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

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