

Qanat:

(Kariz/ Surangam/ Foggara/ Falaj)

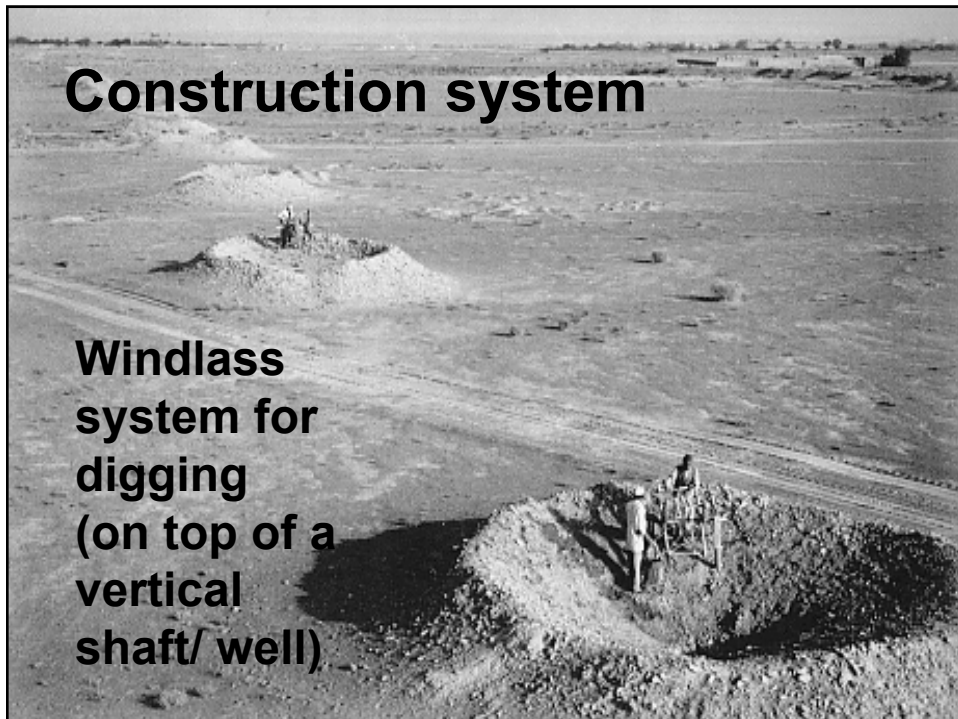
**KARIZ, AN ETERNAL FRIENDLY
TECHNOLOGY FOR HARVESTING
GROUND WATER**



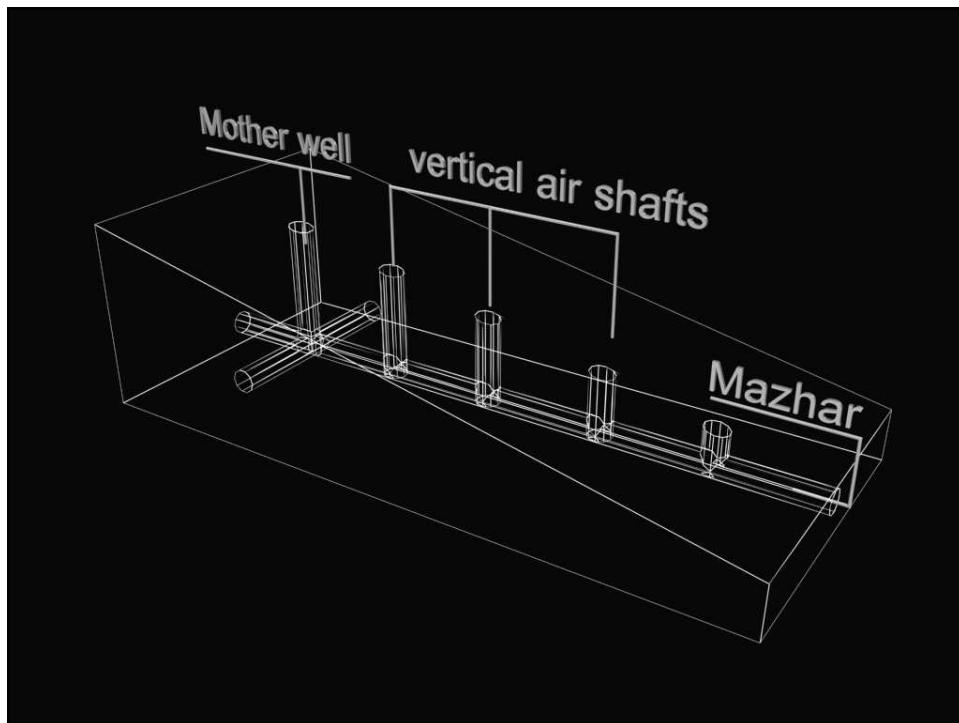
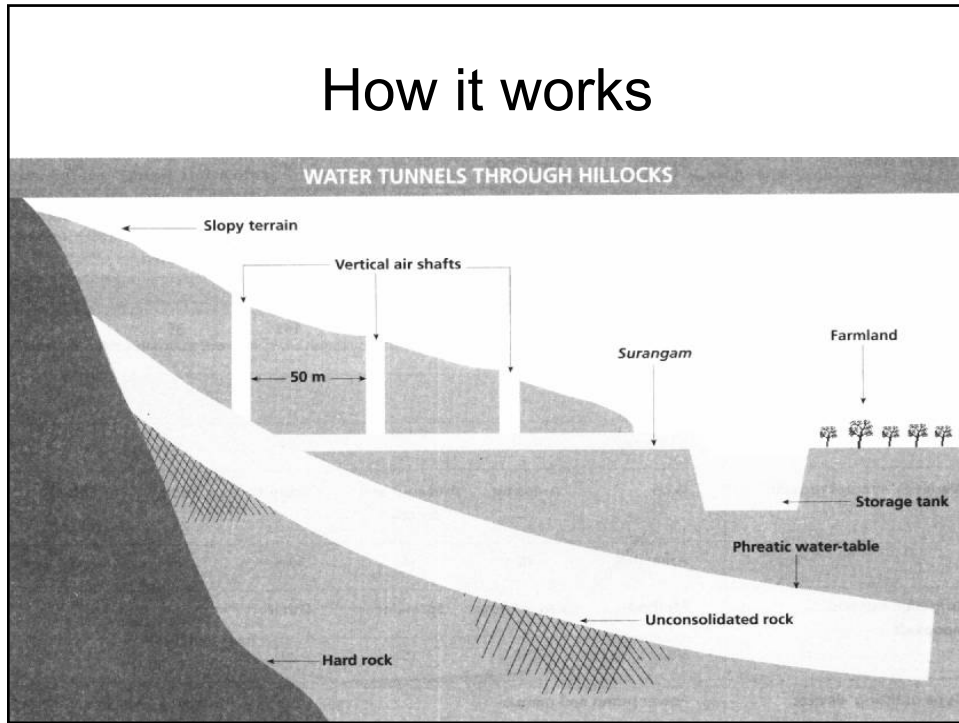
Centre for Sustainable Development
CENESTA, Iran
M.R. HAERI

Construction system

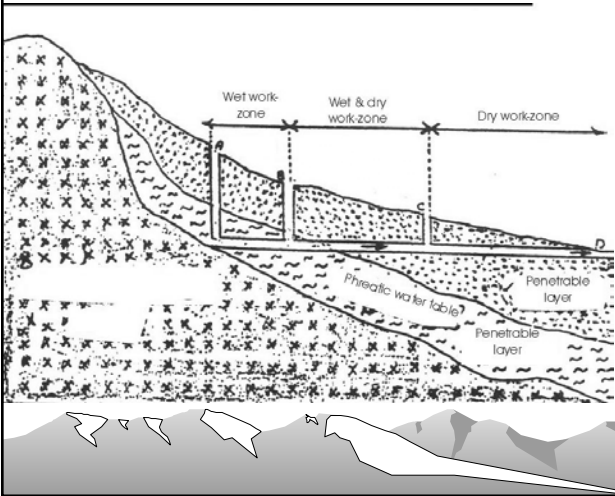
**Windlass
system for
digging
(on top of a
vertical
shaft/ well)**



How it works

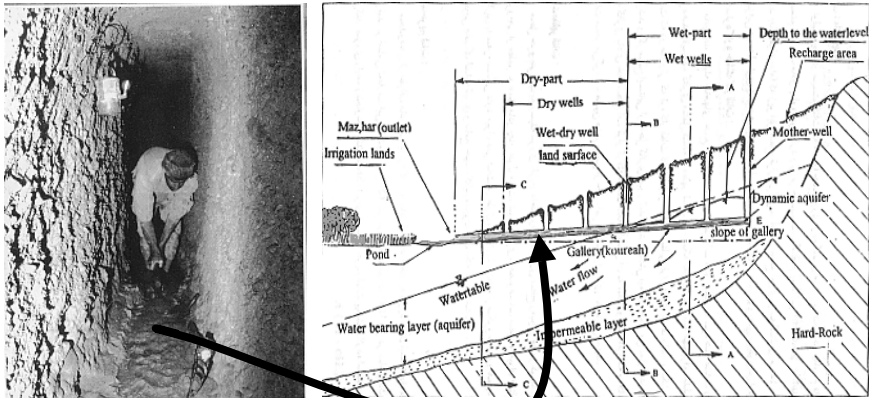


The three work zones



Different techniques are used for working in each zone.

Kureh (Vertical Canal)

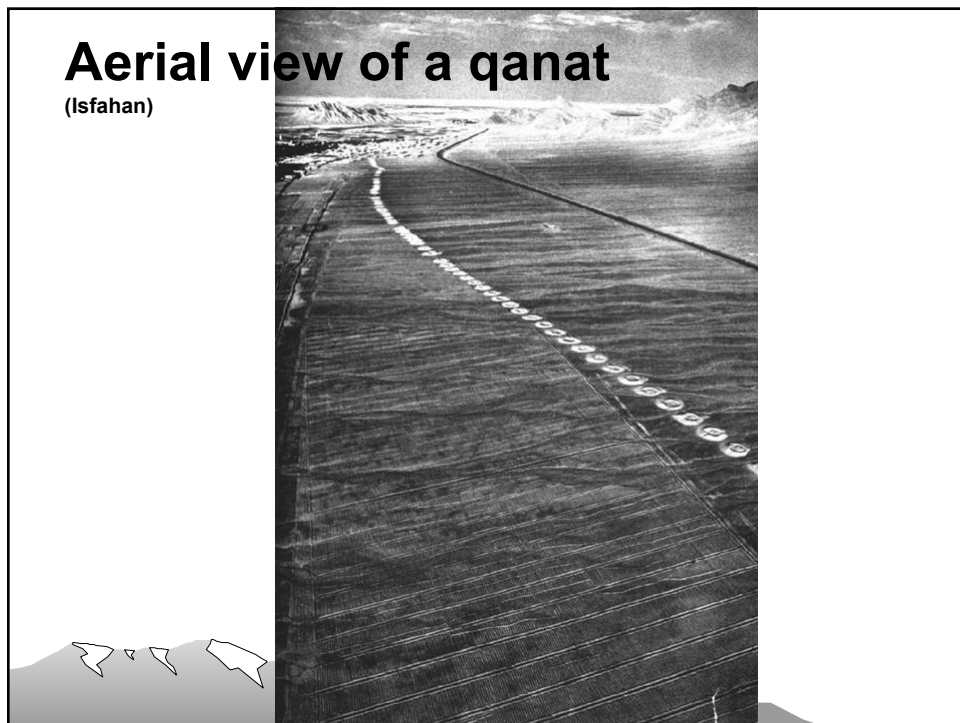
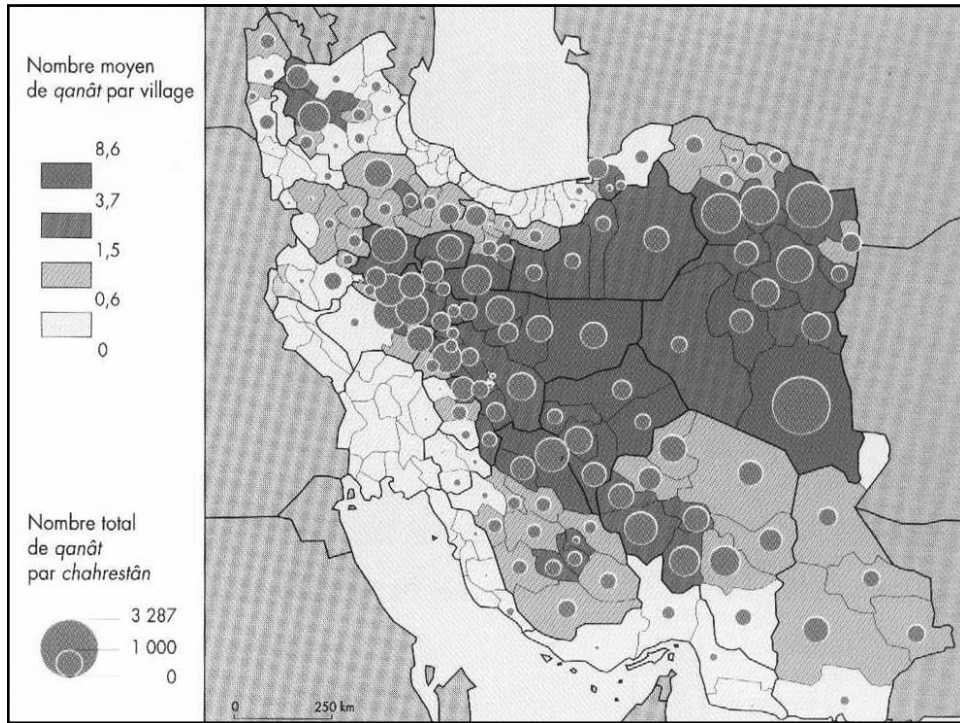




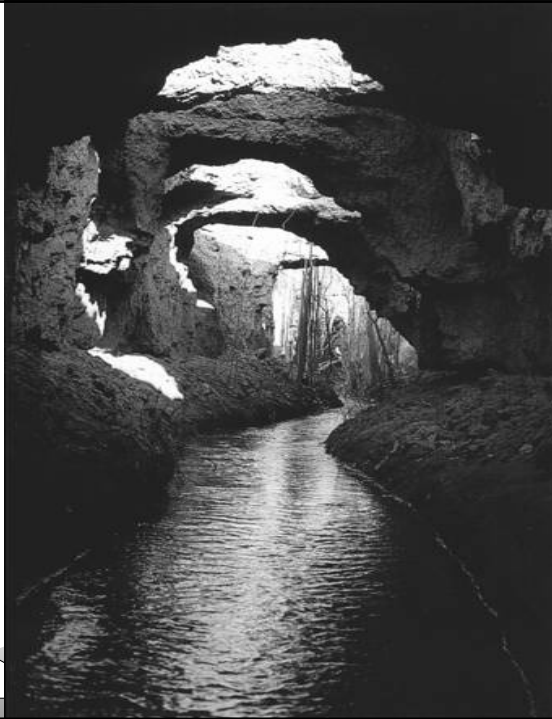
Qanat: a tunnel ground water harvesting system

- An ancient system
- Global in geographic extent and history
- Indigenous knowledge & technology
- Still functional and productive in Iran
- Falling into disrepair and neglect
- Victim of the modernisation mentality



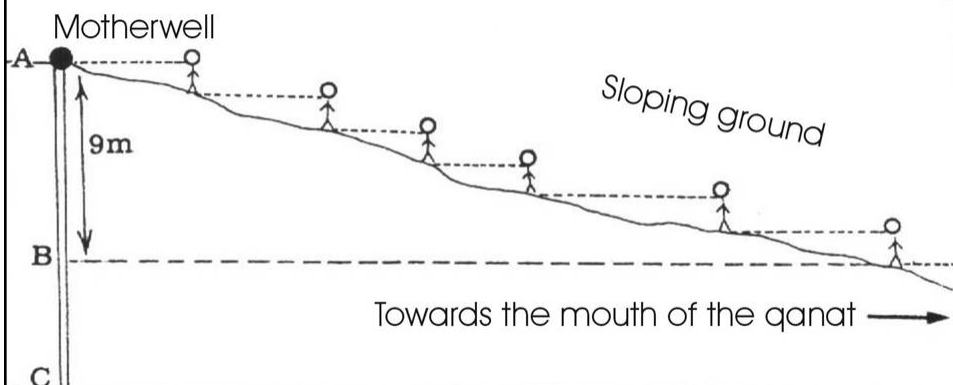


The “mouth” of the qanat: Mazhar

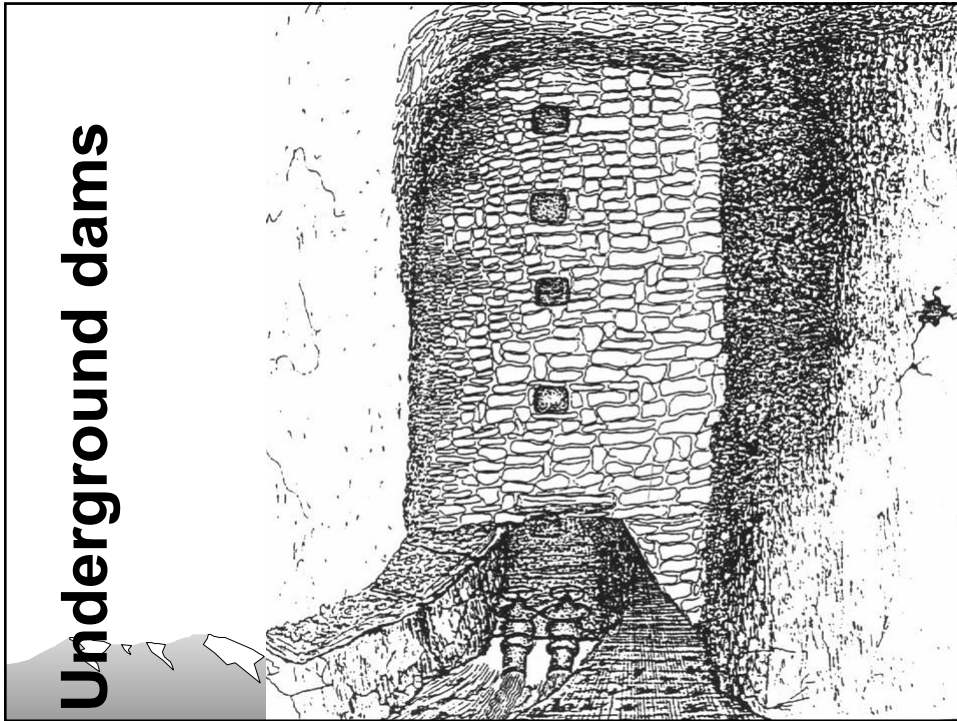


Planning and Surveying

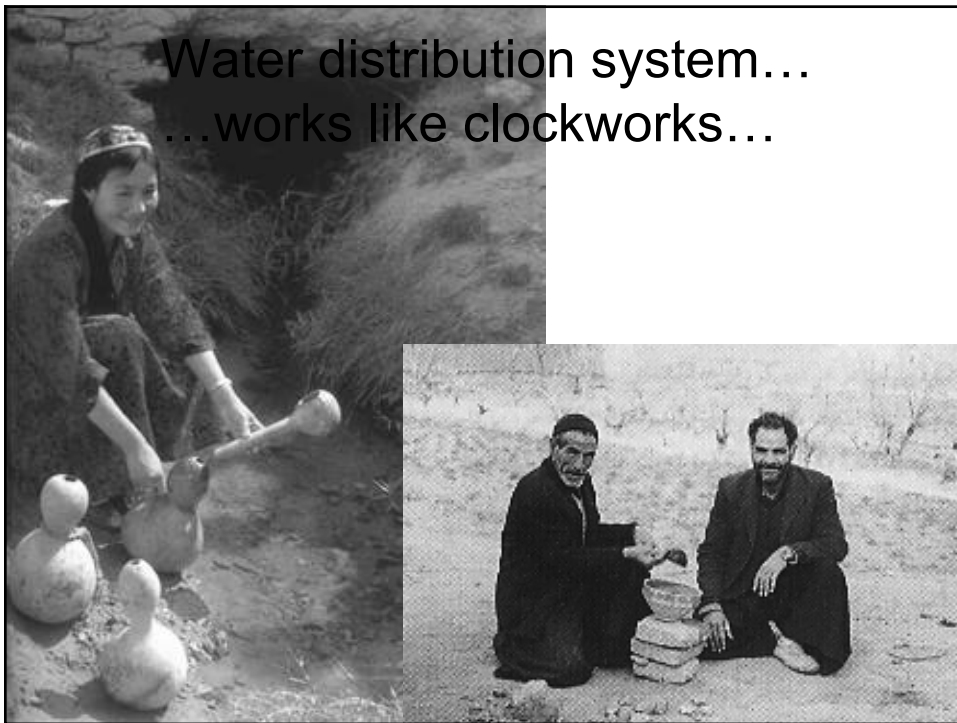
- The landscape is examined, and then a survey team does assessment (geo-hydrological, geographic, soil characteristics, agricultural...)



Underground dams



Water distribution system...
...works like clockworks...



The real water managers...

...”oriental despotism” or democracy at work?



Well	Qanat
Usage of groundwater sources more than the existing capacity	Usage of groundwater sources according to the existing capacity
Unsustainable use of water resources	Sustainable use of water sources
Worsening of water quality with respect to salinity and hardness	Protection of water quality and its amelioration in long-term
After a while agricultural lands are degraded and left unused	Improves agricultural lands and enhances cultivation in long-term
Worsening quality of land	Better quality of land
No cultivation system to follow	A cultivation system that works
Weak collaborative work	Strong collaborative work
Unsustainable agricultural communities	Sustainable agricultural communities
Enhances desertification	Prevents desertification
Unsuitable drinking water for rural and urban dwellers	Very suitable drinking water for urban and rural dwellers

