

A Participatory, Transformational Approach to Urban Food Security Research

by

Kathleen Talbot

A Thesis Presented in Partial Fulfillment
of the Requirements for the Degree
Master of Arts

Approved April 2012 by the
Graduate Supervisory Committee:

Hallie Eakin, Chair
Arnim Wiek
Seline Szkupinski-Quiroga

ARIZONA STATE UNIVERSITY

May 2012

ABSTRACT

Contemporary urban food security in the US is influenced by complex, multidimensional, and multi-scale factors. However, most assessment methods and intervention efforts in food security research are: 1) narrowly focused on environmental factors (i.e. the presence or absence of quality food outlets), 2) divorced from the human dimension and, 3) ultimately disempower communities to affect change at the local level. New approaches are needed to capture the lived experiences and unique perspectives of people potentially most vulnerable to food insecurity, while also empowering people to become change agents in their lives and in the wider community. This thesis argues that sustainability problem solving frameworks such as transformational sustainability research (TSR), and community-based participatory research (CBPR) provide promising bases from which to address these deficiencies. Through interactive workshops with youth in Canyon Corridor, a neighborhood in Phoenix, Arizona, I demonstrate the potential of concept mapping, sketch mapping, and intervention mapping methods that prioritize participation and co-production of knowledge to: 1) better understand the contextual, community-identified factors that contribute to food security or food insecurity, 2) identify and adapt interventions for the local context and, 3) promote community agency and action. Workshop outcomes suggest the relevance of these frameworks and methods, and the potential for more people- and place-based approaches to food security research.

ACKNOWLEDGMENTS

Thank you to my committee, Hallie Eakin, Arnim Wiek, and Seline Szkupinski-Quiroga, for your valuable feedback, guidance, and encouragement throughout the research process.

This research was made possible by Rehoboth Community Development Corporation (RCDC) who partnered with my efforts, opened up the Community Life Center for my use, and allowed me to learn more about Canyon Corridor through observing their ongoing community meetings and development programs. A special thanks to Gwen Relf, Tania Izelo, and Aubrey Relf at RCDC for their support.

Thank you to the youth participants for patiently working with me and sharing their perspectives. A special thanks to Layah Htwe for her invaluable help translating and coordinating the workshops. Thank you to Georgia Sepic for her help recruiting participants.

Thank you to Briar Schoon, my research partner, who helped show that a high level of collaboration is not only possible, but also rewarding and fun. Thank you to the workshop volunteers and note-takers: Angela Xiong, Nelson Mandrell, Nivedita Rengarajan, and Kim Pearson.

Finally, thank you to Michael Chadwick for moving to the Valley of the Sun so I could pursue this degree, and for being a very supportive partner to me while I completed this research.

This research was generously supported by the C.W. and Modene Neely Foundation's Food and Agriculture Sustainability Research Grant.

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Chapter 1

OUTLINE OF SECTIONS

This thesis presents a participatory, transformational approach to urban food security research. Through a case study of Rebooth Community Development Corporation's (RCDC) efforts to address food insecurity concerns in Canyon Corridor, a neighborhood in Phoenix, Arizona, I documented the potential of youth engagement to: 1) better understand the contextual, community-identified factors that contribute to food security, 2) identify and design relevant, appropriate interventions, and 3) promote community agency and action.

This thesis is organized into four chapters including this introduction. Chapter 2, "A Transformational Sustainability Approach to Community Food Security," provides a brief critique of conventional food security assessments that focus primarily on the food environment, omitting the human dimension. It presents an alternative approach, grounded in a transformational sustainability research (TSR) framework. The chapter describes the research design and methods, process-level outcomes, and the strengths and limitations of the approach. Chapter 2 was co-written by my research colleague, Briar Schoon, and therefore shows how our joint efforts and our different research methods interact and fit within the TSR framework (see Appendix A).

Chapter 3, "Assessing the Multidimensionality of Urban Food Security and the Implications for Local Intervention Planning," expands on the need for more integrated, community action-oriented food security efforts. It presents an overview of my workshop activities in Canyon Corridor as one approach to utilize community-

based participatory research (CBPR) to perform more multidimensional, place- and people-based assessments while also empowering community action.

Finally, Chapter 4 provides a short synthesis of the thesis outcomes and an exploration of potential next steps—both for the study area’s community partners and academic research.

Chapters 2 and 3 are intended to be stand-alone articles for eventual publication, so may contain some redundancies with other sections.

Chapter 2

A TRANSFORMATIONAL SUSTAINABILITY APPROACH TO COMMUNITY FOOD SECURITY

Introduction

Many research groups, public organizations and even popular media sources report increasing concerns about food insecurity in the United States (US), particularly in urban areas (Gallagher, 2006; Nord et al., 2008; Gray, 2009). US food security efforts have historically focused on hunger-alleviation and food provisioning (i.e. ensuring enough food), but now must also address challenges including limited access to food outlets and the poor quality of food available, which may be tied with other diet-related health outcomes such as obesity (Christian, 2010; Egger & Swinburn, 1997; French, Story & Jeffery, 2001; Slater et al., 2008).

Urban communities that face these contemporary food insecurity challenges are often defined as “food deserts”—areas without access to fresh, healthy food. Food deserts are most commonly identified through geographic analyses or market-based methods that map food outlets and measure the availability, affordability, and quality of food available (Beaulac, Kristjansson & Cummins, 2009; Walker, Keane & Burke, 2010). This singular emphasis on the food environment (i.e. the presence or absence of certain food outlets) illustrates a significant deficiency in how we assess and respond to food insecurity. These types of assessments: 1) are based on assumptions about how the food environment affects dietary behaviors and health outcomes (Lytle, 2009; McKinnon et al., 2009), 2) fail to show how people actually intersect with this environment and, 3) do not empower potentially affected populations to participate in defining the problem or affect change (Lytle, 2009; Brug

et al., 2009; Cummins, 2007b; Guthman, 2011). Therefore, these conventional methods are problematic and do not translate to a deep understanding of food security (Guthman, 2011).

In this chapter, we present a participatory, transformational approach to understanding and assessing “food deserts” that addresses these challenges. We applied this approach in Canyon Corridor, a neighborhood in Phoenix, Arizona, that has been identified as vulnerable to food insecurity by a geographic- and market-based assessments (Taylor, Schoon & Talbot, 2011). We conducted workshops in Canyon Corridor designed to capture the perspectives and priorities of a specific stakeholder group, in this case, youth. Our objectives were: 1) to better understand food security and the food environment, particularly from a youth perspective and within a place-based context, 2) articulate a vision for the future that represented participants’ desires as well as food security principles, and 3) participate in developing relevant and effective interventions. To achieve these objectives, we employed a suite of creative methods that prioritize participation and co-production of knowledge: concept mapping, photovoice, sketch mapping, photo-visioning, and intervention mapping. Through these methods we were able to: 1) capture youth participants’ perspectives about a diverse set of factors that influence food security and can help inform future efforts, 2) successfully manage age, language, and cultural constraints in order to interact with an often overlooked and difficult-to-access population, and 3) empower participants to be change agents in their neighborhood.

The “Food Desert” Approach to Food Security

According to the US Department of Agriculture, “Food security for a household means access by all members at all times to enough food for an active,

healthy life” (Nord et al., 2008). Access includes availability of acceptable food, affordability of the food available, and the means to obtain the available food (Cohen, 2002). Food security historically emphasized the welfare of households, and individuals’ ability to afford and obtain sufficient food. However, in light of studies suggesting the food environment and other structural processes influence dietary options and diet-related health outcomes, food security efforts have since shifted focus to these environmental factors (Furst et al., 1996; Adler & Stewart, 2009; Ver Ploeg, 2010; Lake & Townshend, 2006; Dixon et al. 2007).

Accordingly, most methods used in contemporary food security research emphasize the food environment. Areas lacking access to healthy food, or “food deserts,” are most commonly identified through: 1) spatial analysis using a geographic information system (GIS) that maps an area’s boundaries, available food outlets, and often other economic or social demographics, 2) market-based studies that compare the availability, affordability, and quality of food available or, 3) a mixture of geographic- and market-based approaches (Beaulac, Kristjansson & Cummins, 2009; Walker, Keane & Burke, 2010). In very simplified terms, any area further than one mile (or another distance justified by the researchers) from a supermarket (or an outlet with adequate food available) is a “food desert.” Residents of this area are thought to be vulnerable to food insecurity and the health outcomes associated with it.

While these types of assessments do contribute to our understanding of the food environment, they are based on controversial assumptions and reductionist models about how the food environment affects dietary outcomes, and thus face serious validity concerns (e.g. (Lytle, 2009; McKinnon et al., 2009; Brug et al., 2008).

They also fail to show how people actually intersect with this environment, and do not empower potentially affected populations to participate in defining the problem or affecting change (Lytle, 2009; Brug et al., 2009; Cummins, 2007b; Guthman, 2011). Since potential issues of validity are adequately explored elsewhere (Lytle, 2009; McKinnon et al., 2009; Brug et al., 2008), our focus is on the latter two concerns.

First, while the food environment may be an important consideration in assessing food security, methods must also acknowledge the role of social and individual factors and how they interrelate with the physical environment (Lytle, 2009; Brug et al., 2009; Cummins, 2007b; Guthman, 2011). The food environment is the context in which people make decisions and interact with one another and with food—it is not the sole determinant of decisions and dietary outcomes (Lytle, 2009). Yet, these conventional methods fail to capture “unmappable” features such as the lived experience of people living in “food deserts” and their characteristics, assets, attitudes, and behaviors that could potentially affect food security outcomes (e.g. social capital, dietary preferences, or constraints such as time).

Second, the current framing of the problem ultimately disempowers populations living in “food deserts.” Since the food environment is an exogenous force, it “acts on” people, rather than putting people in a position to affect change (Guthman, 2011, pg. 68). Furthermore, since the problem is defined as a problem of supply (i.e. absence of food outlets) and since people are not empowered to participate, proposed solutions will at best be supply-oriented interventions that “fill” the food desert with food outlets (Guthman, 2011, pg. 69). Therefore, it is problematic to only look at physical factors that can be mapped or easily measured

since these assessments do not translate to a deep understanding of food security, and do not motivate transformational change (Guthman, 2011).

We participated in a community food assessment that is exemplary of this food environment-centric approach and the corresponding issues. The assessment was performed in Canyon Corridor, a neighborhood in Phoenix, and was based on an adaptation of the Nutritional Environment Measures Survey (NEMS), a market-based tool to measure and map the food retail environment (Glanz et al., 2007; Taylor, Schoon & Talbot, 2011). Canyon Corridor residents were trained to use a Latino adaptation of the NEMS to report the availability, affordability, and quality of certain food items in neighborhood food outlets (Szkupinski-Quiroga & Winham, 2012). From those surveys, researchers calculated indices and mapped the food outlets, their scores, and other demographic data using a GIS. This research concluded that residents of Canyon Corridor experience a poor food environment (Taylor, Schoon & Talbot, 2011).

This assessment was unique within market-based research in that people living in the community were also the surveyors. However, we noted that assessment methods did not solicit or integrate the perspectives and behaviors of these residents (e.g. “what factors are most important to you and your family?”). Further, upon completion of the NEMS report, community members were dissatisfied with the knowledge generated from the process. They reported that they knew the results (i.e. that there was relatively poor availability and affordability of healthy foods in their neighborhood) before the surveying; what they wanted to know was what to do about it. Unfortunately the community food assessment results could not help address this outside of recommending the neighborhood improve existing food

outlets or pursue alternative outlets. For these reasons, we developed an additional assessment approach, based on sustainability science principles. This approach was designed to capture the perspectives of those potentially affected in order to develop a richer sense of the problem, and promote empowerment to develop innovative, community-based interventions.

Food Security as a Sustainability Problem

One of the reasons measures of the food environment are insufficient in assessing food security is because it is an issue embedded in complex networks of social, environmental, economic, political, and cultural factors. For instance, food security outcomes are influenced by socio-economic status (Larson, Story & Nelson, 2009), cultural and personal dietary preferences (Wrigley et al., 2004), and arguably by food politics and the wider food system (i.e. consolidation and industrialization, issues of distribution, etc.) (Winne, 2003). At the same time, food insecurity is a pressing concern with significant negative impacts on the public good both in terms of health (e.g. malnutrition, obesity, other diet related diseases) (CDC, 2011; Morland, 2010; Casey et al, 2001), and human capacity (e.g. disenfranchisement of affected households and communities). What is more, food security and the associated diet-related outcomes potentially have inter-generational legacies on health and livelihoods (CDC, 2011; Hursti, 1999).

Thus, we argue that food insecurity is not just an issue of individual welfare or physical deficiencies, but that it should be considered a sustainability problem—that is, a problem that (among other characteristics) is manifold (including social, economic, and environmental factors), threatens the public good, and has long-term implications (Wiek, 2010; Du Pisani, 2006). Community food security (CFS) is a

progressive framing of food security that explicitly situates the issue in a sustainability context. CFS describes the “condition in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance, social justice, and democratic decision-making” (Hamm & Bellows, 2003). If we take after CFS’s example and define food security as a sustainability problem, then sustainability problem solving frameworks are potentially relevant to help expand food security efforts past the physical environment, and toward CFS and more sustainable conditions.

A Transformational Sustainability Approach to Food Security

Transformational sustainability research (TSR) is a framework for knowledge generation and application and one approach to sustainability problem solving. TSR includes three modules: 1) *problem analysis*, generating (social) knowledge about complex sustainability problems, 2) *visioning* a future sustainable state, and 3) *intervention planning*, developing strategic programs to move us from the current state toward the vision (Wiek, 2011). The formulation and relationship between modules involves a combination of foresight, backcasting, and intervention research (Wiek, 2011; Loorbach, 2010) (Figure 1). The emphasis of TSR is on knowledge that can generate solution options, grounded in a strong understanding of the problem and orientation for the future. The *transformational* aspect is moving beyond the “knowledge-first” and problem-centered approach of sustainability research to research that allows for the exploration of potential solutions (Wiek, 2011; Sarewitz et al., 2010). A more comprehensive overview of TSR is provided elsewhere (Wiek, 2011).

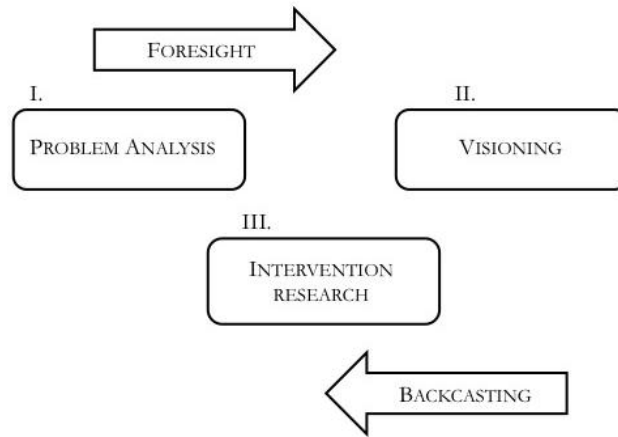


Figure 1. Modules of TSR. Adapted from Wiek, 2011.

TSR research concentrates on the human aspects of sustainability problems and potential solutions (i.e. identifying different actors, motives, and constraints that contribute to the problem or might be assets or barriers to solutions) (Wiek, 2011). Thus in a TSR framework, researchers engage with diverse stakeholders (including user- or target-populations) to understand the problem, but also to develop joint strategies to solve the problem (Wiek, 2011; Blackstock, Kelly & Horsey, 2007). This is consistent with the values of participatory research to integrate different sources of knowledge and values, focus on social learning, and ultimately link knowledge with action through engagement (Talwar, Wiek & Robinson, 2011; Loorbach, 2010; van Kerkoff & Lebel, 2006). Thus, TSR provides a potentially relevant framework to address some of the identified deficiencies in conventional food security research. We explored this potential by examining food security via more flexible, participatory methods couched in the TSR framework.

Study Site & Community Partnership

We partnered with two organizations, Maryvale on the Move (MTM) and Rehoboth Community Development Corporation (RCDC), who were active in food and health initiatives in the Canyon Corridor and who conducted the NEMS assessment. Canyon Corridor is a very diverse, but economically depressed urban neighborhood (Table 3). Due to its unique demographics and acute social and economic challenges, it has been the focus of several federal-, city- and community-based development efforts.

Table 1.
Canyon Corridor demographics and neighborhood statistics

| <i>Population Demographics</i> | | <i>Social & Economic Indicators</i> | |
|--------------------------------|--------|---|--|
| Total Population | 12,883 | Per capita income | \$12,054 |
| Under 18-years-old | 35.8% | Median household income | \$27,703 |
| <i>Race & Ethnicity</i> | | Adult population w/o high school degree | 35.8% |
| White | 48.6% | Population living in rental housing | 52.0% |
| African American | 5.0% | Crime index (rate per 1,000 people) | 60 |
| Asian | 5.1% | No. languages spoken | 27 |
| AIAN | 2.7% | No. supermarkets | 1 |
| Other race | 34.4% | Prominent refugee/immigrant populations | Latino, Burundi, Burmese, Iraqi, Bosnian, Philippine, Chinese, Japanese, Iranian, Vietnamese |
| Two or more races | 4.0% | | |
| Latino | 70.7% | | |
| Non-Latino | 29.3% | | |

Sources: US Census (2010), Weed and Seed Data Center (2009), CCCC (2011).

MTM represents one such effort, a pilot endeavor for policy and environmental changes to prevent childhood obesity in the Maryvale and Canyon Corridor neighborhoods in Phoenix funded in part by the Healthy Kids, Healthy Communities program of the Robert Wood Johnson Foundation (Steele et al., 2010).

As part of this program, MTM is developing initiatives to increase Canyon Corridor residents' access to healthy foods. In an effort to make our research as salient and useful as possible to the community, we worked with RCDC, a MTM community partner working toward community development in Canyon Corridor, to define our project objectives and activities. We began the partnership with the specific intent to take a TSR-inspired approach to food security rather than market- and geographic- approaches. However, we also adapted our focus based on our partners' needs and desires. For instance, through interviews with RCDC and MTM leadership and meeting attendance and observation, we determined that both organizations were interested in exploring interventions to address food insecurity and poor food environments as part of greater community development efforts. RCDC and MTM also expressed the desire to include community youth in these activities since youth had limited representation in past studies and are often the most vulnerable to food insecurity and obesity and thus a targeted population in programming (Casey et al., 2001; Powell, Auld, & Chaloupka, 2007; Singh, 2010).

On the basis of these observations and consultations, we defined our study objectives as: 1) to better understand food security and the food environment in Canyon Corridor, particularly from a youth perspective and within a place-based context, 2) to articulate a vision for the future that represented participants' desires as well as food security principles, and 3) to participate in developing relevant and effective interventions.

Description of Participant Group

Recruitment for study participants occurred via posters and handouts at RCDC's Community Life Center, as well as outreach through apartment complex

managers and community leaders identified by RCDC (Appendix B: Recruitment Materials). We capped enrollment to sixteen participants to allow for use of research methods best executed in small groups, and for a higher level of engagement with each participant. Working with smaller samples also helped manage restrictions of time, space, and resources.

The final participant group consisted of sixteen youth, aged twelve to eighteen years old. Fourteen of the participants were Burmese resettled refugees and two were Hispanic. A total of five boys, all of who were resettled refugees, and eleven girls participated. While the recruitment targeted youth from a diversity of ethnic and cultural backgrounds, most responses came from the Burmese refugee community. This was in part due to the high level of self-coordination, motivation, and interest of this population (Barron et al., 2007), as well as their proximity to the Community Life Center in a neighboring apartment complex. All participants spoke a language other than English at home, and most were not proficient in English—especially Burmese participants resettled within the last two to three years. While our sample is not representative of Canyon Corridor’s entire population, it does represent the significant refugee and youth populations in Canyon Corridor (Table 1). All procedures for the recruitment, enrollment, and engagement of participants are detailed in an institutional review board-approved protocol (Appendix C: IRB Requirements).

Research Design

In some respects, we began the research with a pre-structured ontology of the problem (i.e. existing problem analysis from the NEMS assessment and consultations with community partners), but we also wanted to capture participants’

perspectives and extend past assessment tools to better understand the human dimensions involved. Thus outcomes were not predetermined, rather we took a grounded theory approach that sought to provide a ‘mouthpiece’ for the participants through a number of exploratory activities (Strauss & Corbin, 1994).

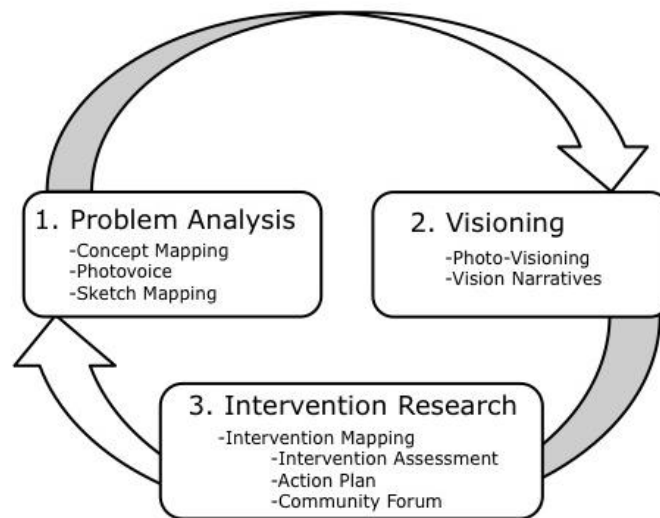


Figure 2. Research modules and corresponding methods.

We designed a suite of methods including concept and sketch mapping, photovoice, photo-visioning, and intervention mapping to elicit perspectives about the topics of each TSR module (see Figure 2). We facilitated research activities over three five-hour Saturday workshops in Canyon Corridor. These research methods are not rooted in assumptions about the food environment and its affect on food security, but are flexible and able to reflect the lived experience and knowledge of people living in a potential “food desert.” At the same time, the emphasis on co-production of knowledge was meant to empower participants and motivate transformational change. In the sections that follow, we outline these methods as

applied in Canyon Corridor, with the aim that our approach can be replicated in other communities where food insecurity is a concern.

Problem Analysis

The first and second workshops were designed to capture youth participants' perspectives of the current state of food security in Canyon Corridor. We focused on what activities participants did related to food (i.e. what they ate, where, and with whom), and what they perceived to be the motivating drivers and effects of these activities. Participants also identified strengths and challenges in their neighborhood that had direct or indirect effects on food security.

Concept mapping.

Concept mapping is a mixed method used to capture participant-generated ideas and the relationship between these ideas (Trochim & Linton, 1986). It is one way to collect, analyze and interpret qualitative data—often about the lived experience of a target population—in a participatory format (Burke et al., 2005). In the first workshop, we used a simplified concept mapping format to: 1) prepare focal questions, 2) brainstorm and generate responses to the focal questions, 3) sort responses, 4) visually display the ideas and the relationships between them, 5) interpret the results through discussion and reflection, and 6) utilize these results by considering how they address the focal questions. Participants were the primary actors in phases two through five.

In the first iteration, the focal questions centered on what participants saw as the causes and effects of food insecurity in the US, Canyon Corridor, and participants' households. In the second iteration, the focal questions centered on what participants defined as barriers and assets to community development and food

security in Canyon Corridor. Prompts were inspired by Tschakert's (2007) study that asked participants to share a wide range of issues that either contribute to worries or help them in their lives. This 'worry and help' framing can help capture affected populations' perspectives on contextual factors often not captured in traditional vulnerability assessments.

Participants were able to brainstorm independently in their workshop journals, share ideas by writing them on sticky notes and posting them in front of the group, and work together to sort and categorize ideas (Picture 1).



Picture 1. Participants sorting responses during concept mapping session.

The final product was a set of factors in response to each prompt that represented the ideas of all participants, and their understanding of how these ideas were related (Table 2). While we were not able to utilize concept mapping analysis

software for a more sophisticated display of the results, due to the small size of the group we were able to accomplish adequate sorting and representation manually.

Table 2.

Participants self-categorized responses to 'causes and effects' concept mapping activity

| Causes | Effects |
|---|-----------------|
| People are busy | Obesity |
| Good food is too far | Hunger |
| No transportation | Health problems |
| People like the taste of unhealthy food | |
| People don't care what they eat | |
| People don't know better | |
| Healthy food is expensive | |
| Bad food is everywhere | |

Photovoice.

Similarly, photovoice is a collaborative process in which the participants utilize cameras and photographs to identify community strengths and weaknesses, define the issues in their community, and promote dialogue surrounding such issues (Wang & Burris, 1997; Wang, 1999). The key aspect of this method is the participation and control community members have in representing their community and identifying the problems. Photovoice has also been recognized for its ability to reach disenfranchised communities and promote empowerment (Wang & Burris, 1997; Wang, 1999; Strack, Magill, & McDonagh, 2004). For this project, the photovoice method was chosen for several reasons: 1) our target group was youth and photovoice has been recognized for its ability to engage youth in the research process, 2) we live in an age of technology and utilizing cameras is a good way to

engage youth, keep them interested, and promote creativity and/or a skill (i.e. exposure to photography), and 3) photovoice is often able to bypass many language barriers (Strack, Magill, & McDonagh, 2004).

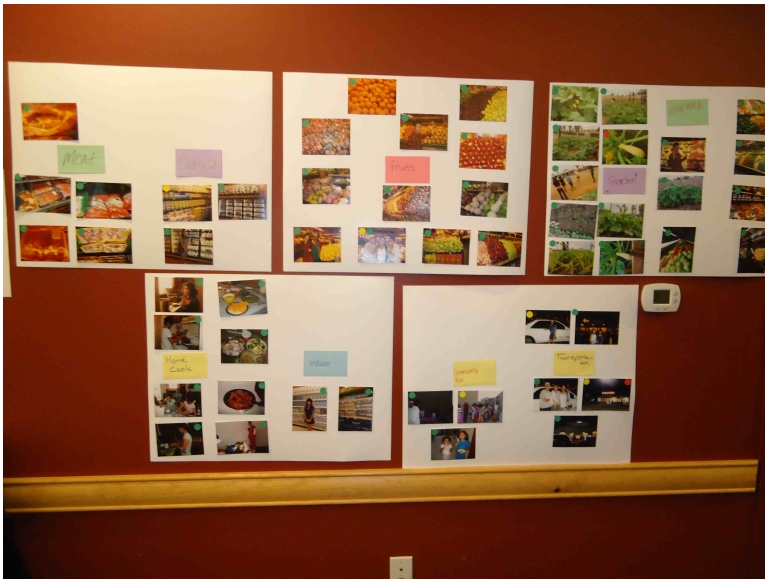
Youth utilized cameras to portray and discuss the strengths and weaknesses of their food environment and discussed the implications for food security. Youth selected photographs they wished to share with the group and related their importance to food security by answering questions in the PHOTO prompt, a series of questions successfully used in another photovoice project in Phoenix (Szkupinski- Quiroga, & Sandlin, 2009).



Picture 2. Example photovoice photograph. “This is at Ranch Market by the apples because ‘an apple a day keeps the doctor away.’ I went with friends in WaWa’s car. It’s better to go to the store for fresh food rather than snacks. But we don’t actually shop here, we actually go to Lee Lee’s because it provides transportation and has a large selection of Asian cuisine. I wanted to go to a new place. Lee Lee’s gets boring and it’s far. I wish a place like Lee Lee’s was closer.”

Afterwards, youth organized their photographs into groups and color-coded photographs for their relationship to food security (i.e. green stickers were placed near a picture that helped food security, yellow stickers showed indifference, and red

highlighted things that hurt food security). After the organization and coding of photographs, youth discussed the state of food security in their community.



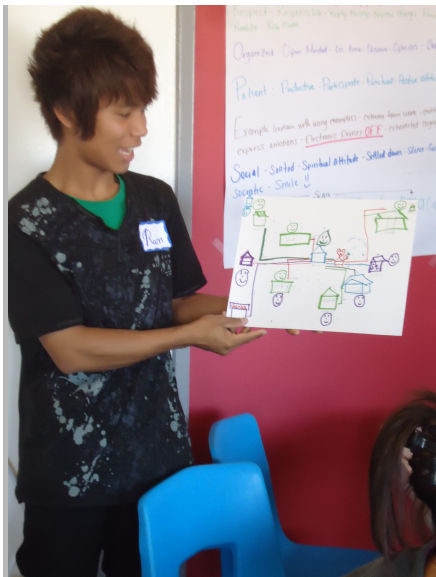
Picture 3. Youth determined categories from photovoice activity.

Sketch mapping.

We also used a method called sketch mapping. Since the 1980s, participatory mapping has become a widespread method, particularly in the Global South, to elicit information about natural resource management, social structures, health outcomes, mobility, education, and many other factors of interest (Chambers, 2006). Maps can serve as useful boundary objects since many of these issues are spatially bound or related. More formal mapping of the food environment use a GIS that draws from preexisting spatial data. In this regard, the representation of reality is based on available secondary data, not on the community's own understanding of their environment or space. Unlike these formal mapping methods, sketch mapping is a very flexible platform to help stimulate discussion about community planning and decision-making, and can help provide the broad picture or context (Corbett, 2009; NOAA, 2009). For example, using sketch maps allows each participant to define

her/his community boundaries rather than using a scaled map with a street grid that might not capture key points of interest (Cummins, 2007a). Sketch maps are drawn freehand from memory, are not dependent on exact measurements or scaling, and can include any key community features identified by participants themselves (Corbett, 2009).

Participants sketch mapped places relevant to their community (home, school, church, parks) and food outlets—or anywhere they purchased or ate food. Next, they mapped the routes to get to each place, and the mode of transport. Finally, they used color or emoticons to map how they felt in or traveling to each place. Participants then reflected on what seemed to be good and bad aspects of the neighborhood environment in terms of accessing food (Picture 4).



Picture 4. Participant sharing his sketch map with the group.

Visioning

Visioning is a creative and collaborative way of crafting an ideal future state that boasts a “problem-solved” quality while also reconciling a diverse set of values and preferences (Wiek, 2011). Drawing inspiration from the success and

participatory nature of photovoice projects, we chose to incorporate many photovoice aspects into our visioning activities, resulting in a combination of the two methods that we referred to as photo-visioning. Through photo-visioning, youth used photographs to capture desired future states.

In the third workshop, we elicited participants' perspectives of future visions of the food environment. We captured vision elements about what the food environment ought to look like in 2021, assessed whether these elements addressed food security principles, and ultimately developed consensus around a vision statement.

Photo-visioning.

After an initial introduction to various strategies to address food security, the youth used photography to portray elements of their vision for food in ten years. The youth were asked to think about what they would *like* to see for food and how they would *like* to access food in their community in the future. Specifically they were asked to keep in mind the things they had classified from their photovoice and mapping activities as bad for food access and think of ways to help address these problems, and to think of things that would help enhance their community's food security. A few youth brainstormed some elements for their vision and shared with the class how they would express these ideas in a photograph.

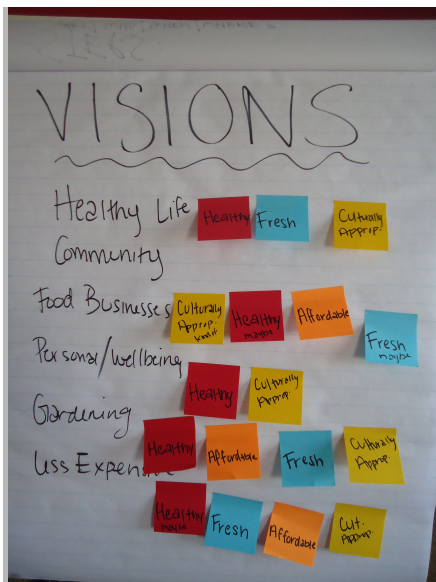


Picture 5. Example visioning photograph. “I want to see more organic and natural foods. I heard from the news that people spray food and put things in apples to make it shiny.”

In the third workshop, youth presented their photo visions along with a brief description of what the photo was meant to capture. Afterwards, the youth arranged their visions into categories (Picture 6) and assessed their effectiveness at ensuring food security (i.e. access to healthy, fresh, affordable, and culturally-appropriate food) (Picture 7).



Picture 6. Individual vision elements grouped into categories.



Picture 7. Assessment of group visions with food security criteria.

As a final piece, the youth broke into two groups and wrote narratives depicting their envisioned future state for food.

Intervention Research

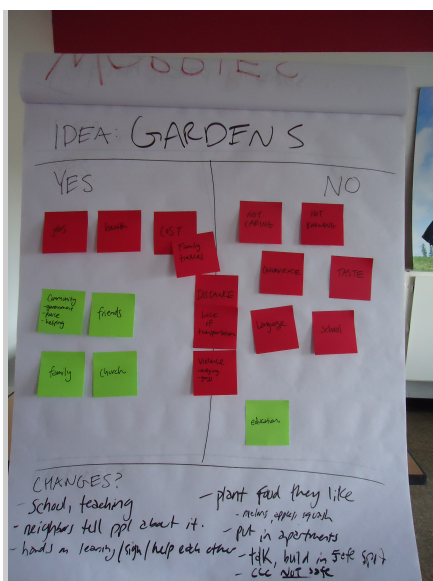
The final module of the third workshop explored how to move from the current state to the proposed vision through strategic interventions. Intervention research demands a wide range of activities from strategy selection to implementation and evaluation--activities that were largely outside the scope of our research (Fraser et al., 2009). Our focus, then, was on preliminary steps such as intervention selection and planning.

Intervention mapping.

Intervention mapping (IM) is a planning process that explores program objectives, selects strategies, designs and organizes a program, specifies implementation plans, and generates evaluations plans (Belansky et al., 2011; Bartholomew et al., 2006). IM processes increasingly include community members or

the target populations (Green & Mercer, 2001). We adapted IM processes to explore how identified barrier and asset factors can inform intervention selection and planning.

RCDC and its partner organizations articulated program objectives and proposed interventions (e.g. community gardens) prior to our research. In order to explore these interventions, we facilitated brainstorming and assessment activities in the third workshop. Participants performed an assessment of proposed interventions based on factors identified in the problem analysis activities (both barriers and assets). Participants considered each proposed intervention and determined whether it addressed each factor. Next, they considered potential improvements for each of the interventions so that they would address more of the place-specific problems and build on community strengths (Picture 8).



Picture 8. Intervention assessment results for gardens. Barriers were represented on red sticky notes, and assets on green sticky notes.

This allowed a direct comparison between the three modules of the research, and helped vet the proposed interventions by what was known about the problem

and vision. It also allowed participants to express areas for improving these interventions' relevance and effectiveness prior to extensive program planning and implementation.

Finally, participants developed a draft action plan that considered what needed to be done, who needed to be involved, by when, and with what resources. We held an open community forum for the research team and participants to share the results of the workshops with RCDC staff, family, friends, and interested community members. We also created a report of findings and recommendations for RCDC, and facilitated follow-up meetings with decision-makers and participants to continue this thread of intervention planning (Appendix E: RCDC Report). This was the beginning of the 'real work' of program design and implementation. Ultimately implementation and evaluation were beyond our research scope so while our activities were not comprehensive, they were an important first step in facilitating IM processes.

Outcomes & Discussion

Overall, using these participatory methods allowed us to capture the human dimensions of food security, as described by our youth participants, including many intervention-relevant aspects (e.g. communal meals, sharing resources) that would be impossible to capture with geographic and market-based methods. We were able to do so in part because the methods we used allowed participants to be co-creators of the knowledge and any final products. For instance, in concept mapping, participants were the primary actors in nearly each phase of the process, so the analysis was not developed by researchers after the workshop, but reflected the 'voice' of the participants themselves (Burke et al., 2005). Similarly, using sketch maps allowed for

each participant to define her/his community boundaries, and key points of interest related to food. As a result, the mapping process helped prompt specific examples of barriers to food security (i.e. walkability, high crime areas) that participants didn't bring up in the prior problem analysis activities. Overall, capturing these perspectives proved invaluable. Past assessments identified Canyon Corridor as a food insecure area (Steele et al., 2010; Taylor, Schoon & Talbot, 2011), however, we found that this particular group was able to overcome what would be food insecurities due to the social capital and high levels of collaboration.

Due to the unique demographics of our participant groups (both in terms of age, cultural background, and communication constraints), we had to be innovative and adaptive in our selection and facilitation of methods. We aimed for interactive activities to engage young people, such as taking photographs, drawing, writing, and having informal discussions. In order to accommodate the language needs of all participants, we asked a volunteer translator to assist in instructions, encouraged peer-translation and assistance, allowed participants to write in their primary language (and had it later translated), and designed activities that were not exclusively language-based. For example, photovoice allowed the youth to identify their experiences, as well as the strengths and weaknesses, of their food environment with photographs. This was beneficial since youth did not have to articulate such elements, rather the photograph acted as the primary communicator and a platform for meaningful discussion. Like photovoice, sketch mapping was a non-language-based activity so it was easier for participants who struggled to express themselves in written- or oral-based activities.

Further, it was important to foster a comfortable environment for the participants. Burmese refugees are often more reserved or discrete before friendship is formed (Barron et al., 2007). Thus, we focused on building familiarity over the course of the workshops, using reassuring body language and tone, re-asking questions in different ways, and allowing many different ways to share (written responses, group discussion, one-on-one conversation). For instance, concept mapping and its mixed method of individual reflection and then sharing made it possible to collect each participant's perspectives in a non-imposing way that was both interactive and comfortable. Similarly, photo-visioning allowed for all youth to participate, especially those that were often quiet during discussion-based activities. For example, nearly all youth took photographs for the visioning activity and those who did not want to speak out when discussing their pictures opted to write in their journal about their pictures and have the descriptions read aloud by one of the facilitators or a peer.

Ultimately the nature of these methods and careful consideration of how to best facilitate the workshops allowed us to successfully work with a younger population and participants from diverse cultural or linguistic backgrounds, who are typically left out of the planning process due to difficulties in engagement and communication (Uyesugi & Shipley, 2005; Moss & Grunkemeyer, 2010; Head, 2011). In post-workshop surveys, all participants responded that they felt their perspectives mattered during the day's activities and that they felt safe and comfortable to share in the group. When asked what they liked most about the day, responses were overwhelmingly positive (many participants just wrote "Everything!"). Other

responses highlighted particular aspects like “working on posters,” “taking photos,” “talking with friends,” and “working as a team.”

Another outcome of our work was increasing the interest and capacity of participants to develop solutions (Blackstock, Kelly & Horsey, 2007). Many youth commented on the importance of the topics covered in the workshops. For example, one girl wrote in her journal: “We went to class to learn about healthy food access. Educating our youth on these fundamentals is important. The more educated that we are, the better the decisions we make.” At the final forum, participants also shared with attendees that they learned more about “community access,” and “how important what we eat is” and reported that they were very grateful to have participated in the workshops.

In order to encourage a greater sense of empowerment and efficacy, we also embedded plans for future partnerships and solutions into the IM activities, and facilitated follow-up between our community partners and participants. As a result, MTM and RCDC are already integrating several of the youth’s suggested interventions and considerations into their programming plans. Through pre- and post-empowerment surveys we were able to measure empowerment using a likert scale from 1-5 (1 being strongly disagree, and 5 being strongly agree). The 12-question survey had a maximum empowerment score of 60. Pre-workshops scores ranged from 40-50, while post-workshop scores ranged from 43-55, with all but one participant reporting a higher score. These results demonstrate that the participants felt that they were able to enact change or make a difference in their community prior to our research. This may be a form of self-selection bias or it is possible that the tight community, particularly in the refugee population, encourages feelings of

self-worth and/or accountability. Further, it may be a result of the participant's age, as other researchers have found youth to feel particularly capable of bringing about change (Hicks & Holden, 2007). However, youth did feel an increase in the extent of empowerment after participation in the workshops, with a group score increase of 23, suggesting that the youth benefited from the research experience.

Adapting the Framework & Methods for Future Research

This study operated at a very localized level with a very specific population. Thus, it is important to remember that the results are only valid for this particular population, and this particular sample. However, our research does provide a case study of participatory food security methods that: 1) can help inform local action and future interventions and, 2) can be generalizable at the methodological level. The tension between localization and the desire to translate findings to other scales will persist with this type of research. When research is conducted in a somewhat consultative partnership (e.g. helping RCDC adapt and design food security interventions), working at a local scale is imperative. Future researchers will need to determine whether performing local, place-based research meets or limits their objectives for both knowledge generation and decision-support.

This study was focused on youth and resettled refugees since their perspectives are often excluded in food security research, and since they are important actors in potential programming in Canyon Corridor. But inclusion of certain populations can have important implications for results and future action (van Kerkoff & Lebel, 2006). For instance, while youth may not realize the full burden of accessing food since these duties fall primarily to adults in the family, and their capacity to act or influence higher-level factors may be limited (van Kerkoff &

Lebel, 2006). In future studies, it will be important to bring multiple perspectives (in terms of age, ethnicity, socio-economic position, etc.) together in order to move toward a more coherent, inclusive perspective of people potentially affected by food insecurity. This will likely demand multiple iterations of research activities with diverse groups, and a longer time-scale. Unfortunately conducting more comprehensive research is often inhibited by resource limitations (i.e. research budgets, time).

Issues common to social science and qualitative data apply to our study as well. For example, social desirability, or reporting what participants believe the researcher wants to hear, is always an issue with qualitative research (Bertrand & Mullainathan, 2001), and may have manifested in stages of the problem analysis such as photovoice. Instability of measured attitudes and/or desires (i.e. people don't always understand why their preferences or opinions suddenly change) is often a concern and could have serious implications for visioning and intervention planning. Further, people's general inability to forecast their behavior and understand the drivers behind their actions is particularly relevant for the visioning module of this research (Bertrand & Mullainathan, 2001). Future research should be sensitive to and transparent about these inherent constraints.

Another challenge in this type of research is managing the level of engagement and reciprocity. Researchers ultimately initiated this study, so it is another case of "user-engagement" rather than "researcher-engagement" (Talwar, Wiek, Robinson, 2011). That is, the researchers identified a problem and then sought out a community partnership and study site; MTM or RCDC did not identify the problem and seek out support from researchers. While we did work closely with

RCDC to develop the problem description and research objectives, RCDC was not as involved in designing, conducting, and interpreting the research. Thus, there is potentially a discrepancy in the knowledge generated by us, the researchers, and the knowledge needed for action (van Kerkoff & Lebel, 2006). While there is value in research-based knowledge in that it can provide an independent perspective, or inform problem perceptions and solutions in new ways, future studies should aim to cultivate a relationship rooted in co-learning and greater integration between the research group, the community partner, and even outside expert opinions (van Kerkoff & Lebel, 2006).

In our case, we also had to balance engagement and reciprocity with the participant group. Participants were not included in the first phase of research (i.e. topic selection, topic significance), while they were integral producers of knowledge during the other phases (i.e. generation, interpretation). Ultimately, then, this study could not be considered “mode-2” research in which community partners and/or participants are involved in all phases of the research (Talwar, Wiek & Robinson, 2011). Furthermore, our work was more extractive in the sense that we primarily reported youth perspectives rather than co-produced knowledge—which would have included more input and shaping from the researchers and other experts. Still our research was a step closer to this mode than traditional extractive, consultative research or studies that only include an “add-on” level of engagement (Talwar, Wiek, Robinson, 2011).

Our activities were still disproportionately dedicated to the problem analysis module of research, with less effort dedicated to developing solutions. In this regard, our research was not a full realization of the TSR framework. This was in part due to

the time scale of the research since IM often requires a more longitudinal design. Intervention research as it is applied to sustainability science is also still under developed, and the framework and tools for sustainability-based intervention design and evaluation need to be fleshed out—drawing in particular from established fields such as public health and social work (Wiek, 2011; Fraser et al., 2009). It is our hope that future research in Canyon Corridor is now oriented to focus more on intervention planning, and that TSR research in general will continue to develop this important module and related instructional and strategic competencies.

Finally, we presented a suite of participatory methods that we believe contributes to future TSR and food security research design. Still, there is the need for further experimentation of innovative, inter-disciplinary methods that can generate knowledge appropriate to each TSR module, and that are effective with diverse populations.

Conclusion

In response to concerns about conventional studies of food security that focus primarily on the physical food environment, our study captured the human dimensions of food security by engaging youth—significant stakeholders and those potentially most impacted by the problem—in the assessment process. Through TSR-inspired workshops, we utilized a suite of participatory methods adapted to meet the special characteristics of our participant group, to: 1) better understand food security and the food environment in Canyon Corridor, 2) articulate a vision for the future that represented participants’ desires as well as food security principles, and 3) participate in developing relevant and effective interventions.

Our emphasis on participatory methods and the co-creation of knowledge produced several notable outcomes. First, we were able to capture youth participants' perspectives about a diverse set of factors that influence food security and can help inform future efforts. Second, we successfully managed age, language, and cultural constraints in order to interact with an often overlooked and difficult-to-access population. Lastly, our work empowered participants to be change agents in their neighborhood.

Based on these outcomes, this study demonstrates the potential gains from the synthesis of sustainability problem solving frameworks and these flexible, participatory methods with food security assessment and intervention efforts. It is our hope that our approach can be replicated in other communities where food insecurity is a concern.

Chapter 3

ASSESSING THE MULTIDIMENSIONALITY OF URBAN FOOD SECURITY AND THE IMPLICATIONS FOR LOCAL INTERVENTION PLANNING

Introduction

Many research groups, public organizations and even popular media sources report increasing concerns about food insecurity in the United States (US), particularly in urban areas (Gallagher, 2006; Nord et al., 2008; Gray, 2009). According to the US Department of Agriculture, “Food security for a household means access by all members at all times to enough food for an active, healthy life” (Nord et al., 2008). Access includes availability of acceptable food, affordability of the food available, and the means to obtain the available food (Cohen, 2002). US food security efforts have historically focused on hunger-alleviation and food provisioning (i.e. ensuring enough food), but now must also address the challenge of poor food environments and the quality of food available (i.e. a lack of healthy food options and the prevalence of fast food or junk food), which may be tied with other diet-related health outcomes such as obesity (Christian, 2010; Egger & Swinburn, 1997; French, Story & Jeffery, 2001; Slater et al., 2008). Food insecurity and poor food environments affect socially and economically marginalized communities most (Gittelsohn et al., 2008; Raja, Ma & Yadav, 2008; Larson, Story & Nelson, 2009; Morland et al., 2002). Thus, these conditions pose immediate challenges in public health, but also in social and economic justice (Gottlieb & Joshi, 2010).

Contemporary urban food security in the US is influenced by complex, multidimensional, and multi-scale factors. Research in food security, nutrition, and health promotion and prevention emphasizes individual characteristics, such as

attitudes and behaviors related to diet, but also increasingly explores the food environment and other structural processes that might affect diet-related outcomes (Furst et al., 1996; Adler & Stewart, 2009; Ver Ploeg, 2010; Lake & Townshend, 2006; Dixon et al. 2007). When we extend the boundary of analysis to include structural processes, we discover that system-level phenomena (e.g. entrenched social patterns of the distribution of resources), as well as more local factors (e.g. neighborhood food retail availability) are all significant in determining food insecurity (Raja, Ma & Yadav, 2008; Powell et al., 2007). However, mainstream food security assessments and intervention efforts do not adequately: 1) integrate multidimensional and multi-scaled factors, especially at the local scale, and 2) connect knowledge of these factors and driving processes with opportunities for individual or community action.

Several fields including sustainability science and public health suggest community-based participatory research (CBPR) and stakeholder engagement as one response to deal with these dual deficiencies (Wiek, 2011; Winne, 2003; Israel et al., 2005; Green & Mercer, 2001). The research presented here seeks to integrate an assessment of the wide range of drivers of urban food insecurity with perspectives and priorities of a specific stakeholder group, in this case, youth. Through a case study of Rehoboth Community Development Corporation's (RCDC) efforts to address food insecurity concerns in Canyon Corridor, a neighborhood in Phoenix, Arizona, I document the potential of youth engagement to: 1) better understand the contextual, community-identified factors that contribute to food security, and 2) identify and design relevant, appropriate interventions, and 3) promote community agency and action. The research demonstrates that by taking a more integrated place-

and people-based approach, food security assessments and intervention planning processes are able to identify: 1) potential discrepancies between the perceived and realized problem, 2) a wide range of physical, social, cultural, economic, and psychological factors that influence food security, 3) more multidimensional approaches to proposed interventions, and 4) the interest and capacity of stakeholders to develop solutions.

Multiple Dimensions and Scales of Food Insecurity

Contemporary urban food security in the US is influenced by complex, multidimensional and multi-scale factors. In one respect, people’s individual characteristics or their ability, assets, and attitudes (a classification structure proffered by Shaw (2006)), influence food security by either expanding or restricting available choices (Figure 3).

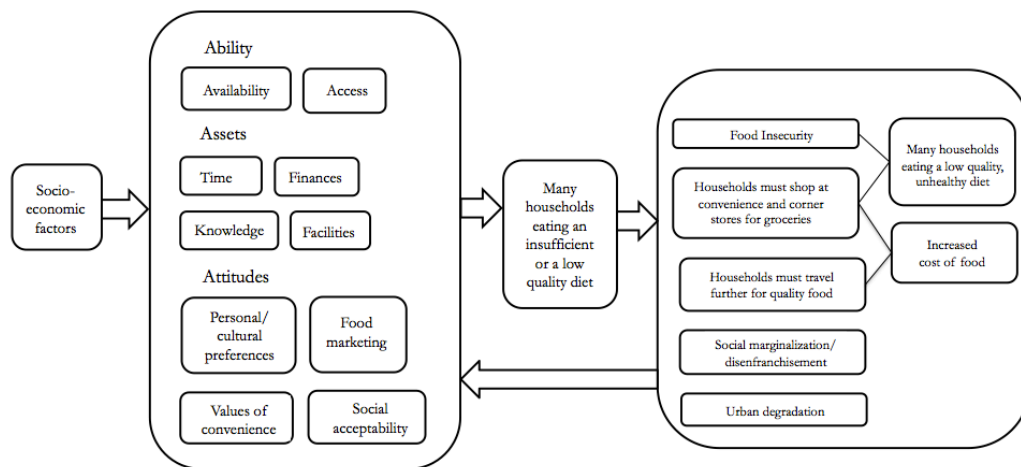


Figure 3. Factors that influence dietary situations and potential negative effects.

In this classification, ability includes any factor that physically prevents food access. Asset factors are defined as a lack of financial or human capital that prevents food security such as time, finances, knowledge of nutrition and food preparation, and access to facilities for food storage and cooking (Table 3). Finally, attitude

factors include any state of mind that affects food decisions apart from physical and asset constraints such as personal or cultural preferences, food marketing, values of convenience, and social acceptability or pressures to eat a particular diet (Table 3). Often one's ability, assets, and attitudes are dictated by socio-economic factors including race and ethnicity (Guthman, 2011).

Table 3.
Factors that influence dietary situations and references by author

| Factor | Author(s) | |
|-------------------------------|--|--|
| <i>Assets</i> | | |
| Time | Munoz-Plaza et al., 2007 Rose & Richards, 2004 | Ver Ploeg et al., 2009 |
| Finances | Munoz-Plaza et al., 2007 Azuma et al., 2010 Jetter et al., 2006 | Vahabi et al., 2010 Ver Ploeg, 2010 Ver Ploeg et al., 2009 |
| Knowledge | Hamm & Bellows, 2003 | Munoz-Plaza et al., 2007 |
| Facilities | White, 2007 | Shaw, 2006 |
| <i>Attitudes</i> | | |
| Personal/cultural preferences | Wrigley et al., 2004 | |
| Values of convenience | White, 2007 | Ver Ploeg, 2010 |
| Food marketing | Munoz-Plaza et al., 2007 | Baker et al., 2006 |
| Social acceptability | Munoz-Plaza et al., 2007 | |
| <i>Ability</i> | | |
| <i>Access</i> | | |
| Climate/Hypsography | Shaw, 2006 | |
| Built Environment | Beulac, Kristjansson & Cummins, 2009 Walker, Keane & Burke, 2010 Slater et al., 2008 | Egger & Swinburn, 1997 Rose & Richards, 2004 Ver Ploeg et al., 2009 French et al., 2001 |
| Income-level | Vahabi et al., 2010 | Ver Ploeg, 2010 |
| Transportation | Coveney & O'Dwyer, 2009 Ver Ploeg et al., 2009 Walker, Keane & Burke, 2010 Munoz-Plaza et al., 2007 | White, 2007 Azuma et al., 2010 Ver Ploeg, 2010 |
| Perceptions of safety | Doyle et al., 2006 Rose & Richards, 2004 | Azuma et al., 2010 |
| Physical disability | Wilson, Alexander & Lumbers, 2004 | Shaw, 2006 Ver Ploeg et al., 2009 |

Table 3. (continued)

| Factor | Author(s) | |
|---|--|---|
| <i>Availability</i> | | |
| Patterns of urban growth/flight | Fury, 2001 Guy, Clarke & Eyre, 2004 | Azuma et al., 2010 |
| Social/racial patterns for distributing resources | Larson, Story & Nelson, 2009 Munoz-Plaza et al., 2007 Walker, Keane & Burke, 2010 Raja, Ma & Yadav, 2008 White, 2007 | Baker et al., 2006 Fleischhacker et al., 2009 Azuma et al., 2010 Vahabi et al., 2010 |
| Food retailing norms/practices | Munoz-Plaza et al., 2007 Gittelsohn et al., 2008 Rose et al., 2010 Zenk et al., 2005 | White, 2007 Baker et al., 2006 Azuma et al., 2010 |
| Changing demand | Ver Ploeg et al., 2009 | White, 2007 |

Table 4.

Effects of poor dietary situations and references by author

| Effect | Author(s) | |
|---|--|---|
| Food insecurity | Hamm & Bellows, 2003 | Christian, 2010 |
| Changes in shopping routines | Munoz-Plaza et al., 2007 Larsen & Gilliland, 2009 | Azuma et al., 2010 Ver Ploeg, 2010 |
| Social marginalization/disenfranchisement | Raja, Ma & Yadav, 2008 Larson, Story & Nelson, 2009 | Walker, Keane & Burke, 2010 |
| Urban degradation | Walker, Keane & Burke, 2010 | |
| Increased cost of food | White, 2007 Larsen & Gilliland, 2009 | Ver Ploeg, 2010 |
| Unhealthy diet/diet-related disease | Morland, Diez Roux & Wing, 2006 White, 2007 | Baker et al., 2006 Fleischhacker et al., 2009 Powell et al., 2007 |

Potential negative outcomes include food insecurity, changes in shopping routines with adverse outcomes for welfare, social marginalization or disenfranchisement, urban degradation, increased cost of food, and ultimately unhealthy diet and diet-related disease (Table 4). Within these outcomes, there are reinforcing feedbacks to driving factors (e.g. urban degradation increases urban flight). This conceptualization of the multidimensionality of drivers of food security is consistent with other health equity research that suggests socio-economic position influences social, physical, economic, and psychological factors, which then affect

intermediate outcomes such as dietary behaviors, which then affect health outcomes (Brennan Ramirez, Baker & Metzler, 2008).

While these ability, asset, and attitude factors focus on the individual or household sphere, the ability-level factors of availability and access are conditioned by structural factors associated with the historical, socio-economic and biophysical environment of consumers. These structural drivers include: 1) geographic or environmental factors such as climate, hypsography, and the built environment including walkability or presence of food outlets, 2) economic factors such as income-level and access to reliable transportation and, 3) sociological or psychological factors such as patterns of urban growth and flight, social and racial prejudices, food outlet retailing practices, changing demand, perceptions of safety, and physical disability (Figure 4). All of these drivers contextualize and potentially influence the availability of and a person's access to acceptable foods (Table 3).

These drivers also represent several different scales of activity. For instance, food security is influenced by: 1) systemic or macro-level phenomena (e.g. the entrenched social patterns of the distribution of resources), 2) meso-level factors (e.g. city or state policies affecting urban planning), 3) community-level factors (e.g. the neighborhood safety and food retail availability) and, 4) individual and household factors (e.g. assets and attitudes). In many cases, activities at one scale are synergistic with activities at other scales.

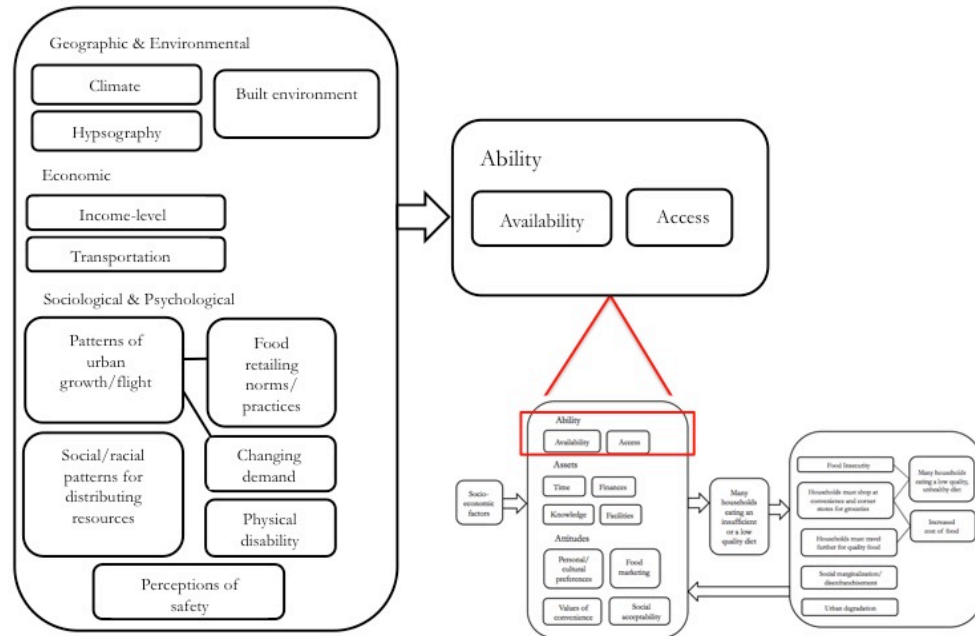


Figure 4. Contributing factors to low access to and availability of acceptable foods.

Failures of Current Food Security Assessments

While there is growing recognition of the complexity of drivers operating at diverse scales, most food security interventions continue to focus almost exclusively on the individual. As such, in many ways such interventions implicitly “blame the victim” (Adler & Stewart, 2009). Ironically, those studies that have focused on environmental and structural factors have tended to neglect individual factors rather than pressing in to the complexity and synergies at play (Brug et al., 2008). Thus the food environment becomes the core measure of vulnerability to food security or diet-related diseases like obesity, and the diversity of potentially significant factors is lost (Guthman, 2011). For instance, current assessments focus on spatial analyses to identify areas without certain food outlets (i.e. “food deserts”) and market-based statistics that capture the status of the retail environment. However, these assessments omit significant dimensions of the problem including social processes

and the actual behaviors or lived experiences of affected populations (Cummins, 2007b; Guthman, 2011). There is no “meta-narrative” of food security or insecurity applicable to each situation or context (Maxwell, 1996). In fact, food security outcomes may vary from household to household on the same block, and even between different members of the same household (Maxwell & Smith, 1992). Therefore, it is problematic to only look at factors that can be mapped or measured easily since these assessments do not translate to a deep understanding of the food environment, let alone food security (Guthman, 2011). Thus, while it may be important to capture aspects of the food environment, it is also necessary to capture the perspectives of those considered vulnerable.

Failures of Current Food Security Intervention Efforts

Because of the tendency for reductionist framings in food security assessments, most food security intervention efforts do not integrate or adequately address a plurality of factors. In the past, food security efforts took an isolated, individual- and outcome-focused approach (i.e. emergency food provisioning to households). While these efforts managed the most immediate concerns such as hunger, they did not fundamentally address the problem (Winne, 2003). Over the last several decades, there has been growing recognition for the need to redesign interventions to address drivers in the system—not just outcomes. However, since the problem is defined as a problem of supply (i.e. absence of food outlets), proposed solutions will at best be supply-oriented interventions that “fill” the food desert with food outlets (Guthman, 2011, pg. 69). Systems theory posits that a single intervention designed to address a single problem will not be successful in the long term (Senge, 1994). Improving one factor—making fresh foods more available—will

not necessarily change dietary choices and outcomes because there are so many additional factors influencing the behavior. For instance, researchers have observed that the addition of a grocery store (a popular intervention to improve availability and access) in a formerly low-access neighborhood did not lead to positive, significant changes in dietary outcomes (Wrigley, Warm, Margetts, 2003; Cullum, Spilsbury & Richardson, 2005). Even if fresh food is more available, it does not ensure that people have sufficient access, time, knowledge, or interest to prepare that food. Thus, there is a marked need to use integrated assessments of the issues to identify potential intervention points as well as the limitations of isolated (one-dimensional) interventions (Meadows, 1997).

Furthermore, the current framing of the problem ultimately disempowers those populations potentially affected by food insecurity since the food environment “acts on” people, rather than putting people in a position to affect change (Guthman, 2011, pg. 68). At the same time, many public and private programs encourage local communities to act and improve their immediate physical and social space to address food insecurity and create healthier environments (Brennan Ramirez, Baker & Metzler, 2008; Leadership for Healthy Communities, 2011). There is a delicate balance between recognizing food insecurity and poor dietary outcomes as the negative effects of complex individual and structural factors, but also empowering local communities to champion the issues and make a difference. This process requires both “deconstruction” (i.e. breaking down the problem ontology, understanding the diverse driving factors) and “reconstruction” (i.e. pulling the pieces together, making connections, and acting despite the complexity)(Maxwell, 1996).

Because every community is distinct, successful interventions from other locales may face unique risks, barriers, or protective processes and lead to distinctive results when applied to a different scale or community context (Figure 5). Thus, interventions often need to be adapted to meet the unique needs or characteristics of a place (Fraser et al., 2009). This suggests the need for a “locally-based, learning process” approach (Maxwell & Smith, 1992). Yet, there are few published community efforts that intentionally: 1) consider the unique drivers of food security at a community-level, and 2) connect this understanding with opportunities for individual or community agency for change (Morland, 2010).

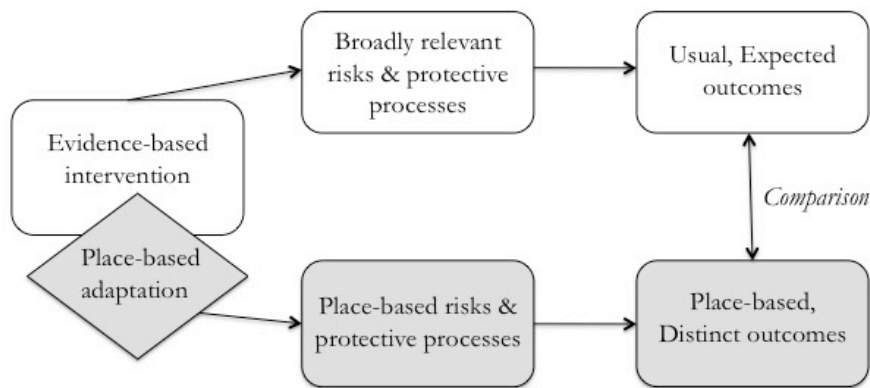


Figure 5. Conceptual framework for place-based interventions. Adapted from Fraser et al. (2009).

Role of Community-based Participatory Research

In order to encourage strategic food security interventions at the community-level, we must perform place-based, integrated assessments of the problem and target particular intervention points where local actors can be most efficacious. It is also imperative that food security assessments take a people-based approach that includes more qualitative, experiential information about affected peoples' priorities

preferences, and perceptions of what driving factors are most significant (Cohen, 2002; Coates et al., 2006; Webb et al., 2006). This way people's "lived experiences" can contribute to a more integrated and localized understanding of the problem and potential solutions (Jacobsen, Pruitt-Chapin & Rugeley, 2009).

Community-based participatory research (CBPR) is one means to develop this type of integrated assessment of community food security that can subsequently empower communities to improve their situation. CBPR is an increasingly utilized research approach (particularly in sustainability science, planning, and health-related fields) that involves the affected community in identifying a problem, developing a research agenda, and planning an appropriate intervention to address the problem (Israel et al., 1998; Breckwich Vásquez et al., 2007; Green & Mercer, 2011; Blackstock, Kelly & Horsey, 2007). What is more, CBPR moves beyond more traditional extractive research approaches by striving for "co-production" of knowledge (Talwar, Wiek & Robinson, 2011; van Kerkoff & Lebel, 2006). That is, CBPR research ought not to simply report participants' perspectives, but must also reconcile experts' and participants' opinions in a mutual effort of sharing and learning.

Stirling (2006) identifies three arguments for including public participation in problem solving: 1) the normative argument, that states the inherent right to participate and the value of democratic decision-making; 2) the substantive argument, that states the quality of decisions is improved through greater participation and; 3) the instrumental argument, which states that participation improves buy-in for future decision-making and activities. Based on these arguments,

CBPR is growing in legitimacy and has helped successfully develop solutions for a wide-range of health and social issues (Breckwich Vásquez et al., 2007).

Participatory research and community engagement not only help generate more holistic, relevant problem and solution agendas, but can also promote participants' capacity and agency for change making. CBPR develops "critical consciousness" in participants and encourages both reflection and action (Travers, 1997). For instance, Travers (1997) documents the ability of participatory research to empower participants and contribute to social change. Thus participatory research can allow for the integration of different sources of knowledge and values, and can ultimately link this knowledge with action through engagement (Talwar, Wiek & Robinson, 2011; van Kerkoff & Lebel, 2006). While CBPR is still infrequently used in food security research, its successes in other fields suggest CBPR may be a promising approach to deal with the dual challenges of performing an integrated assessment and connecting it with community action.

Research Objectives & Study Site

With the aim of exploring the potential of participatory, integrated assessment to enhance food security interventions, my research sought to engage a specific stakeholder group—youth—and elicit their perspectives and priorities about the driving factors of food security and opportunities for community action. In this research, I partnered with two organizations—Maryvale on the Move (MTM) and Reboth Community Development Corporation (RCDC)—who were active in food and health initiatives in the Canyon Corridor neighborhood in Phoenix, Arizona. Canyon Corridor is a very diverse, but economically depressed urban neighborhood (Table 5). Due to its unique demographics and acute social and

economic challenges, it has been the focus of several federal-, city- and community-based development efforts.

Table 5.
Canyon Corridor demographics and neighborhood statistics

| <i>Population Demographics</i> | | <i>Social & Economic Indicators</i> | |
|--------------------------------|--------|---|--|
| Total Population | 12,883 | Per capita income | \$12,054 |
| Under 18-years-old | 35.8% | Median household income | \$27,703 |
| <i>Race & Ethnicity</i> | | Adult population w/o high school degree | 35.8% |
| White | 48.6% | Population living in rental housing | 52.0% |
| African American | 5.0% | Crime index (rate per 1,000 people) | 60 |
| Asian | 5.1% | No. languages spoken | 27 |
| AIAN | 2.7% | No. supermarkets | 1 |
| Other race | 34.4% | Prominent refugee/immigrant populations | Latino, Burundi, Burmese, Iraqi, Bosnian, Philippine, Chinese, Japanese, Iranian, Vietnamese |
| Two or more races | 4.0% | | |
| Latino | 70.7% | | |
| Non-Latino | 29.3% | | |

Sources: US Census (2010), Weed and Seed Data Center (2009), CCCC (2011).

MTM represents one such effort, a pilot endeavor for policy and environmental changes to prevent childhood obesity in the Maryvale and Canyon Corridor neighborhoods in Phoenix funded in part by the Healthy Kids, Healthy Communities program of the Robert Wood Johnson Foundation (Steele et al., 2010). As part of this program, MTM is developing initiatives to increase Canyon Corridor residents' access to healthy foods. Past research sponsored by MTM includes planning charrettes (Steele et al., 2010) and a community food assessment using an adaptation of the Nutritional Environment Measures Survey (NEMS)—a project I helped coordinate (Szkupinski-Quiroga & Winham, 2012; Glanz et al., 2007; Taylor, Schoon & Talbot, 2011). The results of these studies suggest that residents of

Canyon Corridor are vulnerable to food insecurity and faced with a poor food environment. In response, MTM proposed interventions including expanding community gardens, establishing mobile markets or farmer’s markets, and attracting more food retailers to the neighborhood (Table 6).

Table 6.
Overview of proposed interventions

| | |
|-------------------|--|
| Community Gardens | Any piece of land gardened by a group of people |
| Mobile Markets | Markets that operate out of a large truck or trailer that can travel around neighborhoods |
| Farmer’s Markets | Outdoor market where farmers or other vendors bring fresh vegetables, fruit and other items to sell directly to customers on one or more days a week |
| Grocery Store | An effort to attract more full-service grocery stores closer to the neighborhood |

My participation in the community food assessment contributed to my understanding of food insecurity, and my critique of current assessment and intervention approaches. For instance, the NEMS project did not solicit or integrate the perspectives and behaviors of these residents (e.g. “what factors are most important to you and your family?”). Further, upon completion of the NEMS report, community members were dissatisfied with the knowledge generated from the process. They reported that they knew the results (i.e. that there was relatively poor availability and affordability of healthy foods in their neighborhood) before the surveying; what they wanted to know was what to do about it.

In an effort to make my research as salient and useful as possible to the community, I worked with RCDC, a MTM community partner working toward community development in Canyon Corridor, to define the project objectives and activities. I began the partnership with the specific intent to take a CBPR-inspired

approach to food security rather than market- and geographic-approaches. However, I also adapted the focus based on my partners' needs and desires. For instance, through interviews with RCDC and MTM leadership and meeting attendance and observation, I determined that both organizations were interested in exploring interventions to address food insecurity and poor food environments as part of greater community development efforts. RCDC and MTM also expressed the desire to include community youth in these activities since youth had limited representation in past studies and are often the most vulnerable to food insecurity and obesity and thus a targeted population in programming (Casey et al., 2001; Powell, Auld, & Chaloupka, 2007; Singh, 2010).

Through participatory workshops in Canyon Corridor, I explored the potential of youth engagement to: 1) better understand the driving factors that contribute to food insecurity (referred here as barriers) as well as the protective processes that promote food security (referred here as assets) in Canyon Corridor, 2) identify and design relevant, appropriate interventions, and 3) promote community agency and action. In order to meet these objectives, the study answered the following questions:

- What do youth in Canyon Corridor identify as the barriers to and assets of food security in their community?
- How do these contextual barriers and assets impact the relevance and effectiveness of proposed food security interventions in Canyon Corridor?
- How might youth participants get involved in or encourage wider community action around food security interventions?

Workshop Activities

Recruitment & Participant Description

Given the research objectives, the demographics of Canyon Corridor, and the needs of my community partners, I focused on youth and resettled refugee populations for this study. Recruitment for study participants occurred via posters and handouts at RCDC's Community Life Center, as well as outreach through apartment complex managers and community leaders identified by RCDC (Appendix B: Recruitment Materials). I capped enrollment to sixteen youth to allow for use of research methods best executed in small groups, and for a higher level of engagement with each participant. Working with smaller samples also helps manage restrictions of time, space, and resources.

The final participant group consisted of sixteen youth, aged twelve to eighteen years old. Fourteen of the participants were Burmese resettled refugees and two were Hispanic. A total of five boys and eleven girls participated. All participants spoke a language other than English at home, and most were not proficient in English—especially Burmese participants resettled within the last two to three years. While the recruitment targeted youth from a diversity of ethnic and cultural backgrounds, most responses came from the Burmese refugee community. This was in part due to the high level of self-coordination, motivation, and interest of this population, as well as their proximity to the Community Life Center in a neighboring apartment complex. It is important to remember that the specific results I present below are only valid for this particular population, and this particular sample.

Youth participants received a \$15 gift card for attending the first workshop, as well as two meals each day. Each youth participant completed a written assent

form and submitted a parental consent form before participating in the study (Appendix F: Consent and Assent Forms). All procedures for the recruitment, enrollment, and engagement of participants are detailed in an institutional review board-approved protocol (Appendix C: IRB Requirements).

Overview of Workshops

My research team and I facilitated activities over three five-hour Saturday workshops between October 1-November 5, 2011. The workshops included a number of interactive activities to capture youth perspectives about food security including concept mapping, sketch mapping, and intervention mapping (IM) (Appendix D: Workshop Guides).

Concept Mapping.

In the first workshop, I used concept mapping, a mixed method used to capture participant-generated ideas and the relationship between these ideas (Trochim & Linton, 1986). Concept mapping is one way to collect, analyze and interpret qualitative data—often about the lived experience of a target population—in a participatory format (Burke et al., 2005). I used a simplified concept mapping format to: 1) prepare focal questions, 2) brainstorm and generate responses to the focal questions, 3) sort responses 4) visually display the ideas and the relationships between them, 5) interpret the results through discussion and reflection, and 6) utilize these results by considering how they address the focal questions. In the first iteration, the focal questions centered on what youth saw as the causes and effects of food insecurity in the US, Canyon Corridor, and participants' households. In the second iteration, the focal questions centered on what youth defined as barriers and assets in community development and food security in Canyon Corridor. Prompts

were inspired by Tschakert's (2007) study that asked participants to share a wide range of issues that either contribute to worries or help them in their lives. This 'worry and help' framing can help capture affected populations' perspectives on contextual factors often not captured in traditional vulnerability assessments.

Sketch Mapping.

Building on these conceptual exercises about food security and the community context, participants then created sketch maps. Maps can serve as useful boundary objects since many food security issues are spatially bound or related. Sketch maps are generally a good method to stimulate discussion about community planning and decision-making, and can help provide the broad picture or context (Corbett, 2009; NOAA, 2009). Sketch maps are drawn freehand from memory, are not dependent on exact measurements or scaling, and can include any key community features (Corbett, 2009). For our study, the youth mapped places relevant to their community (home, school, church, parks) and food outlets—or anywhere they purchased or ate food. Next, they mapped the routes to get to each place, and the mode of transport. Finally, they used color or emoticons to map how they felt in or traveling to each place. Prompts included: “What is it like at this place?” “How are you treated at this place?” “Is it easy to get there?” “Do you feel safe getting there?” If participants created original map symbols, they were instructed to write what they meant in their workshop journal, back of the map, or to discuss it with a facilitator. The youth then reflected on what seemed to be good and bad aspects of the neighborhood environment in terms of accessing food.

Intervention Mapping.

In the third workshop, the youth performed an assessment of RCDC's proposed interventions based on four asset factors and eleven barrier factors.¹ identified in the concept and sketch mapping exercises. Participants considered each proposed strategy and responded to the prompt "Does this project deal with this problem/strength?" Next, they considered potential improvements for each of the interventions so that they would address more of the place-specific problems and build on community strengths.

Finally, the youth developed a draft action plan that considered next steps for proposed interventions including what needed to be done, who needed to be involved, by when, and with what resources. We held an open community forum for the research team and participants to share the results of the workshops with RCDC, family, friends, and interested community members. I also created a report of findings and recommendations for RCDC, and facilitated follow-up meetings for decision-makers and participants to continue this thread of intervention planning. My colleague administered a pre- and post- survey to capture potential changes in participants' sense of empowerment due to workshop activities.

I reviewed and coded the final concept maps, sketch maps, and workshop notes into category schemes. These codes were then manually sorted and aggregated for final analysis. While I tried to maintain as much of the voice of the participants

¹ Asset factors included: community, family, friends and church. Barrier factors included cost, jobs, health, convenience, distance/lack of transportation, taste, family troubles, not caring about healthy eating, not knowing about healthy eating and cooking, language, violence. Further explanation of these assets and barriers is provided under 'Findings.'

themselves, the final categorization was mine.

Findings

Barriers to Food Security

Throughout these activities, youth identified a diverse set of barriers to food security in their community including what I later categorized as asset-, attitude-, and ability-level factors. In terms of assets, participants reported that time and cost constraints (“people are busy,” “healthy food is expensive”), and the lack of knowledge of nutrition and healthy cooking practices (“people don’t know better,” “not knowing the right food to eat”) are all drivers of food insecurity (Table 7).

Table 7.

Participants self-categorized responses to ‘causes and effects’ concept mapping activity

| Causes | Effects |
|---|--------------------------------------|
| People are busy Good food is too far No transportation People like the taste of unhealthy food People don’t care what they eat People don’t know better Healthy food is expensive Bad food is everywhere | Obesity Hunger Health problems |

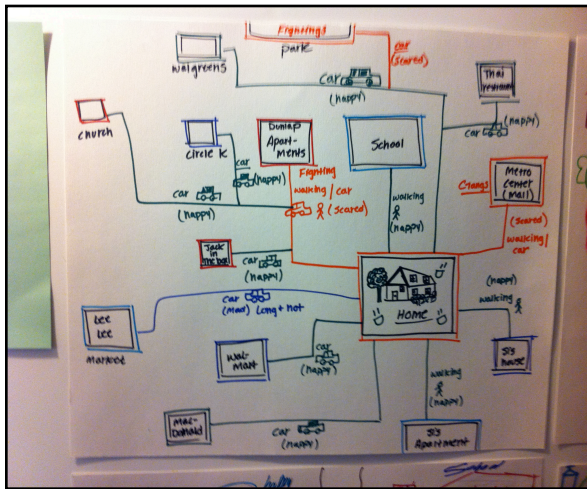
Table 8.

Participants self-categorized responses to ‘worries’ concept mapping activity

| Worries | |
|-----------------------------------|-----------------------------|
| School | Transportation |
| Violence (gangs, drugs, bullying) | Health |
| Family | Littering |
| Language (do not know English) | Home country (war in Burma) |
| Jobs (unemployment | Distractions |

The youth also discussed attitudes including taste preferences (“people like the taste of unhealthy food more”), convenience, and apathy (“not caring” what they

eat) (Table 7). In terms of ability factors, the youth discussed distance to quality food outlets (“good food is too far”). For most participants, their preferred ethnic food market was over ten miles away and one youth reported feeling “mad” on her sketch map because of the burden of getting to the market (Picture 9). The issue of distance is exacerbated by limited access to transportation since youth reported that most families don’t own their own car (Table 7 & 8).



Picture 9. Example sketch map.

Other ability-level factors included the ubiquity of unhealthy food outlets (“bad food is everywhere”), extreme climate (on sketch maps, youth reported that the weather was “too hot” to travel long distances, especially in the summer months), and safety concerns (youth said “violence” was a major worry, and during sketch mapping they reported fear of “fighting” and gang activity in some parks and shops, and fast-moving traffic). The participants also mentioned language barriers (“not able to speak English” and “not knowing what is going on”) and unemployment (both of the youth and their family members) as potential concerns that might also affect the state of food security and potential interventions (Table 8).

They also brought up other personal concerns such as stress from school, family troubles, health (including drug use), and the political and social conditions in participants' home countries as pressing issues (Table 8).

Assets of Food Security

Table 9.
Participants self-categorized responses to 'helps' concept mapping activity

| Helps | |
|--------------------------|-----------|
| Community/Helping Others | Family |
| Friends | Education |
| USA | Mentors |
| Medicine | Church |

When asked to reflect on the state of food security in their households and in Canyon Corridor more generally, all participants answered that they were food secure, which was contrary to RCDC and MTM's perception that residents of Canyon Corridor were vulnerable to food insecurity and other negative outcomes of a poor food environment. The youth identified several assets of food security including community ("helping each other" and "working together"), family, friends, church, education, social services (government, police, and resettlement agencies), and living in the US ("we have everything here") (Table 9). Activities such as riding a shared shuttle to the ethnic food market, carpooling, cooking communal meals, sharing resources, and peer translating all help this group be more food secure by addressing some of the key barrier factors—particularly asset-related barriers (Table 10).

Table 10.
Youth-reported influences of community assets on barrier factors

| <i>Barrier factors</i> | |
|------------------------|---|
| <i>Assets</i> | |
| Time | Cooking/shopping together saves time, and carpooling/using a shuttle reduces transportation time |
| Knowledge | Peer mentoring and teaching, and pursuing a formal education builds knowledge |
| Language | Peer-translating and participating in resettlement programs' language courses helps overcome language barriers |
| Personal wellness | Social support (family, friends, neighbors) can help relieve stress and tensions |
| Food cost | Cooking together, buying in bulk as groups, carpooling to reduce transportation cost, participating in public assistance programs all decrease the cost |
| <i>Attitudes</i> | |
| Convenience | Working together and sharing responsibilities allows people to accomplish tasks with less personal inconvenience |
| <i>Ability</i> | |
| Transportation | Carpooling or using a shuttle allows for easier transportation |

Implications for Intervention Planning

How do these barriers and assets affect RCDC's proposed interventions (Table 6)? The intervention assessment showed that the proposed interventions are not adequately addressing all identified strengths and barriers (Appendix G: Intervention Assessment Results). In particular, participants found that issues of personal wellness (may not "hire people from the community"), knowledge or awareness, convenience ("gardens take a long time to grow, and take a lot of work," and "depends on location and selection"), taste preferences ("usually not the food people like to eat"), language, and safety concerns ("gangs might cause trouble," and "businesses won't want to open because of gangs and losses") are not addressed across the four interventions. The participants also found that while interventions

such as community gardens or farmer's market could potentially build on existing social capital, interventions such as attracting a grocery store are removed from all identified community strengths.

In response, participants brainstormed important critiques and adaptations that could expand the scope, and ultimately the relevance and effectiveness of the activities. Youth suggested that RCDC: 1) locate gardens within apartment complexes to improve access and convenience, 2) develop a cooperative or community-led store format, 3) consult community members about safe placement and safety measures for all projects, and 4) incorporate translation and educational services to address language barriers and a lack of knowledge about healthy foods and cooking practices.

Participatory Research & Community Agency

Pre- and post-empowerment survey results show that the participants felt that they were able to enact change and make a difference in their community prior to this study, but that their sense of empowerment did increase over the span of the research (Schoon, in prep). Based on the activities following the workshops (i.e. developing an action plan, the community forum, follow-up meetings) and these empowerment survey results, it does appear that participants were empowered to apply the workshop findings to concrete action in their community. This is significant because not only did the workshops allow for a more integrated assessment of food security; the research process also acted as a catalyst for promoting community action.

Discussion

Importance of Multidimensional Assessments

The workshop activities enabled participants to report a holistic, integrated account of the drivers of food security and community development, especially when compared with RCDC’s and MTM’s problem perception and focus areas that were solely centered on the food environment (and to some extent, the local economy) (Table 11).

Table 11.
Barrier factors and participant- vs. community partner-identified focus areas

| <i>Barrier factors</i> | <i>Participant-identified focus areas</i> | <i>Community partner-identified focus areas</i> |
|----------------------------|---|---|
| <i>Assets</i> | | |
| Time | | |
| Knowledge | | |
| Language | | |
| Personal wellness | | |
| Employment/income | | |
| Food cost | | |
| <i>Attitudes</i> | | |
| Taste preferences | | |
| Convenience | | |
| Apathy | | |
| <i>Ability</i> | | |
| Transportation | | |
| Climate | | |
| Safety concerns | | |
| Distance | | |
| Ubiquity of unhealthy food | | |
| Built environment | | |
| Retail environment | | |
| Urban flight/degradation | | |

Surprisingly, youth identified the majority of the factors presented in the wider literature—save for some of the structural processes—and even introduced (or at least made more explicit) new factors such as personal wellness and language

constraints (Figure 3 & 4). While this level of integration and synthesis is rarely seen due to distinct disciplinary focuses and varying theoretical approaches to food security and diet-related disease, the participants' lived experiences surpass these boundaries and provide a rich picture of the multidimensionality of food security. What is more, understanding community concerns such as safety, transportation, and language barriers can inform our perception of food security not just as an outcome—a household as food secure or not—but as a multidimensional issue affecting the processes and contexts in which food is acquired and consumed. This is consistent with theories of livelihood or the development-food security nexus—that progress in one requires concomitant progress of the other (Maxwell & Swift, 1992; Conceição et al., 2011).

Also significant is the youth participants' account of community strengths. In the case of Canyon Corridor, social capital is a major contributor to food security, and arguably the missing link in prior food security assessments that defined a neighborhood based on the *absence* of key resources (i.e. food outlets). This research supports the idea that areas we define as having low food access should not be considered simply as spaces absent of certain capacity and resources, but rather spaces of differently configured resources. As demonstrated in the youth's discussion of assets of food security, necessary resources are met through reciprocity and community networks to ensure food access and provision. The tie between social capital and food security is substantiated in other studies, and is thought to be especially strong in resettled populations (Altschuler, Somkin & Adler, 2004; Martin, 2001; Martin et al., 2004; Harris, 2009). Thus, food security assessments and intervention planning ought to make a more concerted effort to not just take a

problem-based approach, but also an asset-based approach that targets these strengths.

Implications for Defining the Problem.

In this study, the “vulnerable” population (i.e. youth, resettled refugees, and residents in Canyon Corridor) defined the problem of food security differently than prior assessments or the perceptions of the community partners. Youth participants did not define their neighborhood as a “food desert” or their families as food insecure. Similarly, participants did not describe food-related issues as a central concern. According to the group, personal wellness issues like school demands, unemployment, language barriers, and troubles in the family or home country were more pressing.

Ultimately these observations suggest that while the youth think of themselves as relatively empowered, the external agents believe them to be vulnerable and at risk. This further highlights the danger of relying on specific types of information to define a problem or plan an intervention. In this particular case, RCDC and MTM defined food security vulnerability based on observable environmental factors such as the built and retail environment (i.e. what can be “mapped”). While participants reported that aspects of the environment (e.g. ubiquity of unhealthy foods, distance, transportation) do affect food-related outcomes in Canyon Corridor, these factors did not have as significant an effect as these organizations intuited. These types of assessments do not capture the community’s perspectives or potential (unanticipated) factors (e.g. personal wellness, community support) that may significantly affect food security. As a result, these

community-based organizations' programming may not be consistent with the community's priorities (Jacobsen, Pruitt-Chapin & Rugeley, 2009).

This situation might also reflect a different hierarchy of needs. Since participants were able to access adequate food, even if it was relatively resource and time intensive to do so, they prioritized more immediate needs (i.e. school demands, unemployment) over issues of low food access. Alternatively, the youth participants may be dealing with today's issues, while the community organizers are trying to be proactive and anticipatory. Whatever the rationale, it appears that there is a discrepancy between the perceived and the realized problem. Therefore, it is important to perform this type of engagement to determine the unique priorities of the targeted population and respond by addressing core concerns rather than following potentially misguided assessments and programming paths.

That said, some of the discrepancy between the perceived problem and the results of this study is due in part to the unique demographics of the participants. Since most of the youth were not born in the US, they noticed that just living in this country is a huge help because there are more resources available to them—including food. Thus, their perception of the food environment is quite positive, especially when compared to the situation in their home countries. Also, young people may not realize the full burden of accessing food since these duties fall primarily to adults in the family. This study was focused on youth and resettled refugees since their perspectives are often excluded in food security research. In future studies, it will be important to bring multiple perspectives (in terms of age, ethnicity, socio-economic position, etc.) together in order to move toward a more coherent, inclusive perspective of people potentially affected by food insecurity.

Importance of Multidimensional Interventions

Based on the wide-range of issues participants raised, RCDC and its partner organizations may need to take a more holistic approach to intervention planning and pursue multidimensional programming to address a multidimensional issue. RCDC’s proposed interventions focus on ability- and community-level interventions, activities that promote new food outlets or foodways, but do not actively address other dimensions or scales (Table 12).

Table 12.

Food security intervention matrix with example activities

| | Household/ individual-level | Community- level | Meso-level | Macro-level |
|-----------------|---|--|--|--|
| Ability | <i>e.g. promoting use of alternative transportation modes</i> | <i>e.g. new food outlets or foodways</i> | <i>e.g. city-wide public safety measures</i> | <i>e.g. federal incentives for new urban food retail development</i> |
| Asset | <i>e.g. nutrition education</i> | <i>e.g. cooperative kitchens/ facilities</i> | <i>e.g. city/ state food assistance programs</i> | <i>e.g. national food assistance programs</i> |
| Attitude | <i>e.g. peer teaching and learning</i> | <i>e.g. community center programming</i> | <i>e.g. awareness campaigns</i> | <i>e.g. regulations on food advertising</i> |

During the intervention assessment exercise youth reported that just introducing a grocery store or other food outlet is not necessarily going to address key issues or be the most appropriate action given concerns about safety, a lack of knowledge and awareness, personal or familial issues, and language constraints. The intervention assessment activity also revealed some fundamental constraints of these activities to address a broader range of factors simultaneously. For instance, when considering distance, limited transportation, and safety concerns, participants could not identify a place closer to home that was also safe enough for a grocery store or garden because “violence is everywhere!” This illustrates the role of meso- and

macro-level constraints on these more localized interventions. While there is no resolution to this tension, community-based organizations need to acknowledge these constraints in program design and mobilize action on many fronts.

For instance, in this case, RCDC is active in working with City of Phoenix offices to champion the cause of food security and attract more resources to the Canyon Corridor neighborhood, and also participated in a Weed and Seed program from 2006 to 2011. Weed and Seed is a multiagency approach to law enforcement, crime prevention, and community revitalization that involves a two-pronged approach: law enforcement agencies and prosecutors cooperate in “weeding out” crime and drug abuse, and public agencies and community-based organizations collaborate to “seed” human services (CCCC, 2011). Now that the CCCC’s Weed and Seed grant has expired, RCDC and its partners will continue to hold monthly meetings to bring together a diverse group of community development organizations, neighborhood associations, business leaders, law enforcement, City of Phoenix representatives, apartment managers and faith based organizations to continue these efforts.

RCDC’s commitment to the Weed and Seed program is one example of an “indirect” approach in which interventions address community-wide issues that affect food security rather than focusing on targeted food interventions. In many cases, community development concerns need to be addressed alongside food security measures. This may be possible through “bundling” intervention efforts across different scales and actors and considering efforts that are not directly tied to food, but rather affect other assets or abilities (e.g. housing, employment, education). This study also suggests the need to take a more systematic approach to identify

intervention points, especially where community members are empowered to make change given the varying barriers and assets (Meadows, 1997). For instance, each identified barrier factor (e.g. knowledge, personal wellness, employment, taste preferences, transportation, safety concerns, built environment) represents a potential intervention point (Table 11). With more participatory assessments, community groups can identify key challenges to target (e.g. personal wellness or safety in the case of Canyon Corridor), and mobilize community assets to make improvements.

Marrying community development efforts with a more creative and integrated approach to food security may amount to lower food insecurity and greater quality of life in general. Participants were able to start brainstorming how RCDC could adapt existing proposals to encapsulate more of these issues during the intervention assessment. It will be important to revisit these ideas and further develop appropriate, relevant, and viable interventions.

Conclusion

This study was a response to food security assessments and intervention efforts that: 1) do not adequately address multiple factors or, 2) connect these factors with opportunities for community agency. It documented a case of stakeholder engagement—community workshops with youth—that allowed for a more integrated assessment of food security while also promoting relevant interventions and community action. My research demonstrates that by taking a CBPR approach, food security assessments and intervention planning processes are able to identify: 1) potential discrepancies between the perceived and realized problem, 2) a wide range of physical, social, cultural, economic, and psychological factors that influence food

security, 3) more multi-dimensional approaches to interventions and, 4) the interest and capacity of stakeholders to develop solutions.

This study also underscores the importance of the community context and social capital over more simplistic measures of food security outcomes, and supports the re-prioritization of risk factors to include more of an integrated framing of the issue rather than focusing solely on the food environment. With a more contextual, integrated assessment, future urban food security efforts may identify indirect interventions (i.e. not necessarily food-based) that have great potential to improve food security and overall community development.

Furthermore, taking a CBPR approach and using interactive methods such as sketch and concept mapping allowed me to capture the perspectives of youth and participants whose first language is not English—a population that otherwise would not have been “heard.” Expanding these approaches and methods is imperative to ensure future food security efforts include the voices of those we are targeting or those we presume to be vulnerable.

Chapter 4

OUTCOMES & RECOMMENDATIONS

Outcomes

By answering the questions what do youth in Canyon Corridor identify as the barriers to and assets of food security and how do these barriers and assets impact the relevance and effectiveness of proposed food security interventions in Canyon Corridor, I provided a meaningful assessment for RCDC and other groups working in the neighborhood. In addition, this study also contributes to food security research in that it offers a model for both TSR and CBPR to engage youth and identify place- and people-based factors that affect food security and overall community development.

Community Outcomes

My research partnership with RCDC culminated in a set of recommendations that will help inform future food security interventions in Canyon Corridor. Deliverables for RCDC included display materials that provide an overview of findings from the various activities, a comprehensive final report (see Appendix E: RCDC Report), and a working list of potential strategies and resources. The report and working list are valuable decision-support tools. RCDC and MTM are already incorporating the results of our research into an action plan for how to address health disparities in the community. The report and display materials can also be used as potential evidence and justification for future grant and project proposals. RCDC has used the display materials in meetings with policymakers—including a site visit from the Congress of Cities—to express the need for healthier food options

in the neighborhood.

The workshops and my meetings with RCDC also demonstrated the value of including youth perspectives. My work connected decision-makers with youth and modeled this interaction. In subsequent meetings, RCDC has made a point to invite youth. Hopefully this type of inclusion and collaboration will continue.

Research Outcomes

This thesis utilizes innovative community engagement methods, and contributes a more multidimensional approach to assessing problems like food security. As described in Chapter 2, I offer important lessons learned for designing methods that are effective with this unique population—both youth, and resettled refugees. Perhaps most importantly, this research brings important but implicit concerns related to food security to the foreground. Currently, food security assessments reduce the issues to cold statistics and spatial analyses (Guthman, 2011). However, food security is more psychological, complex, and difficult to quantify. By introducing contextual, experiential factors I hope this study humanizes the issues and encourages more integrated, potentially “indirect” efforts for improvement.

Next Steps for RCDC

The next step for RCDC is to design and implement food security interventions. A good starting point is to organize a steering committee that will help coordinate these efforts and provide momentum for action. The Canyon Corridor Neighborhood Alliance’s (CCNA) Revitalization Committee could potentially serve this role. This group can hopefully recruit a diverse set of participants, including young people. RCDC, CCNA, and MTM can continue to clarify the community goals, potential strategies to reach these goals, and create actionable plans for change.

Some of these efforts may depend on policy changes. RCDC should continue its work with the City of Phoenix and political offices to encourage them to become champions for the cause of promoting more just and healthy food environments.

I encourage RCDC and its community partners to pursue a longer-term relationship with ASU's School of Sustainability (SOS) through internships and/or graduate student researchers. My work is documented on the Global Institute of Sustainability's SustainabilityConnect site, and all files associated with this study will be shared either with RCDC or my academic advisor so they can aid future study. I have also mentored undergraduate and graduate students in SOS interested in food system sustainability with the hope that they will dedicate future research to this important topic.

Next Steps for Research

It is my hope that future studies will expand this type of integrated, people- and place-based food security research. Research might consider ways to include different populations simultaneously thereby providing multiple perspectives, or to scale up this type of assessment while maintaining sensitivity to the community context. There is also opportunity to explore other methods to elicit contextual contributors to food insecurity—in particular, using more criteria-based assessments (e.g. self reporting through logs, journals). This research is just one step towards successfully “deconstructing” and then “reconstructing” community food security (Maxwell, 1996). Future efforts will need to continue to develop integrated assessment approaches and strategically tie these assessments with localized action.

Future studies should concentrate on the sustainability assessment of proposed interventions, and strategy building, implementation, and evaluation, all of

which are important next steps of this research. RCDC leadership is concerned that some of interventions (e.g. shuttle services or CSAs) will not promote economic development of the neighborhood, and instead continue the ‘leakage’ of money outside of Canyon Corridor. It will be important to develop a set of criteria that can help capture potential trade-offs between these interventions, and help prioritize efforts based on their overall affect on the community. When RCDC and its partners are able to pilot a program, it will set the stage for more complete intervention mapping that can monitor progress and evaluate the effectiveness of the given intervention.

Future studies should also improve upon the methodology presented here to reach a higher level of co-production. Research should also integrate more “push back” and real-time contrast of participants’ perspectives with expert review and best practices in order to develop an assessment and action plan that is both participatory and strategic.

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APPENDIX A
COLLABORATION CONSENT

Collaboration Consent

March 1, 2012

Sections of “A Transformational Sustainability Approach to Community Food Security” were co-written by my colleague, Briar Schoon due to the collaborative and cumulative nature of our research. Any analysis Briar Schoon conducted independently is cited appropriately. Briar Schoon grants her permission that this chapter be included in this thesis.

APPENDIX B
RECRUITMENT MATERIALS

Our names are Briar Schoon and Katie Talbot and we are graduate students under the direction of Dr. Hallie Eakin in the School of Sustainability at Arizona State University. **We are conducting a research study to understand the factors that influence food access for Canyon Corridor youth.**

We are recruiting individuals between the ages of 14 and 16 to participate in this study. Participants will be invited to participate in **three Saturday workshops** [Oct. 1st, Oct. 22nd, Nov. 5th] that will be held at Rehoboth Community Life Center.

Breakfast and lunch will be provided at each workshop. Participants will also be asked to conduct specific activities independently. Participants in the workshops will map issues related to access, discuss short films about urban food access, and use photographs to document what influences how/what/where/when/why they eat and to envision how they would like their community to relate to food in the future. This study will take approximately 15-20 hours total over a period of 2-3 months.

Participants in this study will be compensated with a \$15 Visa gift card.

Parental permission is required.

Participation in this study is voluntary. **Please see XXX or XXX at Rehoboth CLC to sign up.** If you have any questions concerning the research study, please call Briar at (XXX) XXX-XXXX or Katie at (XXX) XXX-XXXX. You may also email us at XXX@asu.edu, or XXX@asu.edu. If you are a Spanish speaker, please direct your questions to Katie.

Nuestros nombres son Briar Schoon y Katie Talbot y somos estudiantes de posgrado bajo la dirección de la Dra. Hallie Eakin en la School of Sustainability (Escuela de Sostenibilidad) en Arizona State University. **Estamos llevando a cabo un estudio de investigación para comprender los factores que influyen en el acceso de alimentos de los jóvenes de Canyon Corridor.**

Estamos buscando a personas entre 14 y 16 años de edad para que participen en este estudio. Se invitará a los participantes a participar en **tres talleres de sábado [1/10/11, 22/10/11 & 5/11/11]** que se llevarán a cabo en Rehoboth Centro Comunitario. Se proporcionará desayuno y almuerzo en cada taller. A los participantes se les pedirá también llevar a cabo actividades específicas independientemente. Los participantes en los talleres harán mapas de asuntos relacionados con el acceso, discutirán cortometrajes sobre acceso a alimentos urbanos, y usarán fotografías para documentar las influencias de cómo/qué/a dónde/cuándo/por qué comen y cómo se imaginan que les gustaría que su comunidad se relacionara con la alimentación en el futuro. Este estudio tomará aproximadamente 15-20 horas en total durante un período de 2-3 meses. **Los participantes en este estudio recibirán como compensación una tarjeta de regalo Visa de \$15.** Se requiere permiso de los padres.

La participación en este estudio es voluntaria. **Por favor vea XXX o XXX para firmar.** Si tiene cualquier pregunta sobre este estudio de investigación, por favor llame a

Briar al (XXX) XXX-XXXX ó a Katie al (XXX) XXX-XXXX. Usted también nos puede enviar un correo electrónico a XXX@asu.edu o XXX@asu.edu. Si usted habla español, por favor dirija sus preguntas a Katie.

APPENDIX C
INSTITUTIONAL REVIEW BOARD REQUIREMENTS

The interview and observation portion of this study was granted exempt status by the Arizona State University Institutional Review Board for conducting research involving human subjects. Practices followed protect participants and include voluntary participation, informed consent via agreement to letter of project overview and terms of participation, and confidentiality of any quoted participant. ASU IRB granted Exempt Status for this portion of the study on May 31, 2011 (IRB Protocol # 1105006466).



Office of Research Integrity and Assurance

To: Hallie Eakin
GLOS Build

From: Mark Roosa, Chair *MR*
Soc Beh IRB

Date: 05/31/2011

Committee Action: Exemption Granted

IRB Action Date: 05/31/2011

IRB Protocol #: 1105006466

Study Title: Urban food access interventions in a community context: A case study of Maryvale, Phoenix, AZ

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(2).

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.

The workshop portion of this study was granted expedited approval by the Arizona State University Institutional Review Board for conducting research involving human subjects. Practices followed protect participants and include voluntary participation, informed consent via agreement to letter of project overview and terms of participation, and confidentiality of any quoted participant. ASU IRB granted Expedited Approval for this portion of the study on July 7, 2011 (IRB Protocol # 1106006541).



Office of Research Integrity and Assurance

| | |
|--------------------------|---|
| To: | Hallie Eakin GIOS Build |
| From: | Mark Roosa, Chair Soc Beh IRB |
| Date: | 07/08/2011 |
| Committee Action: | Expedited Approval |
| Approval Date: | 07/08/2011 |
| Review Type: | Expedited F7 |
| IRB Protocol #: | 1106006541 |
| Study Title: | Youth Perspectives & Future Visions for Urban Food Environments: A Case Study of Maryvale, Phoenix, Arizona |
| Expiration Date: | 07/07/2012 |

The above-referenced protocol was approved following expedited review by the Institutional Review Board.

It is the Principal Investigator's responsibility to obtain review and continued approval before the expiration date. You may not continue any research activity beyond the expiration date without approval by the Institutional Review Board.

Adverse Reactions: If any untoward incidents or severe reactions should develop as a result of this study, you are required to notify the Soc Beh IRB immediately. If necessary a member of the IRB will be assigned to look into the matter. If the problem is serious, approval may be withdrawn pending IRB review.

Amendments: If you wish to change any aspect of this study, such as the procedures, the consent forms, or the investigators, please communicate your requested changes to the Soc Beh IRB. The new procedure is not to be initiated until the IRB approval has been given.

Please retain a copy of this letter with your approved protocol.

APPENDIX D

WORKSHOP GUIDES

Workshop 1: Introduction to Understanding Local Food Environment

These guides were not used verbatim and in many cases facilitators improvised. They are simply shared here to provide an overview of the approach and nature of our interaction with participants.

Arrival

We introduce ourselves at the door, and collect completed forms or have parents and students sign the consent forms. Have everyone fill out nametags. Administer pre-workshop empowerment survey.

Breakfast

Students can go back and start breakfast as soon as they arrive and have signed in.

Icebreaker

After everyone has arrived and as students finish breakfast, have participants sit in a large circle and introduce himself or herself, and answer “What is your favorite meal?”

Welcome

Good morning, and thank you so much for joining us! Did everyone get something to eat? Does everyone have a journal and pen?

We have a lot of fun things planned today! We will do a few different activities, and talk a lot together about the issues you see in this neighborhood. If you have questions and any time, please ask. If you don’t understand something Briar or I, or some one else in the group says, please ask. Basically, if you need anything at anytime, please ask—we want to make sure this is a comfortable and fun time!

There will be times when we ask you to write a bit in your journal, or talk about something as a group. Briar and I will collect and read the journals, so if you don’t feel comfortable sharing something, you don’t have to at all.

Are there any questions before we begin?

Intro to Food Security/Access

Briar and I are students at ASU, and we study food. We are most interested in studying issues related to *food security*

Can anyone think of what we mean by food security? What images come to mind?
[Listen to any ideas]

Basically, what we mean by food security is that people have good food choices available (healthy, high-quality food within a reasonable distance), and that they can get there (through different transportation options, and safely). What we want is for everyone, everywhere to be able to access and afford safe, healthy food that also meets their cultural needs. *[Have this definition written up on the flip chart.]*

In general do you think this is the case right now—does everyone everywhere have good food access?

[See if anyone has any ideas]

All over the US, there are families that don't have good food security. Some reports say that almost 1 in 4 children in Arizona don't have this kind of security, and it may be even higher because it is so hard to measure.

People describe areas where there simply are no grocery stores or places to buy fresh food as “food deserts.” People also think that places with a lot of fast food restaurants and convenience stores are a problem, and call these “food swamps.”

[Have a few photos of “food desert” and “food swamp” environments and these definitions written on the flip chart.]

A lot of people have researched why food deserts and swamps exist. Let's think about some the causes of bad food access together. *Have a cause and effect diagram prepared on the flip charts. In the center chart have Food Desert & Food Swamp sheet. On the right chart, have “Effects” written at the top. On the left chart, have “Causes” written at the top. Have youth pull out the stickies from the inside of their journals, and brainstorm what they think might cause food deserts/ swamps. Once they are done filling out their stickies, ask them to come up and place them where they think they fit on the chart. Then have them sort into clusters. Ask them: Should we add new categories or causes? Should we add any other effects? Do you disagree with any of them?*

Intro to the Project

So we have talked so far about food security, and tried to understand what it is, and what causes bad food security. What we want to do together today and over the next two meetings is explore what food access means to you, and for this neighborhood, Canyon Corridor.

Our project will have three parts. We will first figure out where we are now, then create an idea of where we want to be, and finally, create a plan for how to get from where we are to where we want to be. *[Use the flip chart to illustrate these three stages and the relationship between them.]*

Reflection

So we have talked about food access in general, but now we want to apply it to your neighborhood. Please take out your journals, and write short answers to these questions in preparation for the next activity:

- Where do you and your family get your food?
- Are you able to prepare the meals you want at your home? Why or why not?
- Would you say that you live in a ‘food desert’? Would you say that you live in a ‘food swamp’? Why or why not?
- Would you say that you and your family have good food access or bad food access? Why or why not?
- If you think your family and/or community has food security problems, what do you think might be some of the causes of the problems?

[Have these questions written on a flip chart.]

Stretch and Bathroom Break

Intro to Mapping/Community

[Hand out scaled map of the neighborhood]

What we are going to do next is create maps of our neighborhood that can help us better understand food access. Please look at the map in front of you. Can you find where we are? Can you find where you live? Can you find where you usually shop? What other places are meaningful to you?

Can everyone read the map so far? Does anyone have any questions? Go ahead and mark your home and your favorite stores. Are there places/things you think we need to consider that are off the map? *[As youth work, notice how they define 'community' to use in later sessions].*

Lunch

Introduce theme (Asian)

Guiding questions during meal

- Do you normally consume this type of food?
- Do you like this food? Why or why not?
- Can you find similar food in this neighborhood?
- Does your family have any particular traditions when it comes to food?

Introduction to Photovoice (Briar)

Workshop 2 Guide: Mapping & Photovoice

Sign-in & Breakfast

Icebreaker question: Say your name as a reminder for everyone, and answer 'What is the best memory you have of a meal or a time around the dinner table?'

We'll be doing a number of things today:

- 1) Brainstorming and organizing your ideas about the community
 - 2) Mapping your community, especially things about food and food security
 - 3) Talking about the photos you all took the last few weeks, and working with them to create a poster
 - 4) Looking ahead to what you would like to see in your community in the future
- Like last time, feel free to ask us or a friend if you have any questions.

Worry & Help Mapping

Today, we want to think about how you feel about your community, both what worries you and what you think are good things about the community, or things that help you deal with your worries.

Can everyone take out their journals and on a new page list anything that worries you during the week. These can be big and small worries. *[May need to ask someone to provide an example]*

Once you are done, write these worries in order of how often you feel them on the worksheet. After that, rate its impact on your life on a scale from 1-10 on the far right column of the worksheet. 1 means that it does not have that much impact on you and your normal day or week, 5 being that it has an impact that changes how you go about your day or week, and 10 being huge, that it has a life changing impact.

I want you to do the same thing with the good things or helps in your community. List anything you can think of on a new page in your journal. *[Again, may need examples]* Then rank them based on how often you notice them or feel them, and then rate them based on impact. 1 means that it doesn't help that much, 5 that it does help you, and 10 that you need that help or good thing to live a happy life.

Now, write all your ideas for worries on red stickies (one idea per stickie) and write all your ideas for good things on green stickies (one idea per stickie). Once you are done, come up front and put them on the board.

Once everyone is done and posted their ideas: how can you sort these ideas into groups? Are there any similarities you see? As a team, sort all of the ideas into however many groups make sense to you. Once they have them sorted: what would you name each group?

Break

Sketch Mapping

Last time we spent a few minutes looking at a map of your neighborhood, and thinking about places that were important to you. You also wrote in your journal about where you get food and have now gone out and taken some pictures, too! One interesting thing is that food is all around us! It isn't just about your house or your favorite grocery store, but there are a lot of places you might get food. Raise your hand if you eat at school? If you want to eat out, where do you go (with family, with friends)? Do you ever stop anywhere for a snack? We want to spend the next hour or so mapping our communities including the places we get food. One thing I'm also going to ask you is to talk about your feelings at different places. This is important because places can make us feel different things. Have you ever been to a park or a shop that was dirty or had people in them that made you feel uncomfortable? Have you ever been to a place that made you feel happy and at home? We're going to try to think hard about what feelings we get in the places we map, and use symbols to map those feelings.

We're going to start by having you create your own map. It doesn't have to be perfect with all the right sizes or distances between the different things you put on it, it just needs to be a rough map of where places in your community are.

[Show a rough example of my neighborhood for each step on one of the flip charts]

First, I want you to map places relevant to community (same as you did last time: home, school, church, parks, stores), and then think specifically about where you get your food and make sure those places are also mapped.

Next, map the routes to get there (and mark how you get there whether it be car, walk, bike, bus). Ask yourself, is it easy to get there? Do you feel safe getting there? Map this emotion using emoticons or color. If you make new symbols, make sure you write what they mean in your journal or on the back of the map.

What is it like at this place? Map an emotion about your experience at this place. How does it make you feel to be there? How are you treated? Please map this emotion using emoticons or color.

Are the stores/places you mapped close to home (could you walk to them if you needed to)? If not, what stores are closer to your home? Please map them. Why don't you go there? Please map your emotions about this place using emoticons or color.

Based on what you mapped, think of a few things that seem to be good and bad about your neighborhood for accessing food, and write them in your journal.

Lunch

Discussion of Photos (Briar)

Photo Themes & Collage (Briar)

Intro to Visioning & assignment instructions (Briar)

Post-workshop survey & reminders about upcoming dates!

Workshop 3: Visioning & Strategy Building

Breakfast

Visioning (Briar)

Lunch

Strategy Brainstorm

Identify Strategies

You have worked with Briar to think about visions for the future, and specific things or themes you want to see in your community. Next, we are going to think about how we can work together to see if these ideas deal with the problems we talked about the last few weeks, and then how we can make these things happen.

First, let's think of a few ideas or projects from the visions that we want to work on now. Which are most exciting or important? Which do you feel you could help create?

Second, there are people and groups already working on some of these issues of food access, like the Community Life Center we are in right now! Some of the projects they want to work on are:

- 1) Community gardens, like the one right outside
- 2) A community market. This would be an outdoor market where farmers bring fresh vegetables and fruit and other food things to one place a few days a few. Has only ever been to a market like this?
- 3) Last thing, is that they are interested in "mobile" or traveling markets, so stores can sell food from a large truck or trailer that can travel around neighborhoods, and go to people rather than have people go to it!

Consider Context

One thing that is important when thinking about solutions or these projects, is if they deal with the right problem and right strengths in the first place. So let's try to remember all of the things we've done together that have tried to understand the problem and strengths of your neighborhood: cause & effect, worries & helps, maps, and photos.

Some of the causes of poor food access and worries you talked about were: taste, convenience, distance, not caring, not knowing, cost, family troubles, bullying/gangs/violence, transportation, language, jobs, health, and school

Some of the good things or helps you talked about were: community (government, police, working together), church, family, friends, education.

We want to know whether the ideas you just talked about help solve some of these problems, or will still work given that these problems exist.

When thinking of your visions or project ideas, it also makes sense that they would include some of the good things so you work with the strengths of your neighborhood.

[Have a sheet off the flip chart with the Idea/Yes/No/Improvements and have all of these problems on red stickies and helps on green stickies. Prepare 6 sets. Do the next activity as one large group].

What I want you to do is write the project idea on the top of the page. Next, ask yourselves "Does this idea deal with this problem/help?" and organize the stickies into a "Yes" and "No" side of the paper. *[Have youth arrange the stickies and give a brief rationale for why. Repeat for all four strategies.]*

Propose Solutions

Now that you are done putting all of the stickies on the sheet, let's think about how

we can change the idea or project so it deals with some of the problems and helps on the “No” side of the sheet.

First, does every idea need to address every problem or include every help? How could you change the vision to make sure it deals with some of the problems on the “No” side? Can you think of small changes to make it better? Does this idea need to be part of a bigger project? Talk as a group, and if you can think of any changes, write your ideas on the bottom of the page. *[Repeat the same process for all other ideas/projects.]*

Break

Action Plan

Now that we know what ideas/projects we want to see, and have thought about how they can work best in this neighborhood, let’s think about making an action plan. We want to make an action plan, a report, to communicate what you have decided together, and see who might help you, and what things you need to make the change.

What we are going to do next is make an outline of an action plan as a group. *[If they are unresponsive to questions posed to the group, they can work in pairs/small groups and write ideas in their journals and then share them out.]*

First, let’s think about what will be done, and who will do it. *[Brainstorm and write up on the first flip chart]*

Next, let’s think about the steps we would need to take to do each thing, and when, where, and who will do that step.

Last thing, let’s brainstorm some of the resources we would need to make this happen. These can include time, knowledge/skills, materials, and money. Try to be specific.

Great! Making an action plan can take a lot of time--there are still a lot of things we don’t know, but this is a good start! This is also important because now we can share this plan with our families and other people in the community and see if they agree, and where they can help.

Wrap-up

-Discuss final event--get a rough sense of who can come, and who they have invited, tell them that they can hopefully help answer questions and talk about these things with people as they look through the posters and explanations of the findings.

-Post-workshop empowerment survey

APPENDIX E
RCDC REPORT

YOUTH PERSPECTIVES AND FUTURE VISIONS OF FOOD SECURITY IN CANYON CORRIDOR



December, 2011

Prepared by:
Briar Schoon
Katie Talbot
*School of Sustainability
Arizona State University*

In Partnership with:
Rehoboth Community Life Center

INTRODUCTION

Food security describes whether people have good, healthy food choices **available**, whether they can **access** or get to these foods, and whether they can **afford** the food they need.

Our physical and social environments are thought to affect our food security and ultimately diet-related health outcomes.^{1,2,3,4} Unfortunately many urban food environments do not promote healthy lifestyles. “Food desert” and “food swamp” metaphors capture the dual challenge of both a lack of healthy food options and the prevalence of fast food or junk food.⁵ Poor food environments affect socially and economically marginalized communities most.^{6,7} Food insecurity, obesity, diet-related diseases, and social disenfranchisement are all symptoms of an unsustainable food system in which access to healthy food opportunities is limited.^{8,9,10}

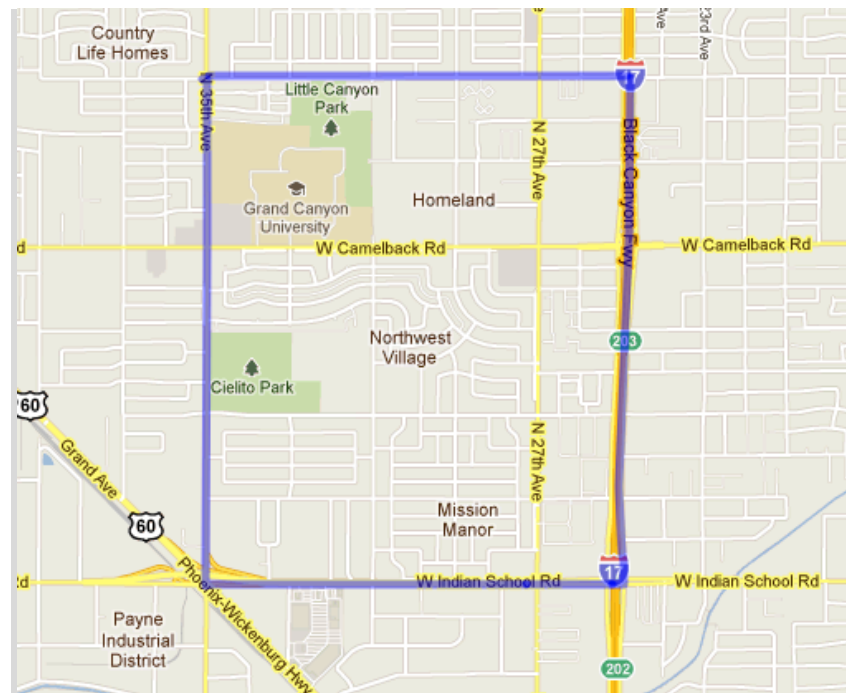
Sixteen teenagers participated in three Saturday workshops during Fall 2011 to explore food security and its significance in the Canyon Corridor neighborhood in west Phoenix, AZ. We, Briar Schoon and Katie Talbot, are graduate students in Arizona State University’s School of Sustainability, and organized these workshops with the support of Rehoboth Community Development Corporation (RCDC). The purpose of the workshops was to explore what food security means to teens in this neighborhood, and better understand the challenges and strengths that hurt or help food security. From there, the group created ideas of what they would like to see in the future, and how the community could help improve food security.

These workshops were an effort to provide a more neighborhood-specific assessment of food security that provides a snapshot of people’s actual experiences, and different perspectives than a traditional, physical assessment of available food stores. This understanding of community food security can

help inform strategies that are relevant, effective, and promote community participation in addressing food issues. By focusing on youth, we were also able to include the voices of our 'future generation' and those arguably most affected by poor food environments as evidenced by alarmingly high rates of childhood obesity.¹¹

FOOD SECURITY IN CANYON CORRIDOR

We worked with Rehoboth Community Development Corporation (RCDC), an organization committed to community development and economic revitalization of Canyon Corridor. Our work was based out of RCDC's Community Life Center near Camelback Road and 29th Avenue. The majority of the participants lived within walking distance of the Center.

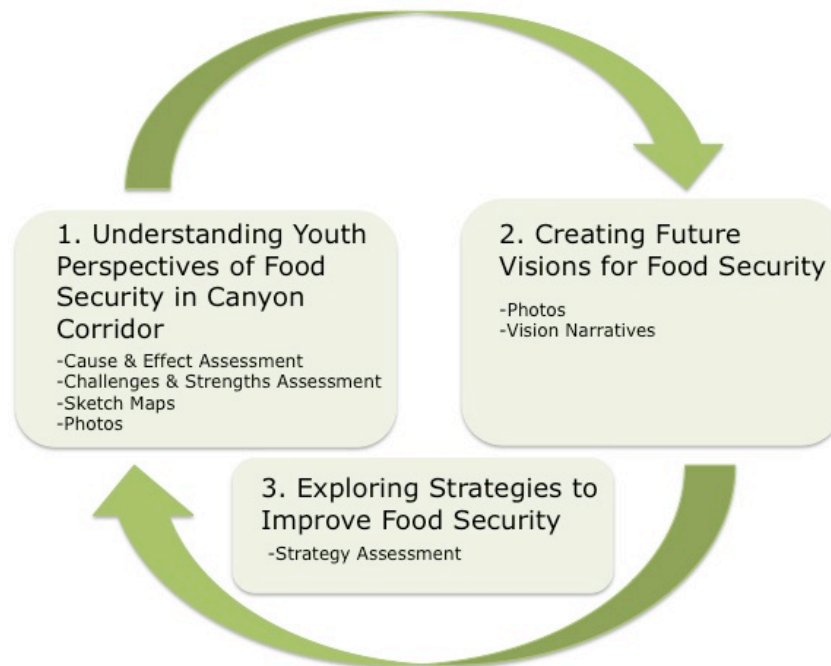


Canyon Corridor is a very diverse, but struggling neighborhood. According to RCDC leadership, the community has historically had high rates of crime. The average household income is below the national poverty level, housing options are limited, and there are insufficient amenities (including quality food stores). RCDC describes challenges at Canyon Corridor such as lack of retail and high rates of abandoned homes as the result of "lack of community and economic development."

Thus, Canyon Corridor is home to many of the contextual factors that are thought to affect food security (e.g. crime, poverty, social marginalization). A number of studies suggest this is the case as well. ASU's Herberger Institute and Stardust Center conducted planning charrettes in Spring 2010 to explore issues in the built environment that affect physical activity and healthy eating, and identified concerns about walkability and safety.¹² ASU's Local Food Working Group also facilitated a community food assessment in Summer 2011. Trained community members used the Nutritional Environment Measures Surveys (NEMS) to assess food access and the quality and affordability of the available food outlets.¹³ The assessment found that Canyon Corridor had low availability of healthy food options. Overall, these assessments suggest that Canyon Corridor is vulnerable to food insecurity. Our research seeks to extend these assessments past the physical environment to better understand how people experience the food environment, and how community strengths can be harnessed to start to address food security issues.

OVERVIEW OF WORKSHOPS

We facilitated activities over three five-hour Saturday workshops between October 1-November 5, 2011. These workshops were designed to learn what community youth see as the problems and positive assets of the food environment in Canyon Corridor, what they see as the ideal future for their food system, and how their visions can be adapted to the Canyon Corridor context.



An overview of the workshops and the different activities at each stage

We worked with sixteen youth throughout the workshops, ages 12-18 years old. Fourteen of the participants were resettled refugees residing in the Serrano apartment complex and two were Hispanic youth from the community. Recruitment occurred via posters and handouts at the Community Life Center, as well as outreach through apartment complex managers and identified community leaders. While our participants are not a representative sample of the youth population in Canyon Corridor, our study does provide insight into a specific population (i.e. refugee youth) with distinct food needs, as well as a framework for incorporating participatory methods and youth into the discussion of food in Canyon Corridor.



Various Workshop Activities: Strategy Assessment, Visioning Narratives, Photovoice

UNDERSTANDING YOUTH PERSPECTIVES OF FOOD SECURITY

We began with interactive sessions in which the group brainstormed why some people are not food secure, or why there might be food deserts and food swamps in some places. Participants also brainstormed the effects of poor food security. After they brainstormed ideas, they worked together to group the ideas into categories. Youth finished by reflecting on their own household's food security.

At the second workshop, the group thought about community challenges and strengths and factors that might help or hurt food security, even if indirectly. They brainstormed what worries them, and what helps them deal with their worries. Again, they worked together to group their ideas into categories.

To explore how some of these challenges and strengths in the community might affect food security, the youth created individual sketch maps. They mapped:

- Important places in their community (home, school, church, parks)
- Places they get food
- Routes to get there (whether it be by car, walking, bike, or bus)
- Feelings at places and along routes using different faces or colors

For instance they considered whether it is easy to get there, if they feel safe getting there, how they feel in each place, and how they are treated in each place.

Another way to capture youth perspectives of food security and their community is through photographs, which is a method called photovoice. During the first workshop, each youth received a digital camera and was asked to take photographs of things that influenced how/where/why they ate the food they did and other things they felt affected their food security. They were encouraged to think about their mapping exercises and discussions during workshops when taking pictures. The youth were invited to include both good and bad aspects of their community, as long as they were meaningful to the youth and could be related to food security in discussion.

During the second workshop, the youth chose some of their pictures to share with the group. They were asked to describe the picture, explain why they took the photograph, discuss its relevance to food security, and try to think about potential opportunities the picture posed to advance food security. After the discussion, the youth organized the photographs into different categories and assigned each photo a color-coded sticker depending on whether the picture portrayed something that helped or hurt the community's food security (i.e. red- bad for food security, yellow- doesn't hurt or help food security, and green- helps food security).

CREATING FUTURE VISIONS FOR FOOD SECURITY

After exploring some of the more contextual factors to food security in Canyon Corridor and having a better understanding of how, where, and why the youth accessed food in their community, the youth were asked to think about what they would *like* to see for food and how they would *like* to access food in their community in the future. Specifically they were asked to keep in mind the photos they had classified as bad for food access and think of ways to help address these problems, and to think of things that would help their community's food security. They were encouraged to not let the present, or how/why/where they currently accessed food, influence what they wanted to see in the future, even if they felt their ideas were unrealistic. Thinking about the future in this way is called visioning.

To facilitate the visioning process, the youth were first asked to be creative and try using their cameras to portray their future visions in a picture. During the final workshop, the youth were shown a slideshow of the visioning photos, and each youth described their photograph and how it relayed what they would like to see for food in their community. Afterwards, the youth were encouraged to share any additional visions they had that were hard to show in photos or not yet discussed.

Once everyone had shared their visioning ideas, the youth arranged the visions into different categories and gave them each a title. Next, the youth went through each category and determined whether or not it helped advance food security in the community by looking specifically at the criteria: healthy, fresh, affordable, and culturally appropriate. Not each category advanced all four criteria, but the youth determined that as a

whole, all categories combined into one group vision, food security was advanced. Afterwards, the youth broke into two groups to write a descriptive narrative of food in Canyon Corridor in ten years that incorporated some of their visions.

EXPLORING STRATEGIES TO IMPROVE FOOD SECURITY

After the visioning activities, the youth identified four main strategies to help improve food security in Canyon Corridor: Gardens, Farmer’s Markets, Mobile Markets, and More Grocery Stores. These are very similar to existing and proposed projects from RCDC and other community groups. We wanted to explore whether these strategies would work well in Canyon Corridor—that is, that they would help address major challenges, and take advantage of the community’s strengths. So the group considered the challenges and strengths they identified in earlier activities, and decided whether the projects dealt with each challenge and included each strength. Next, they brainstormed how they could improve the projects to make sure they deal with these important community factors.

FINDINGS

YOUTH PERSPECTIVES ON HOUSEHOLD FOOD SECURITY

Causes & Effects

Youth brainstormed the following causes and effects of food insecurity:

| | |
|---|--|
| <p>Causes</p> <ul style="list-style-type: none"> • People are busy • Good stores are too far • No transportation • People like the taste of unhealthy food • People don’t care what they eat • People don’t know better • Healthy food is expensive • Bad food is everywhere | <p>Effects</p> <ul style="list-style-type: none"> • Obesity • Hunger • Health problems |
|---|--|

Causes focused primarily on individual choice or limitations (taste, time, knowledge, apathy), and some on the food

environment (ubiquity of bad food, cost). Effects focused on health outcomes.

Community Challenges & Strengths

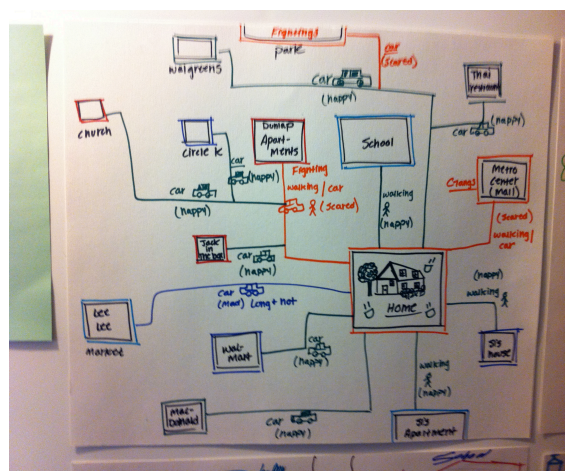
Responses to the challenges and strengths exercise fell within the following youth-designated categories:

| Worries | Helps |
|--|--|
| <ul style="list-style-type: none"> ● School ● Violence (gangs, drugs, bullying) ● Family ● Transportation ● Health ● Littering ● Home Country (war in Burma) ● Language (do not know English) ● Jobs (unemployment) ● Distractions | <ul style="list-style-type: none"> ● Education ● Family ● Friends ● USA ● Mentors ● Medicine ● Community (police, government, help from others) ● Church ● Helping Others (translating) |

Everyone rated each worry and help based on how much it affected his or her daily life and wellbeing. See Appendix A for graphs that show these results.

Sketch Mapping

While every map was different, most of the youth mapped positive places and happy feelings at home, church, and elsewhere. However, some youth mapped challenges including being scared due to fighting or gang activity in the parks and malls, or due to traffic when walking. Another map includes a “mad” emotion because an Asian ethnic foods store and other quality markets are too far away (over



One of the sketch maps

ten miles) and the weather is too hot to travel there. Some maps include sad and scared faces because of language barriers and “not knowing what is going on” in school and in some markets.

Photovoice

The youth took many photographs of food they deemed to be healthy, such as vegetables, fruit, milk, butter, and meat. However, during discussion many of the youth admitted that they didn’t necessarily eat a lot of these items, particularly fruit and milk, but that they recognized their importance for a healthy community. Vegetables and meat appeared to have a strong presence in most of the youths’ diets.

Cooking and eating at home were popular themes in the youth’s photos. The youth saw cooking and eating at home as helpful for food security because they can cook and eat whatever they want, and they thought that most of the food was healthy. These pictures also prompted discussions about the importance of family and the strong community present in Canyon Corridor. For example, eating as a family was an important value to the youth. The youth from Serrano Village discussed their open-door policy, where all members of the community are always welcome to dine and even stay with one another at anytime.

Many of the youth discussed the importance of transportation and personal vehicles for helping food security. Most of the stores were not within walking distance of the youths’ homes. Further, the youth discussed the heat and difficulty of carrying multiple bags as reasons for needing a personal vehicle to go food shopping. Since not everyone in the community has a car, many of the youth’s families carpool and share vehicles.

The youth primarily shop at four stores: Lee Lee Oriental Supermarket, Fry’s Food Store, Ranch Market, and Food City. Fry’s Food Store, Ranch Market, and Food City are nearby the community, but not within walking distance according to the youth. However, Lee Lee Oriental Supermarket, which is the predominant grocery store destination for the refugee youths’ families, is inconveniently far—about a forty-minute trip one way. Thus, the store sends a shuttle when the families want to do their shopping. The youth also saw shopping and preparing food at home as a better value than purchasing fast food that only lasts for one meal.

Photographs from the photovoice activity and their associated descriptions in the youth's own words are displayed at RCDC, and also available upon request.

FUTURE VISIONS

Health was the most recurrent theme among the visions of the youth and was also an underlying reason for many of the other visions discussed amongst the group. The youth had a strong desire for a healthy community—comprised of healthy food, both nutritional and safe (free of chemicals), less fast and unhealthy food, and more people exercising. Such visions also suggest a concern for community wellbeing.

Access and convenience, referring to both distance and time, as well as affordability were also consistently mentioned in visions. For example, many youth want to see more food stores like Lee Lee, Wal-Mart, Food City, and Ranch Market closer to their community. There is also a desire for mobile food carts that will come to the community so residents don't have to deal with transportation. Gardens also pose a transportation-free and convenient way to get food. Further, desire for healthier convenience emerged in visions such as: "more fruit because it is quick to grab and eat and healthy as opposed to other quick food like fast food." The desire for affordable food was apparent in the types of stores desired, as well as more explicit visions such as gardening to save money and cheaper organic food.

The youth arranged their personal visions into group categories, which they titled: healthy life, food businesses, personal/wellbeing, community, gardening, less expensive, and other. Please see an overview of the youth visions in Appendix B. The youth determined that the healthy life category met the criteria for: healthy, fresh, and culturally appropriate. They felt that food businesses would meet the criteria of healthy and affordable, and would maybe meet the criteria of fresh and culturally appropriate, depending on what food the store sold. The youth decided that personal/wellbeing category met the criteria for healthy and culturally appropriate. They believed that gardening would meet all four criteria (healthy, fresh, affordable, and culturally-appropriate), but that the community category was not applicable to food security. Finally, the youth felt that the category of less expensive would possibly meet the criteria

of healthy, but would definitely meet the criteria: fresh, affordable, and culturally appropriate.

Please refer to Appendix C for the Visioning Narratives written by the youth.

PROPOSED STRATEGIES

Youth performed a strategy assessment for the four proposed strategies: Community Gardens, Mobile Markets, Farmer's Markets, and Grocery Stores. The complete assessments of whether each project helps address major challenges and takes advantage of community strengths are presented in Appendix D.

What do these strategies mean?

Community Gardens

Any piece of land gardened by a group of people.

Mobile Markets

Markets that operate out of a large truck or trailer that can travel around neighborhoods.

Farmer's Markets

Outdoor market where farmers or other vendors bring fresh vegetables, fruit and other items to sell directly to customers on one or more days a week.

More Grocery Stores

An effort to attract more full-service grocery stores closer to the Canyon Corridor neighborhood.

Based on these assessments, it does seem like youth have important suggestions for improvement. For instance, the youth suggest:

- Gardens within apartment complexes
- Project should be located in a safe place to address concerns of gang activity
- Projects should include some sort of translation and educational services to address language barriers and a lack of knowledge about healthy foods and cooking

This activity also helps show some constraints to these strategies. When asked if they could think of a place closer to

home that is also safe enough for a grocery store or garden, they said there wasn't any—"Violence is everywhere!"

SYNTHESIS

Youth perspectives of the community were very illuminating. Food issues were not listed as a worry or challenge because the youth don't see this as a primary concern. According to the group, other issues like school demands, unemployment, language barriers, drug use, and troubles in the family or home country are more pressing. Since most of the youth were not born in the USA, they noticed that just living in this country is a huge help because there are more resources available to them—including food. Thus, their perception of the food environment is quite positive, especially when compared to the situation in their home countries.

Still, there are definite challenges and areas for improvement, both in community issues more generally, and in particular aspects of the food environment. While the youth did not identify Canyon Corridor as a food desert, they did discuss that they had to travel long distances to get to quality markets (especially those that carry culturally appropriate foods) and that several families experience transportation difficulties. The youth also discussed the lack of quality, fresh produce at some of the stores in the area. In the worry activity, sketch mapping, and the strategy assessment, youth also brought up safety concerns. This shows that these major concerns need to be addressed alongside food security measures; otherwise projects might not be successful in Canyon Corridor. Youth were also concerned about the lack of knowledge and awareness of healthy food options, and more of the personal factors that might contribute to poor food choices.

On the other hand, we found that this group is able to overcome what would be food insecurities due to the strength of community and high levels of collaboration, especially among the refugee population. Such strategies as using a shuttle to get to the ethnic food market, carpooling, communal meals, sharing resources, and peer translating all help this group be food secure.

RECOMMENDATIONS

One of the main objectives of this report is to serve as a mouthpiece for the youth and recount their perspectives. Moving forward, we also have suggestions for how to use the information outlined in this report and potential next steps.

COMMUNITY & YOUTH INVOLVEMENT IN PROGRAMMING

We believe that incorporating participatory aspects into program design is essential for community development. Without buy-in from community members, proposed strategies are less likely to address the contextual problems and therefore less likely to succeed. One sub-population that is consistently left out of community decision-making is youth, although they are an important population as they consist of the next generations' stakeholders. From our experience with this small group of youth participants, they show a strong interest in becoming involved with community issues and future movements. Thus, we strongly encourage inclusion of youth perspectives into future program design.

There are several outcomes of the workshops. For one, there is clear participant interest in healthy communities and promoting a healthier food environment. Although the youth already believed that they were potential change-agents in their community, they expressed a sense of increased empowerment upon completion of the final workshop and desire to participate in strategy implementation. Second, there is already a strong community network devoted to addressing community development issues. Our findings can supplement any future strategies of such organizations by providing evidence and justification for future grant and project applications, particularly those emphasizing food security, healthy living, youth empowerment, and community development.

POTENTIAL STRATEGIES

There is still debate about whether diet-related health issues are a function of the social and physical environment, or whether they stem from personal preferences, knowledge, and behaviors. Youth highlighted both areas as potential drivers of the problem, but with more emphasis on the personal. When it came to intervention strategies, however, the focus was much more on improving the food environment and providing more options. It

appears that any successful program will likely need to address both aspects of health disparities.

The youth decided that they would like to see the Canyon Corridor community work on all four proposed strategies, although they said that attracting more stores is up to business owners, and they didn't know what they could do to make this happen. The youth said that working to create apartment gardens, a farmer's market, and mobile markets are important projects their community could start now.

There are other potential strategies, which were not explicitly mentioned by youth, but based on our findings, may be worth pursuing in the future. Some examples focus more on personal interventions such as:

- Cooking classes
- Nutrition education
- Community events centered on food

Cooking classes, particularly ones that are culturally-relevant and utilizing local, seasonal food could provide community members with skills to utilize available foodstuffs to cook healthy meals, which are often more cost-efficient than purchasing processed, pre-prepared meals. Nutrition education could be combined with cooking classes or separated and adapted to various cultures within the community, emphasizing strengths and weaknesses of the cultures' predominate food habits. Youth responded positively to the idea of such classes, and reported that one of the main takeaways from the workshops was a better understanding of what healthy food is. Finally, given the strong sense of community already present in Canyon Corridor, community events or socials that focus on food have great potential to address some of the issues threatening the community's food security. The youth voiced a desire for more community socials with food, and cooking and/or nutritional classes could easily be integrated into such events. RCDC has offered some of these types of events and learning opportunities at a smaller scale, but could consider how to expand these activities and partner with other organizations to do so.

Other strategies focus more on changing the food environment or providing better access to healthy foods. The youth's

proposed strategies fit within this group. Other potential strategies include:

- Expanded shuttle services
- Urban farms
- Incentive programs for corner stores to carry healthier food options
- Community Supported Agriculture (CSA) programs or other web-based food stores

Shuttle services to grocery stores appears to have great potential, as the youth relayed the success of such an existing service with Lee Lee's and identified access to transportation as essential for grocery shopping. Rather than just focusing on smaller-scale food production, an urban farm model might make more economic sense and provide higher yields. Other areas of the nation including New York City have successfully implemented corner store improvements to increase availability of healthy food options in existing food stores. CSA programs and newer models of online food purchasing might also bring fresh, healthier foods into the neighborhood without drastic changes in the food infrastructure. In addition, RCDC and the Maryvale on the Move program focus on civic engagement and community organizing training which can potentially help build momentum to pursue these larger, multi-stakeholder, policy-driven efforts.

NEXT STEPS

One next step is to organize a steering committee that will help coordinate these efforts and provide the momentum to take action. The Canyon Corridor Neighborhood Alliance's (CCNA) Revitalization Committee and the ongoing efforts of Maryvale on the Move are good places to start, and can hopefully recruit a diverse set of participants, including young people. These groups can continue to clarify food issues, community goals, and potential strategies to reach these goals and create actionable plans for change.

Some of these proposed strategies will not promote economic development of the neighborhood, and instead continue the 'leakage' or money traveling outside of Canyon Corridor (for example, shuttle services or CSAs). It is important that this committee develop a set of criteria that can help capture

potential trade-offs between these strategies, and help prioritize efforts based on their overall affect on the community.

We will continue to help catalogue and research potential strategies, and encourage RCDC and its community partners to pursue a longer-term relationship with ASU's School of Sustainability through internships and/or graduate student researchers. This type of partnership can continue this important work, and further explore the feasibility and sustainability of potential strategies.

These recommendations, potential strategies, and next steps offer direction towards increasing food security in Canyon Corridor. However, as mentioned, some of these efforts depend on policy changes. Therefore, RCDC should continue its work with the City of Phoenix and political offices to encourage them to become champions for the cause of promoting more just and healthy food environments.

ACKNOWLEDGEMENTS

This research was made possible by:

Workshop Participants

A big thank you to each of our youth participants for working with us and sharing their perspectives—especially on Saturdays! A special thank you to Layah Htwe for her invaluable help translating and coordinating the workshops.

Rehoboth Community Development Corporation

Thank you to RCDC for partnering with us, opening up the Community Life Center for our use, and allowing us to learn more about Canyon Corridor through observing RCDC's ongoing community meetings and development programs. A special thank you to Gwen Relf and Tania Izelo for their support.

Serrano Village

Thank you to Georgia Sepic of Serrano Village for help recruiting participants and for being an inspiring community leader in Canyon Corridor.

ASU School of Sustainability

Thank you to our thesis committee members and colleagues for their valuable feedback and guidance: Hallie Eakin, Seline Szkupinski-Quiroga, Arnim Wiek, Chris Wharton, and Katja Brundiers.

ASU Volunteers

Thank you to our workshop volunteers and note-takers: Angela Xiong, Nelson Mandrell, Nivedita Rengarajan, and Kim Pearson.

Neely Charitable Foundation

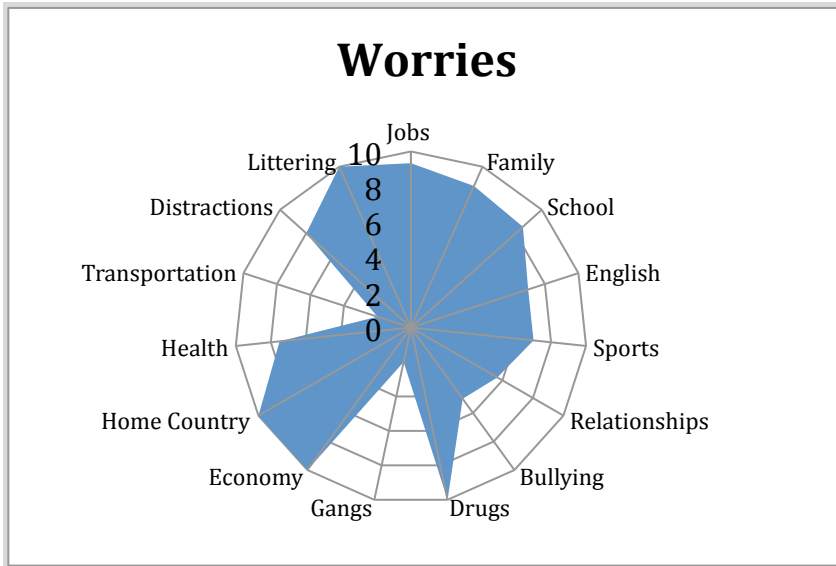
Thank you to the Neely Foundation for funding this research through its Food and Agriculture Sustainability Research Grant.

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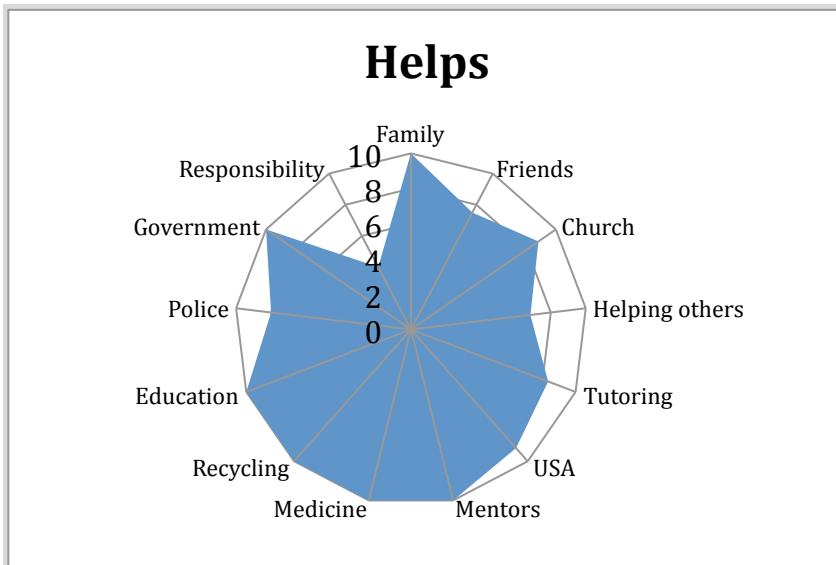
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APPENDIX

A. CHALLENGES & STRENGTHS RADAR DIAGRAMS



Everyone rated each worry based on how much it affected his or her daily life and wellbeing. The graph above shows the results. The more blue area you see, the higher the affect of that worry.



Everyone rated each help based on how much it affected his or her daily life and wellbeing. The graph above shows the results. The more blue area you see, the higher the affect of that help.

B. VISION SUMMARIES

| | | | |
|--|--|---|---|
| <p>Healthy Life</p> <ul style="list-style-type: none"> -Less fast food -More exercising (fitness center, walking) -People in good shape -More fruit planted -Less meat -People eating healthy food -More organic/natural food (no sprays) -People happy because of food -New healthy food in schools | <p>Food Businesses</p> <ul style="list-style-type: none"> -Lee Lee's Market closer -Lee Lee's and Fry's have fresh fruit -More stores like Wal-Mart, Food City, & Ranch Market -More China Buffets or other Asian buffets closer -Mobile carts/stores with fresh, local vegetables | <p>Personal/Wellbeing</p> <ul style="list-style-type: none"> -More people drinking milk, especially Karen community -Family meals sitting around the table (no TV!) -All people have food to live | |
| <p>Community</p> <ul style="list-style-type: none"> -More schools & colleges -Bigger community center -More people coming to community center | <p>Gardening</p> <ul style="list-style-type: none"> -Farmers' markets -Gardens with apartments (public space, instead of pools) -Plant in backyards | <p>Less Expensive</p> <ul style="list-style-type: none"> -Cost between organic and normal foods should be equal -Gardening to save money | <p>Other</p> <ul style="list-style-type: none"> -No wasted food -More plants and animals in the community (horses, cows, pigs) -Cooking outside (fresher, more space) |

C. VISIONING NARRATIVES

Maya and Jesse went to the market and saw a variety of organic fruits and vegetables from local farmers. They were touching the fruit to see if it's ripe and healthy.

The market that they were in was clean and well kept, while the variety of fresh foods kept the atmosphere colorful. The people inside felt welcomed when arriving because the outside had a small garden that farmers kept good and chemical-free.

The girls are feeling that they have choices on the foods that they can eat. It makes them happy because it is close to home and affordable.

Tina and Josh had \$40. They were ready to go to the store around them. They were going to Food City but saw the outside market with food that was fresh, healthy, and less expensive, so they went there instead. They bought five apples and two cauliflowers. They felt calm and happy and thought that they might go back there again. They ate the apples and they were sweet since they were fresh. The cauliflower they fried with other vegetables and eggs.

Tina and Josh were happy that they didn't have to use all of their money. So the rest of their money they saved it for other things that they need or want.

D. STRATEGY ASSESSMENT

[Please see Appendix G of the thesis document]

APPENDIX F
CONSENT & ASSENT FORMS

INFORMATION LETTER
Interview

Urban food access interventions in a community context

Date:

Dear Interview Participant:

I am a graduate student under the direction of Professor Hallie Eakin in the School of Sustainability at Arizona State University. I am conducting a research study to answer the following question regarding your community: What do community members identify as the contextual drivers of food access?

I am inviting your participation, which will involve an interview in which I ask you a series of questions about food access. The interview will take roughly 20 minutes. You have the right not to answer any question, and to stop participation at any time.

Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, there will be no penalty. Please note that you must be 18 years of age or older to participate in this study.

Your responses to these interviews will be incorporated into a larger community assessment of food access, and later used to help shape relevant and effective interventions to increase community food access. There are no foreseeable risks or discomforts to your participation.

After the interview, your input will be written down without revealing your actual name. Your responses will be confidential. We will not record any details that might reveal your identity, such as your occupation, age or gender. The results of this study may be used in reports, presentations, or publications but your name will not be used.

With your permission, we may want to use quotations from this interview. Please let me know if you do not want us to use quotations. We will attribute all quotations to a pseudonym.

I would like to audiotape this interview. The interview will not be recorded without your permission. Please let me know if you do not want the interview to be taped; you also can change your mind after the interview starts, just let me know. The audio file will be deleted immediately following transcription.

If you have any questions concerning the research study, please contact me, Kathleen Talbot, at (XXX) XXX-XXXX, or Hallie Eakin at (XXX) XXX-XXXX. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788.

Thank you!

Kathleen Talbot

By signing below, you are agreeing to participate in the study.

Signature

Date

By signing below, you are agreeing to allow us to use quotations, although your name will not be used.

Signature

Date

By signing below, you are agreeing to be taped.

Signature

Date

YOUTH PERSPECTIVES & FUTURE VISIONS FOR URBAN FOOD ENVIRONMENTS

We are Briar Schoon and Kathleen Talbot, and we work at Arizona State University. We are asking you to take part in a research project because we are trying to learn more about youth eating habits. We want to learn about where you get your food, how you eat it, when you eat, and why you eat this food. We also want to learn what kind of food you would like to see in your community. Your guardian(s) have given you permission to participate in this study.

If you agree, you will be asked to map and take pictures of anything in your community that influences your eating habits. The map will be created in a group setting. The pictures you take will be up to you, but you will be asked to describe them to us and explain why you took each picture. You will be asked to watch some videos and talk about food in the U.S. You will be asked to make your pictures into a collage, along with others in the study. You will also be asked to think about what food you would like to see in your community and make another collage. You will be asked to come to three separate meetings, and each will be with other youth in your community. These meetings will last about five hours each. You do not have to put your name on any photographs or on the collage. You do not have to answer any questions that make you uncomfortable or participate in any of the activities if you do not wish to. If you chose to participate, you will be given a \$15 Visa gift card.

You do not have to participate in this project. No one will be mad at you if you decide not to participate. You are free to change your mind about participating at any time. Even if you start the study, you can stop later if you want. You may ask questions about the study at any time.

Signing here means that you have read this form or have had it read to you and that you are willing to be in this study.

Signature of subject _____
Subject's printed name _____
Signature of investigator _____
Date _____

By initialing below, you agree to have your photographs publically displayed.

By initialing below, you agree to have your name associated with these photographs in public displays. Your name will not be used in reports or publications.

By initialing below, you acknowledge receipt of a \$15 Visa gift card.

YOUTH PERSPECTIVES & FUTURE VISIONS FOR URBAN FOOD
ENVIRONMENTS

PARENTAL LETTER OF PERMISSION

Dear Parent:

We are graduate students under the direction of Dr. Hallie Eakin in the School of Sustainability at Arizona State University. We are conducting a research study to understand how youth perceive their urban food environment and what kind of urban food environment they would like to see in the future.

We invite your child's participation in the project. The study will involve asking the participating youth to map and photograph aspects relevant to their food environment and to use photographs to envision their future food environment and potential interventions. This study will include three workshops (approximately 5 hours each) as well as some independent activities (e.g., photographing the neighborhood) for a total of approximately 15-20 hours over a period of 2-3 months. For participating, your child will be compensated with a \$15 Visa gift card.

If your child participates, he/she will be given a digital camera and will be free to photograph anything that they associate with their food environment. We will prohibit your child from taking any photographs that could be interpreted as obscene, or which might violate the privacy of any individual. If they chose to take pictures of any identifiable individual they will need to get a signed consent form from that individual (the consent form will be provided).

It is possible that your child might take pictures in the interior of your household or another family space. We will ensure that if such photographs are taken, they will not be publicly displayed or shared among the participants in the project without your prior approval.

Your child will be able to choose which photographs he/she wants to share with the rest of the projects' participants. Your child's photographs will remain anonymous unless your child wishes his or her name to be associated with the photographs, in which case the child's first name will be used. The results of this study, including the photographs taken by the participating youth, may be used in reports, presentations, or publications but your child's name will not be used. While we do not expect any personal information to be collected in this project, any information we do collect will be confidential; we will ensure that it will not be possible to identify any single individual or family with information published from this study.

Your child's participation in this study is completely voluntary. If you choose not to have your child participate or to withdraw your child from the study at any time, there will be no penalty. Likewise, if your child chooses not to participate or to withdraw from the study at any time, there will be no penalty.

I hope that by participating in the study, your child may benefit by learning about how other communities in the US have addressed urban food concerns. Your child may also benefit from the experience of using art (photographs) to express what he/she perceives about his or her community. We do not see any risks to your child's participation.

If you have any questions concerning the research study or your child's participation in this study, please call us at (XXX) XXX-XXXX or (XXX) XXX-XXXX. Or, you may email us at XXX@asu.edu, XXX@asu.edu or Dr. Hallie Eakin at XXX@asu.edu. If you are a Spanish speaker, please direct your questions to Katie or Hallie.

Sincerely,

Briar Schoon & Katie Talbot

By signing below, you are giving consent for your child _____ (Child's name) to participate in the above study. If you consent, please provide your preferred means of contact, either phone number or email, so that we may follow up with you.

Signature Printed Name Date

Phone Number Email Address

By signing below, you are giving consent for your child's photographs and/or name to be publically displayed if he/she chooses to do so. No names will be used in any reports or publications.

Signature Printed Name Date

If you have any questions about you or your child's rights as a subject/participant in this research, or if you feel you or your child have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the Office of Research Integrity and Assurance, at (480) 965-6788.

APPENDIX G

INTERVENTION ASSESSMENT RESULTS

Community Gardens

Does this type of project help address major challenges, and take advantage of the community's strengths?

| Yes: | Maybe: | No: |
|---|--|---|
| <p><i>Challenges</i></p> <ul style="list-style-type: none"> ● Jobs² ● Health ● Cost ● Family troubles³ <p><i>Strengths</i></p> <ul style="list-style-type: none"> ● Community ● Friends ● Family ● Church | <p><i>Challenges</i></p> <ul style="list-style-type: none"> ● Distance/lack of transportation⁴ | <p><i>Challenges</i></p> <ul style="list-style-type: none"> ● Not caring about healthy eating ● Not knowing about healthy eating or cooking ● Convenience⁵ ● Taste⁶ ● Language ● Violence⁷ |

Suggestions:

| |
|---|
| <ul style="list-style-type: none"> ● Hold a gardening classes that teach how to garden and cook ● Have neighbors tell people about the garden projects and get more people involved ● Work through language barriers through hands on learning, and helping each other ● Plant foods people like and need ● Plant gardens in apartment complexes, close to a lot of families ● Talk to community to make sure you plant gardens in safe spots⁸ |
|---|

² “May make some jobs, and those without jobs can volunteer more”

³ “Family troubles may be concerns about money, so if gardening is a cheaper way to get food it may help”

⁴ “Only if gardens are close to home”

⁵ “Gardens take a long time to grow, and take a lot of work”

⁶ “May not have the foods you normally eat”

⁷ “Some people may ruin gardens”

⁸ For instance, participants said that the garden at the Community Life Center is not in a safe spot because it is near the alley and the fence is not good

Farmer's Markets

Does this type of project help address major challenges, and take advantage of the community's strengths?

| Yes: | Maybe: | No: |
|--|---|---|
| <p><i>Challenges</i></p> <ul style="list-style-type: none"> ● Health ● Not caring about healthy eating⁹ <p><i>Strengths</i></p> <ul style="list-style-type: none"> ● Community | <p><i>Challenges</i></p> <ul style="list-style-type: none"> ● Distance/lack of transportation¹⁰ ● Cost¹¹ ● Convenience¹² ● Jobs¹³ <p><i>Strengths</i></p> <ul style="list-style-type: none"> ● Family ● Friends | <p><i>Challenges</i></p> <ul style="list-style-type: none"> ● Family troubles ● Language ● Violence¹⁴ ● Taste¹⁵ ● Not knowing about healthy foods and cooking <p><i>Strengths</i></p> <ul style="list-style-type: none"> ● Church |

Suggestions:

| |
|---|
| <ul style="list-style-type: none"> ● Use church parking lots since people are there anyways ● Help each other translate ● Make sure there are security measures such as police or community volunteers ● Locate it in a vacant lot close to homes ● Offer a shuttle service ● Use educational signs about the foods and how to prepare them |
|---|

⁹ "Because the market is visible and social"

¹⁰ "Depends on location"

¹¹ "May be more expensive"

¹² "Depends on location and selection"

¹³ "Depends on if they hire people in the community"

¹⁴ "Gangs might cause trouble"

¹⁵ "Usually not the foods people like to eat"

Mobile Markets

Does this type of project help address major challenges, and take advantage of the community's strengths?

| Yes: | Maybe: | No: |
|---|---|---|
| <p><i>Challenges</i></p> <ul style="list-style-type: none"> ● Lack of transportation/ distance ● Jobs ● Convenience ● Health ● Taste¹⁶ <p><i>Strengths</i></p> <ul style="list-style-type: none"> ● Community ● Family¹⁷ | <p><i>Challenges</i></p> <ul style="list-style-type: none"> ● Family troubles¹⁸ ● Violence¹⁹ ● Cost²⁰ <p><i>Strengths</i></p> <ul style="list-style-type: none"> ● Friends | <p><i>Challenges</i></p> <ul style="list-style-type: none"> ● Language ● Not caring about healthy eating ● Not knowing about healthy eating and cooking <p><i>Strengths</i></p> <ul style="list-style-type: none"> ● Church |

Suggestions:

| |
|---|
| <ul style="list-style-type: none"> ● Work together to provide translation help ● Have a fixed schedule so people can plan accordingly ● Allow bartering/exchange so more people can afford it and participate ● Have the vendor/driver teach people about products and preparation ● Move the cart to a safe spot if there are any security issues |
|---|

¹⁶ “Can carry a lot of variety”

¹⁷ “Work together to shop”

¹⁸ “Helps transportation and maybe cost that sometimes cause stress”

¹⁹ “May be affected by vandalism or theft, but can change location”

²⁰ “May be cheaper since they don’t have to pay for a store, may be more expensive because of small size and gas”

Grocery Stores

Does this type of project help address major challenges, and take advantage of the community's strengths?

| Yes: | Maybe: | No: |
|--|---|---|
| <p><i>Challenges</i></p> <ul style="list-style-type: none"> ● Jobs ● Health ● Convenience ● Distance/lack of transportation ● Taste | <p><i>Challenges</i></p> <ul style="list-style-type: none"> ● Cost | <p><i>Challenges</i></p> <ul style="list-style-type: none"> ● Family troubles ● Not caring about healthy eating ● Not knowing about healthy eating and cooking ● Language ● Violence²¹ <p><i>Strengths</i></p> <ul style="list-style-type: none"> ● Family ● Church ● Friends ● Community |

Suggestions:

- Open a community-run store since outside businesses probably won't come to Canyon Corridor due to safety concerns, and that way we work with strengths, too.

²¹ “Businesses won’t want to open because of gangs and losses”