

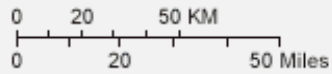
EWB-Israel

Sustainable Engineering in the
Eastern Mediterranean:
Sharing knowledge, Lending a Hand

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Israel

- International Boundary
- - - - - Armistice Line
- Cease-Fire Line
- Road
- River
- ★ National Capital
- City or Town

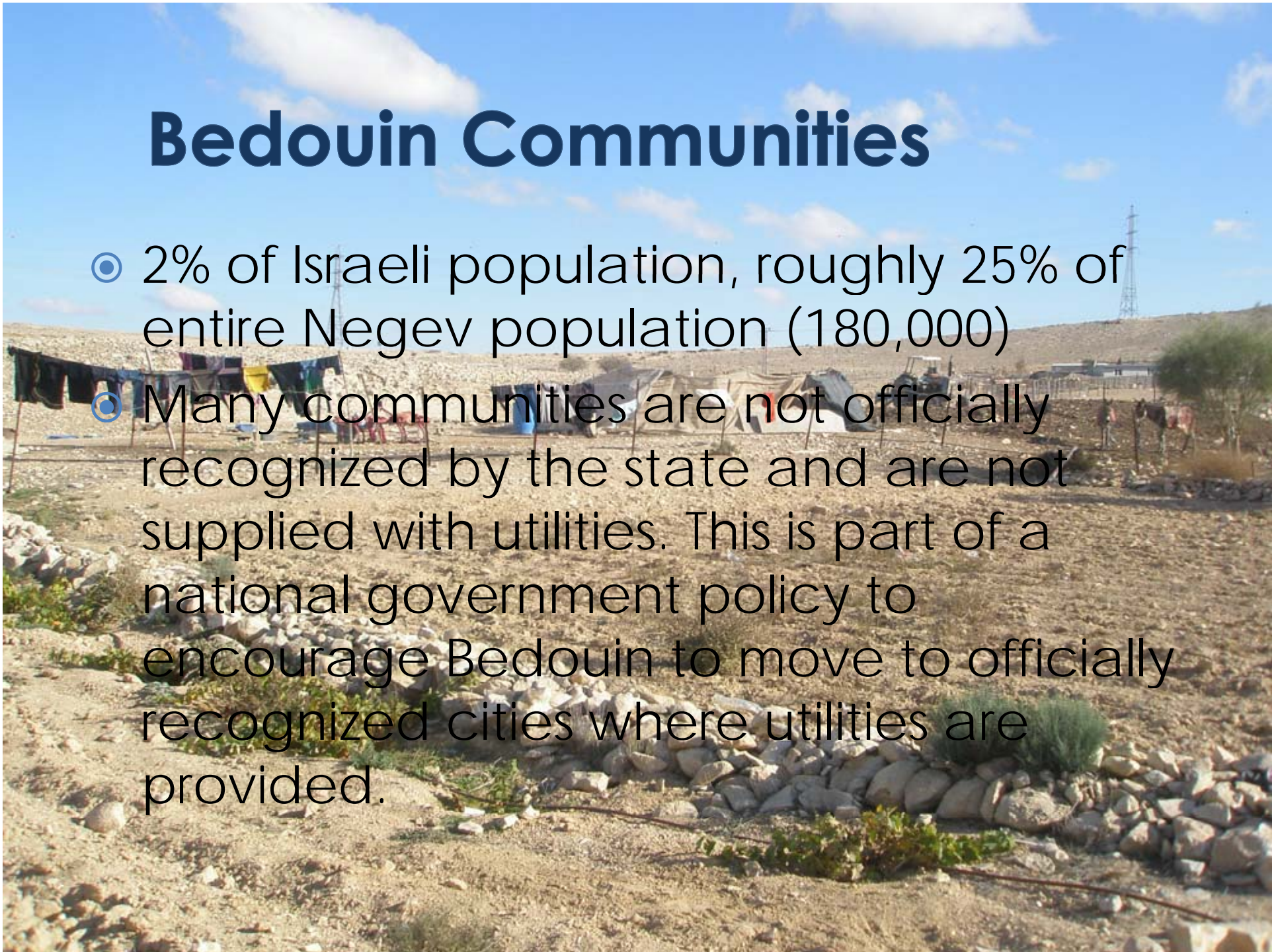


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Bedouin Communities

- ① 2% of Israeli population, roughly 25% of entire Negev population (180,000)
- ① Many communities are not officially recognized by the state and are not supplied with utilities. This is part of a national government policy to encourage Bedouin to move to officially recognized cities where utilities are provided.



Water in Unrecognized Negev Bedouin Communities

Water supplies are from one of three sources:

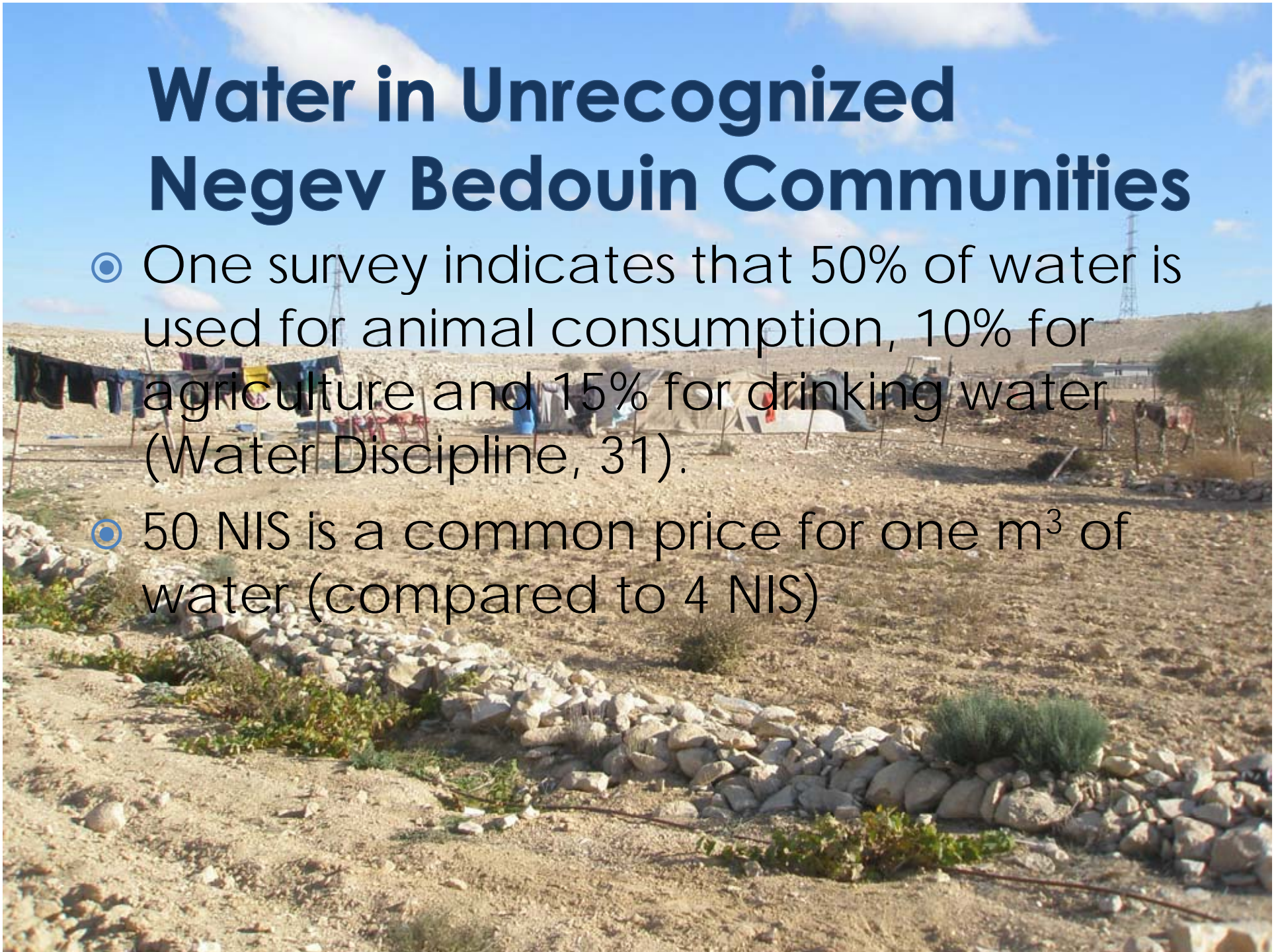
- 1) Private connection (47%)
- 2) Tank or other containers (45%)
- 3) Animal transport (8%)

As of 2006, there were 254 water connections for the approx. 7,000 Bedouin families living in unrecognized villages in the Negev without a water association. This means on average 250 people share each connection.



Water in Unrecognized Negev Bedouin Communities

- One survey indicates that 50% of water is used for animal consumption, 10% for agriculture and 15% for drinking water (Water Discipline, 31).
- 50 NIS is a common price for one m³ of water (compared to 4 NIS)



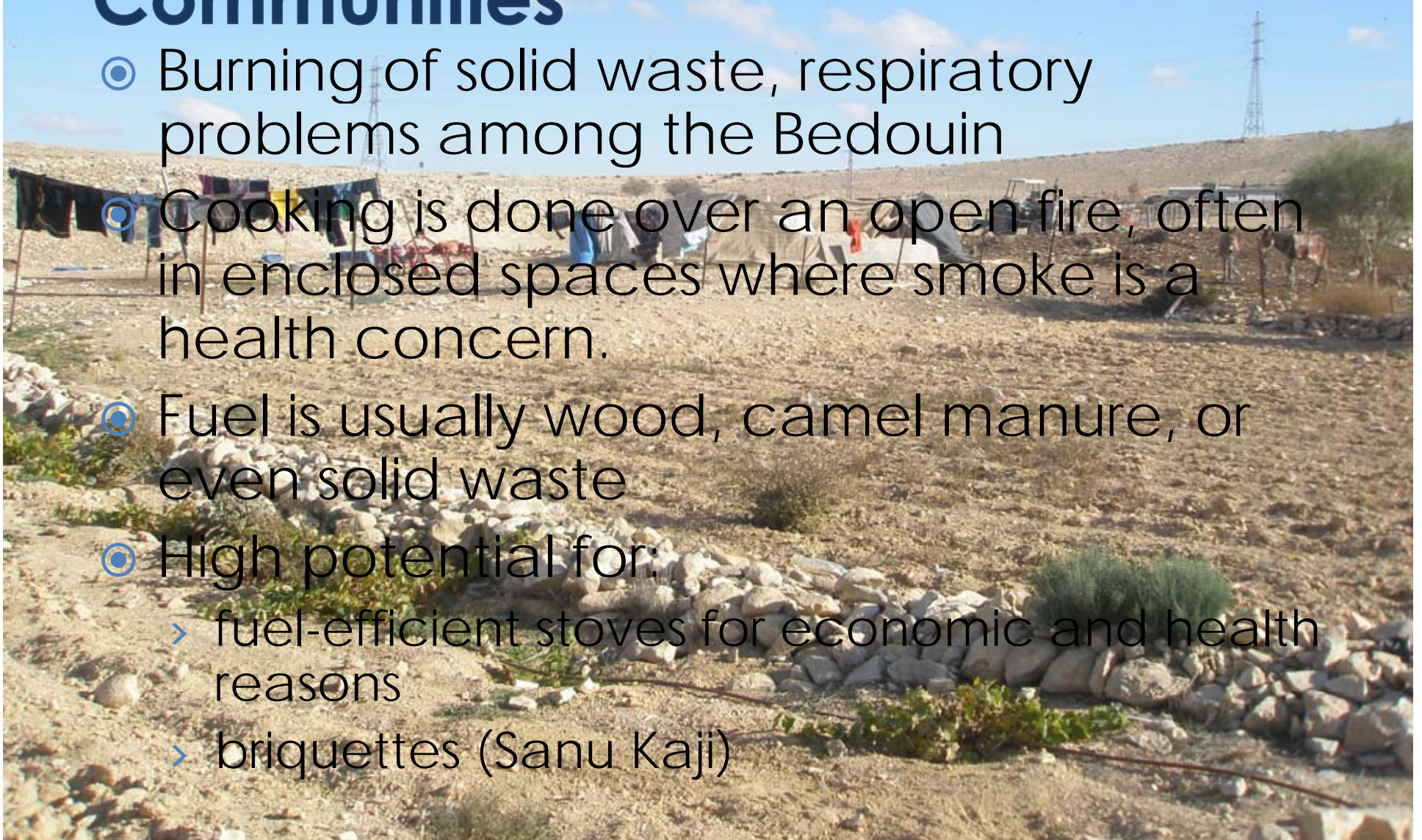
Sanitation in Unrecognized Negev Bedouin Communities

- Sewerage is very primitive. Typical practice is diverting effluent to the wadi.
- Water scarcity contributes to this situation- solutions involving water reuse or saving are more appropriate
- Solution: decentralized (biogas, for example)



Fuel and Solid Waste in Unrecognized Negev Bedouin Communities

- ⦿ Burning of solid waste, respiratory problems among the Bedouin
- ⦿ Cooking is done over an open fire, often in enclosed spaces where smoke is a health concern.
- ⦿ Fuel is usually wood, camel manure, or even solid waste
- ⦿ High potential for:
 - fuel-efficient stoves for economic and health reasons
 - briquettes (Sanu Kaji)

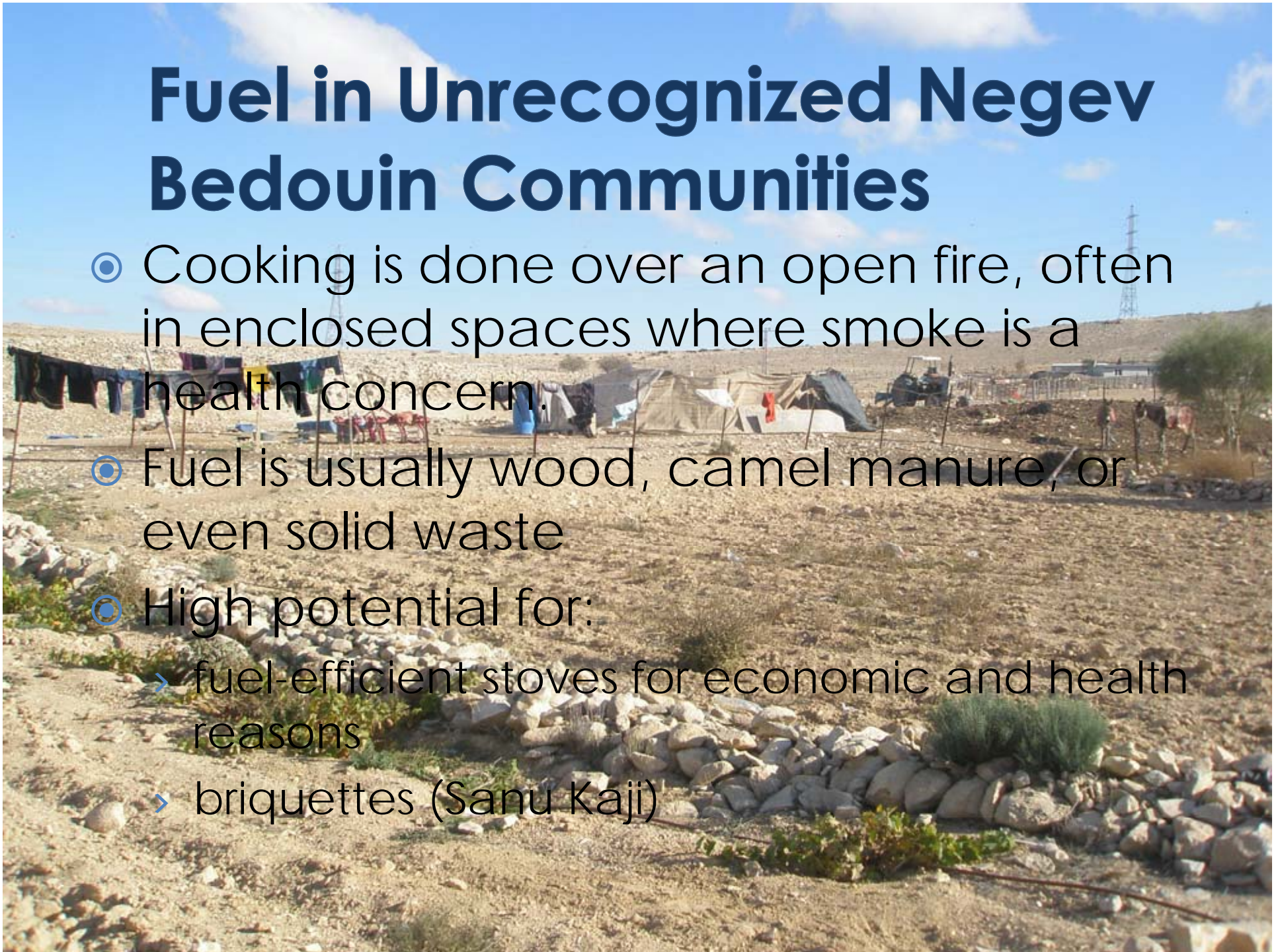






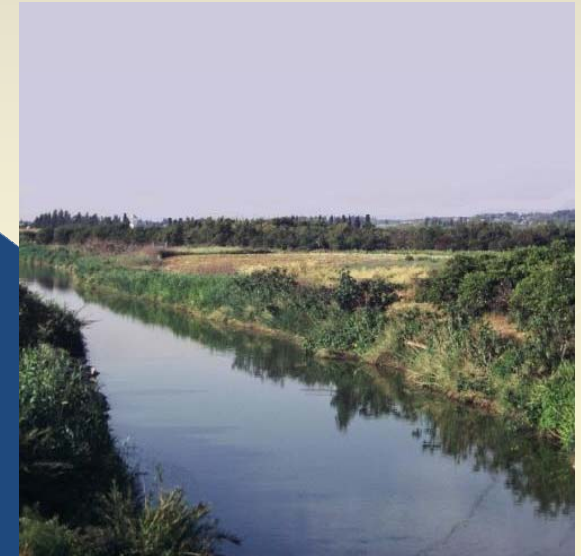
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Alexander stream

- Cooperation between Palestinian Authority and Israel
 - Small-scale treatment (including olive wastewater)



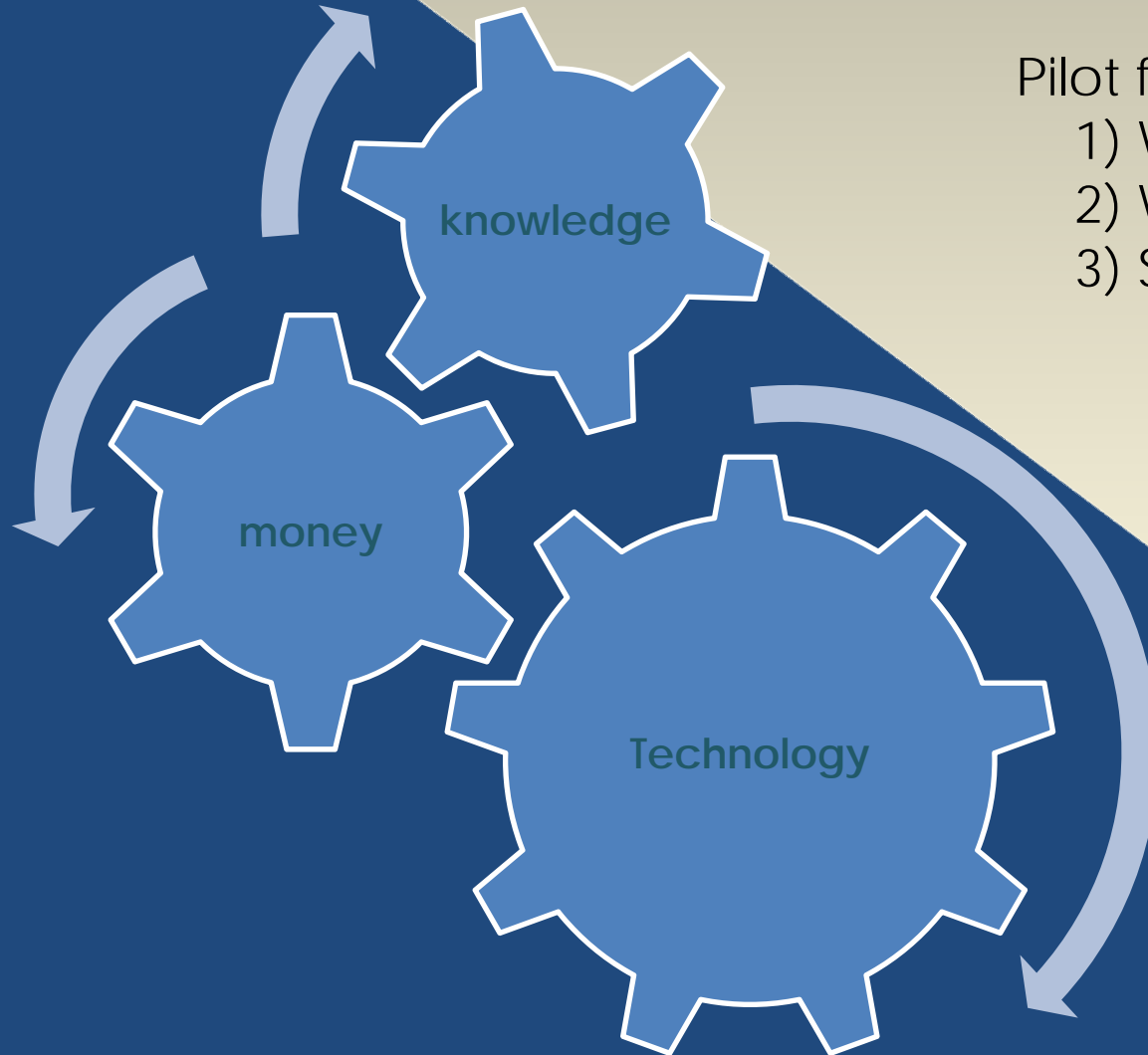
Israel's Potential Role

Pilot for Technological Solutions:

- 1) Water treatment
- 2) Wastewater treatment
- 3) Solid waste management

Monitoring:

- 1) Water quality
- 2) Air quality





Vertical Flow Constructed Wetland for Greywater or Blackwater Treatment

Thanks!

