

## PROBLEM STATEMENT

Inhabitants of the Andes in the southern regions in high altitude suffer from a common phenomenon known as *friaje* which affect the livelihood of the people, their animals, and their crops.

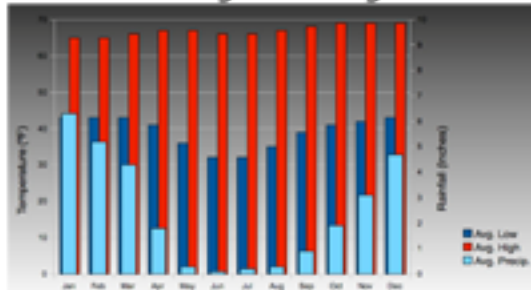
## OBJECTIVES

Create an affordable and sustainable home design for regions in the Andes affected by *friaje* using locally available materials and passive design strategies.

## WHAT IS FRIAJE?

**Friaje** is a common phenomenon in high altitude areas in the southern regions of the Andes which occurs when polar winds blow from the mountainous south. Typically occurs between June and August.

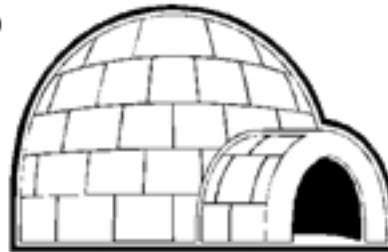
climate averages in Langui, Peru



# design

INSPIRATIONS design

igloo



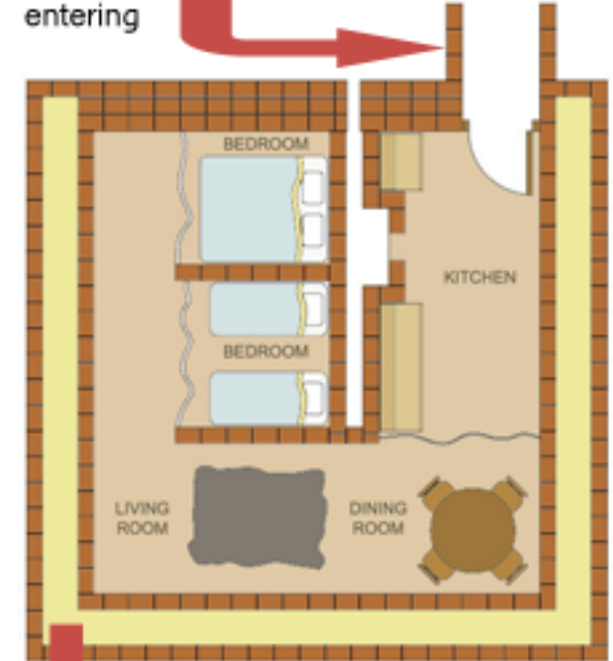
*why?* igloos were designed to withstand cold climates.

current homes



*why?* homes in Peru were constructed using locally available materials

long narrow entrance inspired by igloo entrance, which prevents cold winds from penetrating in the home upon entering



**adobe** is the main building material used in the rural areas of Peru. Combining adobe walls with locally found **straw bale** more than quadruples the *R-value* of the walls.

**R-value:** a measure of thermal resistance. The bigger the number, the bigger the building's insulating effectiveness.

## BUILDING MATERIALS

all materials are locally available



adobe



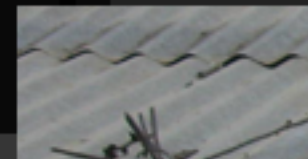
bamboo



animal skin



straw bale



corrugated metal