

Environmental Resource Management in Refugee Camps and Surrounding Areas: Lessons Learned and Best Practices

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Goals

- Understand how the presence of refugee camps influences environmental change
- Examine how/if the rate of environmental change affected refugees, host communities and altered local economies
- Gather lessons learned from current practice for future policies
- Offer comparative evidence-based assessments and identify actionable best practices that would restore environmental integrity

Project background and methodology

- Literature review
- Advisory Board
- Site selection
- Interviews
- Remote sensing and geospatial analysis
- Findings and recommendations

Qualitative data collection

Aysaita camp

- 20 stakeholders interviewed
- 217 refugee households interviewed
- 77 community households interviewed
- Interviews conducted in Afaraf and Amharic

Ali Addeh camp

- 19 stakeholders interviewed
- 300 refugee households interviewed
- 150 community households interviewed
- Interviews conducted in Somali, Amharic, and Tigrinya

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AYSAITA REFUGEE CAMP

Aysaita: Camp characteristics

- Established in 2006
- 12,169 registered; 8,000 live in camp
- Eritrean refugees who are Afar
- Extremely hot climate
 - Little vegetation
 - Little precipitation
- Relatively little tension between hosts and refugees
- Health clinic, school, food rations



Environmental Concerns

- Water resources
- Firewood for fuel
 - deforestation
- Waste management



Aysaita Woreda, Afar Zone 1

REMOTE SENSING AND

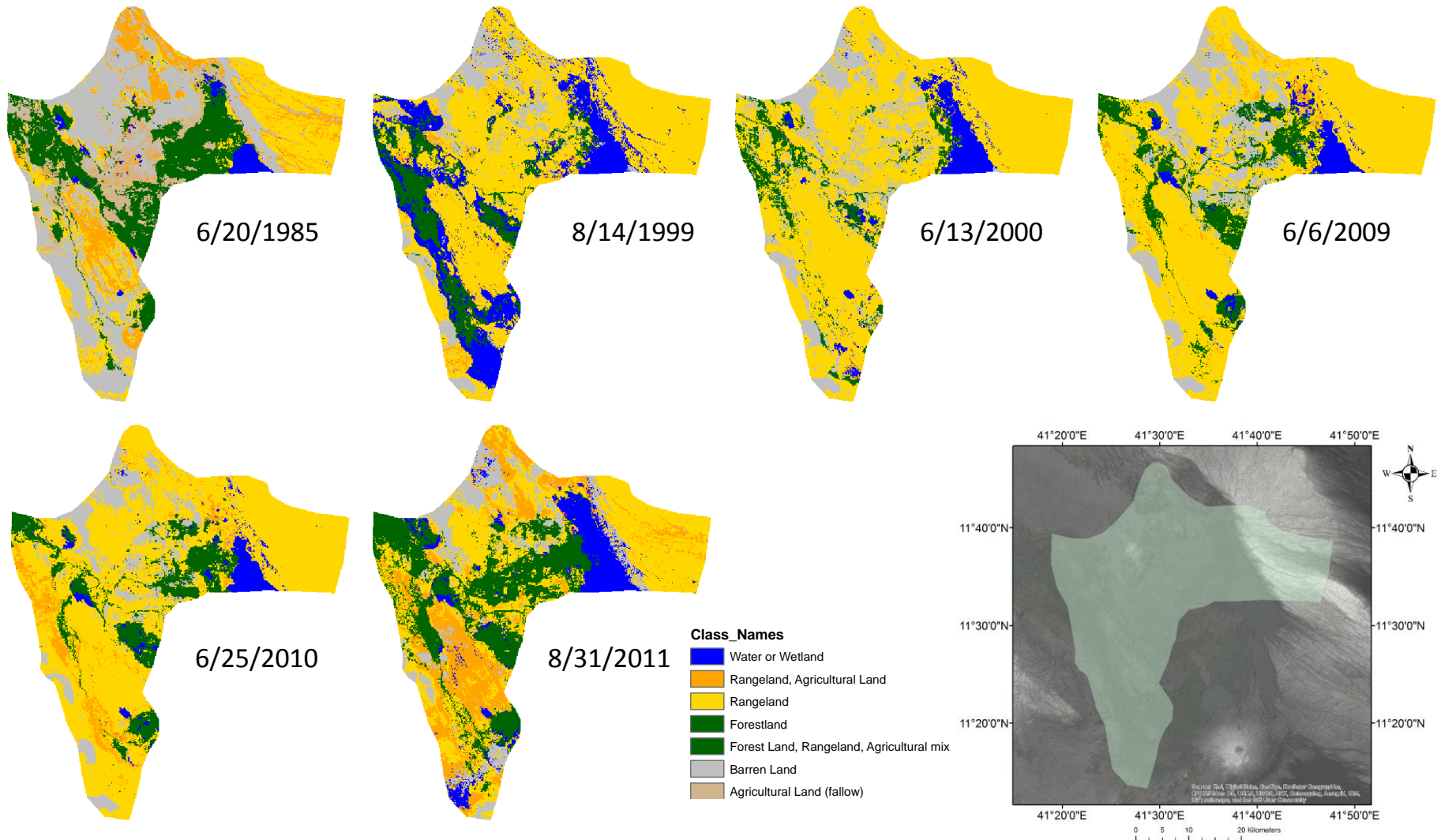
ENVIRONMENTAL ASSESSMENT

Aysaita Region, Afar Ethiopia



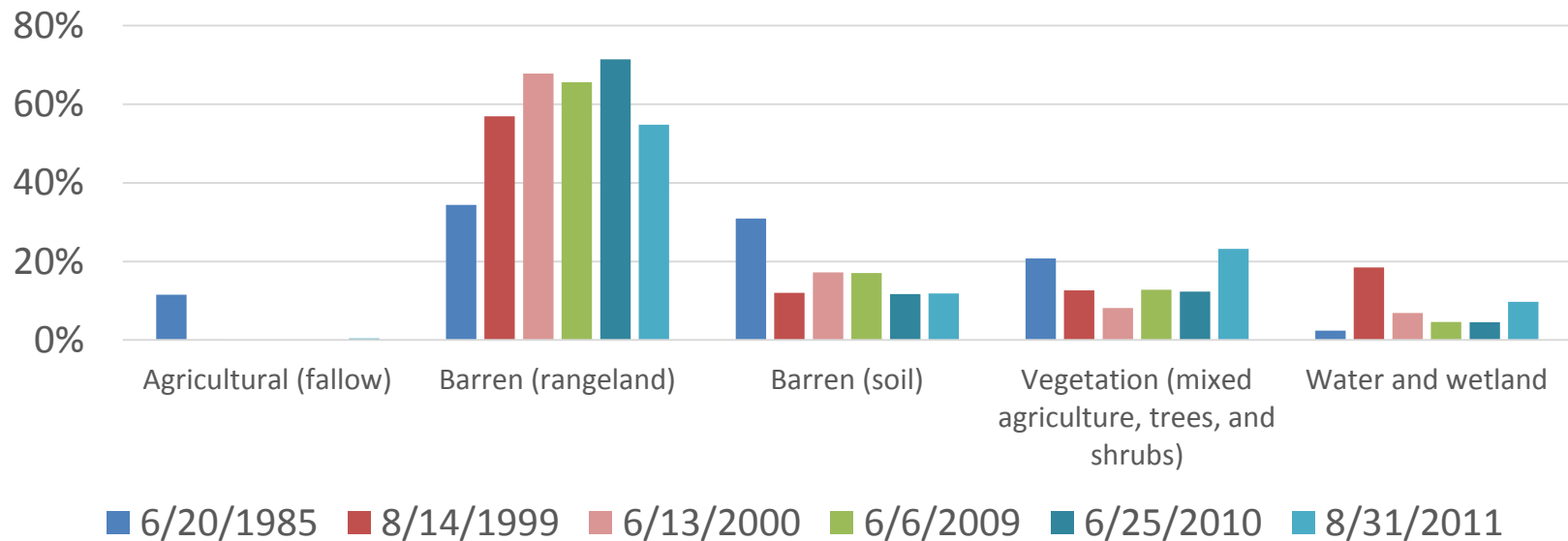


Aysaita Woreda Landcover/Landuse Classification

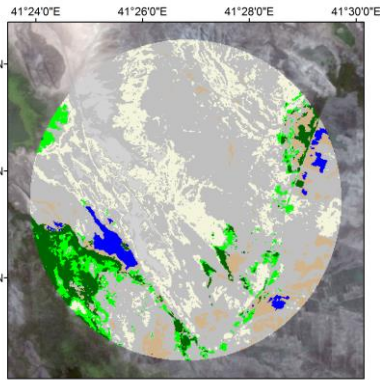


Aysaita Woreda Landcover Classes 1985-2011

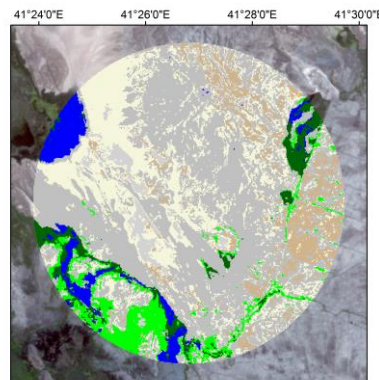
Aysaita Woreda Landcover Classes by Year



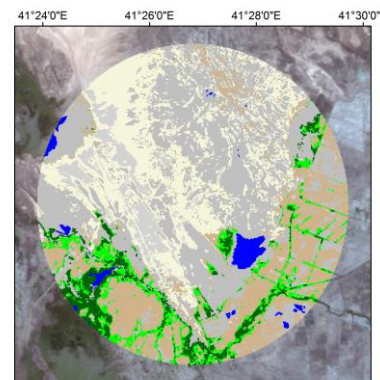
Aysaita Refugee Camp Landcover Classifications



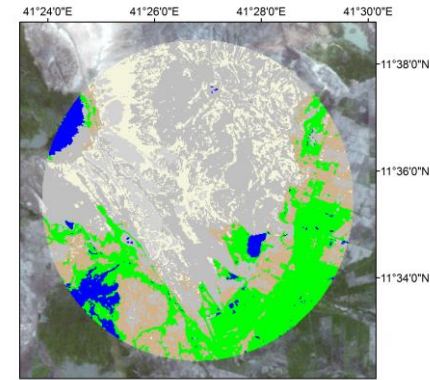
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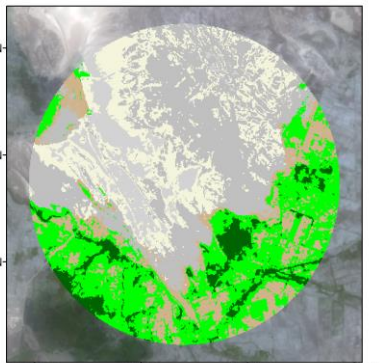
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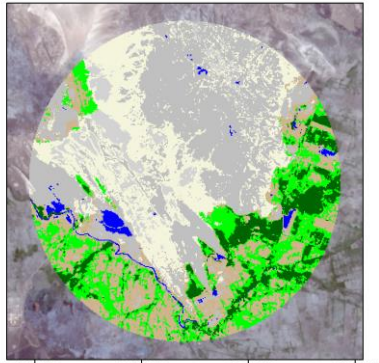
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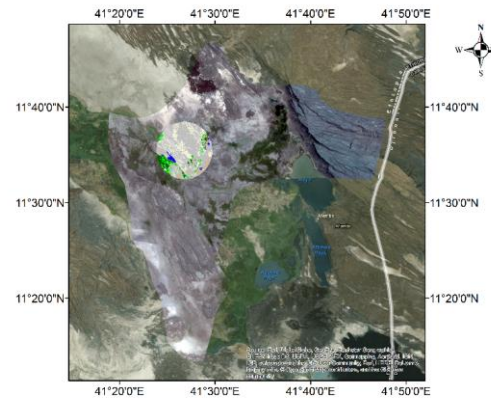
8/31/2011



7/6/2014



7/25/2015



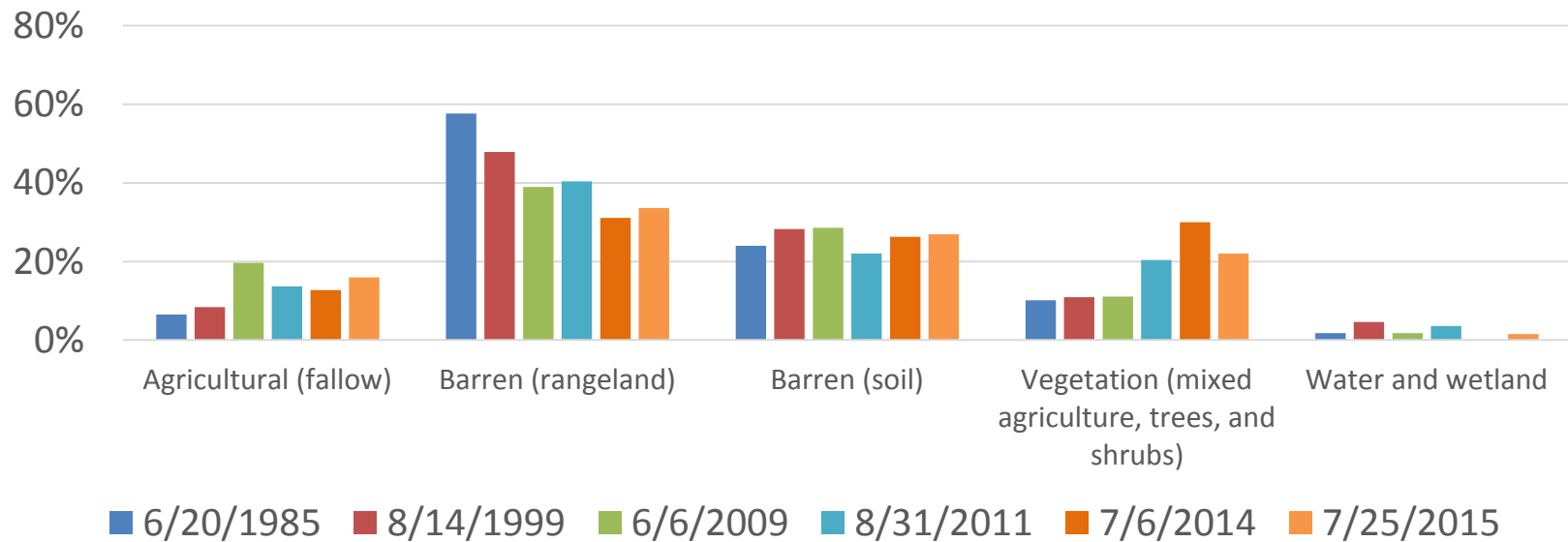
Class_Name

- Agricultural (fallow)
- Barren (soil and town)
- Barren
- Barren (soil)
- Vegetation
- Vegetation (trees)
- Water or wetland

Aysaita Refugee Camp Landcover Classes

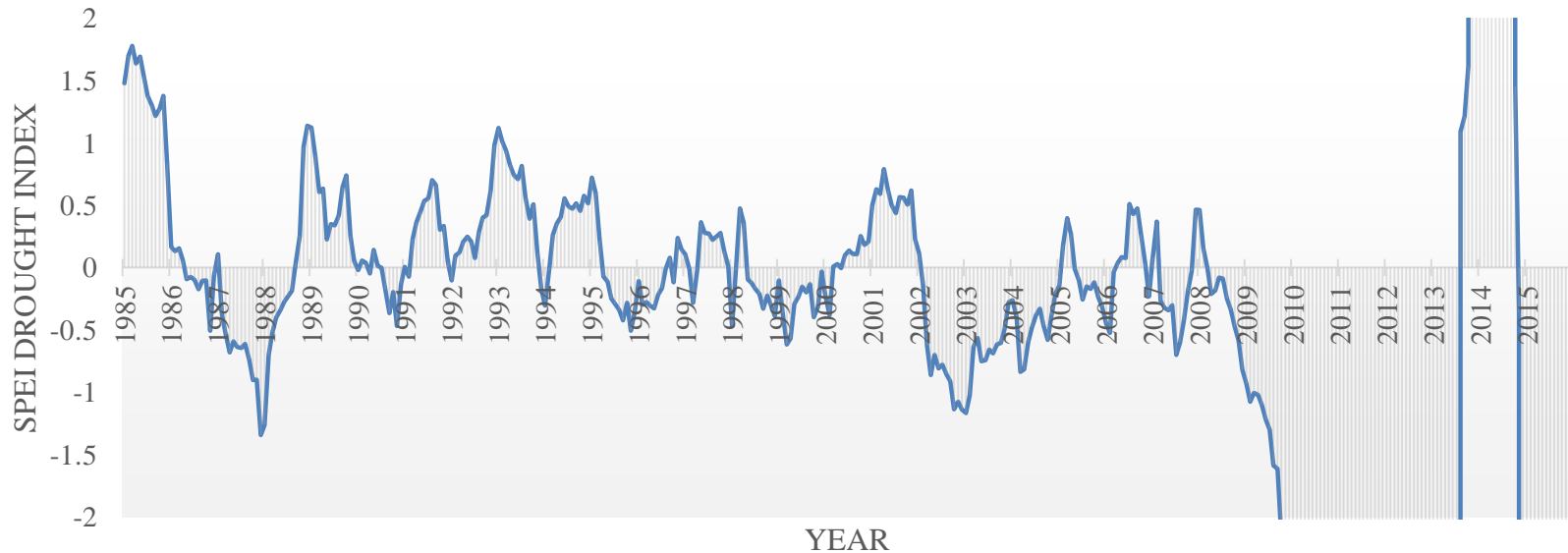
1985-2015

Aysaita Refugee Region Landcover Classes by Year



Afar Zone 1, Ethiopia - SPEI Drought Index

Afar, Ethiopia - SPEI 12 Month



Data source: Standardized Precipitation Evapotranspiration Index (SPEI) Global Drought Monitor
(<http://sac.csic.es/spei/map/maps.html>)

Aysaita: Key findings

The refugee camp has had little adverse environmental impact

- Extremely arid
- Several factors affecting the natural environment and resources
- Vegetation in the Aysaita has actually *increased*
- Deforestation has several facets
- Increase of fallow agricultural fields is anomaly
- Nevertheless perceptions matter
 - Belief that refugees are having harmful effects on environment
 - No quantitative environmental assessments to counter perceptions
- Natural resource management varied
 - Reliance on firewood - negative
 - Water available at a sustainable level within Awash River basin (despite drought)
 - Constraints are political, not environmental
- Poor waste management practices threaten health and environment
- Forced encampment means refugees cannot move in search of better environmental conditions

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ALI ADDEH REFUGEE CAMP

Ali Addeh Camp Characteristics

- Established 1991; designed to hold 7,000 people
- Population: ~11,109 (70% are women and children)
 - Somalis (90%)
 - Eritrean (5%)
 - Ethiopian (5%)
- Average duration in camp: 25 years
- Fragile environment
- Little clear physical divide between community and camp

Ali Addeh Area



Environmental Concerns

- Water resources
- Firewood for fuel
 - deforestation
- Waste management

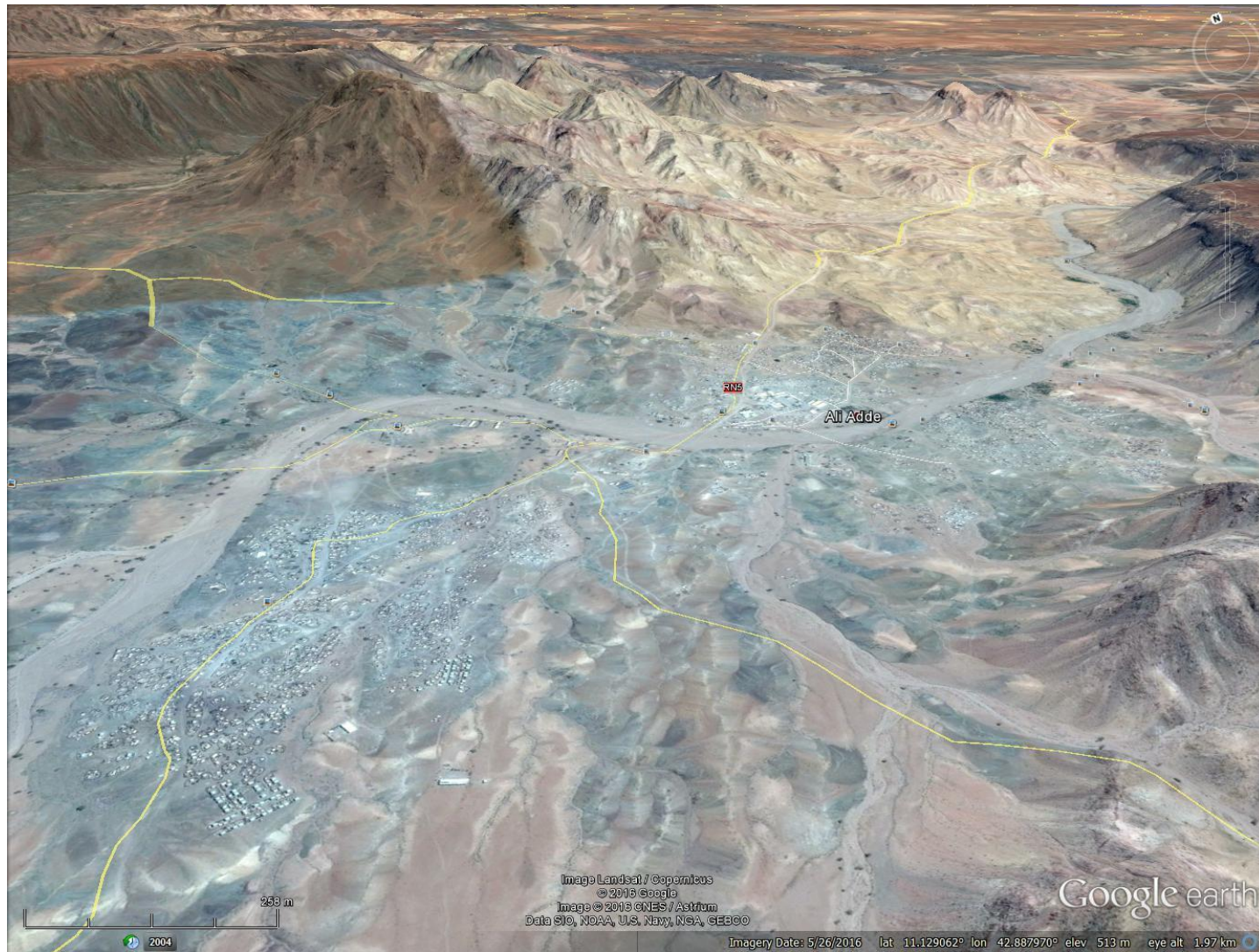


Ali Addeh, Djibouti

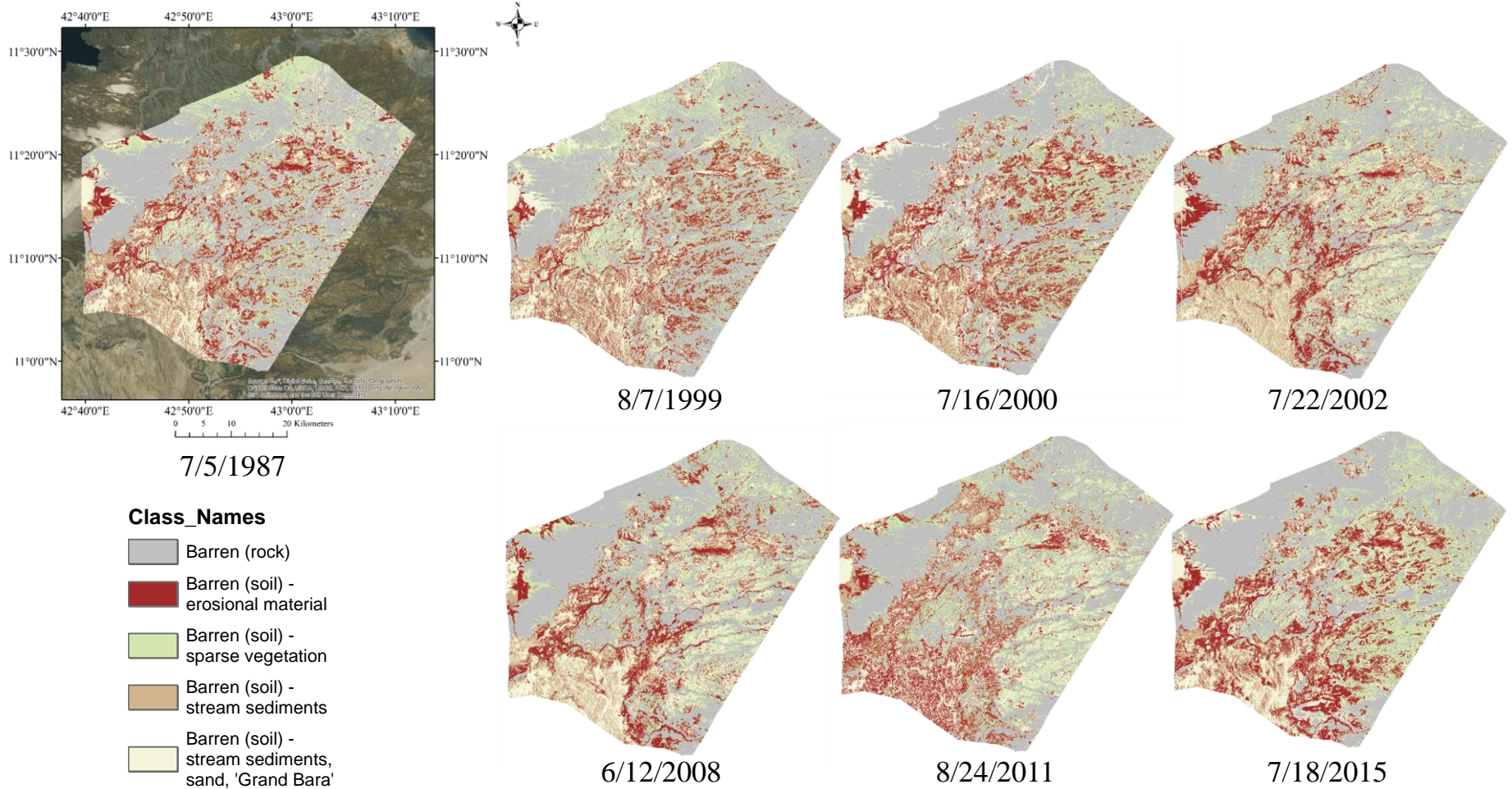
REMOTE SENSING AND

ENVIRONMENTAL ASSESSMENT

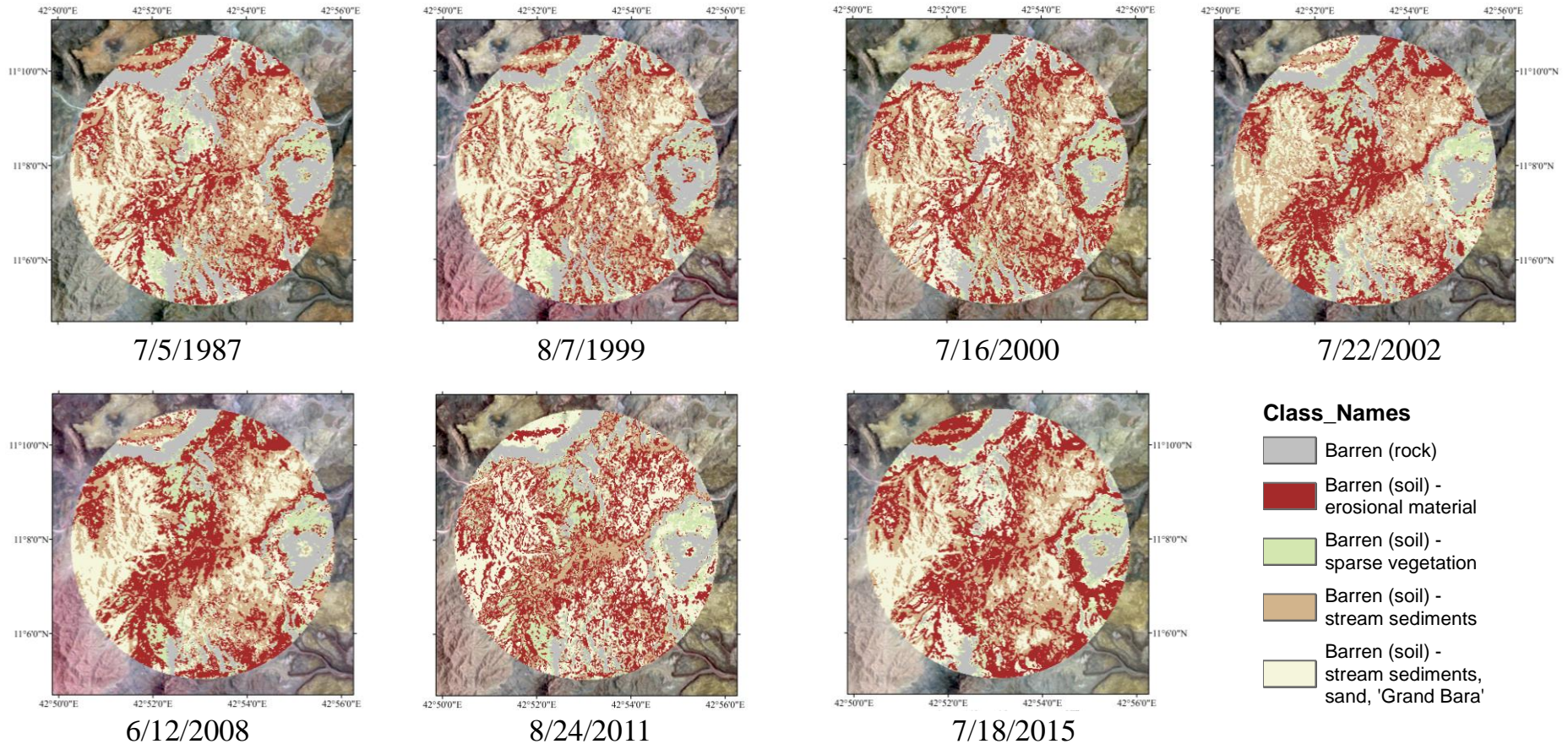
Ali Addeh, Djibouti



Ali Sabieh Region Landcover Classifications

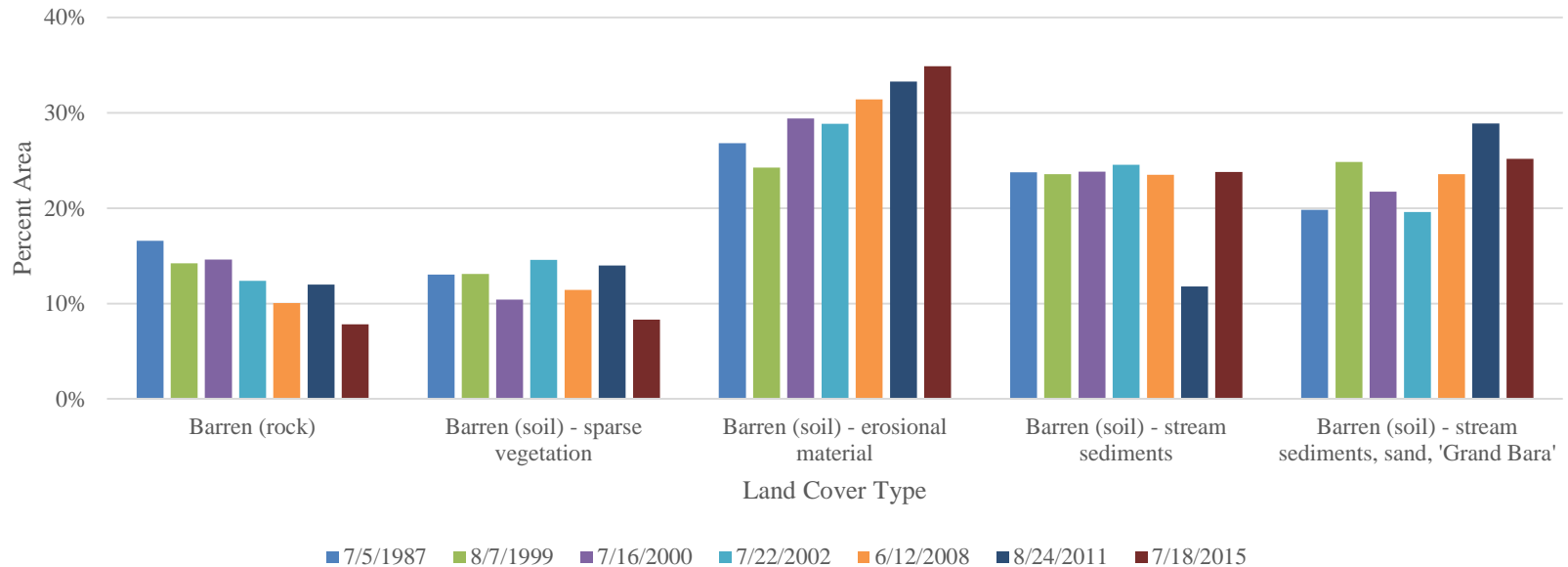


Ali Addeh Refugee Camp Area Landcover Classifications



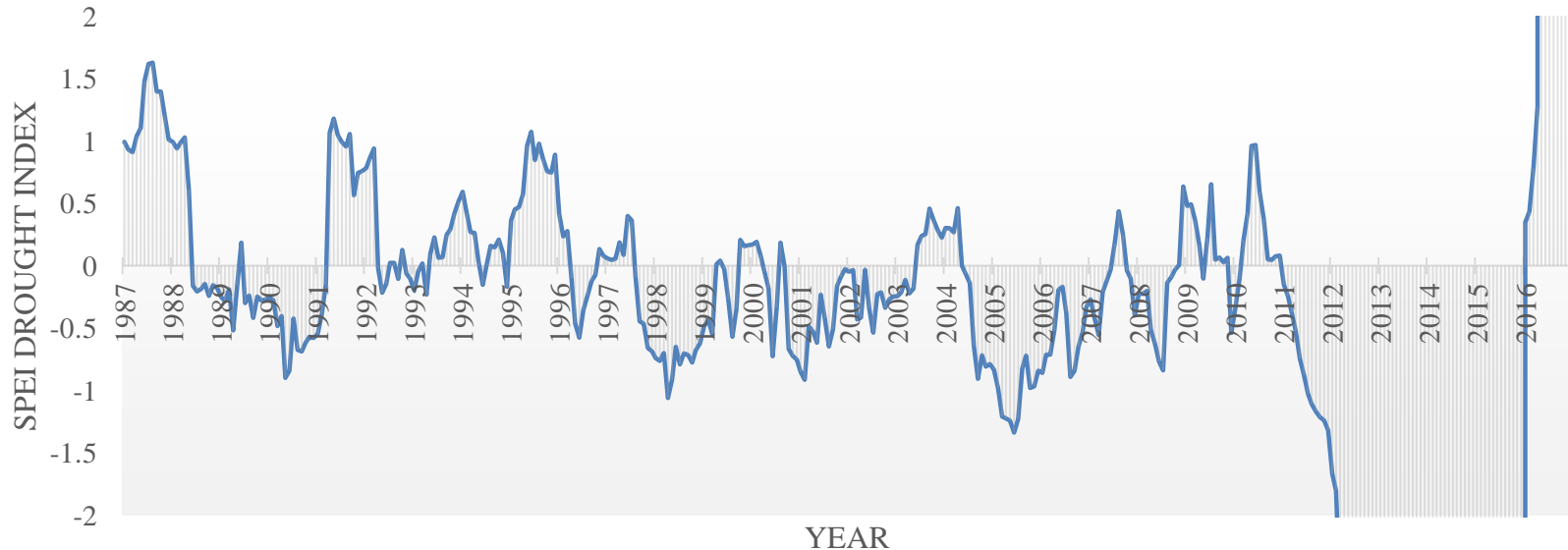
Ali Addeh Refugee Camp Area Landcover Classes 1987-2015

Ali Addeh Refugee Camp Area Land Cover Classes by Year



Djibouti - SPEI Drought Index

Djibouti - SPEI 12 Month



Data source: Standardized Precipitation Evapotranspiration Index (SPEI) Global Drought Monitor (<http://sac.csic.es/spei/map/maps.html>)

Ali Addeh: Key findings

- Impact of camp on environment is minimal
 - Camp is one of several factors impacting natural resources and environment (already so few resources!)
 - Remote sensing showed little change since camp establishment
 - Consistent with stakeholder perceptions in both communities
- Firewood as fuel is unsustainable and running out quickly
 - No alternative energy pilots taking place
- Water safety and availability are positive but...
 - Too many use unofficial water networks
 - Inconsistent perspectives on sufficiency of the water resources for livestock
- Effective waste management system is greatest need but hindered by lack of coordination

Overall Conclusions

- Camp impacts are negligible (in arid climates)
 - Conditions are harsh, so there is very little reduction or change in vegetation
- Camp-related water use in the area is negligible in terms of groundwater recharge (in arid climates)
 - Water still too sparse for certain activities e.g. animal husbandry, home gardening, and tree production for shade and fuel
 - Concerns persist that additional water supply for existing camp residents would encourage camp expansion
- Felling of *Prosopis juliflora* trees is considered positive but reliance on firewood is a negative
 - Overall reliance on firewood as a source of fuel causes increased pollution, respiratory diseases (especially in Aysaita)
 - Djibouti facing massive tree shortages but no effort for alternative fuel sources in Ali Addeh
- Waste management gaps are critical

Recommendations

- Further study to compare practices and impact in climates conducive to fertile soils to those in arid/semi-arid regions
- Holistic approach that brings together humanitarian, development and environmental actors to address environmental needs of both refugees and locals
- Environmental Impact Assessments should be made prior to camp placement and/or expansions
- Rapid EIA methodologies should be implemented
- Improve consultation and coordination of international actors, national authorities, and local government and civil society
- Solutions must be tailored to natural environment in which camp is located

Recommendations, cont'd

- Primary challenge is lack of financial and human resources to manage
 - Funding and training for alternative energy programs
 - Effective systems to address medical, human and livestock waste
- Effective and sustainable alternatives to camps for protracted refugees
 - Would relieve the negative fuel, waste and potential water impacts as well as providing livelihoods
- Greater nuance and care in creating environment-refugee narratives

Thank you