

Economic Impact Research: Review and Discussion

Dr. Jill Fitzsimmons, R.A. Taehyun Kim

Department of Resource Economics,
University of Massachusetts Amherst

Project Advisory Committee
Impacts of Dual-Use Solar on Crop Productivity and the Agricultural
Economy in Massachusetts and Beyond
October, 2023

Economic Impact Research: Review and Discussion

- On-Farm Cost Tool
- Public Acceptance Experiment
- Upcoming Requests for PAC Input

On-Farm Cost Tool, I

Tool and accompanying article completed

- Three-component Cost Tool
 - ▶ Uses “Whole Farm Budget” approach
- Article title: “Agrivoltaic Decision Tools for Perennial and Field Crop Farmers”
 - ▶ Peer-reviewed, accepted at **Journal of Extension**
 - ▶ Publication date TBD
 - ▶ We will send announcement and pre-print as soon as we receive it.

On-Farm Cost Tool, II

Three main components:

- On-farm Log Book
- Whole Farm Book
- Input for NREL InSPIRE Financial Calculator

On-Farm Cost Tool, III

On-Farm Log Book

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1		Inputs and Supplies (Non-Labor)																
2																		
3		Average Fuel Costs																
4		Gasoline/ Gallon	\$	4.00														
5		Propane/ Gallon	\$	3.00														
6		Diesel/ Gallon	\$	5.00														
7		Electricity/KwH	\$	0.26														
8																		
9																		
10		No Agrivoltaics																
11		Input / Supply	Input Type/ Unit	Units Used in Activity	Cost per Unit Type	Total Cost Per Category	Total Input/ Supply Costs											
12																		
13		Fuel	Gasoline/ Gallon	7	\$ 28.00													
14			Propane/ Gallon	0	\$ -													
15			Diesel/ Gallon	18	\$ 90.00													
16			Electricity/KwH	20	\$ 5.20													
17						\$ 123.20												
18		Equipment Hire Costs			\$ 213.00													
19						\$ 213.00												
20		Other Input Supplies/ Costs			\$ 3,000.00													
21						\$ 3,000.00												
22		Chemicals Costs																
23						0												
24		Total Inputs and Supplies (Non-Labor)																
25						\$ 3,336.20												



Configuration B_LaborCosts

Configuration C_LaborCosts

Inputs and Supplies

Labor Hours and Costs

LookUps - Lettuce

Equipment

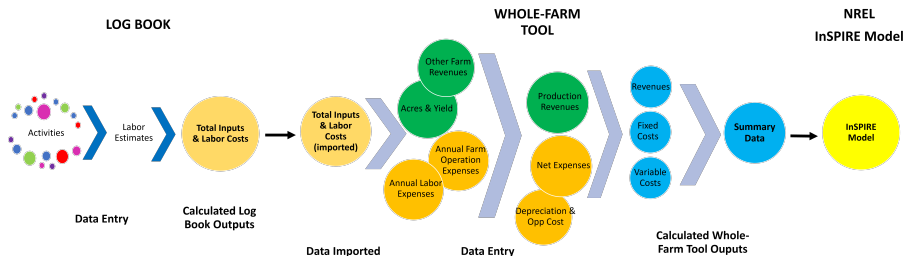
On-Farm Cost Tool, IV

Whole Farm Book

[illegible]

On-Farm Cost Tool, V

“Agrivoltaic Decision Tools for Perennial and Field Crop Farmers”



On-Farm Cost Tool, VI

Key Feedback from Econ Subgroup:

- To operationalize cost tracking at scale, recommend an App that farmers can use in the field

Thank you for all of your input!!

- Margaret Christie (CISA), Mike Ghia (LFG), Christ Grant (NEVBGA), Irene Xiarchos, (USDA OCE), Brian Wick (CCCGA)
- Everyone on the grant team!

Next Steps

- Team discussion of frame and design
- PAC subgroup input on design
- Draft experimental design and survey
- team and PAC subgroup input on draft
- Revise draft
- Test instrument

Thank you!