

Diversity and Availability of Foods in the *Tiendas* of Two Guatemalan Communities

Samantha Davis

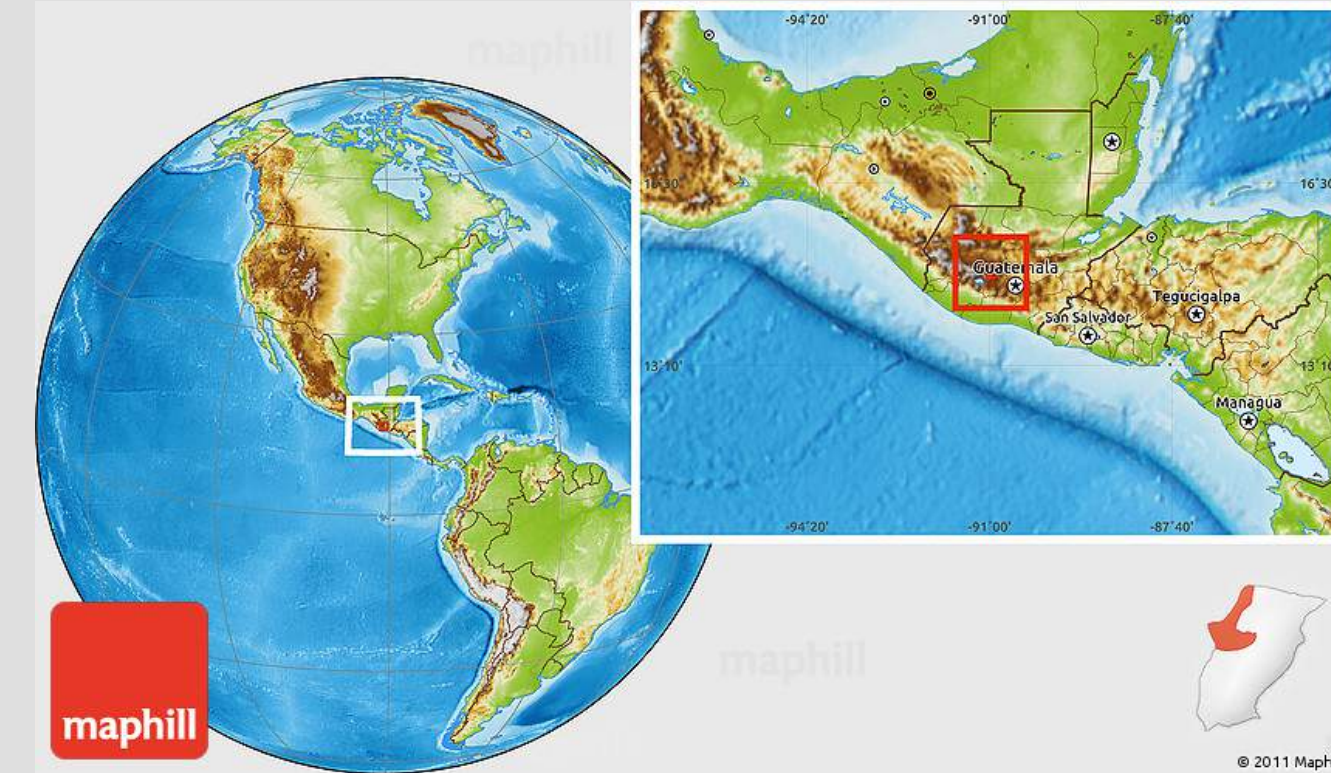
MDP at the University of Florida | Wuqu' Kawoq

s.davis91@ufl.edu



Introduction

Wuqu' Kawoq is a non profit organization that works to bridge the gap for indigenous communities with no access to health care. The organization provides free, high-quality care in the local indigenous languages. Wuqu' Kawoq's endeavors are important because Guatemala's rural indigenous population suffers from one of the highest rates of chronic child malnutrition (stunting) in the world. About 43% of children under 5 years are stunted, and these rates are even higher for the indigenous populations (Brown, 2014). It is challenging, particularly in rural indigenous areas, to meet micronutrient needs among infants and children without supplementation (Brown, 2014). In addition, Guatemala remains the largest packaged food market in Central America. The packaged food market is forecasted to grow nearly US\$5.5 billion by 2018, an increase of 19% (FEA, 2011). Popular junk foods include snack bars, meal replacements, noodles, processed food, ready meals, sweet and savory snacks, and soup. This overwhelming availability of junk food was seen in two Guatemalan communities, Tecpán and Xejuyu', and may contribute to malnutrition.



Methods

Measures of the Nutrition Environment – Market Inventory Study:

- Structured pricing and inventory survey conducted with all local stores in Xejuyu' n = 20
- Same survey was conducted in Tecpán in following manner:
 - 53 stores in town randomly selected for inclusion
 - Started from center of town and counted every third store on each north-south and each east-west street within a 6 block circle, centered on the central park
- A GPS device was used to record the GPS tags for all household interviews
 - Collected during store inventories
 - Gathered at the entry of the store
 - Data used to construct spatial maps for conceptualization of food commodities

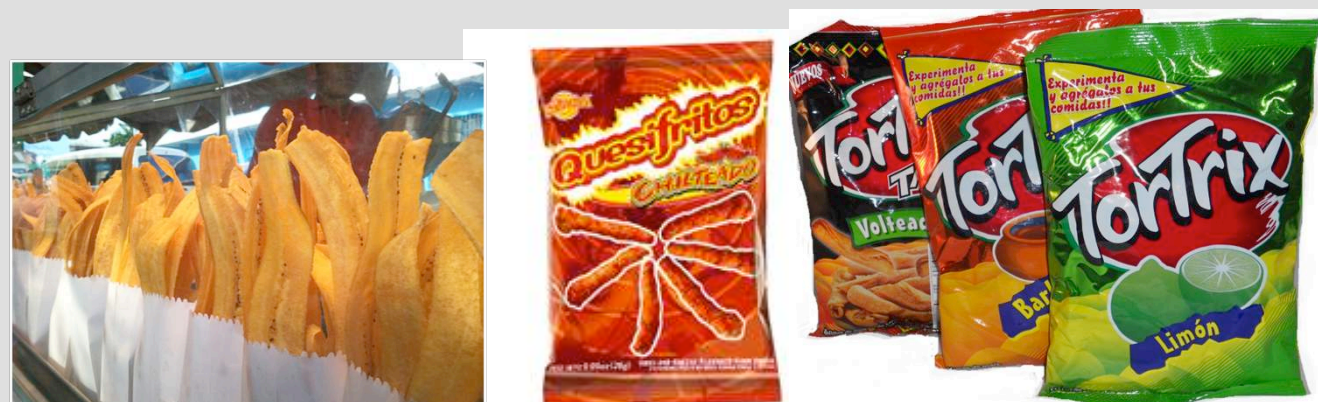


Figure 2. Data Collection in Xejuyu'

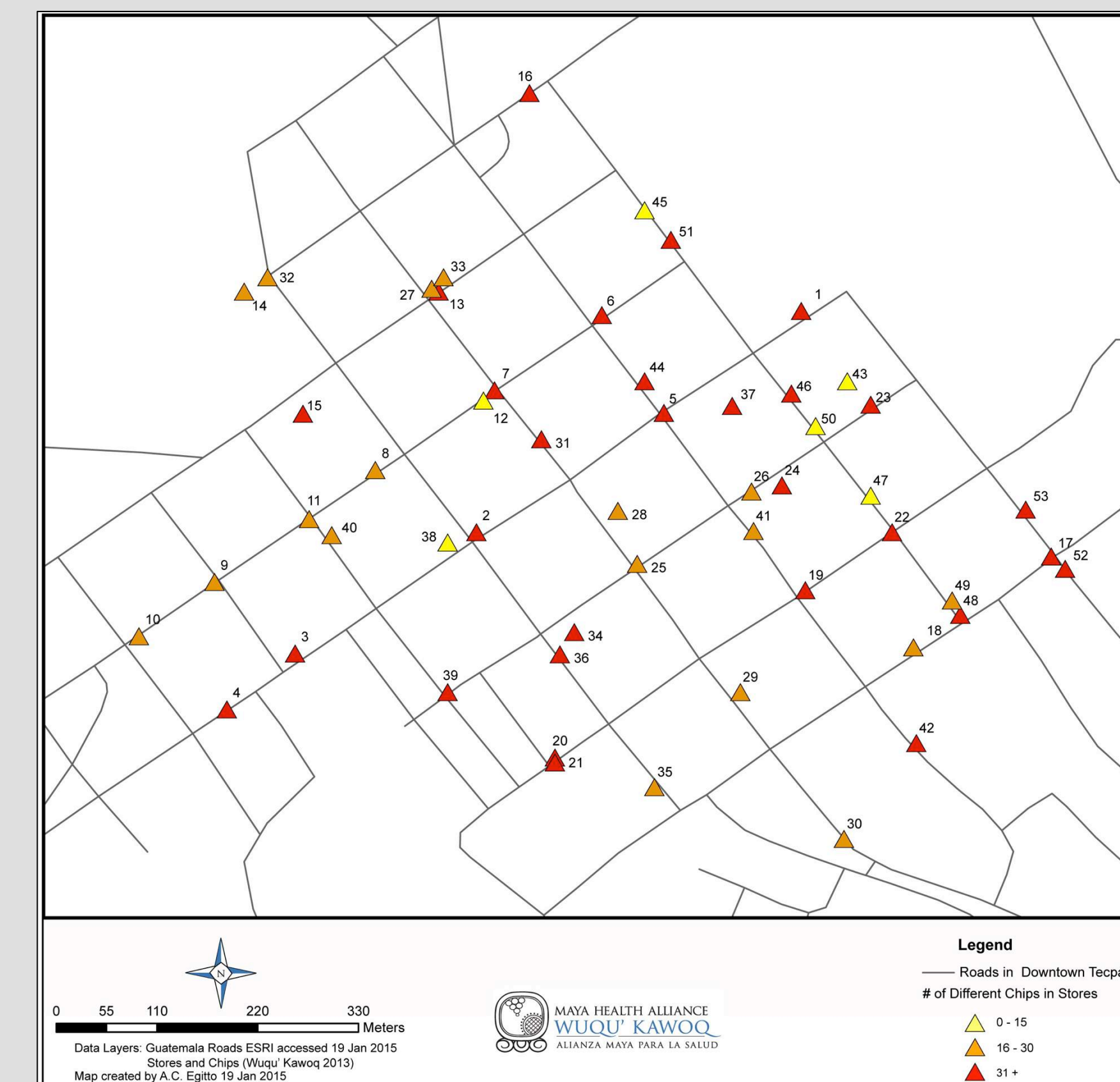


Figure 3. Data Collection in Tecpán

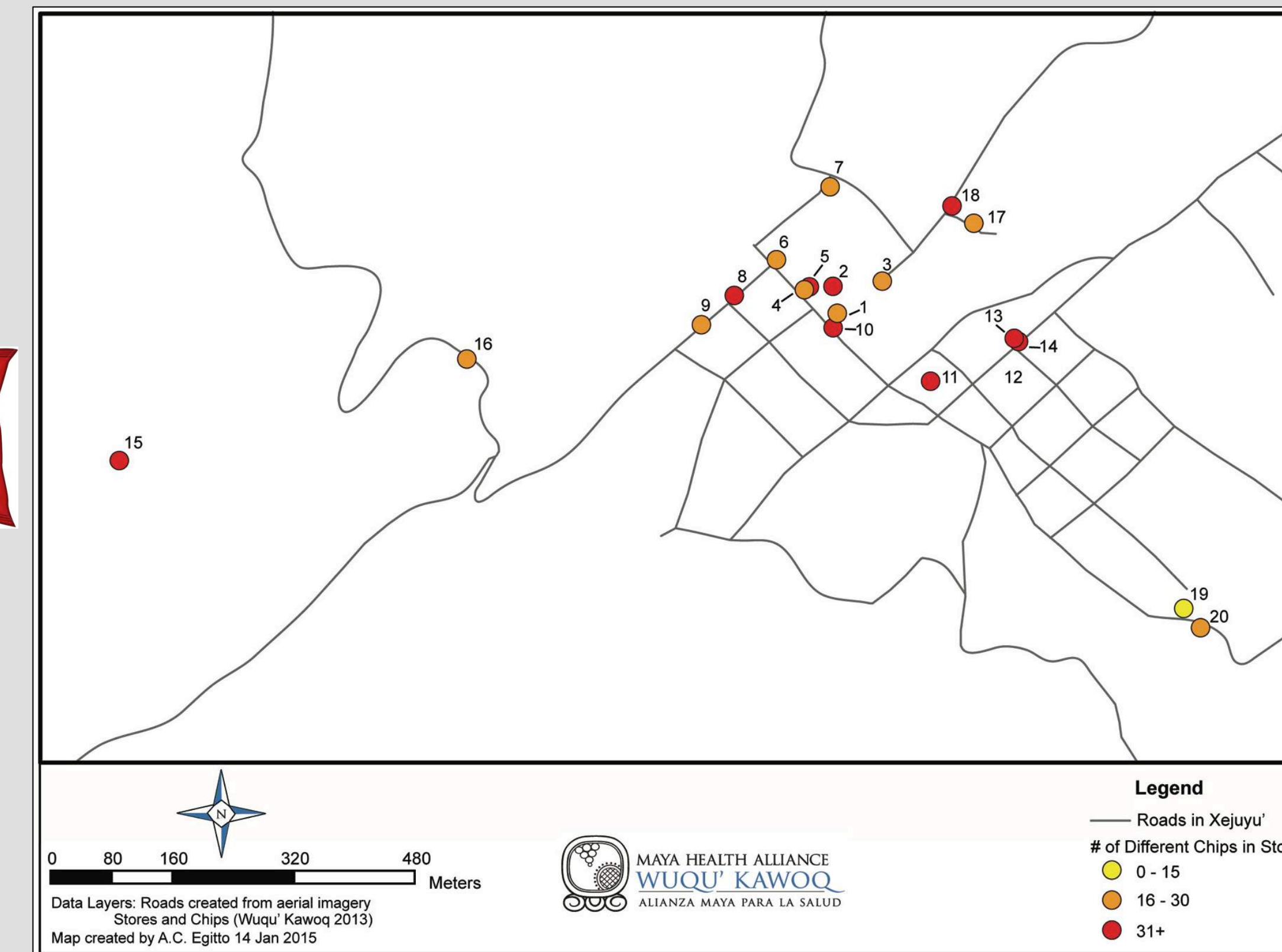
Figure 1. Tienda owners

Analysis of Food Availability: GIS Maps

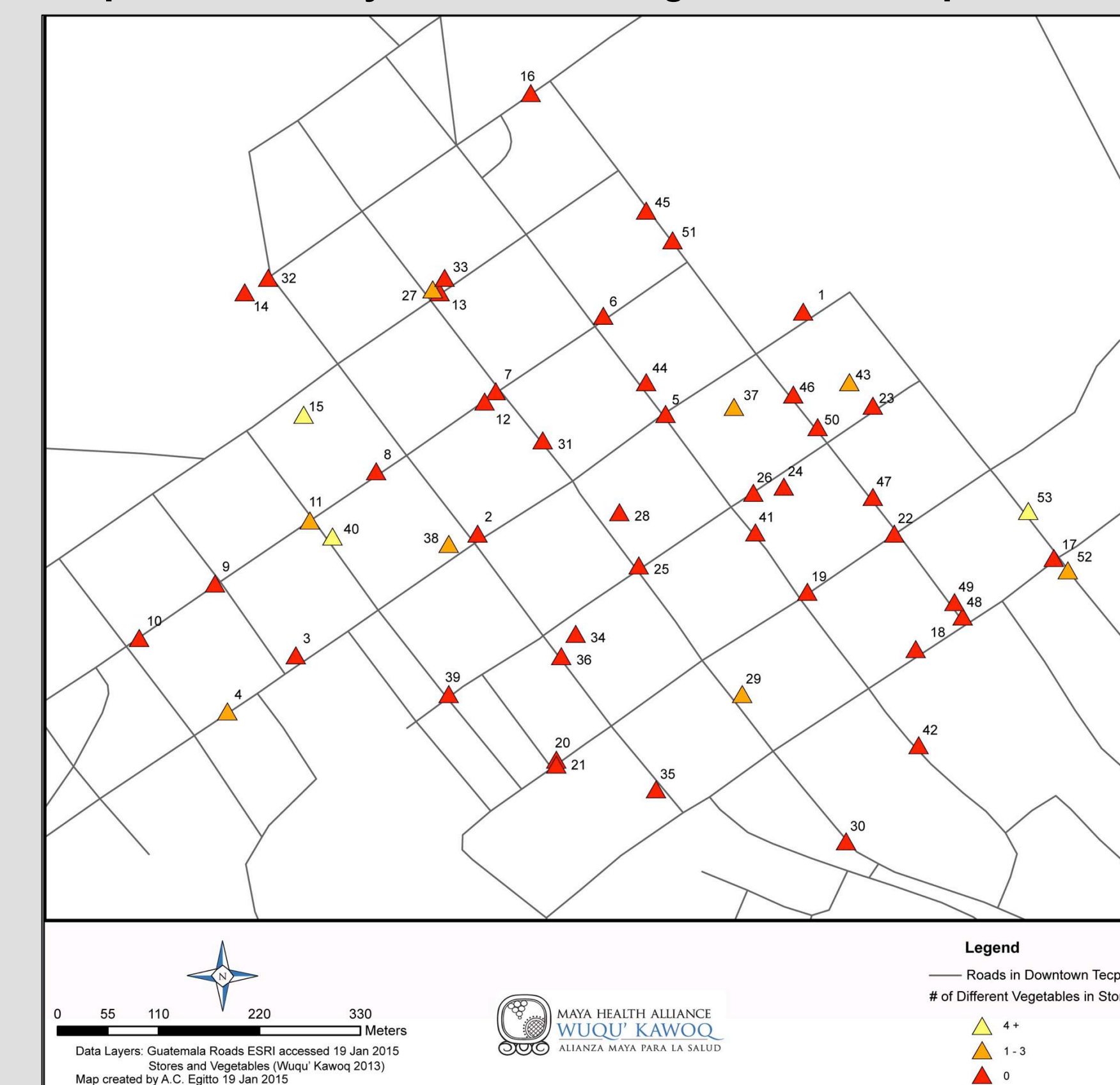
Map 1. Availability of Different Chips in Tecpán



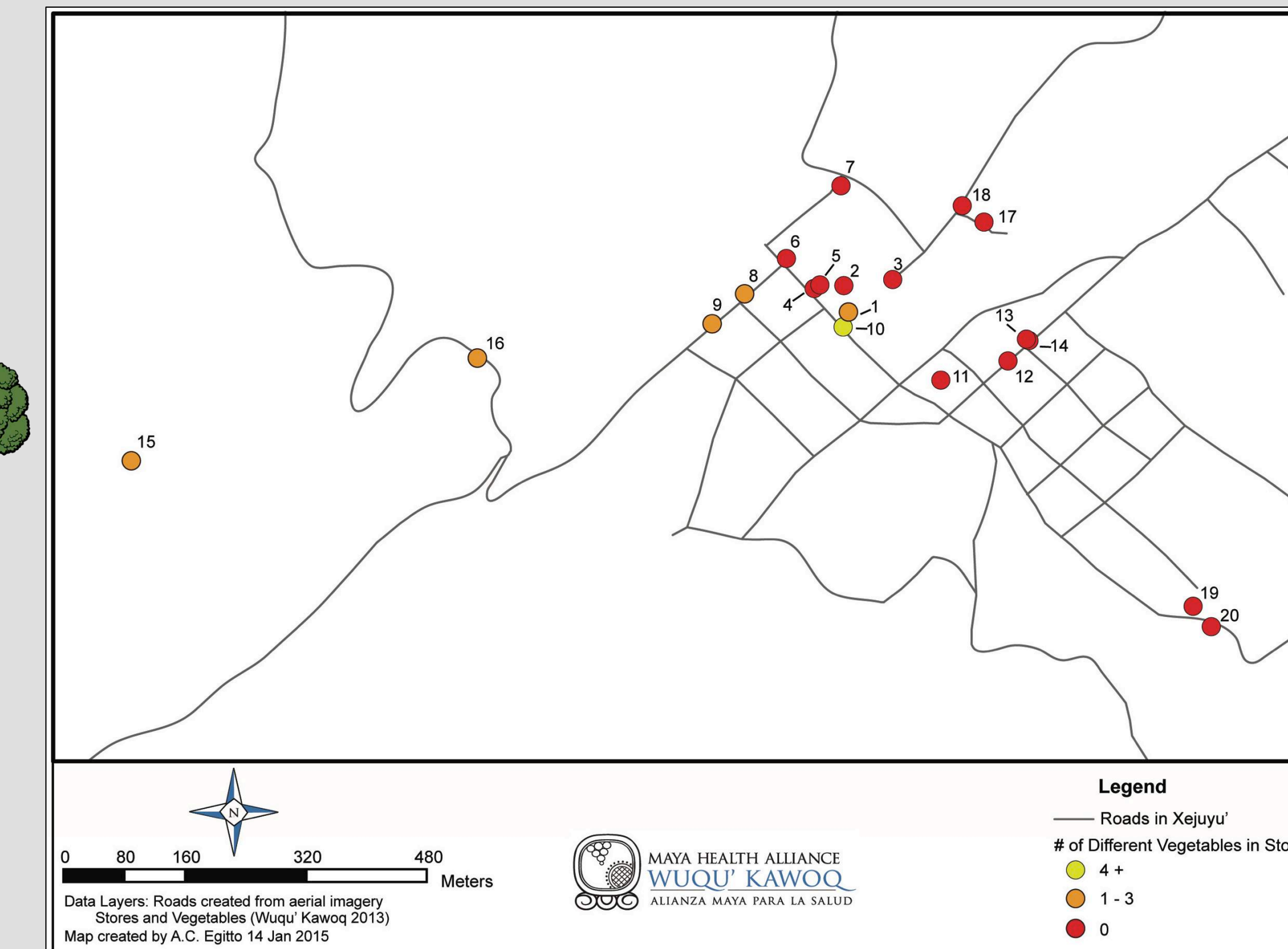
Map 2. Availability of Different Chips in Xejuyu'



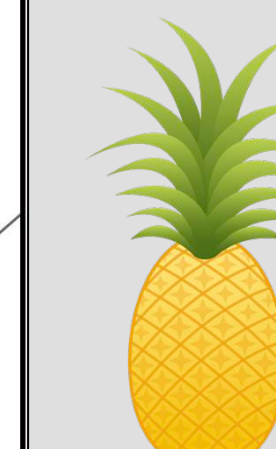
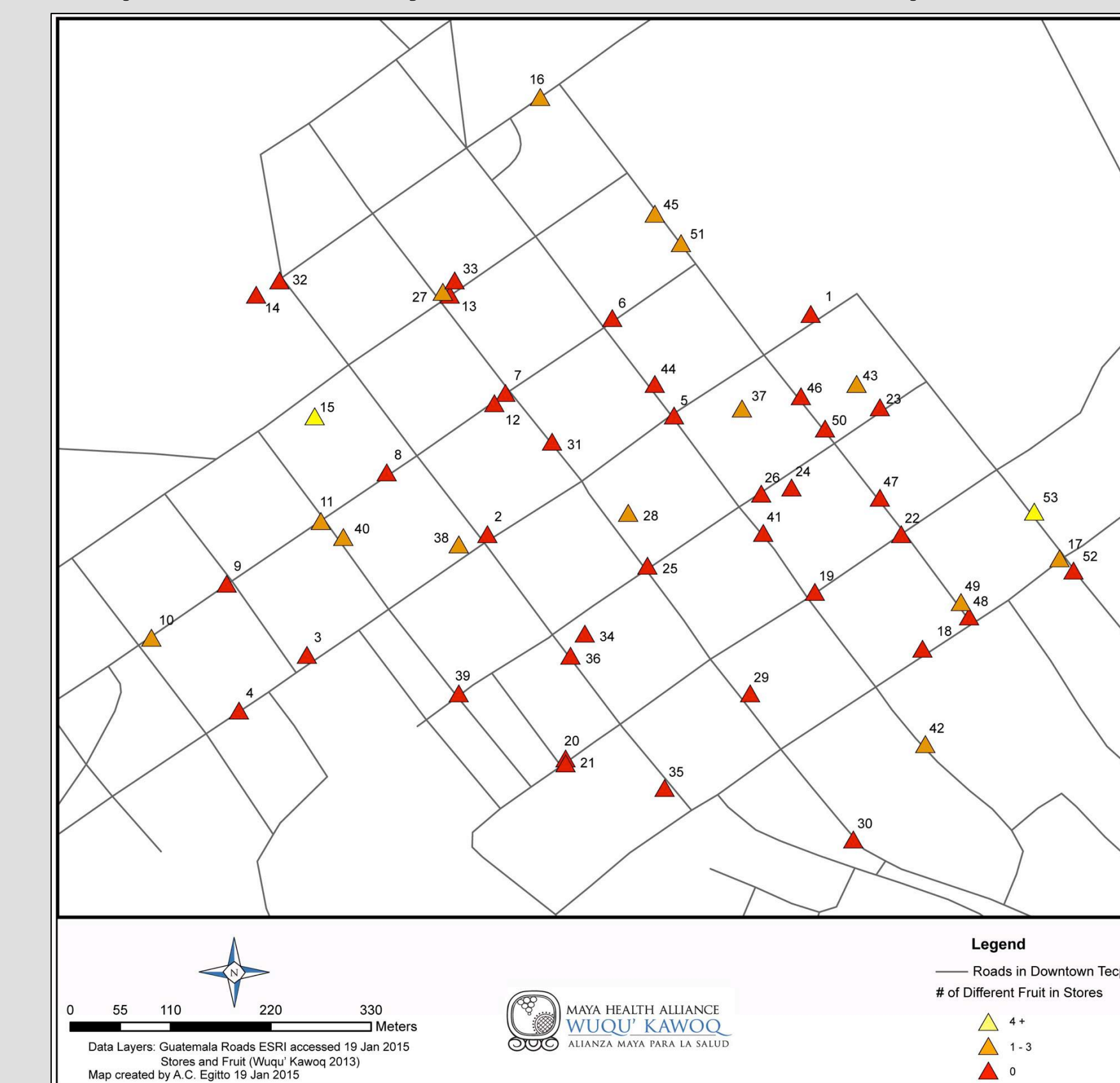
Map 3. Availability of Different Vegetables in Tecpán



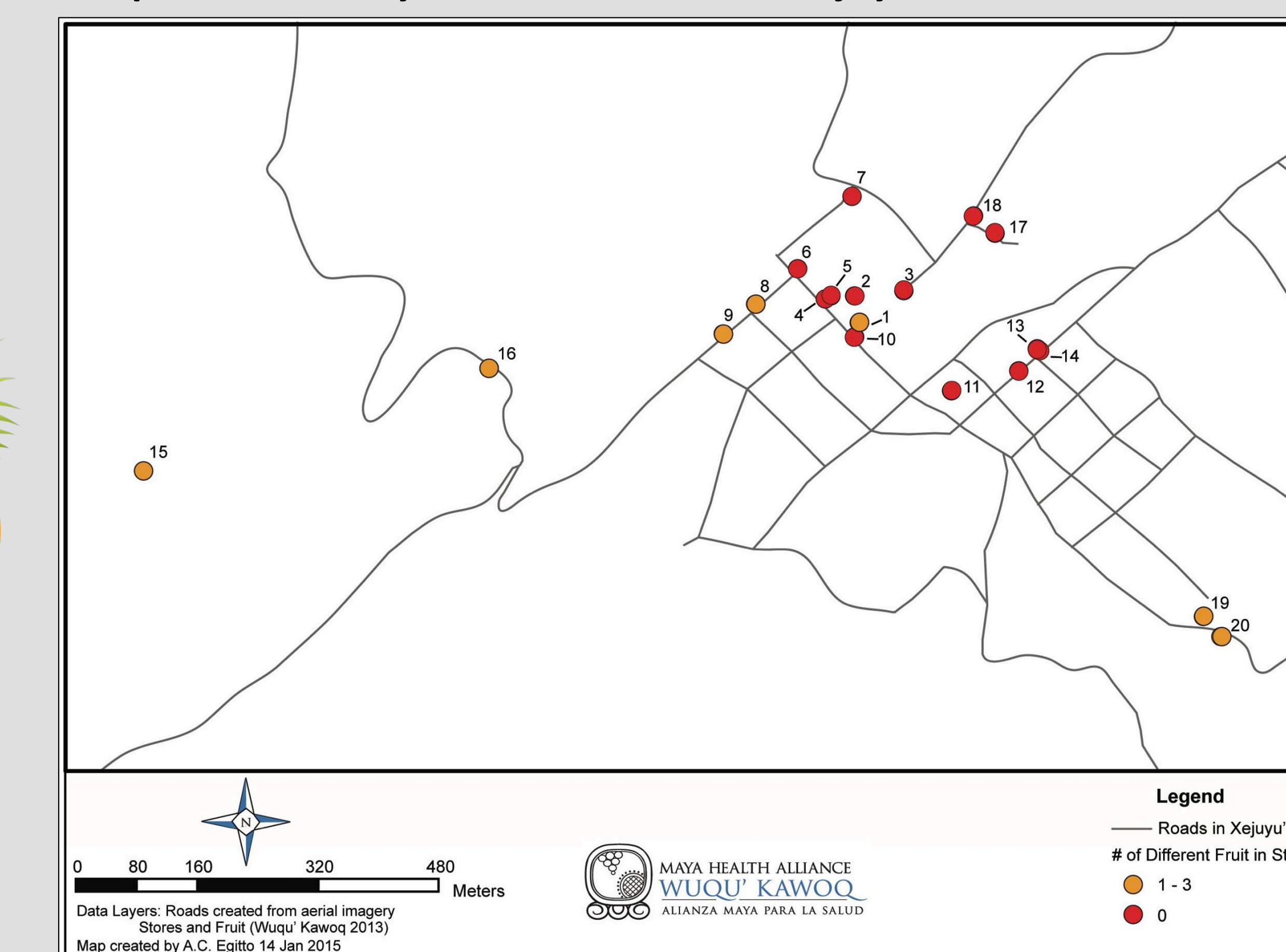
Map 4. Availability of Different Vegetables in Xejuyu'



Map 5. Availability of Different Fruit in Tecpán

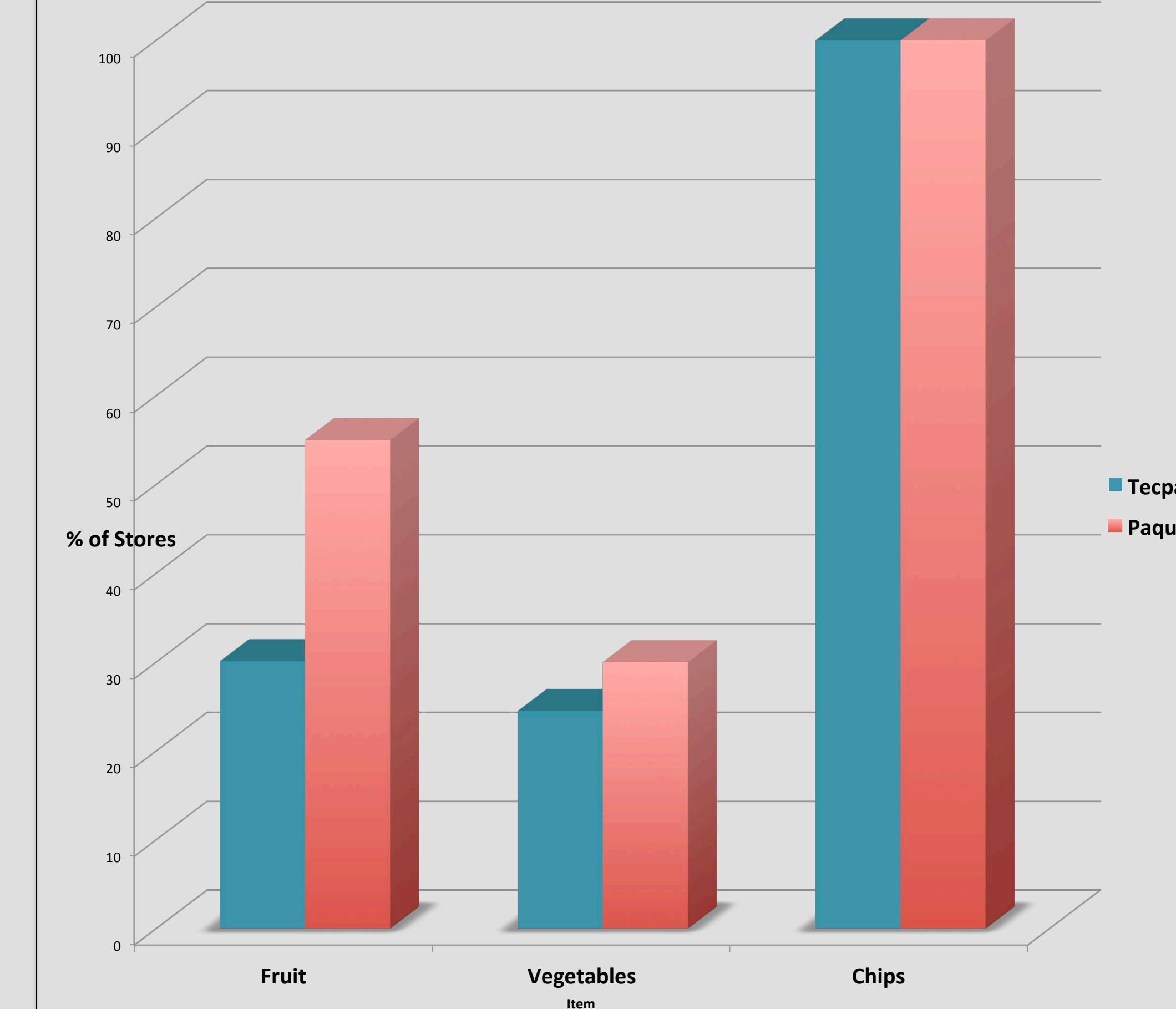


Map 6. Availability of Different Fruit in Xejuyu'



Results: Availability

Graph 1. Percentage of Stores Selling Each Item



Conclusions¹

- Despite land availability for health foods, most crops are sold for export
- Extreme poverty creates “food desert” situation where junk foods are often the only option
- Expensive costs of cooking fuel make snack-food consumption more affordable
- Children enjoy purchasing snacks after school
- 100% of stores sold chips, less than 20% of total stores sold fruit or vegetables
- Percentage of stores selling fortified foods in Xejuyu' may be higher due to lack of a central market; less availability of fresh produce

Recommendations

- Shifting food production back toward local consumption
 - A shift in production would mean less emphasis on *tiendas* as the only source of dietary consumption
- Strengthening land tenure laws
 - Securing rights to land is a critical factor in achieving household food security and improved nutritional status
- Education in indigenous communities about the importance of dietary diversity, especially for <5 children
 - Education tools should be administered in the local, indigenous language

Acknowledgments and References

This work was supported by the University of Florida MDP Program, the MacArthur Foundation, Wuqu' Kawoq, and the UF Latin American Studies Department. Special thanks to my advisor, Dr. Rick Rheingans and my director, Dr. Glenn Galloway.

- ¹Conclusions were drawn from the market inventory study and supplemental information provided by Wuqu' Kawoq
- Brown et. al. “Mixed-methods study identifies key strategies for improving infant and young child feeding practices in a highly stunted rural indigenous population in Guatemala.” *Maternal and Child Nutrition*. 2014.
- FEA Food Export Association. “Central America Market Profile.” 2011. Web 20 January 2015.