

# Risk mitigation



Policies for risk governance



Risk management plans



Resilience improvement



Early-warning systems



Risk mitigation works



Accountability



# **Sendai Framework for Disaster Risk Reduction 2015 - 2030**



United Nations

# Policies and management

## **Sustainability**

enhancing traditional knowledge and sustainable practices

## **Socio-economic impact**

hopefully, feasible with the employment of local materials and manpower

## **Environmental impact**

non-invasive

## **Knowledge and solutions**

Effective solution, based on the best possible knowledge

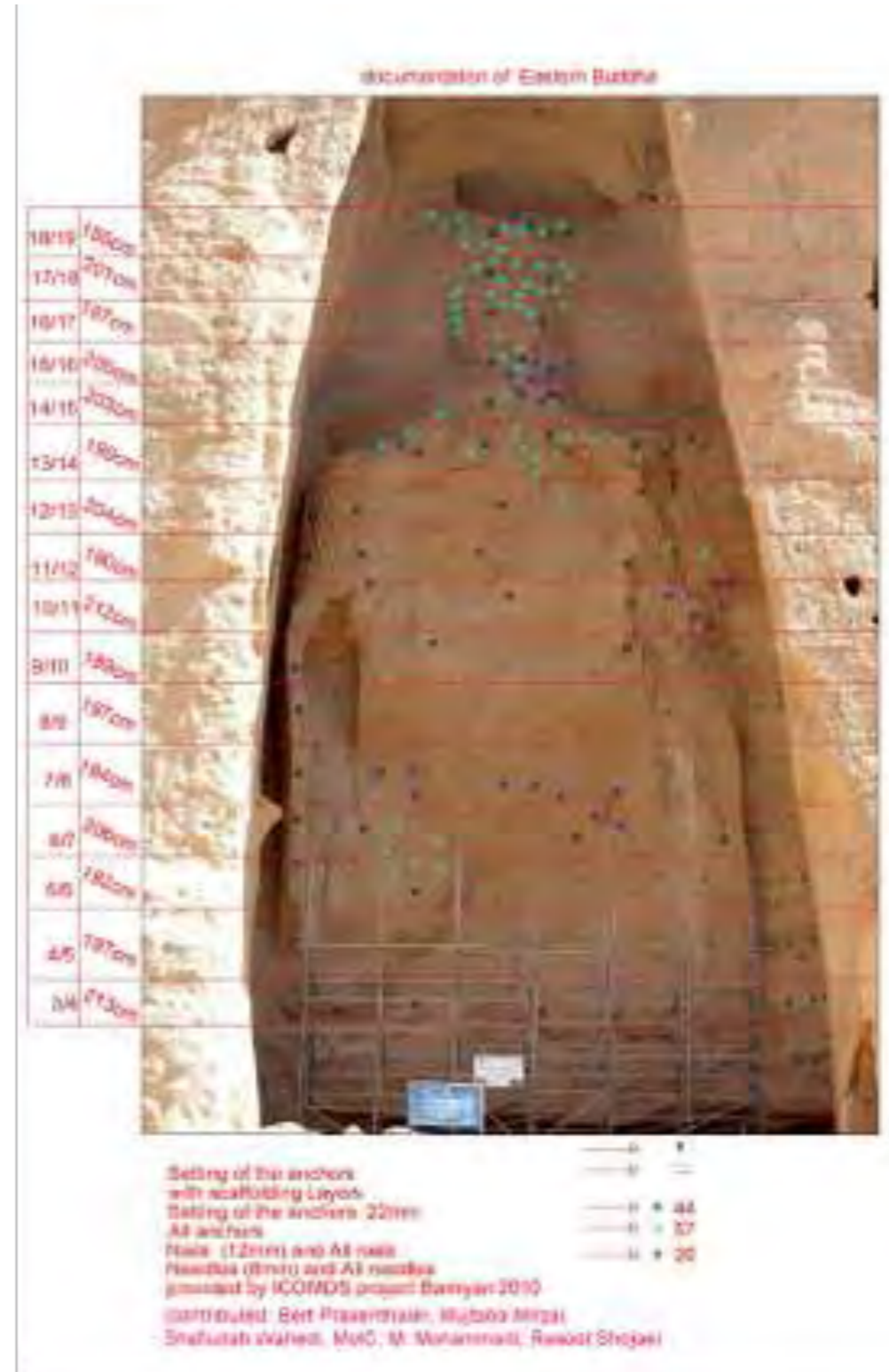


# Key principles

- solve the problem
- preserve the original aspect of the site
- make benefit of local experience,
- maximize the reproducibility, both in time and space, of the adopted techniques in case of further interventions
- involve local community in protection and development of the site



# Cliff stabilization works



Bamiyan (Afghanistan)



# Cliff stabilization works

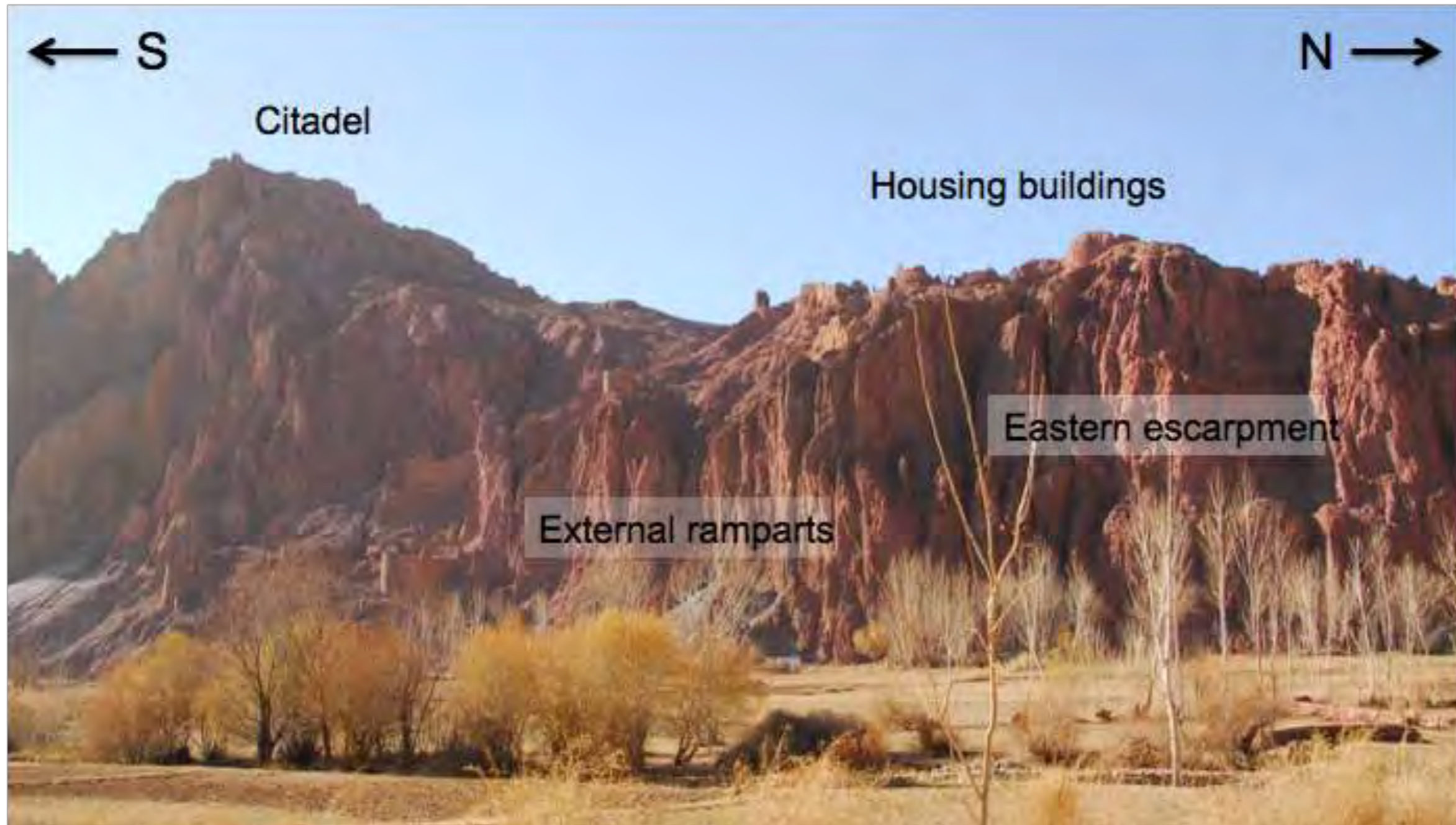


Bamiyan  
(Afghanistan)





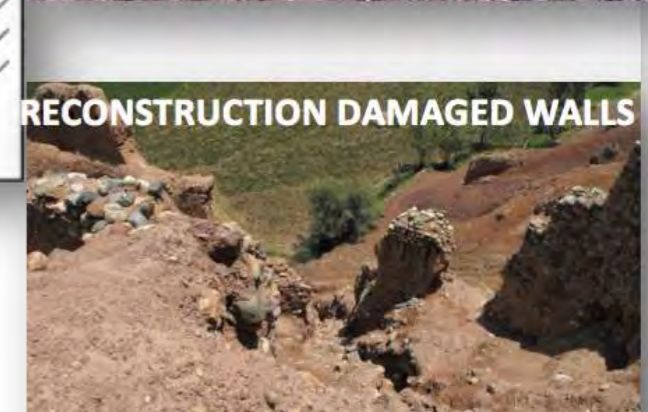
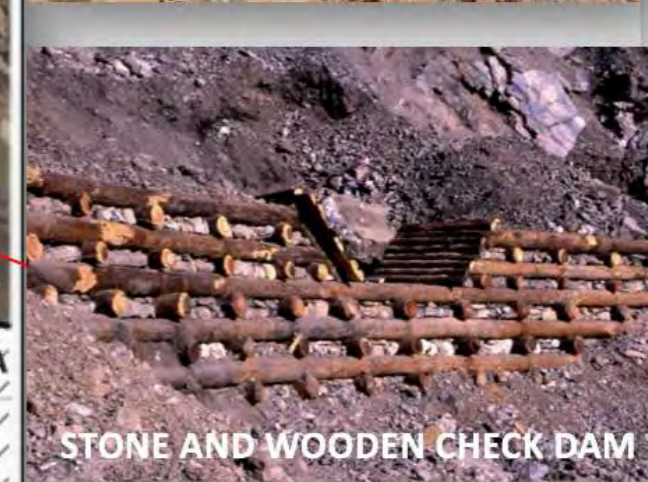
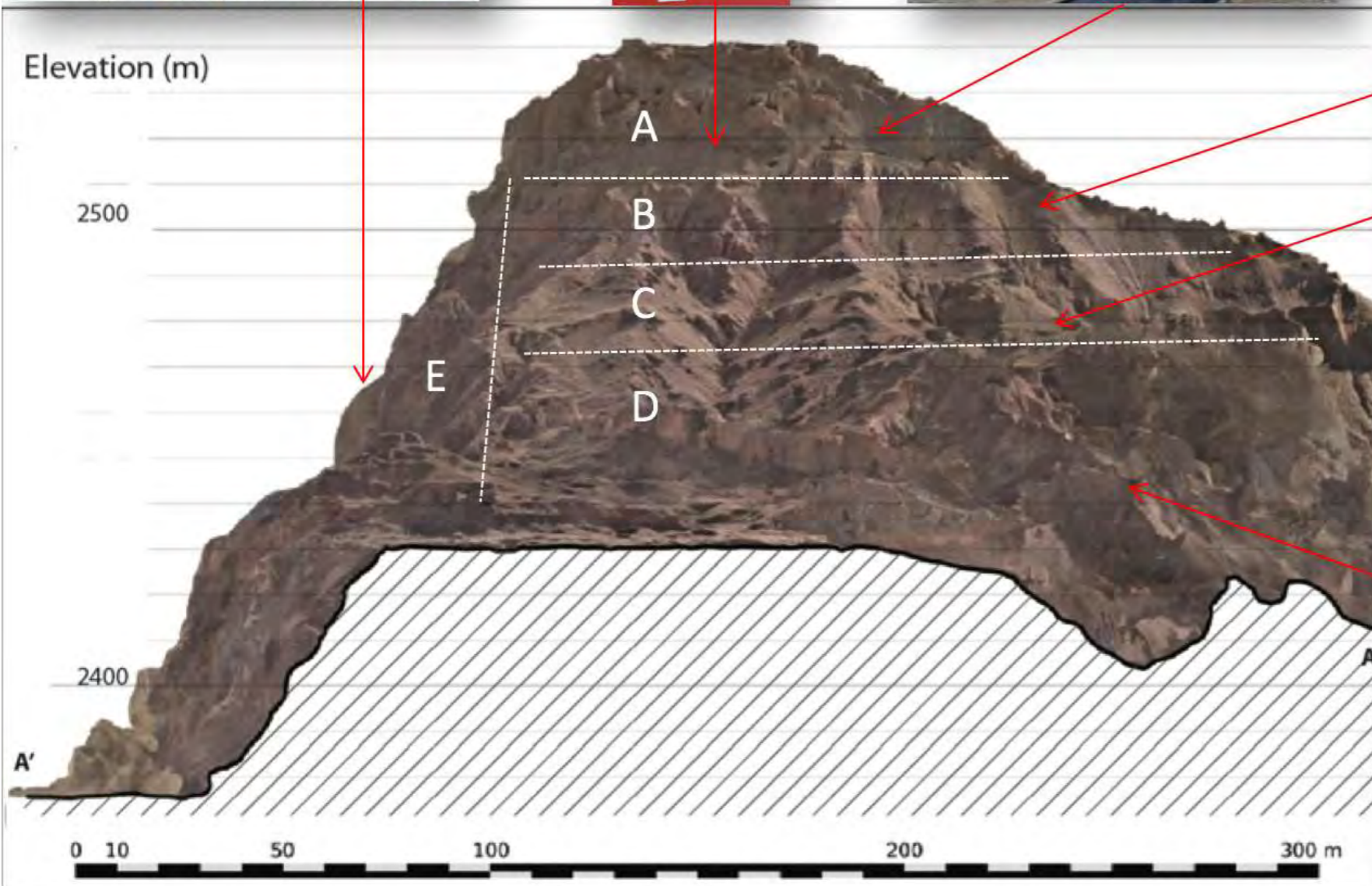
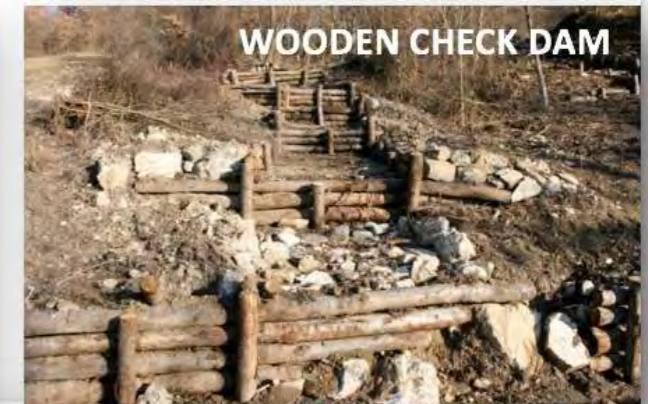
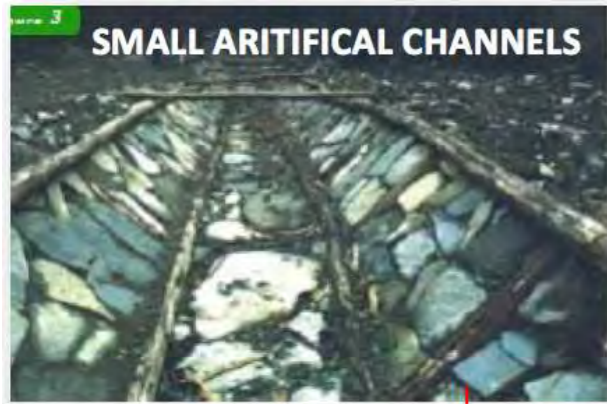
# Protection from erosion



Shar-e-Zohak (Afghanistan)



# Protection from erosion



Shar-e-Zohak (Afghanistan)



# Drainage



Kogurio (North Korea): drainage trench

# Not only with new technologies

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# Drainage



Tools used at site...

Kogurio (North Korea): drainage trench



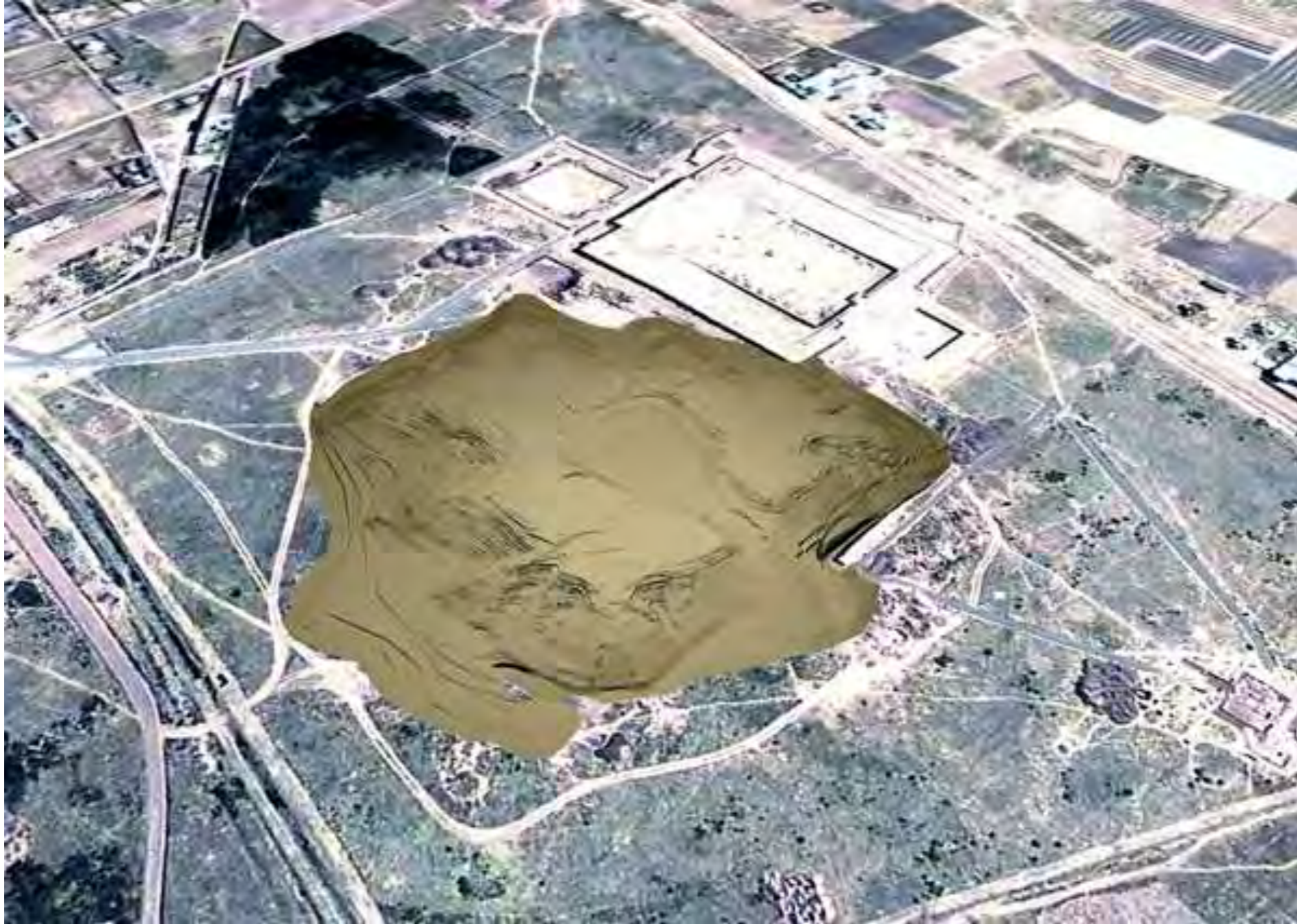
# Traditional techniques



Shar-E-Zohak (Afghanistan)



# Traditional techniques



Tiwanaku (Bolivia): Akapana pyramid



# Traditional techniques



**Penca** (or Penka) is a cactus mucilage. It is mixed with straw and mud for clay stabilization and reinforcement

Tiwanaku (Bolivia): Akapana pyramid



# Traditional techniques



Penca treatment

Tiwanaku (Bolivia): Akapana pyramid



Thank you for your attention and see you soon in Florence

