Semi-Arid Lab for Scalable Agrivoltaics

Short text about what is agrivoltaics, what impact it can have, etc.

Research Areas

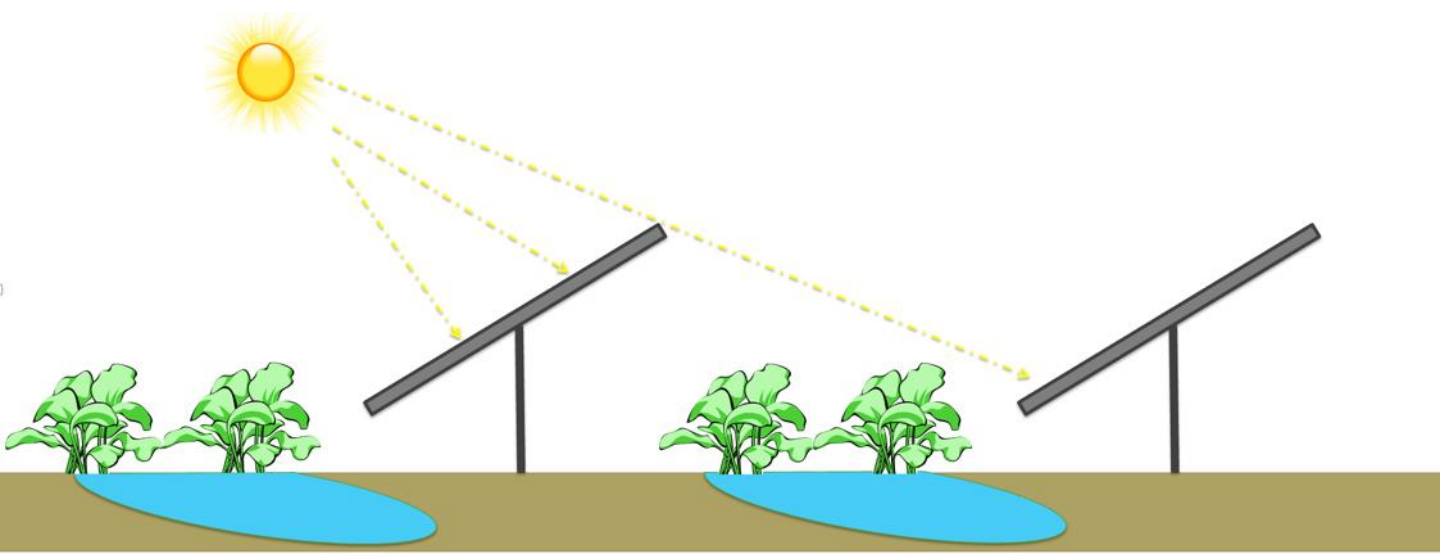
Ecophysiology in Agrivoltaics Systems

Scaling Up Agrivoltaics.

Scaling Out Agrivoltaics

Ecophysiology in Agrivoltaics Systems

Blurb about research questions



SALSA AGRIVOLTAICS UNIVERSITY OF ARIZONA

Ecophysiology in Agrivoltaics Systems

Blurb about research questions

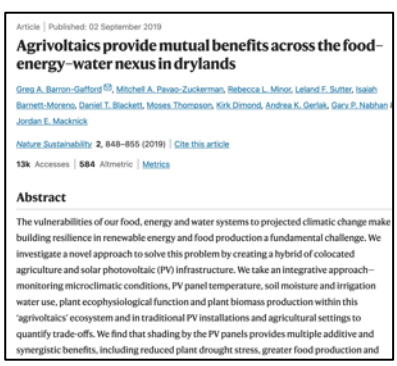
Projects & Sites

B2

Jack's

FARMS

Outputs



Article | Published: 02 September 2019

Agrivoltaics provide mutual benefits across the food–energy–water nexus in drylands

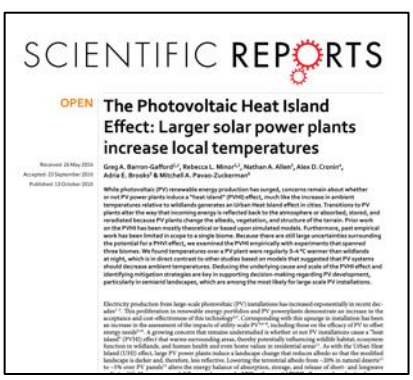
Greg A. Barron-Gafford, Mitchell A. Pavao-Zuckerman, Rebecca L. Minor, Leland F. Sutter, Isaiah Barnett-Moreno, Daniel T. Blackett, Moses Thompson, Kirk Dimond, Andrea K. Gerlak, Gary P. Nabhan, Jordan E. Macknick

Nature Sustainability 2, 848–855 (2019) | Cite this article

13k Accesses | 584 Altmetric | Metrics

Abstract

The vulnerabilities of our food, energy and water systems to projected climatic change make building resilience in renewable energy and food production a fundamental challenge. We investigate a novel approach to solve this problem by creating a hybrid of colocated agriculture and solar photovoltaic (PV) infrastructure. We take an integrative approach—monitoring microclimatic conditions, PV panel temperature, soil moisture and irrigation water use, plant ecophysiological function and plant biomass production within this 'agrivoltaics' ecosystem and in traditional PV installations and agricultural settings to quantify trade-offs. We find that shading by the PV panels provides multiple additive and synergistic benefits, including reduced plant drought stress, greater food production and

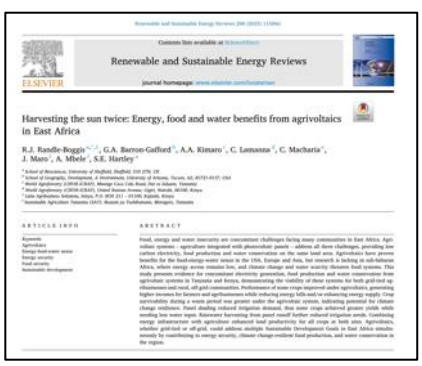


SCIENTIFIC REPORTS

OPEN

The Photovoltaic Heat Island Effect: Larger solar power plants increase local temperatures

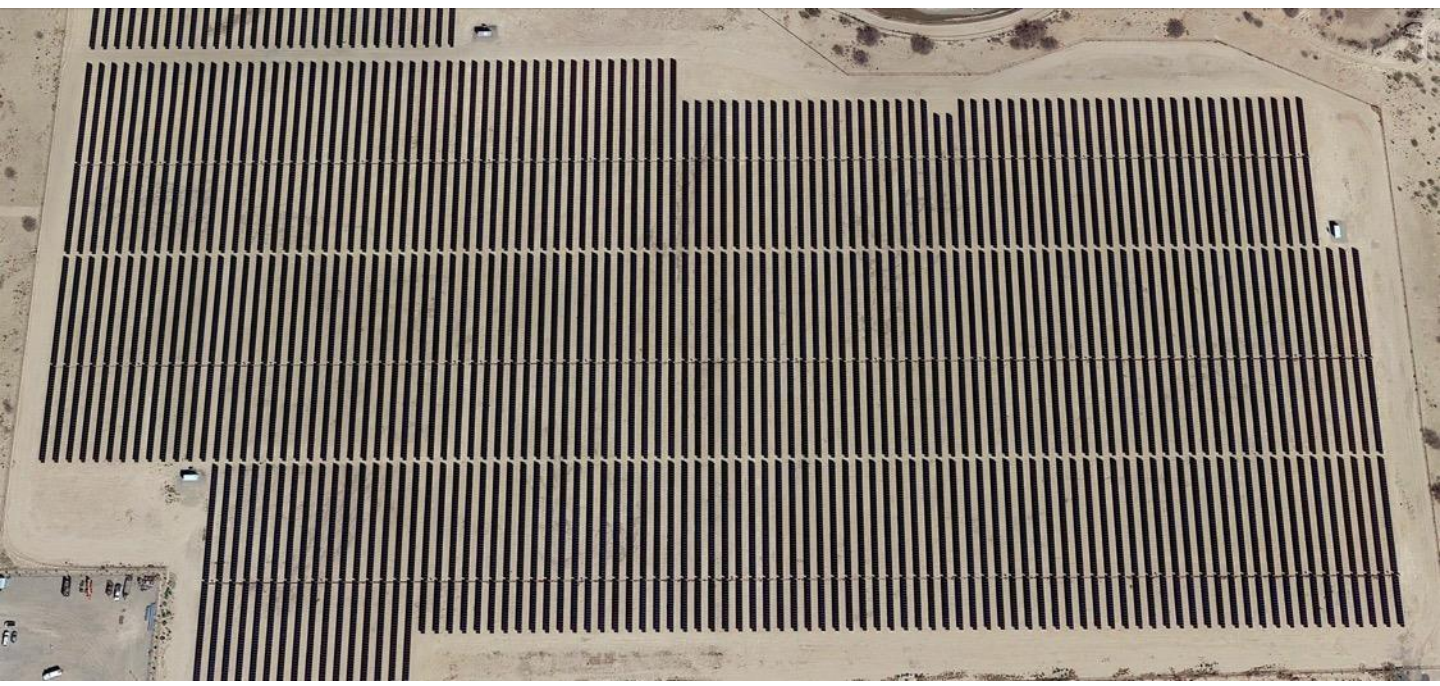
Greg A. Barron-Gafford, Rebecca L. Minor, Nathan A. Allen, Alex D. Cronin, Adria E. Brooks & Mitchell A. Pavao-Zuckerman



Renewable and Sustainable Energy Reviews

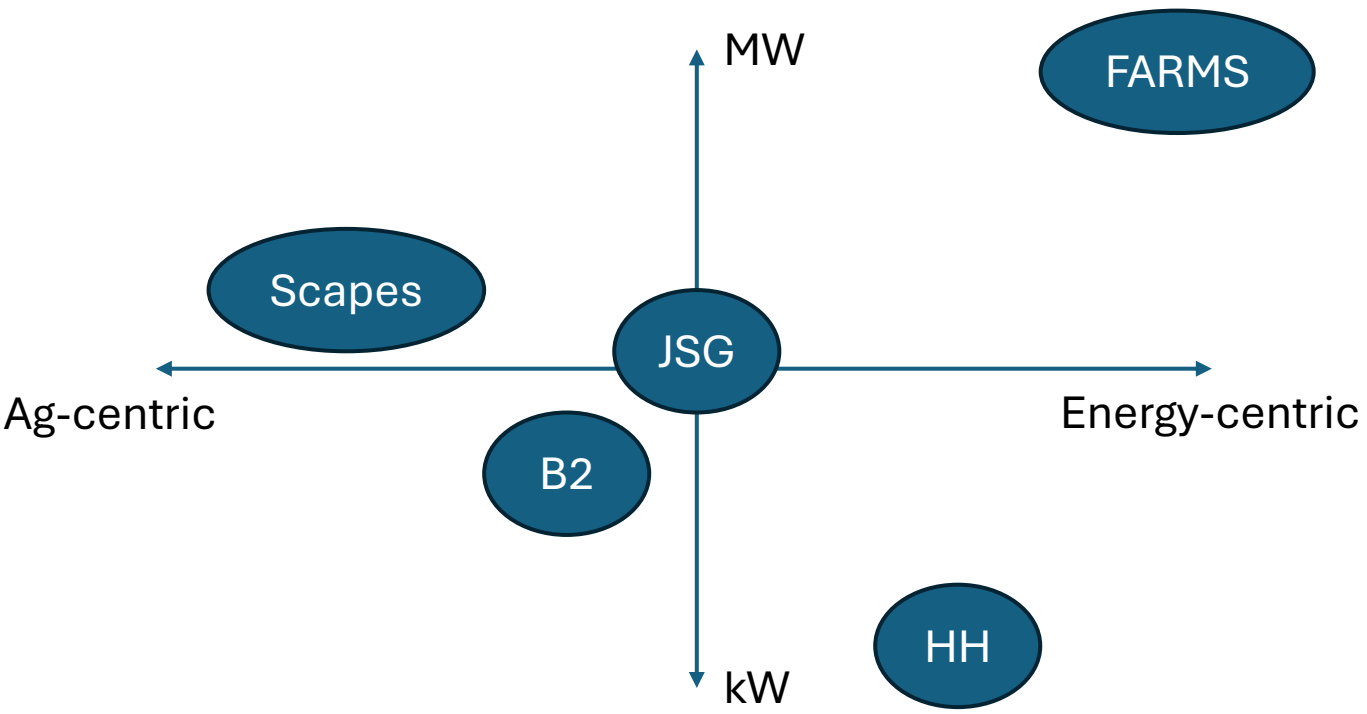
Harvesting the sun twice: Energy, food and water benefits from agrivoltaics in East Africa

R.J. Randle-Boggis, G.A. Barron-Gafford, A.A. Kimaro, C. Lamasana, C. Macharia, J. Mauo, A. Mbele, S.E. Hartley



Agrivoltaics from kW to MW scale

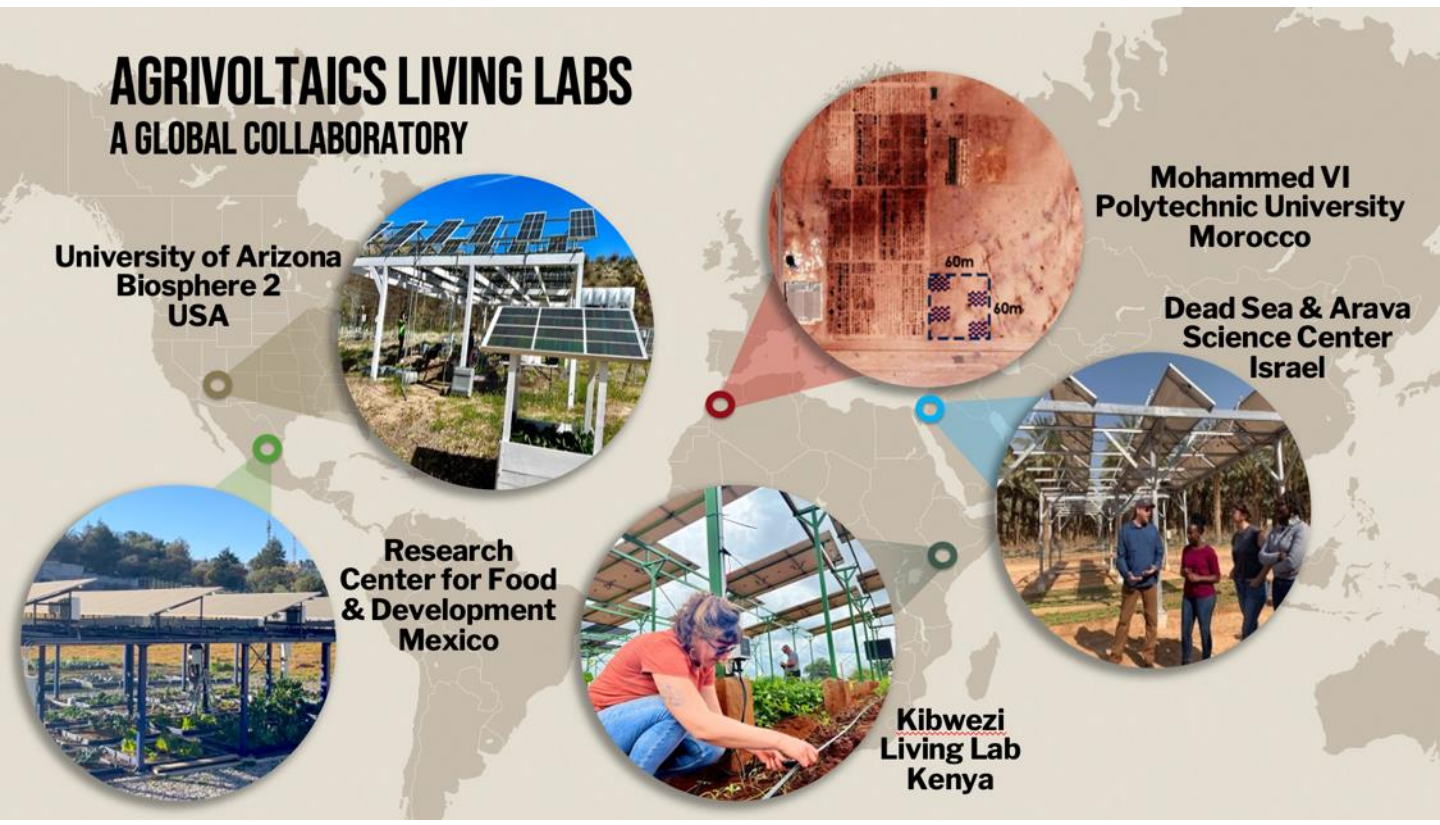
Blurb about research questions



Scaling Out Agrivoltaics – Impact across Contexts

Suitability & system design questions.
Partnerships for exploring agrivoltaics research questions across diverse social-ecological contexts.

A big way we do that is through Agrivoltaics Living Labs



Training & Education for Agrivoltaics

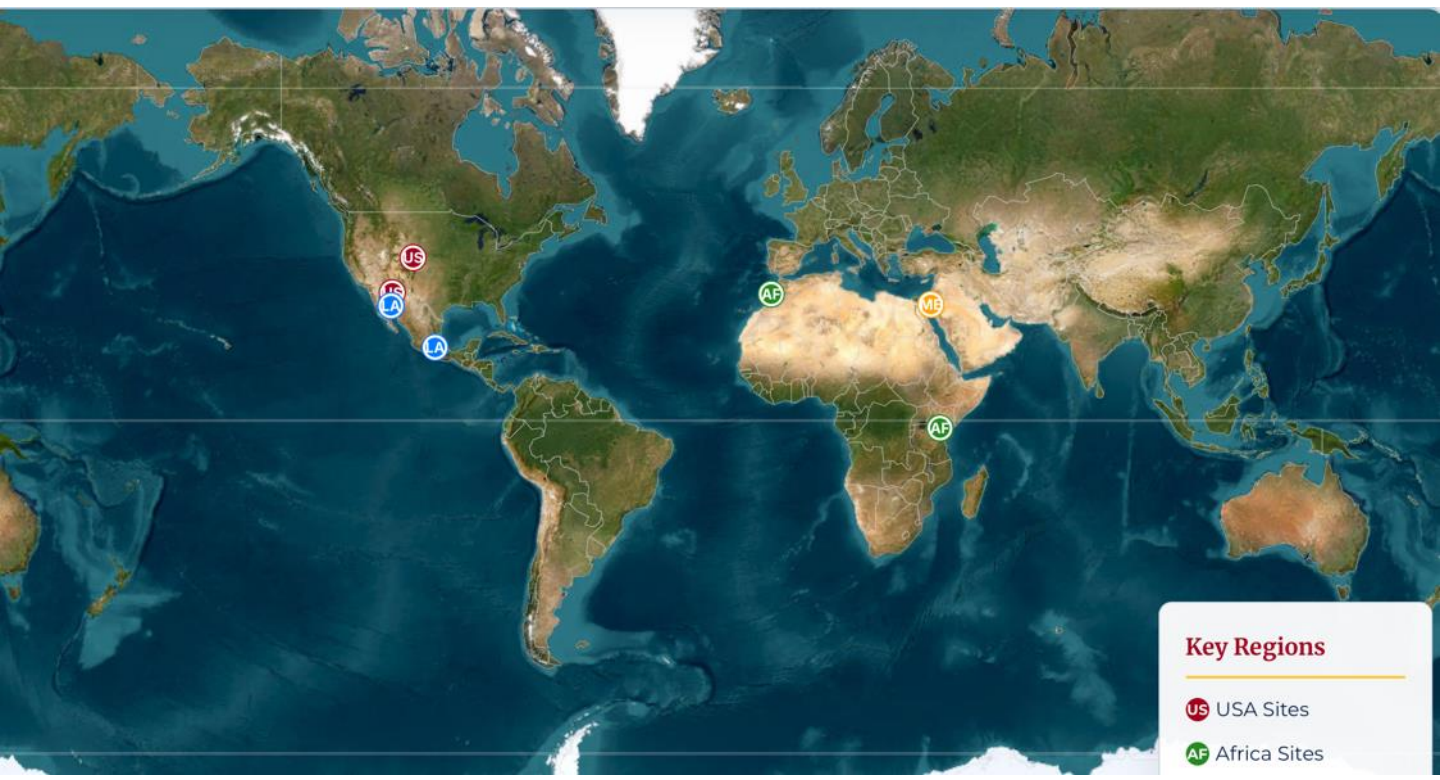
Why is education and training on agrivoltaics so important?

School Garden Program

Global School of Agrivoltaics

Interdisciplinary Opportunities

SALSA
AGRIVOLTAICS
UNIVERSITY OF ARIZONA



News & Publications

filters

Type

Paper

Video

Paper

Article

Article

Paper