

Analysis of Farm Practices for Food Quality and Other Market Benefits

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This diagram is intended to help identify or analyze direct connections between certain farming practices outcomes that are often under-valued, like increased nutrition in foods, local food system resiliency to supply disruptions, water quality, community and cultural values, carbon sequestration, regional landscape resiliency to shocks like food or drought or fires, and more.

The diagram originated with an in-depth analysis of farm practices that can increase nutritional qualities in foods. It became clear that those same practices also drive other value propositions for farmers and food producers. Each economic value listed is based on the economic experience of different enterprises; some are standardized across society and others are not.

The farm practices are organized into six major categories, which reflect 46 more detailed techniques practiced by some farmers today. The colors and arrows on the diagram show which farm practices affect which of the thirteen economic value propositions. They also show clear relationships and patterns between various scientific and economic topics. For example, the diagram shows that soil health – one of the six major categories – is affected by seventeen distinct techniques that a farmer may choose to practice, and that these connect with ten of the thirteen economic opportunities.

A 48-page reference note accompanying the diagram includes a short introduction to all the techniques, their underlying science, the related economics, and a reference list.

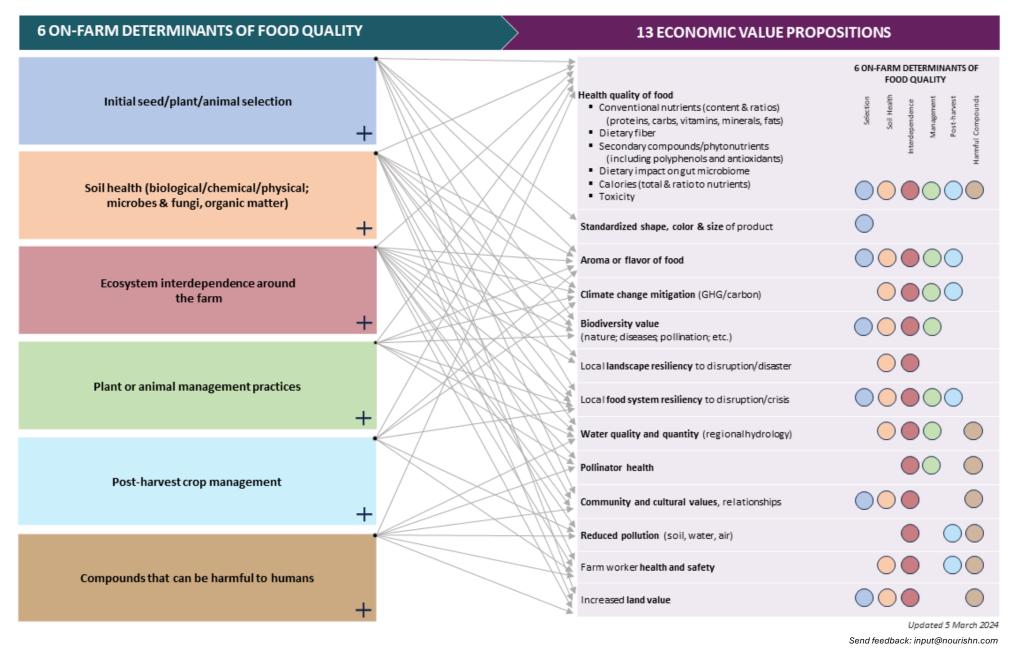
This mapping of farming science to economics is designed to support entrepreneurial actions of farmers, food processors and distributors, product brands, financiers, policymakers, and others who building these multifaceted benefits into modern enterprises, via various actions:

- Developing farm and food producer business strategies
- Assessing a region's or enterprise's potential economic value propositions
- Facilitating communication between producers, financiers, and investors
- Engaging the health and environment sectors to support certain farm practices
- Facilitating communication between scientists and economists (across the agricultural, health, and environmental sectors)
- Assessing the risks of actions that focus on one agricultural output without considering systemic scientific or economic effects

Feedback is encouraged on all points in the diagram, including additional real-life examples of the economics. What points are most useful, need clarification, or should be prioritized for further development? Send feedback or inquiries to <u>input@nourishn.com</u>.

Supported with USDA NRCS Conservation Innovation Grant: Incentivizing Conservation Adoption

Farm Practices for Food Quality and Market Benefits



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Farm Practices for Food Quality and Market Benefits

	6 ON-FARM DETERMINANTS OF FOOD QUALITY				13 ECONOMIC VALUE PROPOSITIONS	
Crop Selection	Baseline nutritional profile of the crop or animal Varietal/breed (what specific type of plant or animal)				6 ON-FARM DETERMINANTS OF FOOD QUALITY	
	Genetics: hybrid, GMO, biofortified, heritage, regional				Health quality of food Conventional nutrients (content & ratios) (proteins, carbs, vitamins, minerals, fats) Distancifiber	다 년 수 번 뒤 뒤
	Management: organic, microbial seed treatment before planting					Selectic Soil Heal dependenc Manageme Post-harve Compoun
	Congruence with regional weather/pest/ecosystem conditions				 Dietary fiber Secondary compounds/phytonutrients 	erde M. Po
Soil Health	Cover crops Agroforestry		Biochar		(including polyphenols and antioxidants)	larm Int
	No/low till	% greenness dur	ring year Other soil amendments		Dietary impact on gut microbiome Calories (total & ratio to nutrients)	1
	Crop rotation	Rotational grazin	-			
	Intercropping/polyculture	Antibiotics	Soil & air pollutants (PFAS, heavy metals, etc.)	Toxicity		
	Nutrient-fixing plants/trees	Synthetic fertilize	ers planting	× / \X X / M W	Standardized shape, color & size of product	
	Perennial planting	Bioactive compo			Standardized snape, color & size of product	\bigcirc
Ecosystem Interdependence	Plant diversity		Integrated pest-management (IPM) & push-p		Aroma or flavor of food	$\bigcirc \bigcirc $
	% greenness during year		Habitat for pollinator health			
	Agroforestry		Perimeter plantings		Climate change mitigation (GHG/carbon)	
	Conserved natural habitat		Animal integration			
	Pesticides			Biodiversity value (nature; diseases; pollination; etc.)	$\bigcirc \bigcirc $	
Direct Crop Maragement	Foliar spray		Microbial seed treatment before planting			
	Sunlight (canopy; in/outdoors)		Feed type (grain, grass, diverse natural pastur		Local landscape resiliency to disruption/disaster	
	Intercropping/polyculture		Exogenous hormones			
	Pollination via animal, self-, other		Exogenous antibiotics	Local food system resiliency to disruption/crisis		
	Rotational grazing				Water quality and quantity (regionalhydrology)	\bigcirc \bigcirc \bigcirc \bigcirc
Post-harvest	Location/proximity/transport		Storage conditions (temperature, growth regulators)		Pollinator health	
	Date/freshness		Maturity of crop at time of harvest			
	On-site food processing		-	Community and cultural values, relationships		
Harmful Compounds	Noteworthy pesticides, fertilizers, hormones, antibiotics, PFAS, heavy metals, etc.				Reduced pollution (soil, water, air)	
					Farm worker health and safety	$\bigcirc \bigcirc $
				-	Increased land value	

Updated 5 March 2024 Send feedback: input@nourishn.com



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