

ENVISIONING A CLIMATE CHANGE-PROOF FUTURE

A short-sighted vision prevents real transformation

More transformative and sustainable responses to environmental changes are ones built on social norms and cultural values that go beyond short-term, market-driven gains.

Women bring at least half of the wisdom

Kermani women have played a critical role in organizing handcrafters and farmers to manage the production and sales of handcrafts and governance of water channels.

Harnessing local and global knowledge to overcome vulnerability

Kermani residents have adjusted to climate change through collective and individual measures influenced by social, economic, and cultural elements. Yet remoteness from financial resources and reliable climatic information leaves them unsure of their vulnerability and the long-term effectiveness.

PUBLIC INVESTMENT DECISIONS COULD BE BETTER INFORMED

To achieve transformative adaptations in arid regions like Kerman we should prioritize both sustainable adaptation strategies and social processes and infrastructures that favor the sharing of traditional ecological knowledge and climate science for contextualized and socio-culturally situated responses. This involves restoring traditional infrastructures, diversifying livelihoods, fostering resilient food systems, and strengthening collective governance structures.

OPENING LOCAL DIALOGUE TO A GLOBAL SCALE

Indeed, by further exchanging information and experiences from outsiders as well as strengthening social processes that encourage participative and community-based dialogue and action, policy makers can identify more effective climate change adaptation measures and increase the likelihood of successful adoption at the grassroots level.



LICCI is a European Research Council (ERC) funded project aiming to bring Indigenous and local knowledge to climate change research. Visit the project website for more details and research results.
www.licci.eu

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Credit: Hamed Zolfaghari

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Local Indicators of
Climate Change Impacts



Western Lut Desert Iran



For millennia, the people of the Western Lut Desert have relied on agriculture and herding. To navigate the arid climate, they have crafted local governing systems and water infrastructure to sustain their livelihoods. However, these innovations are now under growing threat from climatic and political-economic changes, leaving them with limited means to adapt and respond effectively.

Credit: Mariam Abazeri

KERMANI FARMERS OF THE WESTERN LUT

With a population of 1,700 households spread over 30 villages, the Kermani have long relied on aquifer water to sustain their traditional livelihoods.



ACTIVITIES



Agriculture: mainly garlic; sparingly grains, fodder, date fruit, henna, and other vegetables.



Husbandry: Cattle and sheep.



Mixed income activities:
Handcrafts and tourism.

TERRITORY AND CLIMATE

Arid-desert

CLIMATE*

 45.9 °C avg max
8.2 °C avg min

Changes in the climate

Steady rise in temperatures for more than two decades.

 2.7 mm avg
Higher frequency and longer duration of droughts.
Changes in the onset and duration of seasons: a longer summer, a drier winter.

*Highest recorded land temperature on Earth 80.8°C.



ACCESS TO NATURAL RESOURCES



Aquifers, currently in recession, sustain agriculture and husbandry.



Tamarisk trees nearby provide windbreak and extra income from resin collection.

Changes in the territory

Increased drilling for wells has lowered phreatic levels, reducing water quality and quantity in communal channels.

Tourist facilities –guest houses and hotels–, bring additional income to residents but also intensify the demand for water extraction.

VOICES OF LOCAL KNOWLEDGE

Kermani farmers have a rich, ancestral understanding of the different ways environmental changes interact with human endeavors like water governance and crop cultivation. Through their experiences, we gain valuable insights into the tangible and sociocultural impacts of climate change.

"The water channels used to bring enough water to irrigate our fields but it's getting more expensive to maintain them, especially now that they bring less water and have to compete with wells."

"Farming now requires tractors, fertilizers, laborers, everything is on credit but our incomes keep lowering."

"Lack of coordination amongst ourselves means prices are determined by brokers who keep most of the profits."



Credit: Hamed Zolfaghari



Drivers of change

"The youth are leaving to the cities because incomes here are lower than before and there's less work available."

"We used to cultivate many crops like wheat, barley, alfalfa, oranges, cantaloupe, lentils, and henna, but there's low market value for these crops so now we mostly grow garlic and a few herbs. Raising livestock has also become more expensive and there's little incentive to herd local species of sheep and cattle."



Credit: Mariam Abazeri

Legacy of land reforms

Climate change

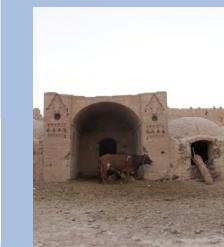
Economy

"There is less dew and moisture in the air and with more heat waves, it's harder to grow crops."



Credit: Hamed Zolfaghari

IMPACTS ON LIVELIHOODS AND CULTURE



Credit: Hamed Zolfaghari

A shift towards profitability

Higher temperatures, less water, and lower market value for staple crops and animal products has reduced herding practices and lowered crop diversity toward more profitable alternatives.



Credit: Mariam Abazeri

Incomes broken free from traditional bounds

As agricultural incomes becomes more precarious, residents have increasingly relied on other livelihood sources such as handcrafting, tourism services, and urban-based labor.



Credit: Mariam Abazeri

A women led water governance

Lower yields from communal water channels has led to more participative interventions enabling women to take on more leadership roles in the community and build greater autonomy.