



International Erosion Control Association



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# Land reclamation on Easter Island: a demonstration project

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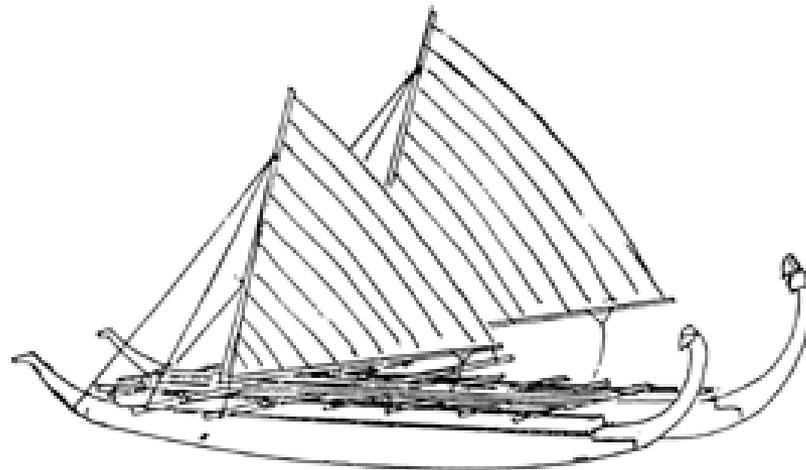
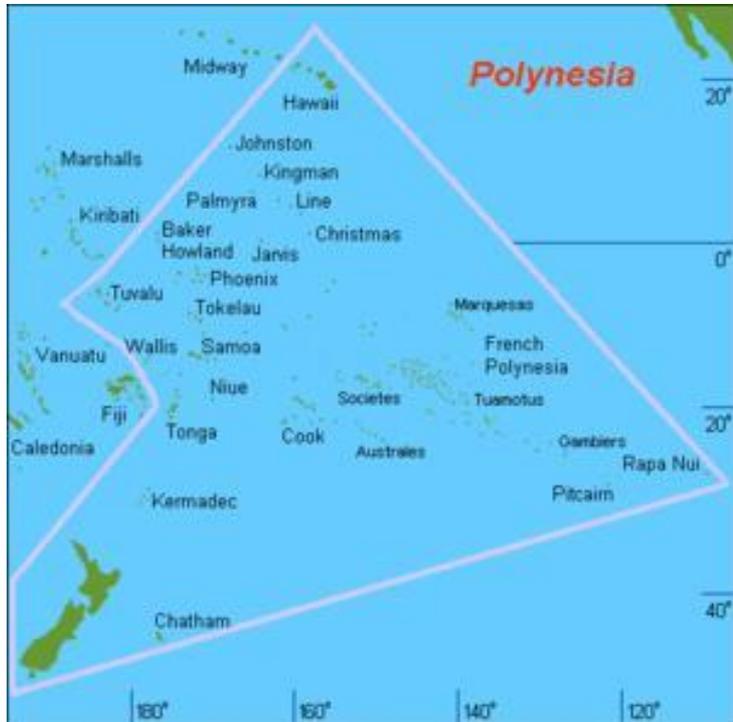


# A brief history lesson



# First settlements

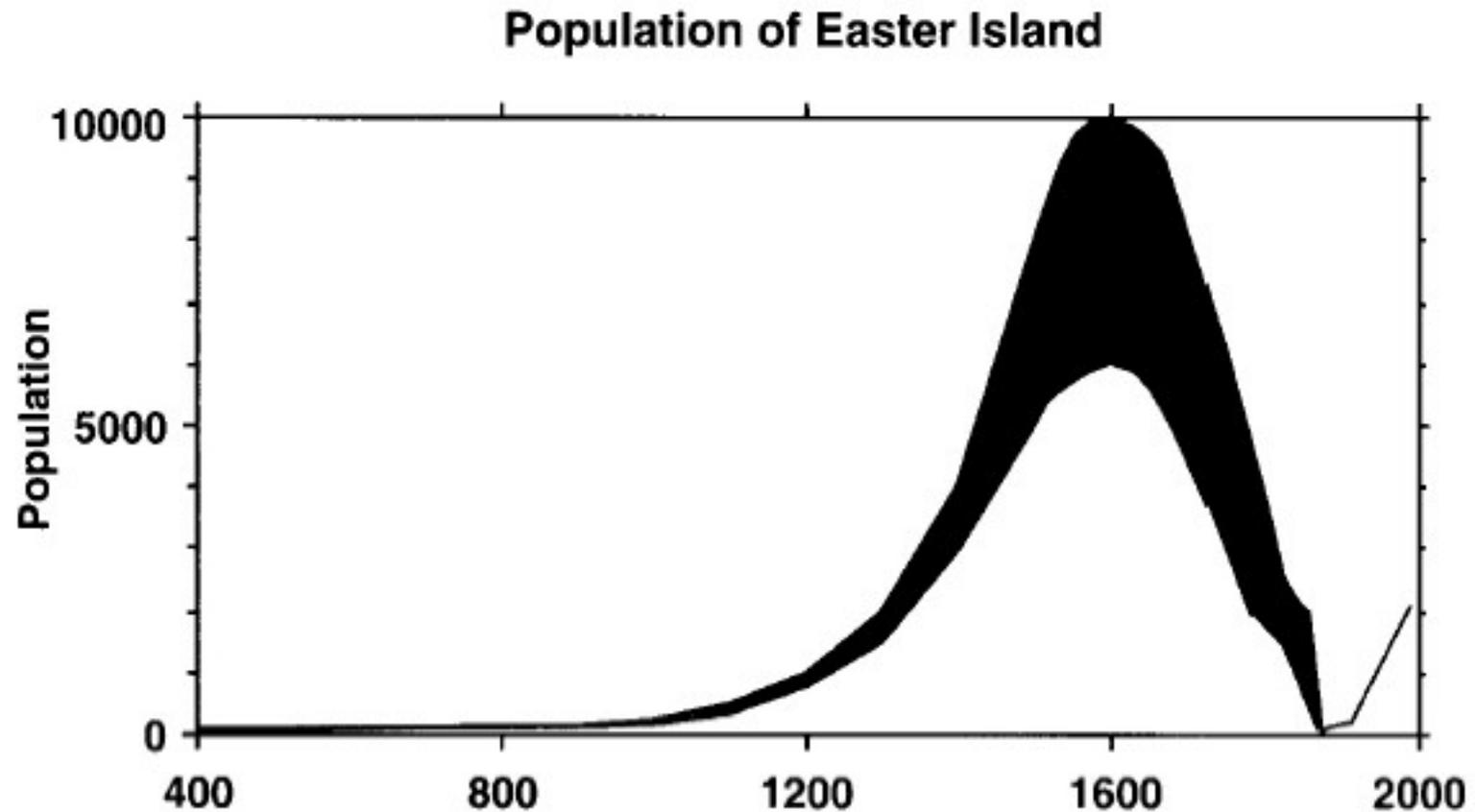
- Between 300 and 1,200 a. D.





# Establishment and development of a civilization

- Population













- Jacob Roggeveen (April 5th, 1722)







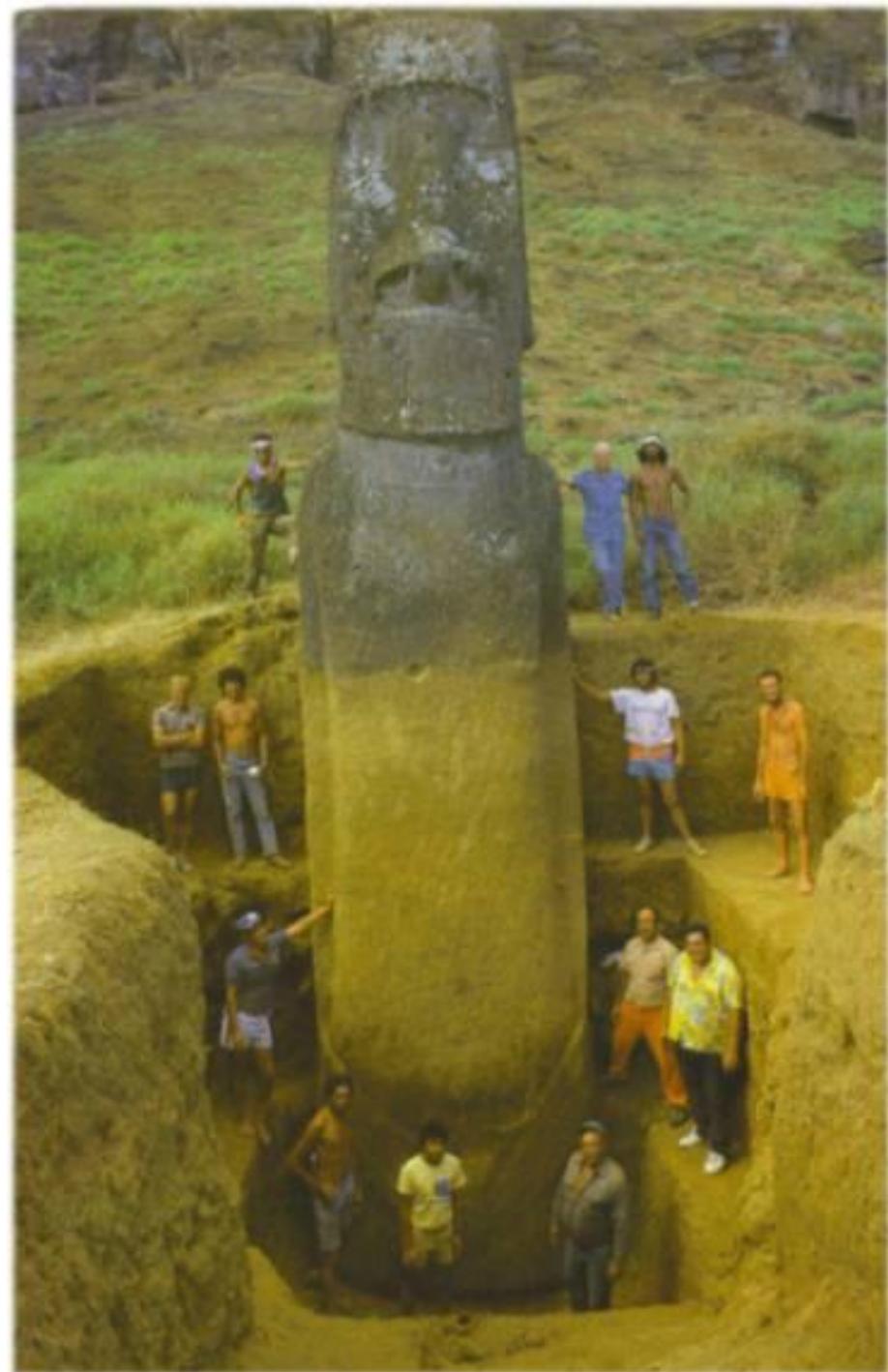








What happened  
and how did they  
transport the  
structures?



# Establishment and development of a civilization

- Disappearance of ancient forests
- How did they disappear?



# Theories

- Deforestation



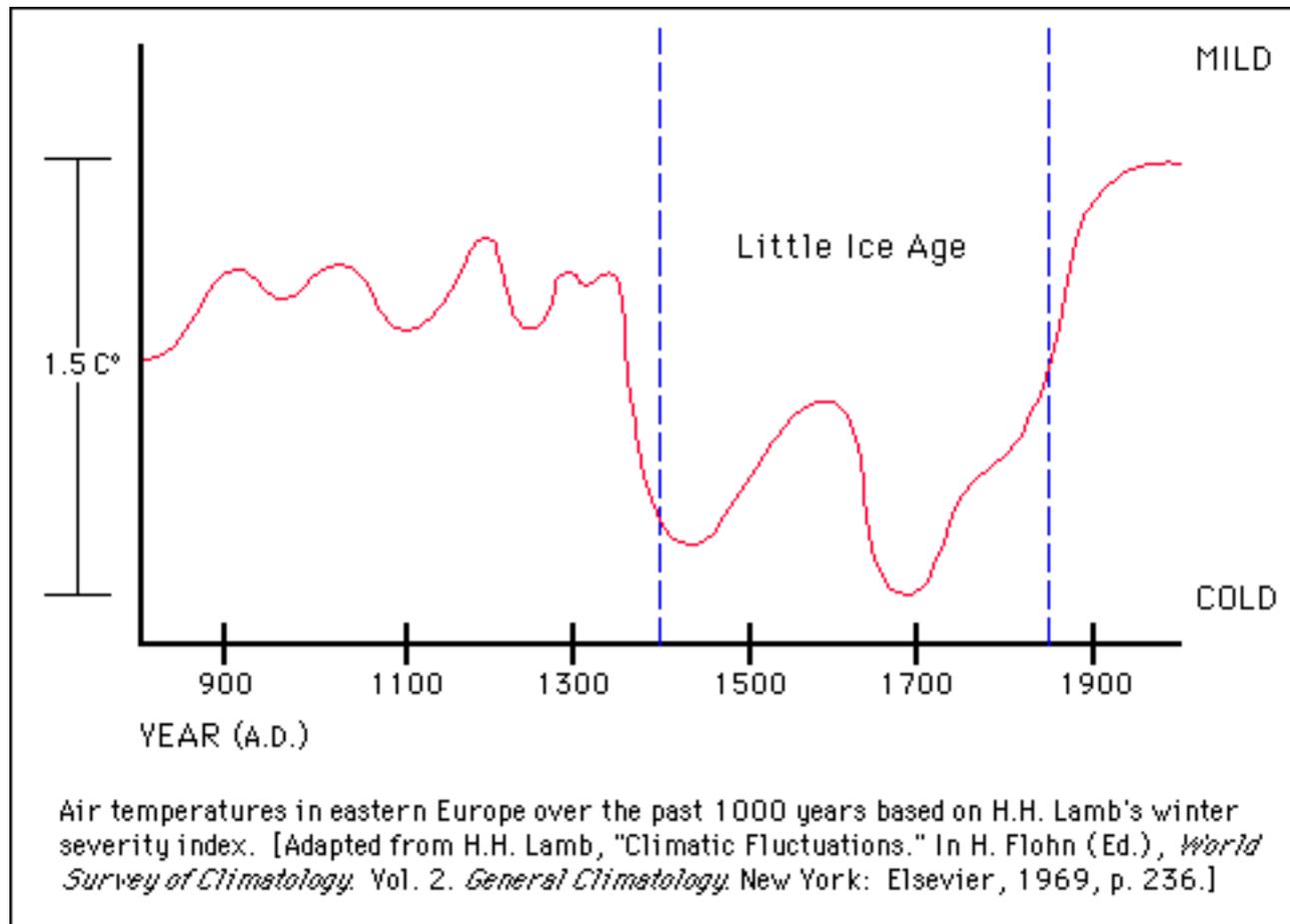
# Theories

- Rats (*Rattus exulans*)



# Theories

- “The little ice age”





# Consequences of forest removal

- Lack of prime material
- Erosion and desertification
- War
- Collapse of the civilization



# Reciently

- Slavery
- Sickness
- By 1877: 111 people alive
- Chile takes over and rents the island for grazing







# Today

- Main land uses:
  - Overgrazing











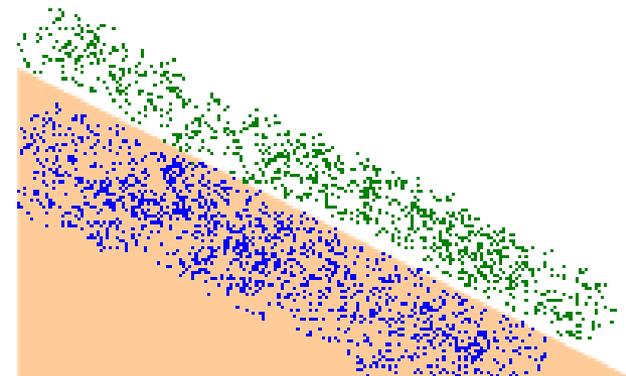
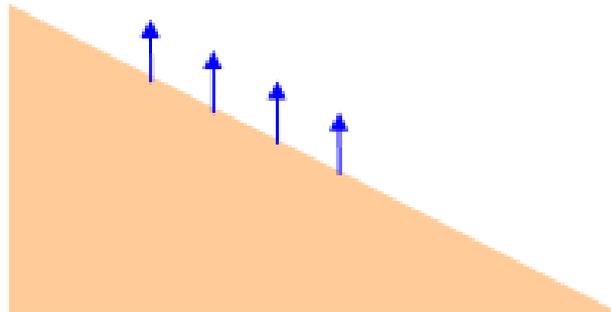
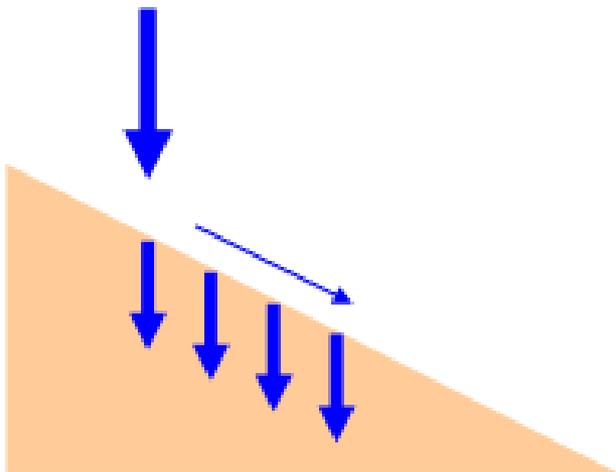
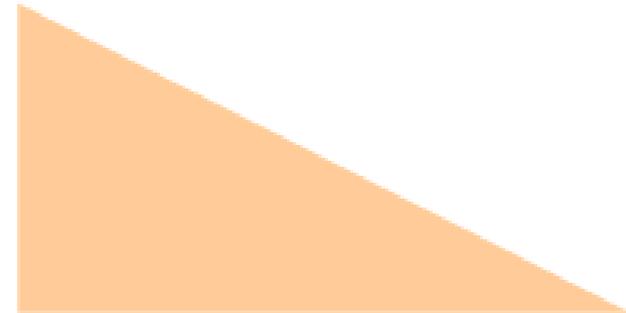
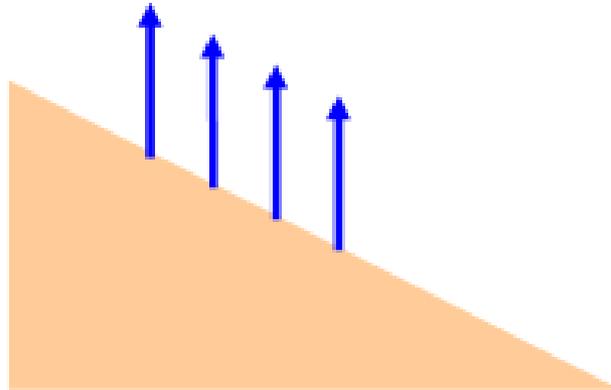
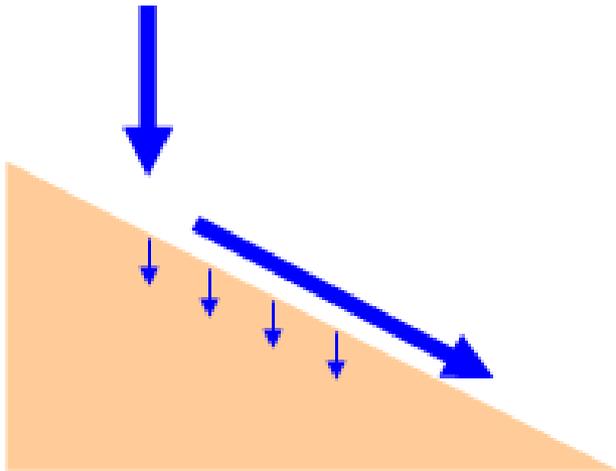


# Today

- Main land uses:
  - *Pennisetum clandestinum*



# Solución

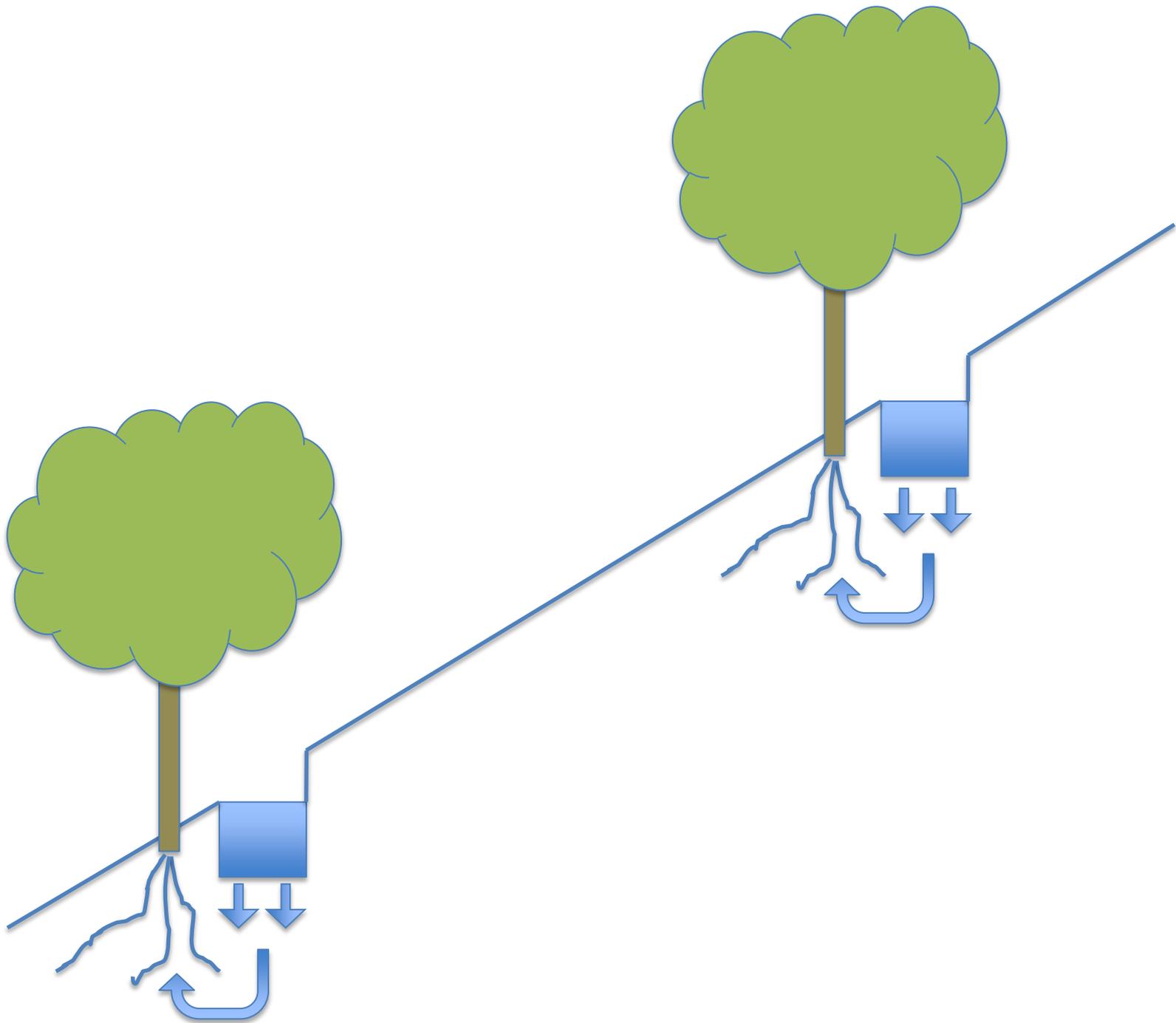




# Infiltration trenches

- Low cost
- Replicable
- Decrease the slope length and stabilizes the soil
- Rainwater harvesting









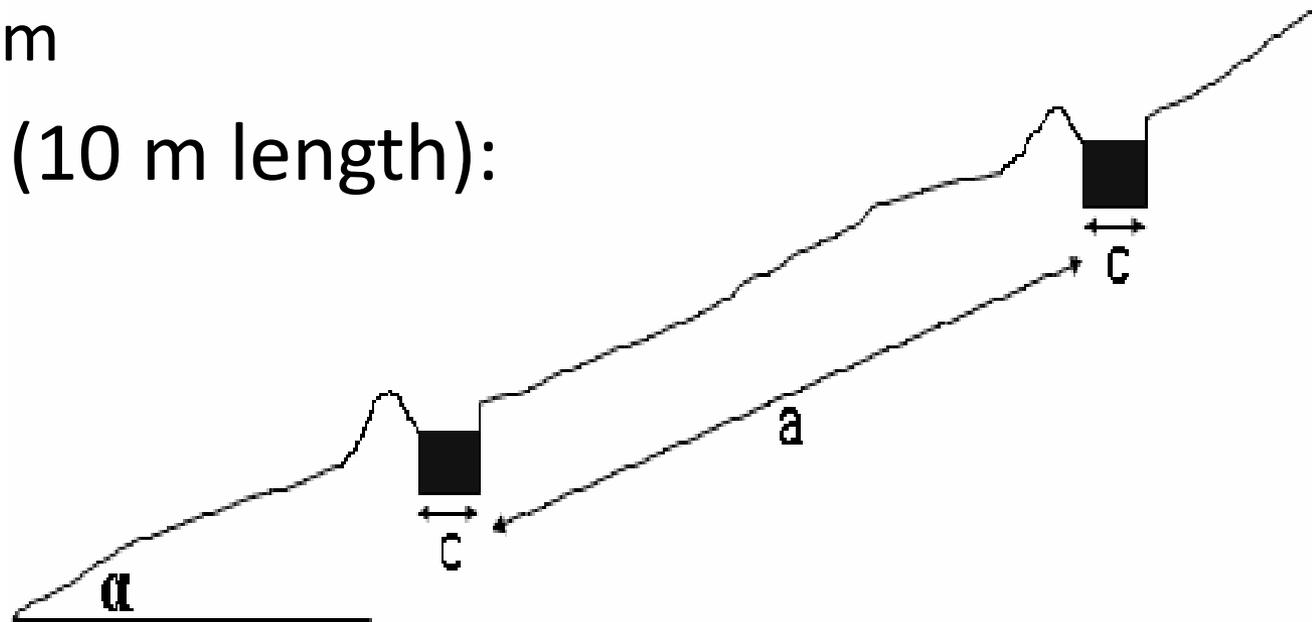
# Experimental design

- 10 infiltration trenches



# Design

- Gumbel method for precipitation design 14.9 mm (RP = 10 years)
- SCS method CN = 89 (grass in good condition, soil group C)
  - $Q = 1.86$  mm
- Dimensions (10 m length):
  - $a = 10$  m
  - $c = 20$  cm



# Study area

































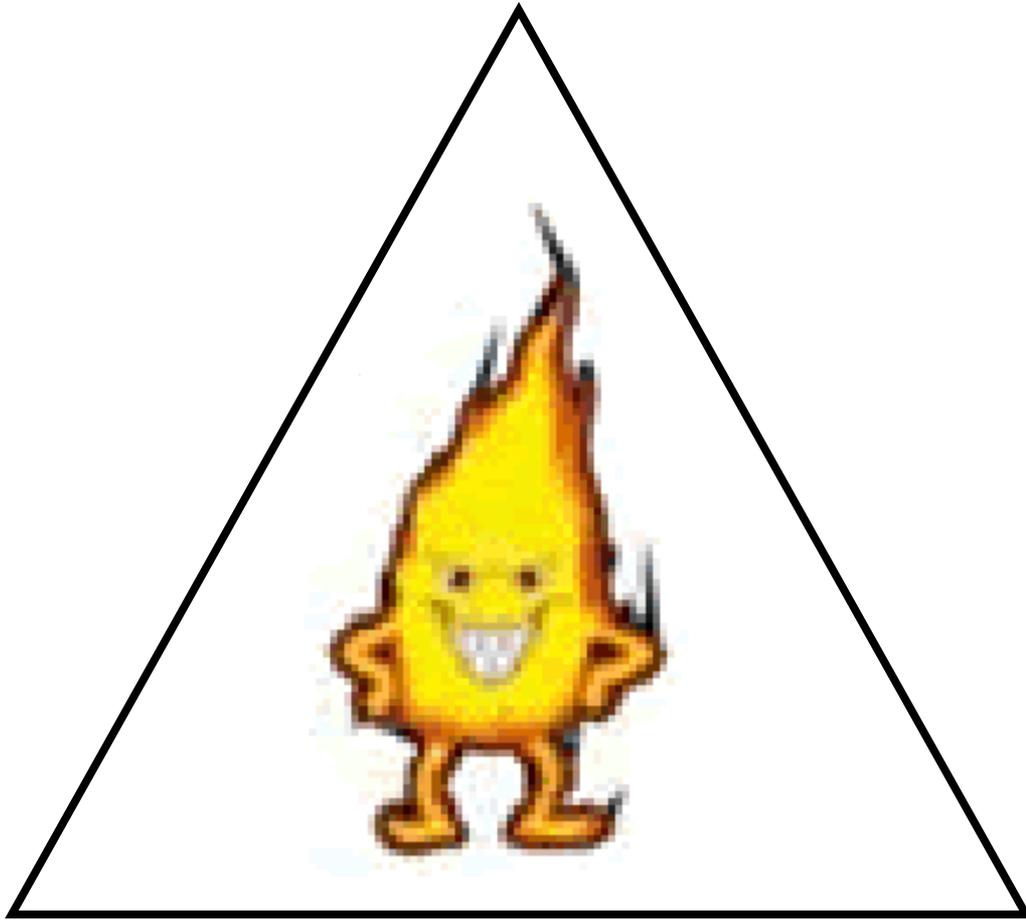


# *Sophora toromiro*

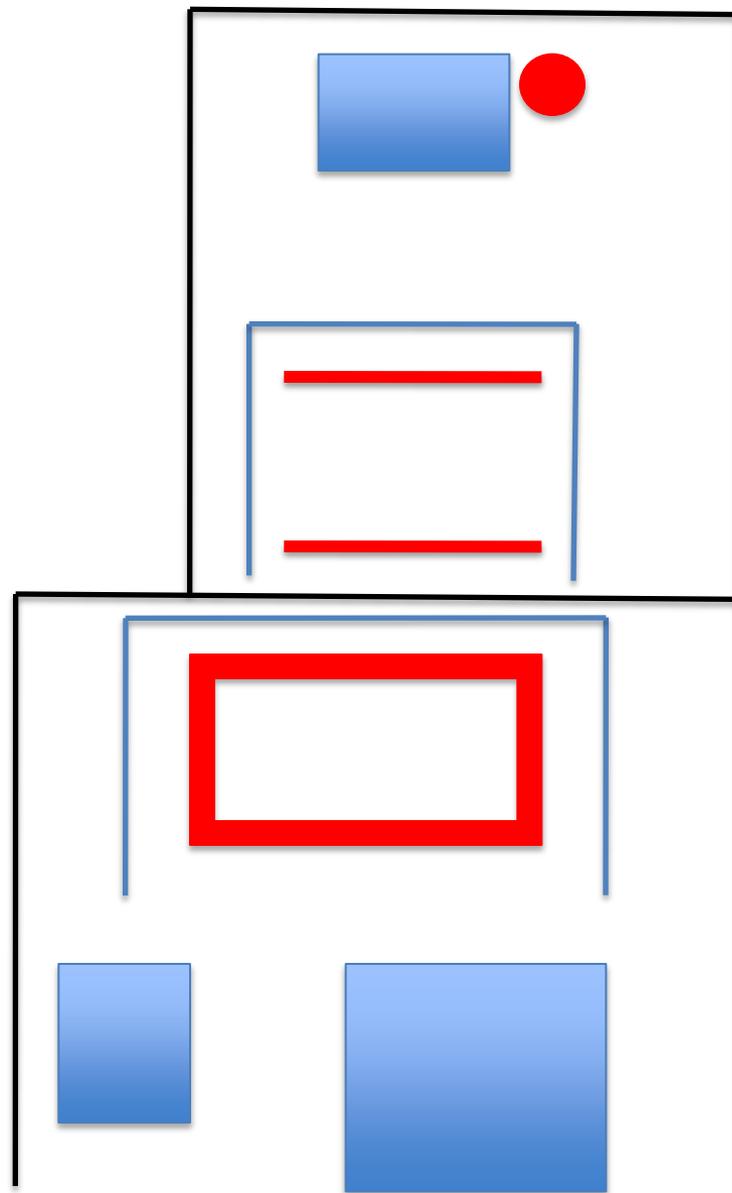
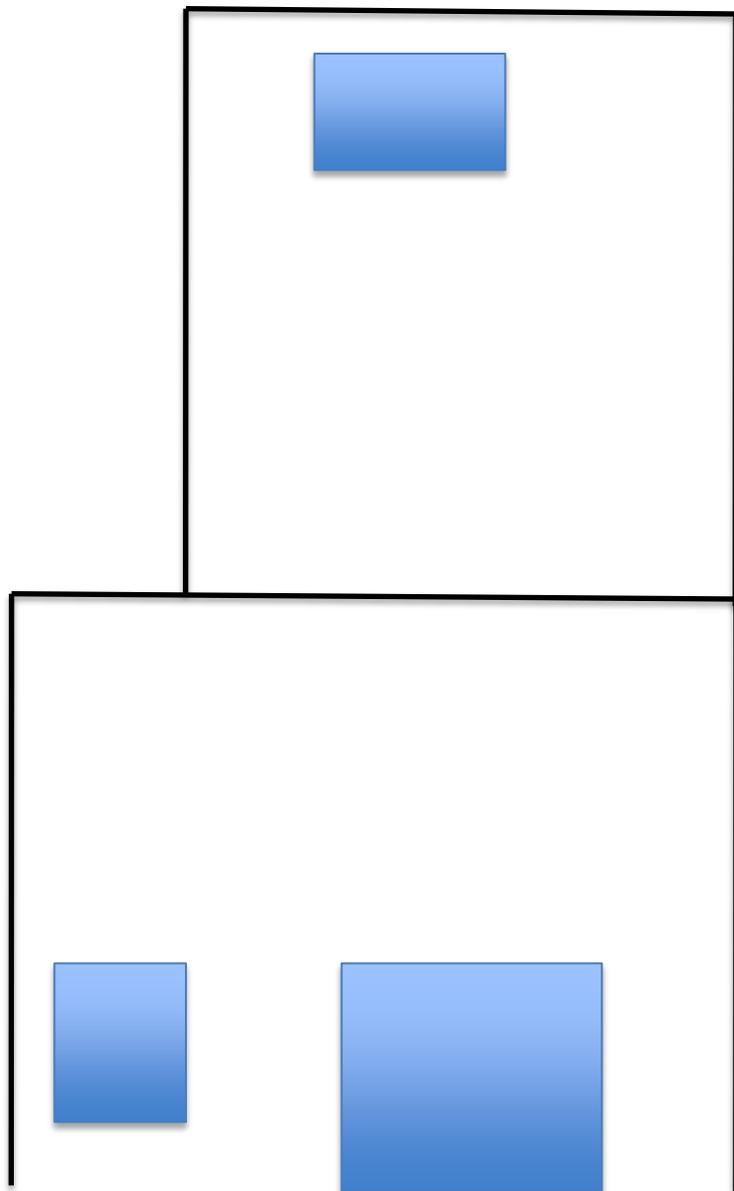




But....













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Rotoplastic

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# Plan of action

- Monitoring for a year
- Replication
- Commercial alliances
- More grants



# Relevance of the project

- Productivity on areas that have been sterile for centuries
- A planetary lesson



# Acknowledgements

- IECA/SOIL Fund
- Reforestation Technologies International
- Rapa Nui
- Volunteers
- All of you

