

## Understanding Equity and Resilience of the Local Food System in Des Moines, Iowa Using the Community Capitals Framework

### Introduction

Urbanization and the rise in global population are creating greater demand for production, processing and distribution of food. Conventional food systems contribute to global greenhouse gas emissions, social inequalities and are slow to adapt to disruption. Local food systems can produce fewer impacts, support local farmers and improve community connections.



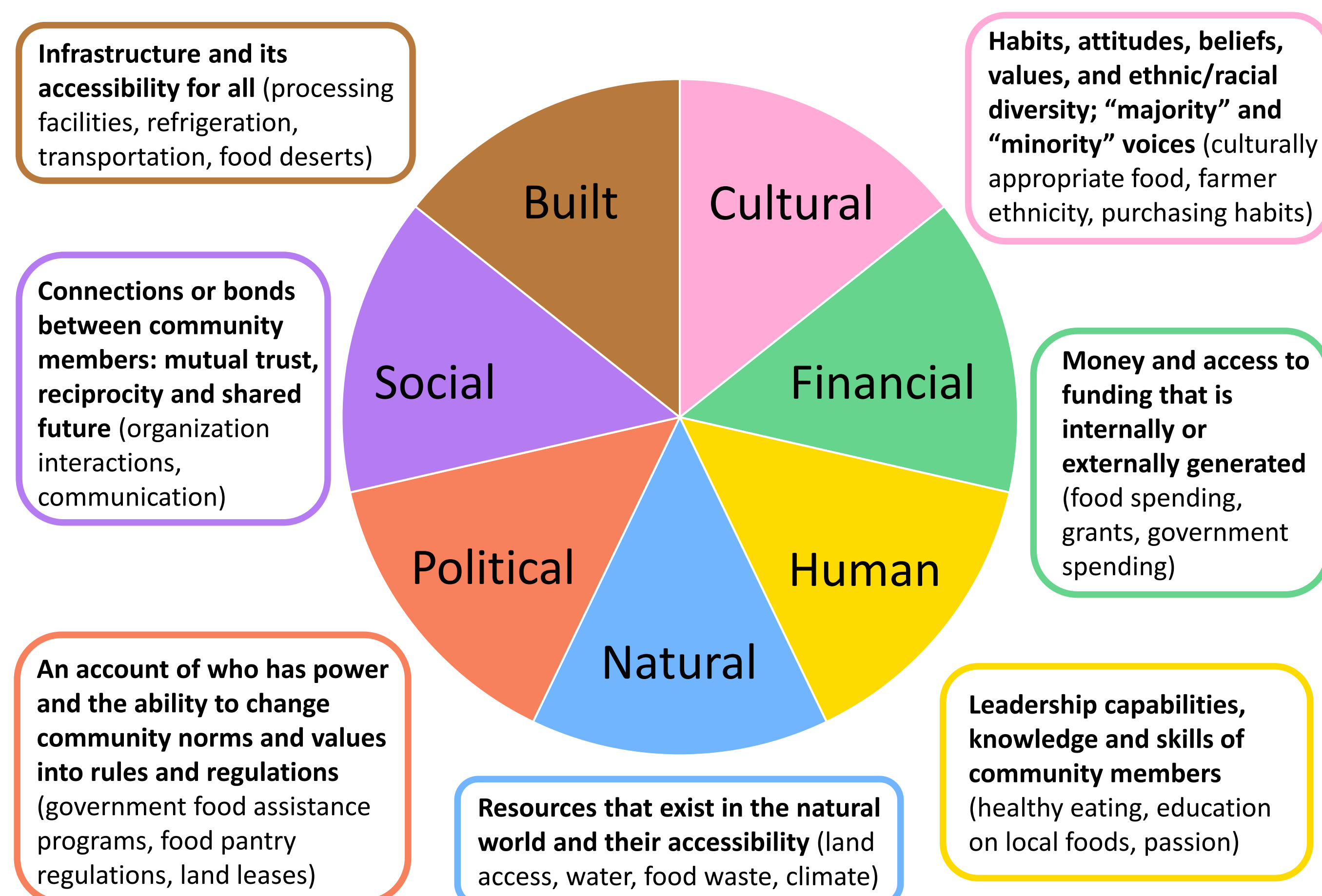
**Figure 1:** Current environmental, economic, health and social crises impact equity and resilience (capacity to function during disturbances) of local food systems. There is no set definition of “local”, but our study focused on the six-county Des Moines Metropolitan Statistical Area; stakeholder’s definitions varied.

### Objective

Examine the social, economic and environmental sustainability of the local food system in Des Moines, Iowa through the lens of equity and resilience using the community capitals framework.

### Community Capitals Framework

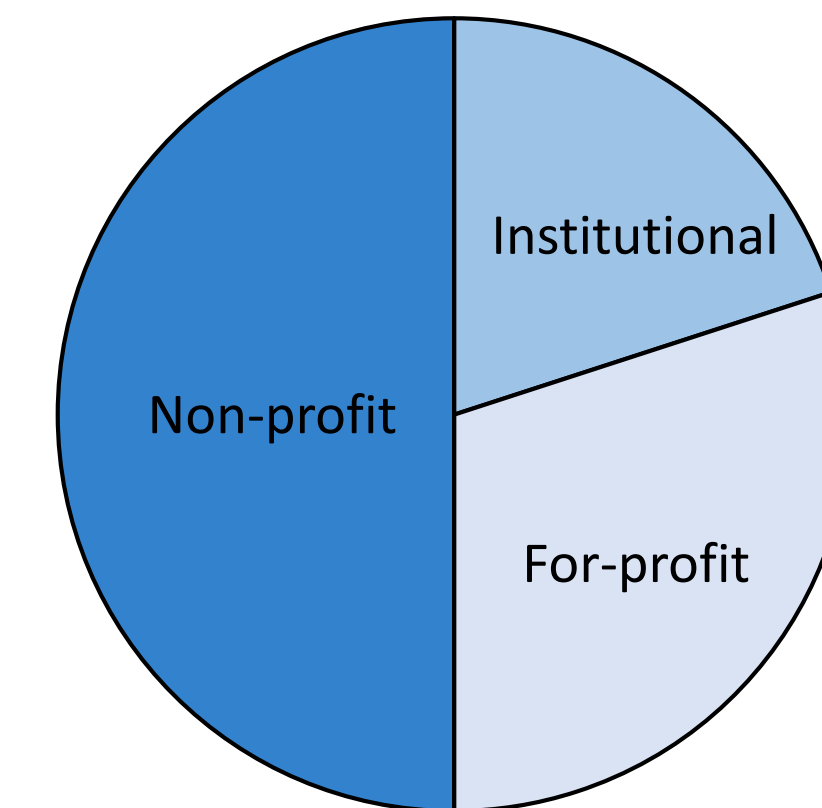
The community capitals framework evaluates the sustainability of community features by examining seven different capitals, which are resources that can be invested to create new resources [1]. Previous studies have emphasized cultural, human and social capitals in relation to local food systems [2, 3, 4]; we considered all capitals equally in our analysis.



**Figure 2:** The community capitals framework was used to examine the local food system in Des Moines, Iowa. Definitions were based on Flora & Flora (2016) work with adaptations and examples for the local food context.

### Methods

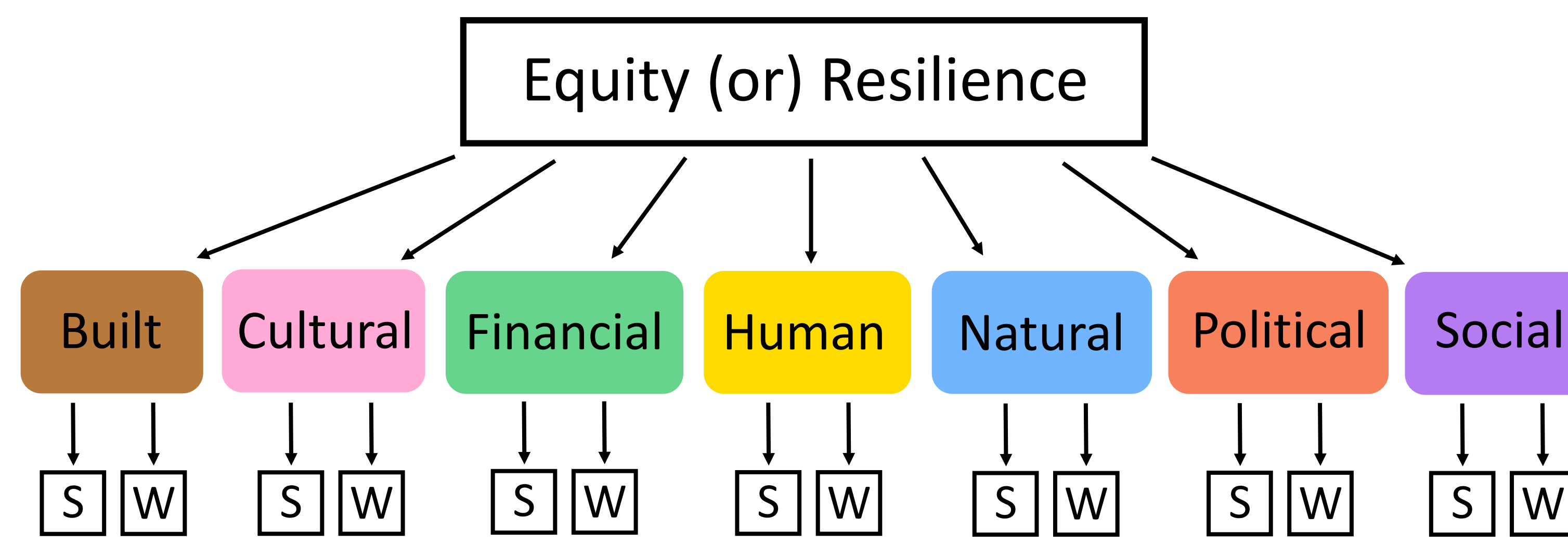
- Interviewed ten local food system stakeholders from institutional (2), for-profit (3), and non-profit (5) organizations in Des Moines
- Stakeholders engaged in production, distribution and retail of local food
- Participants were identified using food system network analysis and snowball referrals
- 30- to 90-minute interviews; in person/Zoom
- Interviews were recorded, transcribed and analyzed qualitatively in NVivo using the community capitals framework
- Study approved by ISU’s Institutional Review Board (IRB); participant comments presented in a manner that protects individual privacy.



**Figure 3:** Stakeholder organization distribution.

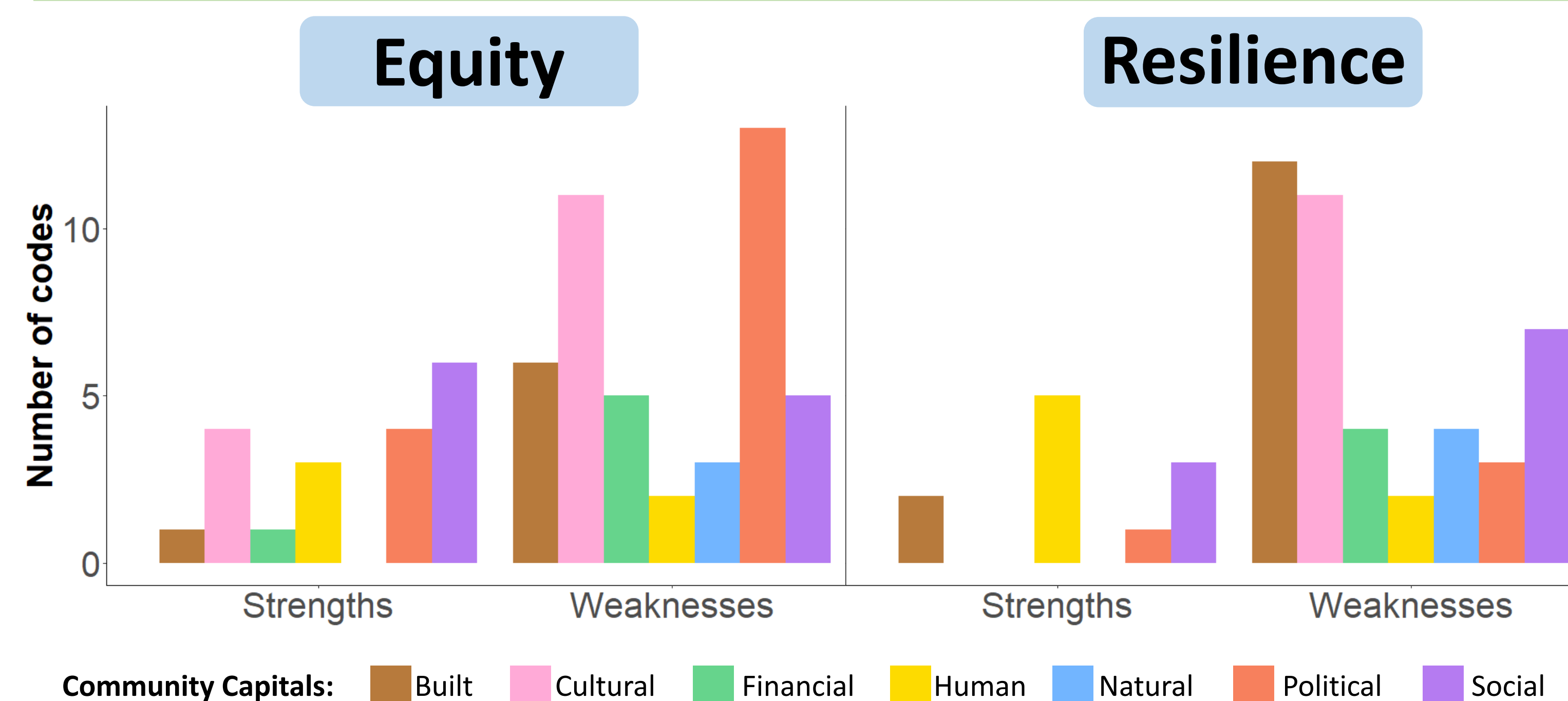
- How equitable do you think the local food system in Des Moines is currently?  
- How resilient do you think the local food system is currently?

**Figure 4:** Selected interview questions.



**Figure 5:** Coding structure used to categorize stakeholder’s responses in NVivo. Responses to each question were placed into a capital using our adapted definitions. Codes were then sorted into strengths (S) and weaknesses (W) for further analysis.

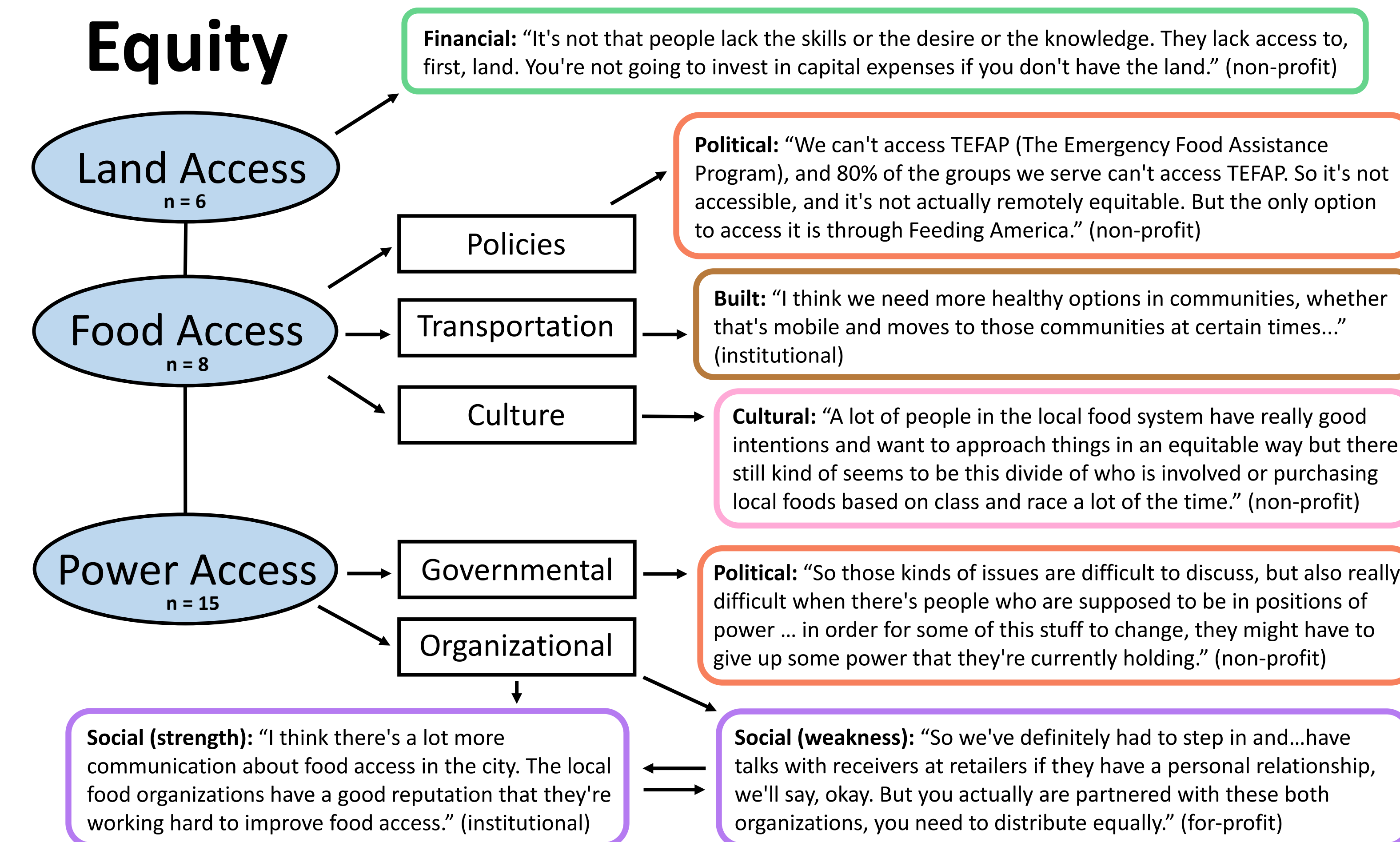
### Results



**Figure 6:** Quantity of stakeholder comments on equity and resilience of the local food system coded as strengths or weaknesses. The absence of a bar indicates no stakeholder comments for strengths or weaknesses of that capital. In some cases, codes were listed as both a strength and weakness (n = 1) or neither (n = 1). Equity weaknesses were frequently noted in built, cultural, financial, natural and political capitals. A lack of resilience was noted in all capitals except for human capital. There were fewer comments on resilience (n = 57) than equity (n = 71).

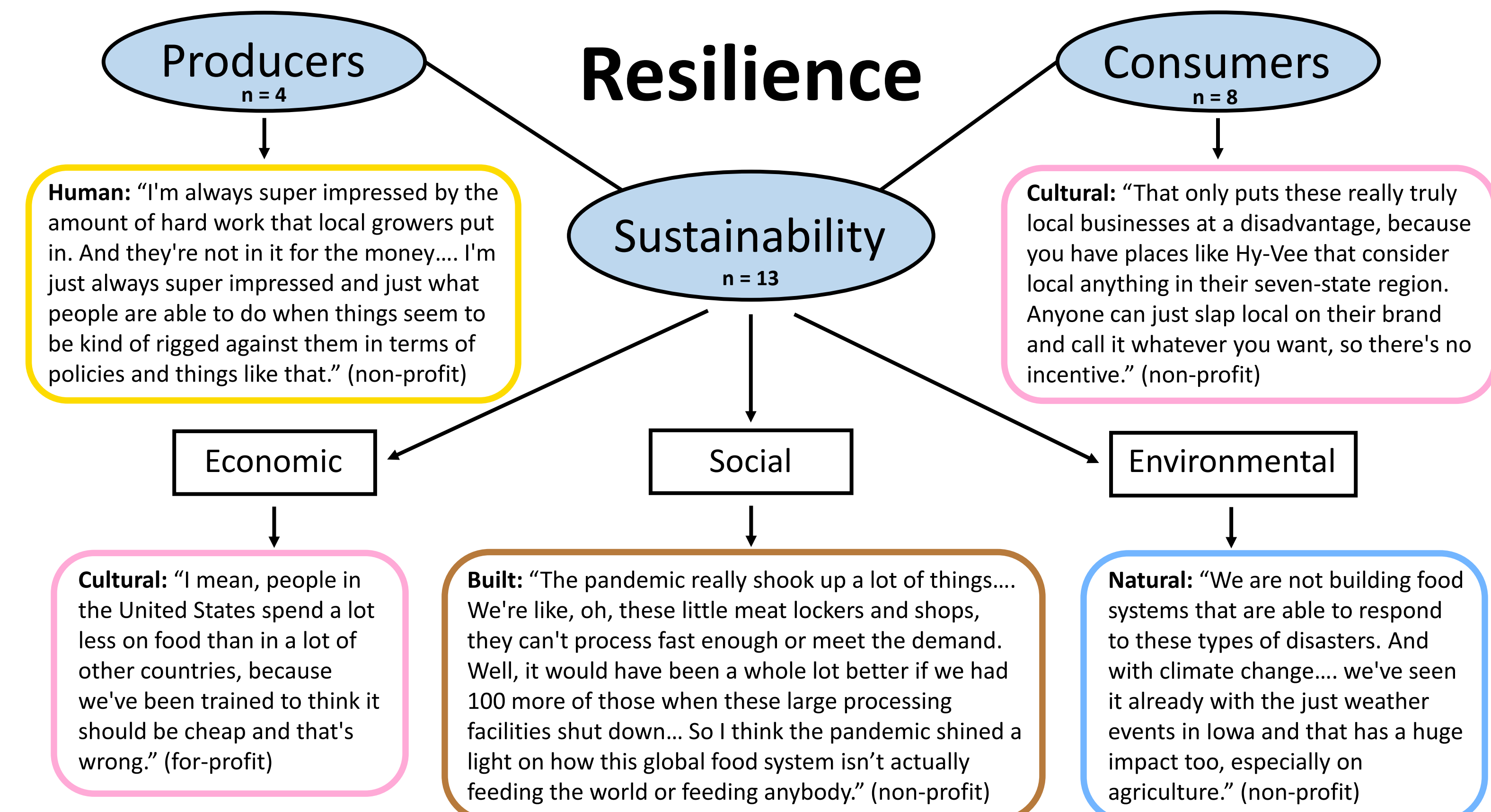
### Results

#### Equity



**Figure 7:** Stakeholder comments highlighted three themes related to equity: land, food and power access. Culture, policies and transportation limit equitable access to local food. Only weaknesses for governmental power access were identified, while organizational power access had equal amounts of strengths (n = 4) and weaknesses (n = 4).

#### Resilience



**Figure 8:** Resilience themes included sustainability, producer resilience, and consumer resilience. Comments praised the resilience of producers (human capital) while consumer resilience was primarily categorized as a weakness. Stakeholders emphasized the lack of resilience of the local food system with regards to economic, social and environmental sustainability.

### Conclusion

- Equity was lacking in cultural, built and political capitals; resilience was lacking in all capitals except human.
- More equity comments may reflect proactive equity planning while resilience planning is more often a reaction to a disturbance.
- This study could inform changes in government policies and community initiatives to improve equity and resilience of the local food system in Des Moines, Iowa.