million of publicity since December 2015. Visit Tucson will track this metric on an annual basis. Among the national or international coverage this year were articles in the New York Times, USA Today, Smithsonian, The Guardian, Slow Money Journal, and Vancouver Sun, as well as National Public Radio’s Splendid Table, Arizona Public Media, and Food Tank.
2. The City’s media partner for the UNESCO Initiative, Edible Baja Arizona magazine, ran more than a dozen



related feature articles focused on various aspects of the designation, written by Megan Kimble, Nelda Ruiz, Doug Biggers, Jonathan Mabry, Gary Nabhan, and several chefs.

3. The Center for Regional Food Studies published three white papers: one on the prehistoric and historic heritage or ethnic crops of native and immigrant communities in the Tucson Basin; one on alternative financing strategies for new food business start-ups and farms; and one on the changing face of Arizona agriculture, which highlighted that while Native American farmers are now the largest ethnic group of farmers in the state, and manage the most food-producing land in the state, they are very under-represented in decision-making. This last report resulted in op-ed invitations from The Arizona Republic and Capitol Times, which encouraged Arizona Department of Agriculture Director Mark Killian to establish a Director's Council on Tribal Relations, inviting Native American farmers to advise his office on issues of concern to tribal communities. He announced the establishment of this council in January at the State Capitol.



LOCAL FIRST ARIZONA EXHIBIT AT CITY OF GASTRONOMY TENT DURING THE TUCSON MEET YOURSELF FESTIVAL.

*In addition to these new achievements, the Center for Regional Food Studies at the University of Arizona has collaborated with dozens of federal, state and local agencies, university researchers and non-profits to establish benchmark metrics for measuring long-term change in the Metro Tucson food system. We thank all the individuals and organizations who have contributed to this provisional snapshot, and welcome any corrections or additions by emailing them to [gpnabhan@email.arizona.edu](mailto:gpnabhan@email.arizona.edu).*

## INITIAL BENCHMARKS FOR MEASURING CHANGE

### A. POVERTY AND FOOD INSECURITY AND FOOD RELIEF

» By 2014, Feeding America found that 16% the residents of Pima County were food-insecure — about 167,000 individuals.

» By 2014, one in four children in Pima County was suffering from food insecurity — yet 29% of these children were considered ineligible for Federal Nutritional Assistance.

» By 2015, Pima County had a food insecurity rate of 15.5% (compared to our state's 17.1%), with 153,000 food-insecure people. At a \$2.85 cost per meal to assist them, Pima County organizations would need an additional \$77,182,000/year to adequately meet their needs.

» There are 32 locations in Metro Tucson offering food relief by way of food banks, pantries, and soup kitchens, in addition to mobile outlets.

» The Community Food Bank of Southern Arizona has the largest program to deal with hunger and food insecurity in Metro Tucson, where it collaborates with 80 other non-profits, agencies and faith-based groups to assist 90,000-120,000 individuals annually.

» The Community Food Bank of Southern Arizona's programs serve 63,000 meals per day in its 5-county area, engaging over 300 non-profits in assisting 225,000 people in need across a 23,000 square mile area.

- » The Community Food Bank of Southern Arizona provided 19,895 individuals with training on food production and nutrition in 2015.
- » It also supported the production of 427,895 servings of locally grown food through garden installations, the Las Milpitas de Cottonwood farm plots, and workshops in schools and community centers.
- » Since its inception, La Caridad Kitchen has graduated 118 students who trained in its 10-week culinary professionals' educational initiative.
- » There are at least 20 other non-profits and grassroots alliances in Metro Tucson that address food justice, hunger and food insecurity issues in our community.
- » By mapping the 45 independently owned grocery stores we have in the Metro Tucson area — not just chain “big box” supermarkets — UA researchers found that a minimum of 81,000 residents live in census tracts meeting the USDA definition of a food desert. Nearly half (48%) of the residents in those tracts are Mexican-American.
- » When food access is mapped on a finer “block group” level, UA researchers determined that 125,000 Metro Tucson residents live in food deserts. That means that one in eight residents of Metro Tucson currently lives in neighborhoods with limited access to fresh, nutritious, affordable foods.

#### **B. LOCAL FOOD PRODUCTION, ACCESS & INNOVATION**

- » Various sources suggest that Metro Tucson supports between 12 and 21 seasonal and year-round farmers markets. At least 5 have SNAP benefits acceptance through EBT cards.
- » The Community Gardens of Tucson organization lists 24 community gardens within its network, and there may be others at churches, schools and senior centers.
- » There are at least 7 Community-Supported Agriculture projects that serve Tucson and 4 food co-ops or buying clubs, one of which collectively purchases poultry feed for its members.

- » There are at least 32 restaurants and an additional number of bars and school cafeterias that source a portion of their ingredients from local farmers, gardeners, school gardens, ranchers and foragers.
- » There are at least 14 farms and ranches in and on the outskirts of Metro Tucson that offer their produce, fruits, meat and dairy to our community's restaurants, cafeterias and bars.
- » There are at least 57 schools with active gardens in the Tucson Unified School District, with 31 schools that do not have gardens, and 4 with current status unsure.
- » The Las Milpitas de Cottonwood garden has a farmer-incubator program associated with it, with classes involving 100-120 individuals a year.
- » Tucson Village Farm of UA Cooperative Extension has had more than 23,000 school-aged children visit and participate in its programs from its inception in 2010 through 2015.
- » In and near Metro Tucson, 28 businesses involving area farmers, foragers and food artisans currently commercially market 55 to 60 prepared heritage foods and beverages that include local ingredients of 20 wild and cultivated species.

#### **C. ECONOMIC ROLE OF FOOD IN METRO TUCSON**

- » Tucson harbors more than 1,200 restaurants and drinking establishments, which employ more than 30,000 people; when grocery stores are included, food businesses provide 14% of all jobs in the city. There are an additional 1,300 restaurants and bars in the rest of Pima County.
- » Of the total number of restaurants and bars in the city, almost two-thirds (63%) are locally owned, non-chain businesses. This is significantly higher than the national rate of local ownership, which is 41%.
- » By 2015, the National Restaurant Association placed Arizona in the lead among all states for 2015 restaurant sales (\$11.5 billion) and restaurant jobs (273,700).
- » The Kaufman Institute ranked Arizona third in entrepreneurial start-up activity among the top 25 states in the nation; since 2008, many of these start-ups have been food-related.

» The annual Tucson Meet Yourself Festival currently attracts upwards of 100,000 attendees, many of whom sample foods from one or more of the 53 vendors of cultural food traditions representing ethnic communities in our Metro area.

#### D. SEED BANKS, SEED LIBRARIES AND FREE OR LOW-PRICE ACCESS TO GARDEN SEEDS

» Tucson harbors at least five important seed banks that include food crops, including those at Native Seeds/SEACH, the University of Arizona's Desert Legume program (DELEP), the Arizona-Sonora Desert Museum, the Pima County Parks and Recreation Nursery, and the USDA/NRCS Plant Materials Center.

» The Pima County Public Library System has the largest free seed interlibrary loan program in the world, with seed libraries in 8 branch libraries that are accessible to all 27 branch libraries in the county. It distributed 27,000 seed packets last year, with 35-40% of the seeds being donated by local contributors, including those who offered some of their harvest back to the libraries.

» Seeds, seedlings and fruit tree cuttings are available for purchase with SNAP benefits from at least five farmers markets in Metro Tucson, allowing low income households to stretch their benefits by growing food for multiple meals rather than simply buying produce.

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