

## THE MICROFEWS STUDY

Food, energy and water (FEW) security are essential for healthy and sustainable communities. Researchers with the Alaska Center of Energy and Power (ACEP) and the Institute of Social and Economic Research (ISER) are studying what FEW security looks like in rural Alaska. In the winter of 2020 researchers traveled to Igyararmiut (Igiugig), Kangirnak (Kongiganak) and Cordova and spoke with 114 households across the three communities to learn about FEW security.

The purpose of this report is to share the results from surveys in your community and the other participating communities. There is another report in this series, [on the renewable energy results](#). We hope you find this interesting and helpful for planning communities future. Please do not hesitate to contact us with any questions or comments at [jjschmidt0@gmail.com](mailto:jjschmidt0@gmail.com) or [bajohnson20@alaska.edu](mailto:bajohnson20@alaska.edu).



### Surveyed Households

Igyararmiut (Igiugig)	13
Kangirnaq (Kongiganak)	51
Cordova	50
<b>Total</b>	<b>114</b>

## Key Findings



- Food, energy connections were strong when it came to subsistence foods.
- Limited transportation negatively impacted FEW security.
- Health was negatively impacted by low food and water security.



- Food security was high in our communities.
- Subsistence and health was vital to food security.
- Cost of gas limited subsistence activities among 58% of households.



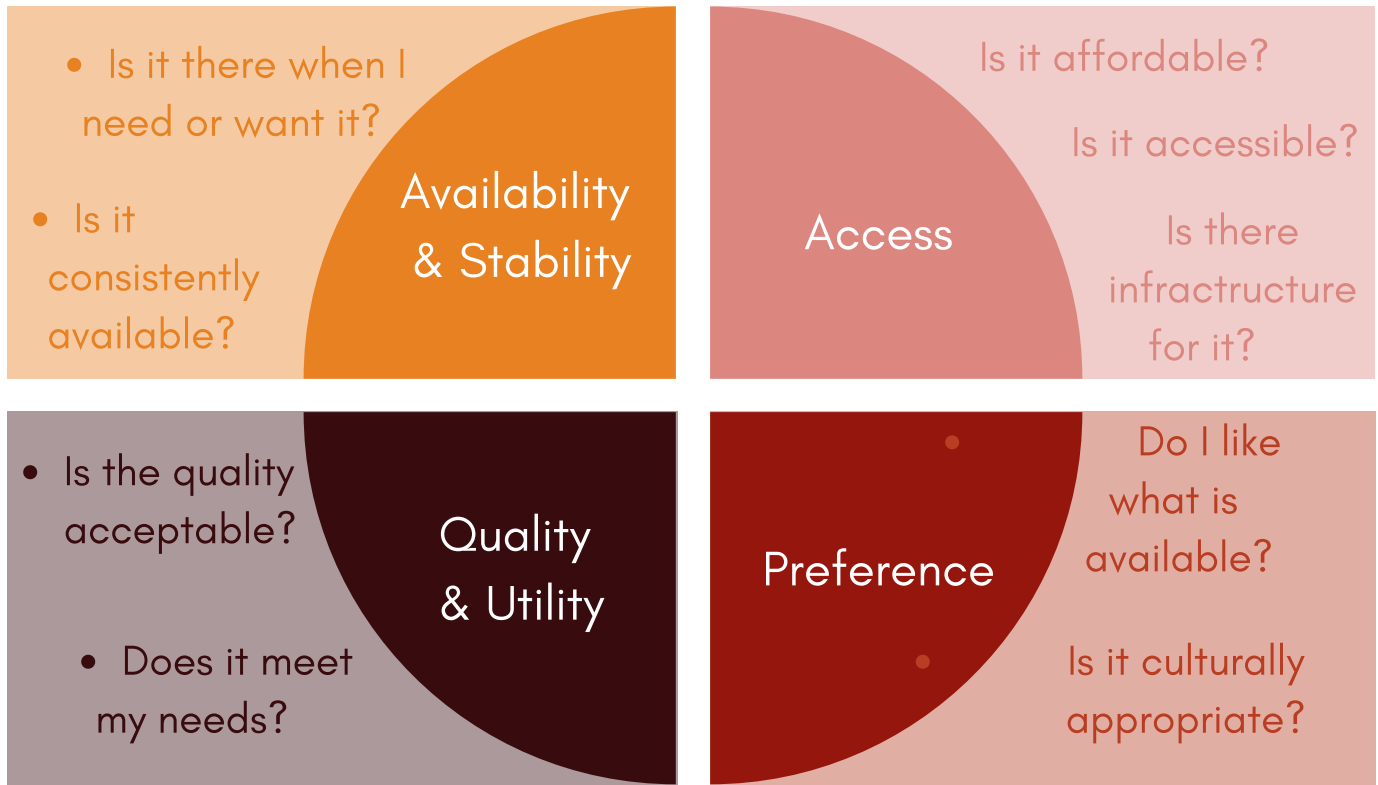
- People felt least secure in energy.
- The inability to harvest energy lowered security.
- Increased satisfaction with renewable energy was related to higher energy security.



- Water security was high in Cordova & Igiugig.
- Even without piped water in Kongiganak 35% felt most secure in water.
- Access to alternative water sources (river, pond, lake) was key to security.

# FOOD, ENERGY & WATER SECURITY

## The Security Framework



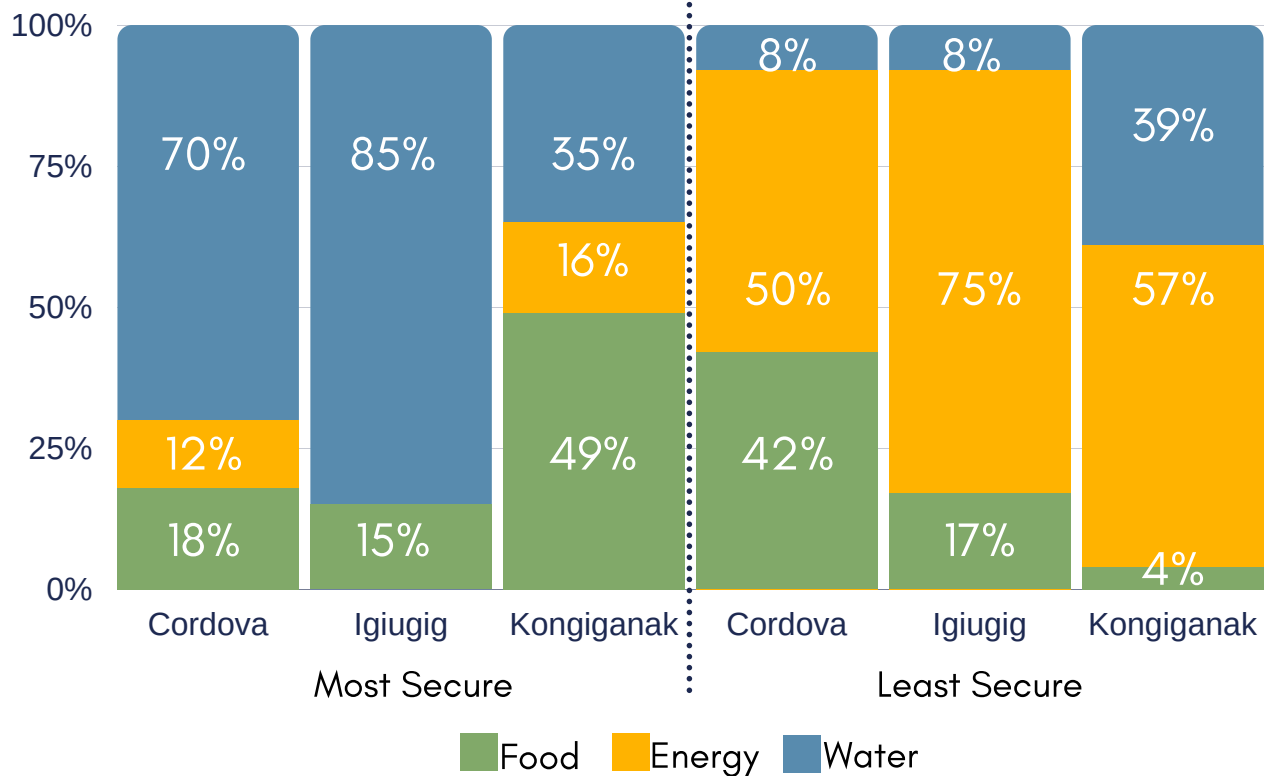
Being food, energy or water secure means more than just having access to these resources. As shown in the diagram above, in this study we defined security as having four components: 1) access, 2) preference, 3) quality and utility, and 4) availability and stability. We believe that FEW security requires satisfaction in all four categories and we used this framework to guide our questions for households in your community.

For an illustration of this framework, let's look at water security, which includes drinking water and sanitation services. Many factors impact water security. It is not enough to just have in-home piped services, but the water must be of good quality and available. Examples could be having too much chlorine in the water or having frozen pipes during winter. In fact, some people may prefer other options. For water security to be achieved:

- A household must have access to affordable water services.
- The water services should be culturally appropriate, and meet the taste and preferences of the user.
- The quality should be acceptable and meet the households' needs.
- The water services should be consistently available, particularly when needed or wanted.

# RESULTS

## Security and Insecurity



**Food Security.** In Kongiganak, where the majority of respondents engage in subsistence, 49% of respondents said they are most secure in food. Conversely, in Cordova, households rely more on store bought foods with 42% indicating they were least secure in food. Last year there was no ferry service over the winter and Cordova residents stated that the lack of ferry service was related to lower food security. In Igiugig, 15% of respondents said food was their highest security, but 17% said it was their lowest.

**Energy Security.** Energy insecurity was high with 50% of respondents in Cordova, 57% in Kongiganak, and 75% in Igiugig listing energy as their lowest security. It appears that when satisfaction in renewable energy decreases energy security decreases. As detailed in our renewable energy report, 68% of respondent in Cordova, 63% in Kongiganak, and 39% in Igiugig said they were satisfied with renewable energy in their community.

**Water Security.** In Cordova and Igiugig, 70% and 85% of respondents, respectively, were most secure in water. The majority of homes in these communities have in-home piped services, and if the water infrastructure were to fail there are alternatives available. In Kongiganak, where households must rely on a washeteria and haul their own water, 35% said they were most secure in water, but 39% said water was their lowest security.

# RESULTS

## Drivers of Food, Energy and Water (FEW) Insecurity:

	Igiugig	Kongiganak	Cordova
Food	Access & Quality	Access & Quality	Access & Quality
Energy	Access (Affordability)	Access & Availability	Access & Quality
Water	Access & Availability	Access (Infrastructure)	Access (Infrastructure)

### Igiugig

Food security was high, thanks to subsistence. Respondents had concerns about the availability and quality of store foods. The local store mainly sold snack foods. Transportation costs limit how much people can import into the community.

"If the planes stop, then we have no deliveries"

Respondents felt least secure in energy due to access issues driven by affordability. Fuel, heat and electricity were expensive. The community's fuel pump was unreliable during winter.

Water security issues were due to issues of access and availability. Piped systems often froze, and respondents with wells reported problems with water quality.

### Kongiganak

Food security was impacted by access and quality issues. Cost, weather, and transportation impacted people's ability to subsist and bring in food from the outside. Transportation included getting food into the community and delivery to the households. The local store was expensive and limited.

Energy insecurity concerns were driven by access and availability issues. Electricity, heat, and fuel were expensive. Power outages were a concern, as was wiring inside homes. Sometimes the community fuel pump ran out of fuel.

"It is challenging to heat our homes"

Water security issues were due to access problems due to a lack of infrastructure. With no pipes, residents had to haul water, which required access to transportation.

### Cordova

Food security was impacted by access, particularly affordability issues and quality. The lack of ferry service had driven up food costs, and decreased the availability of fresh foods at the store. Harvest regulations and need for employment also played a role, as they impacted the ability to do subsistence.

Energy concerns were due to access and quality issues for heat and fuel. Respondents had problems paying for heat and fuel due to high costs, and insulation problems.

Water insecurity was generally low. Problems were primarily reported by people living off-grid, whose water supply depends on rainwater. Three people reported not liking the taste of chlorine in the piped water system.

"With the drought we had limited rain"

**AWA'AHDAH**

**QUYANA**

**THANK YOU**

HAVE A QUESTION? CONTACT JEN SCHMIDT (JISCHMIDT0@GMAIL.COM) OR BARBARA JOHNSON (BAJOHNSON20@ALASKA.EDU)

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