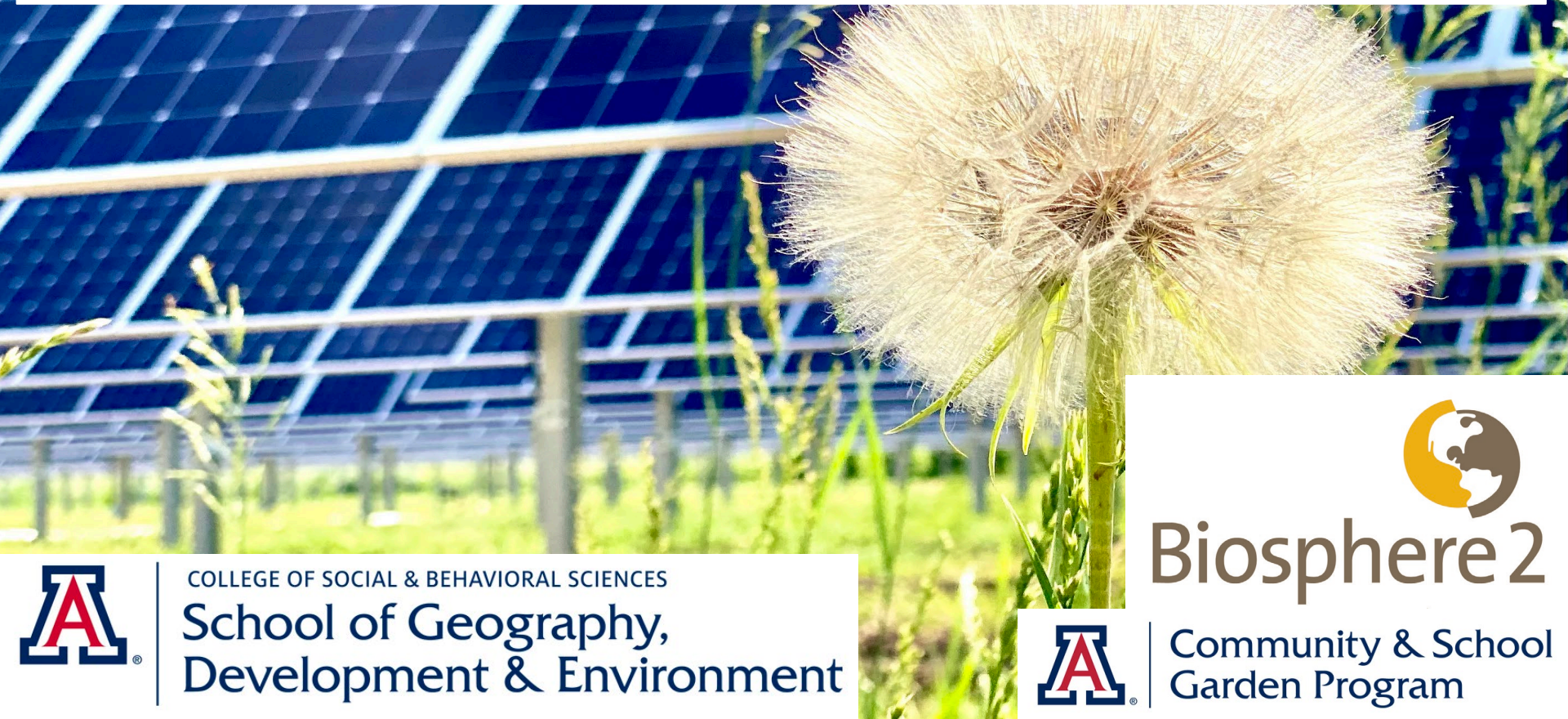


# HARVESTING THE SUN TWICE: CO-USING LAND FOR SUSTAINABLE FOOD AND ELECTRICITY PRODUCTION IN EAST AFRICA

GREG BARRON-GAFFORD



COLLEGE OF SOCIAL & BEHAVIORAL SCIENCES  
School of Geography,  
Development & Environment



Biosphere 2



Community & School  
Garden Program

# Climate change is pushing our water resources towards a tipping point



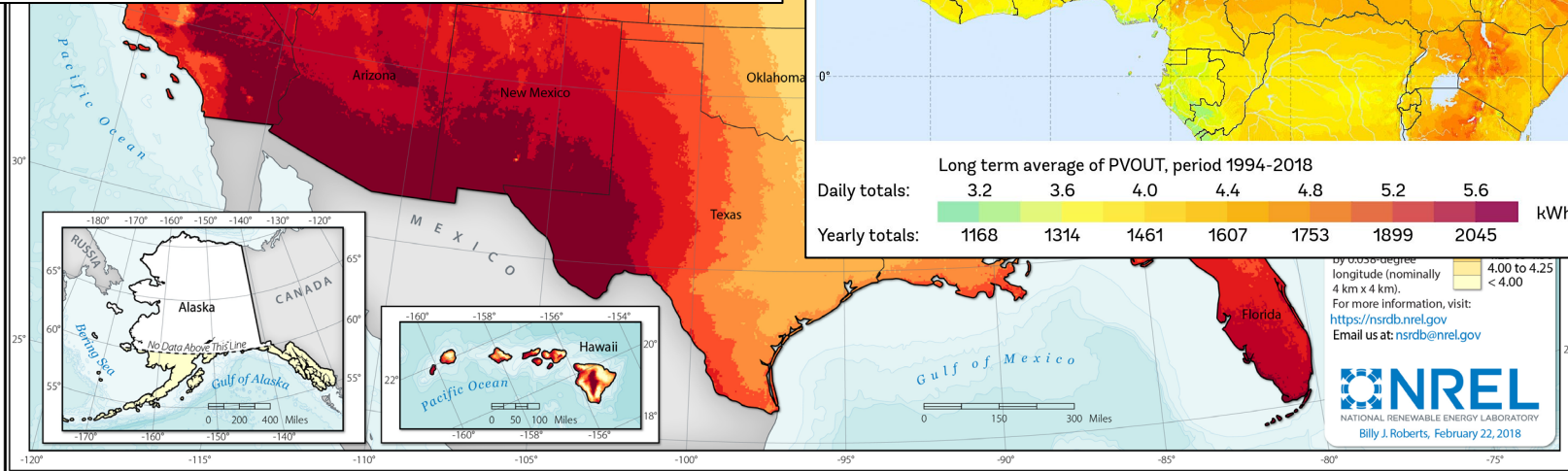
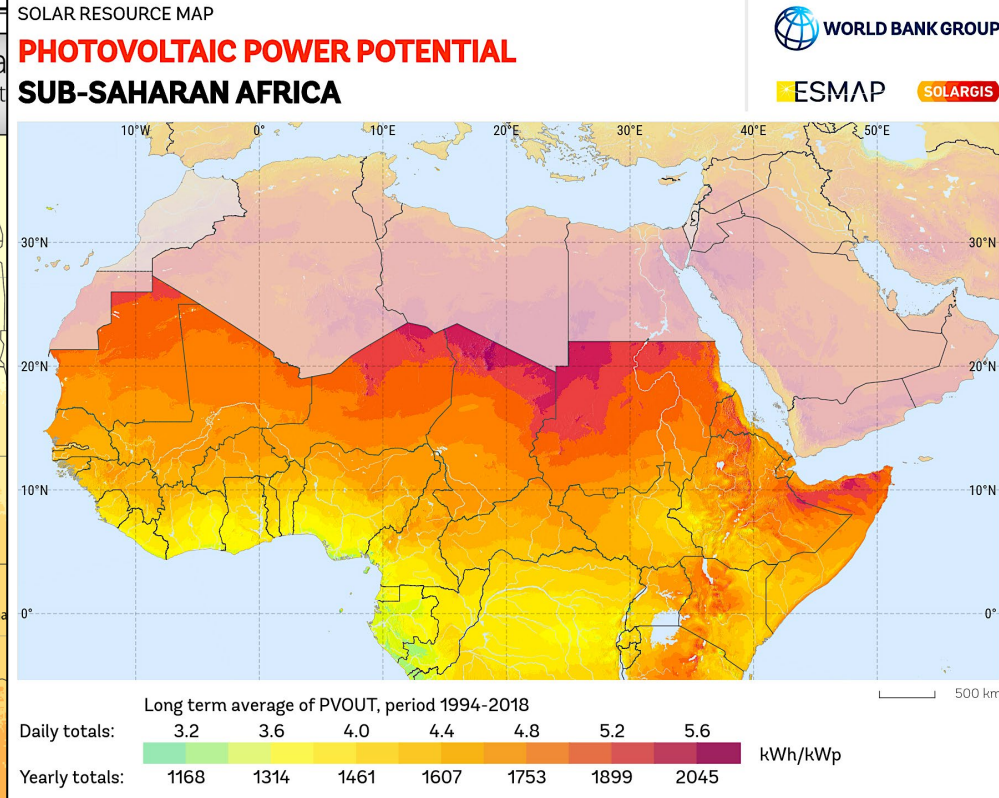
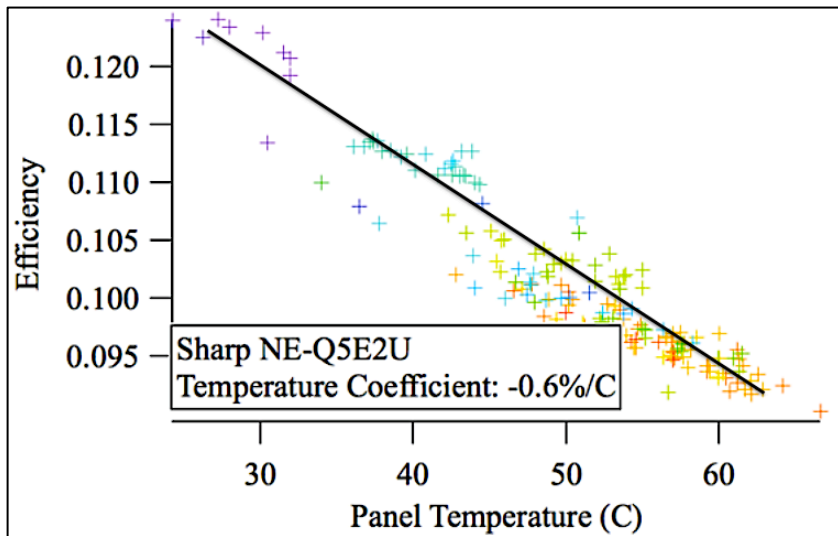
**LOW ON WATER, CALIFORNIA FARMERS TURN TO SOLAR**

**FARMING**

-21

August 6, 2019 / in All News, San Joaquin Valley / by News Article Report

# We want increase renewables, but those may also be vulnerable



# We must work towards resilient food, energy, and water solutions...

Harvesting the sun twice: Enhancing livelihoods in East African agricultural communities through innovations in solar energy



The University Of Sheffield.



## Why East Africa?



2/3

71%



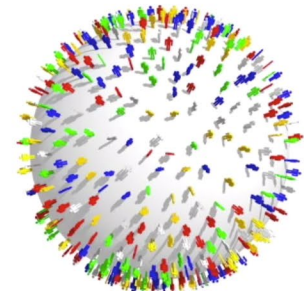
Off-grid/  
mini-grid



75%

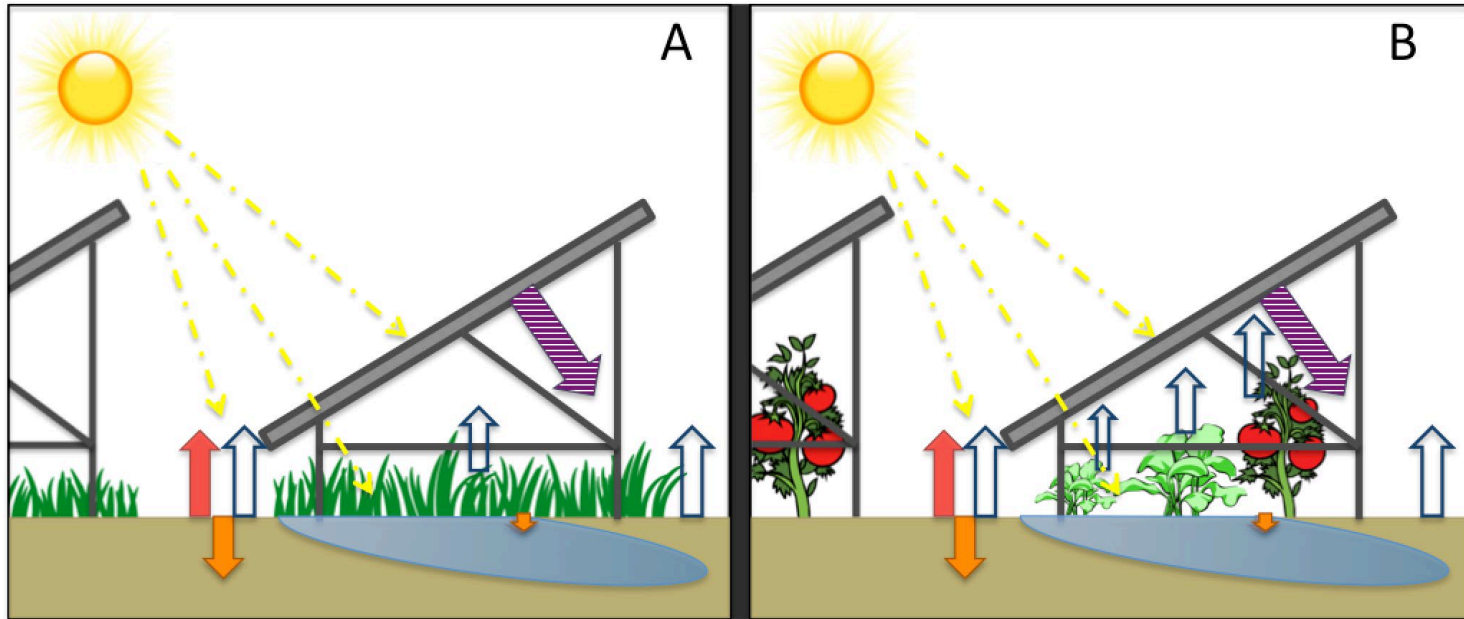


↓ 8-45%



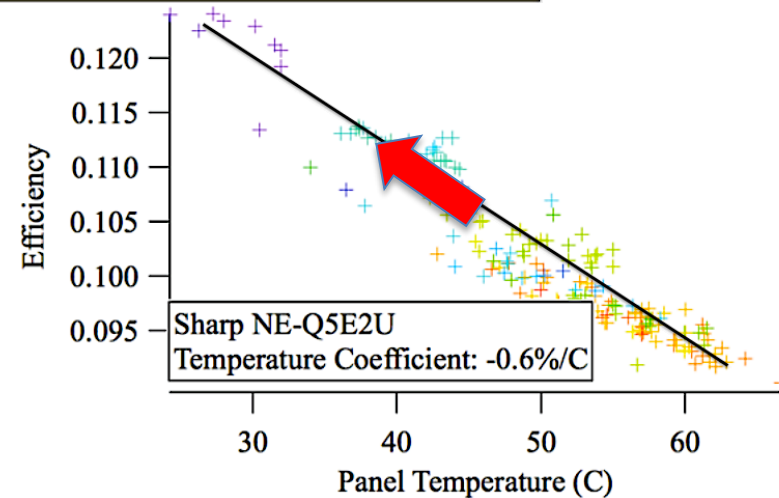
72% ↑ 448m

# Co-locating agriculture + renewable energy could = food, energy, and water benefits



Create 'agrivoltaics' systems to:

1. Adapt food systems to survive drought and temperature stress
2. Improve renewable energy production through transpiration
3. Ease our dependence on irrigation



# Biosphere 2 Agrivoltaics Learning Lab



# Global Partnerships:

## Harvesting the sun twice: could agrivoltaics enhance energy and food security in East Africa?



The University  
Of Sheffield.



# Global Partnerships:

Harvesting the sun twice: could agrivoltaics enhance energy and food security in East Africa?





# Global Partnerships :

## Co-locating Agricultural + Solar Energy Production for a Sustainable Future (Arabah / Arava region)



BY

# *THANK YOU!*

*To learn more, please visit:*

*[www.TheSolarFarm.org](http://www.TheSolarFarm.org)*



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