

# Problematizing Production Potential: Water Scarcity, Access, and Borders in the 21st Century Agricultural Economy

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# Impediments to food security and agricultural development aren't always better plants



[http://www.watradehub.com/index.php?option=com\\_content&task=view&id=1162](http://www.watradehub.com/index.php?option=com_content&task=view&id=1162)

# Production Potential and Food Security

- Agriculture is about enabling farmers to produce for the market
  - Supply of inputs
    - Seeds
    - Financing
    - Water
  - Access to markets
    - Roads
    - Transport
    - PERMISSION



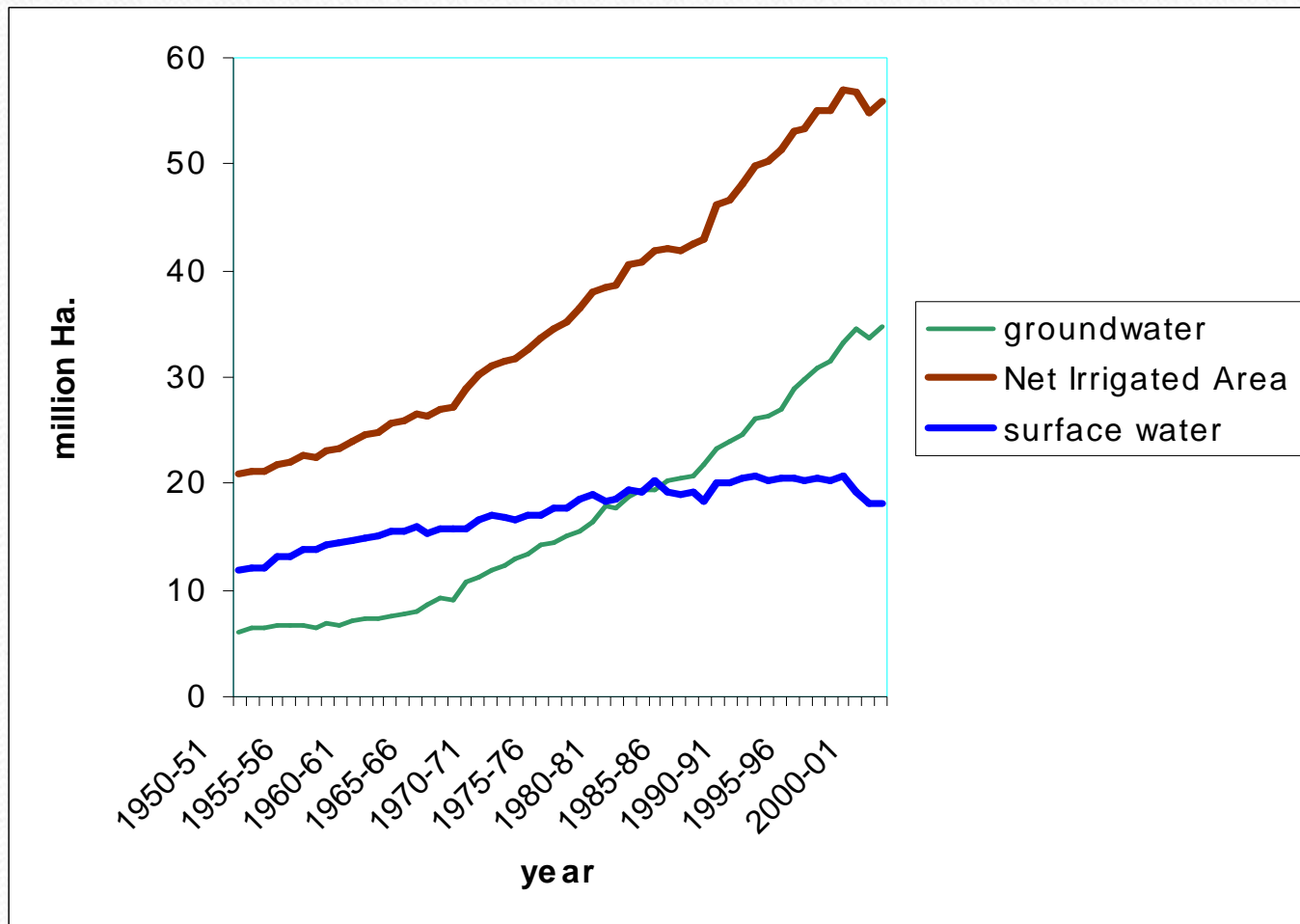
# Understanding constraints to production potential

- The Green Revolution dramatically increased agricultural productivity in the 1960s.
- Improved varieties
- + improved techniques...
- + water for irrigation!



University of Arizona. Credit: John C. Palumbo

# Expanded Irrigated Area has Driven Agricultural Development (IWMI)





# Water Conflict and Scarcity...

- “Our experiences tell us that environmental stress, due to lack of water, may lead to conflict, and would be greater in poor nations.”
  - United Nations General Secretary Ban Ki Moon, speaking at the World Economic Forum in Davos, Switzerland, January 24, 2008.

# Scarcity

- Scarcity is a combination of factors combined:
  - Environmental conditions and
  - Regulatory restrictions
  - Institutional initiatives, standards, and conditions
  - Social organization

# Environmental conditions

- Low annual precipitation
- Decreasing precipitation over time
- Diminishing availability of resources
- High variability of resources
  - Change in distribution of rainfall





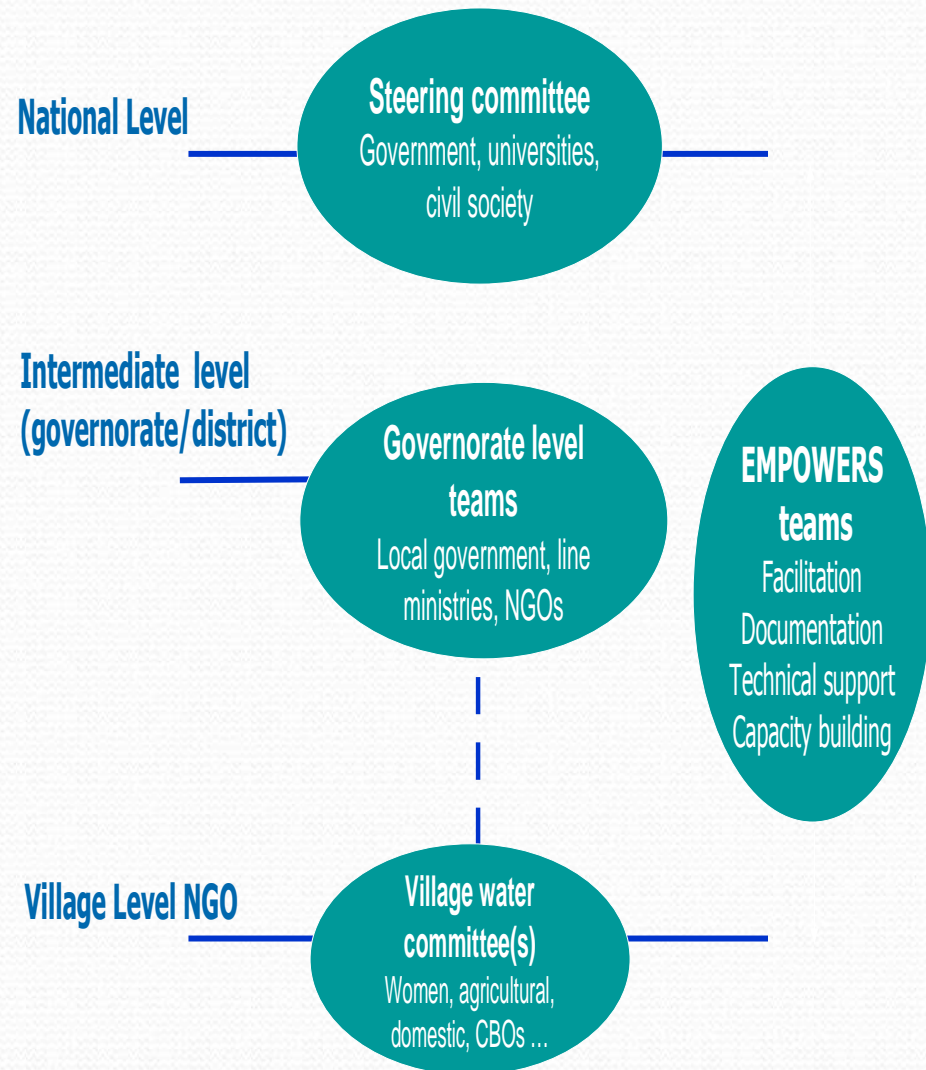
# Regulatory Conditions

- Regulations can limit access to water resources;
  - Limits on Palestinian water use by Israel
  - Limits on Fulani access to irrigation in Mauritania
  - The Great Lakes Compact limits the amount of allowable withdrawal of water



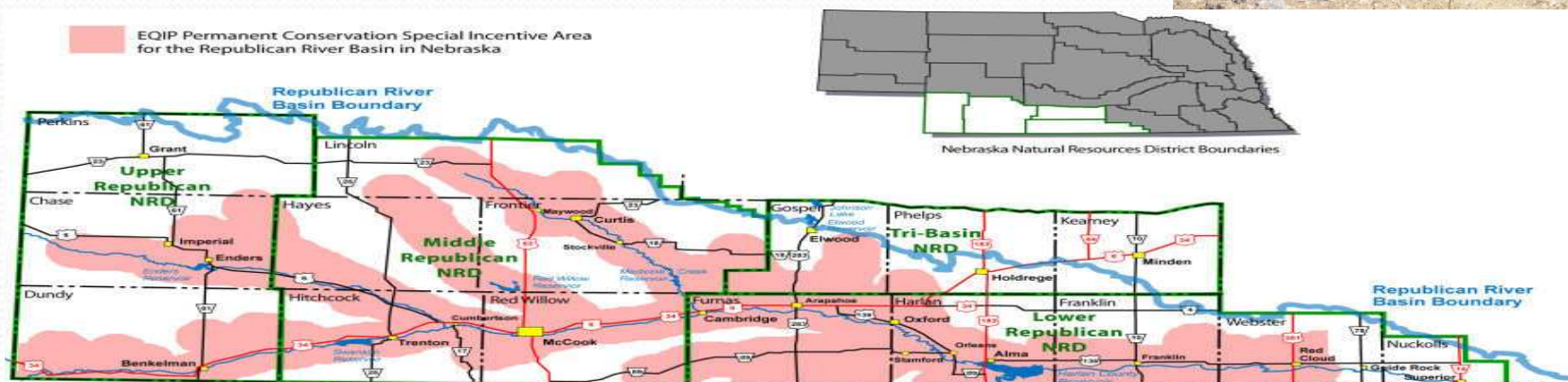
# Governance and Institutional Structures

- Agencies at the level of the central government, provincial government, local government or non-governmental institutions may take actions that limit access.



# Social Organization

- The way that society is organized can lead to availability or limits on the availability of water resources.
  - Community Culture
  - Gender Roles
  - Standards
  - Eating habits
    - Price signals



# Role of Technology

- Pivot Irrigation
- Diversion-Desalinization
- No till – conservation tillage
- Drought resistant varieties



# Conclusion

- If we are serious about food security, in the future, we must become serious about solving water conflict
- This implies two things:
  - 1) We need to more explicitly consider the social sciences in research designs, models, and evaluations.
  - 2) We need to explicitly attach concerns about human rights and social justice to consideration of agriculture.
  - 3) We need think explicitly about the kinds of social movements and coalitions that will drive policies that more justly distribute resources.