North San Joaquin Valley, CA BDO Zone Rating: **‘AA’**

- ✓ **Rating Parameters:**
  - Orchard Biomass: 900,000 tons/yr @ $15-$25 bdt.
  - Nut Tree Shells: 180,00 bdt/year @$15-$25 bdt.
- ✓ **Rating Outlook: Low Supplier Risk:** Long-standing industry with 6,300 nut tree growers/suppliers in the BDO Zone.
- ✓ Well established processor and contractor networks to separate nuts from biomass shells and recycle orchards.
- ✓ Premium development sites in two primary industrial districts.

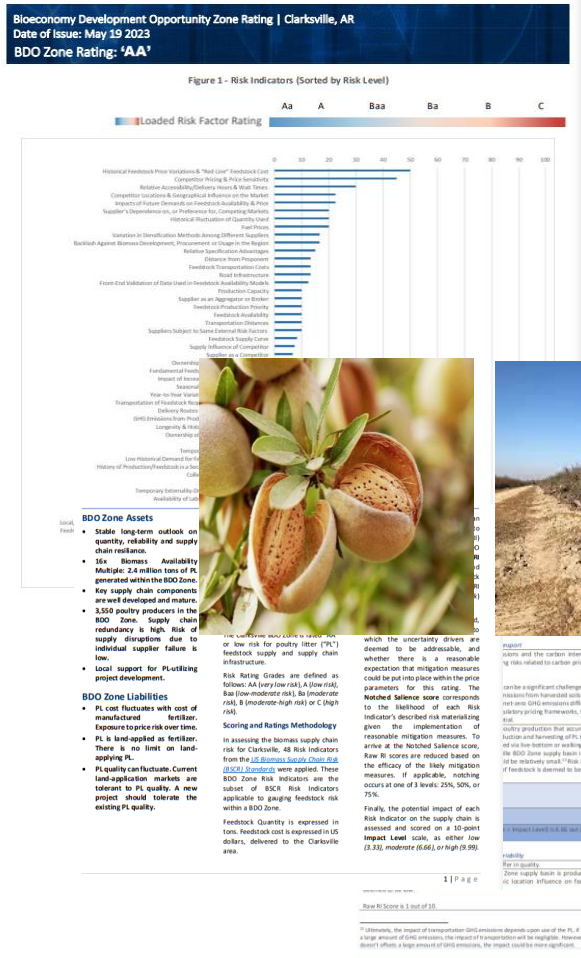
View and download the North San Joaquin BDO Zone Rating **here**.

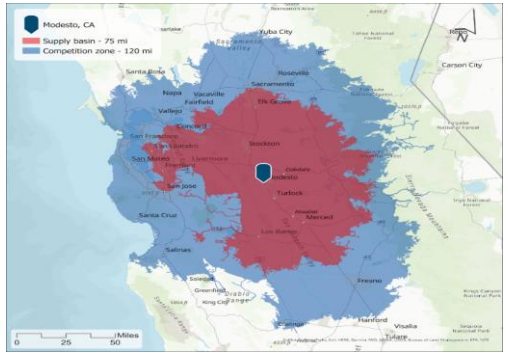
Bioeconomy Development Opportunity Zone Rating I BDO Zone Designation: North San Joaquin Valley, CA Date of Issue December 14, 2023
BDO Zone Rating: ‘AA’

Bioeconomy Development Opportunity Zone Risk Rating

‘AA’

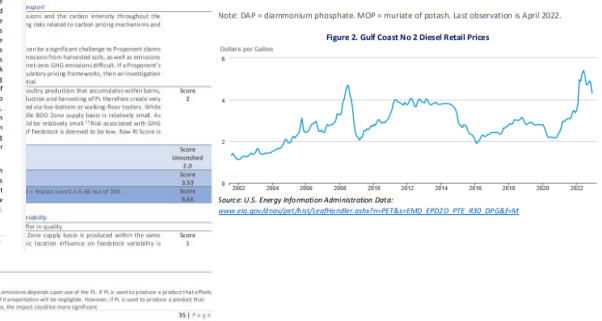
The North San Joaquin Valley, California Bioeconomy Development Opportunity Zone is rated ‘AA’. There is a significant amount of underutilized nut tree biomass within the BDO Zone that can be acquired by new Bio-projects with low risk of supply and pricing.











BD | BIOECONOMY DEVELOPMENT
OZ | OPPORTUNITY ZONE INITIATIVE

BEAM CIRCULAR

BIOECONOMY • AGRICULTURE • MANUFACTURING



Building a hub for the circular bioeconomy in California's agricultural heartland

Karen Warner, Founder and CEO

BDO Zone Webinar



BioEconomy, Agriculture, & Manufacturing (BEAM) Initiative:

a regional strategy for global leadership in the circular bioeconomy

BEAM Portfolio

Collaborative projects & programs to support scale-up of bioindustrial manufacturing

- Community
- Infrastructure
- Talent
- Innovation
- Capital

Regional Industry Focus: Circular Bioeconomy



FEEDSTOCKS (BIOMASS)
agricultural residues, wood & forestry residues, municipal solid waste / green waste, food processing byproducts, wastewater sludge



CONVERSION
biological (fermentation, anaerobic digestion), chemical, thermochemical (pyrolysis, gasification)

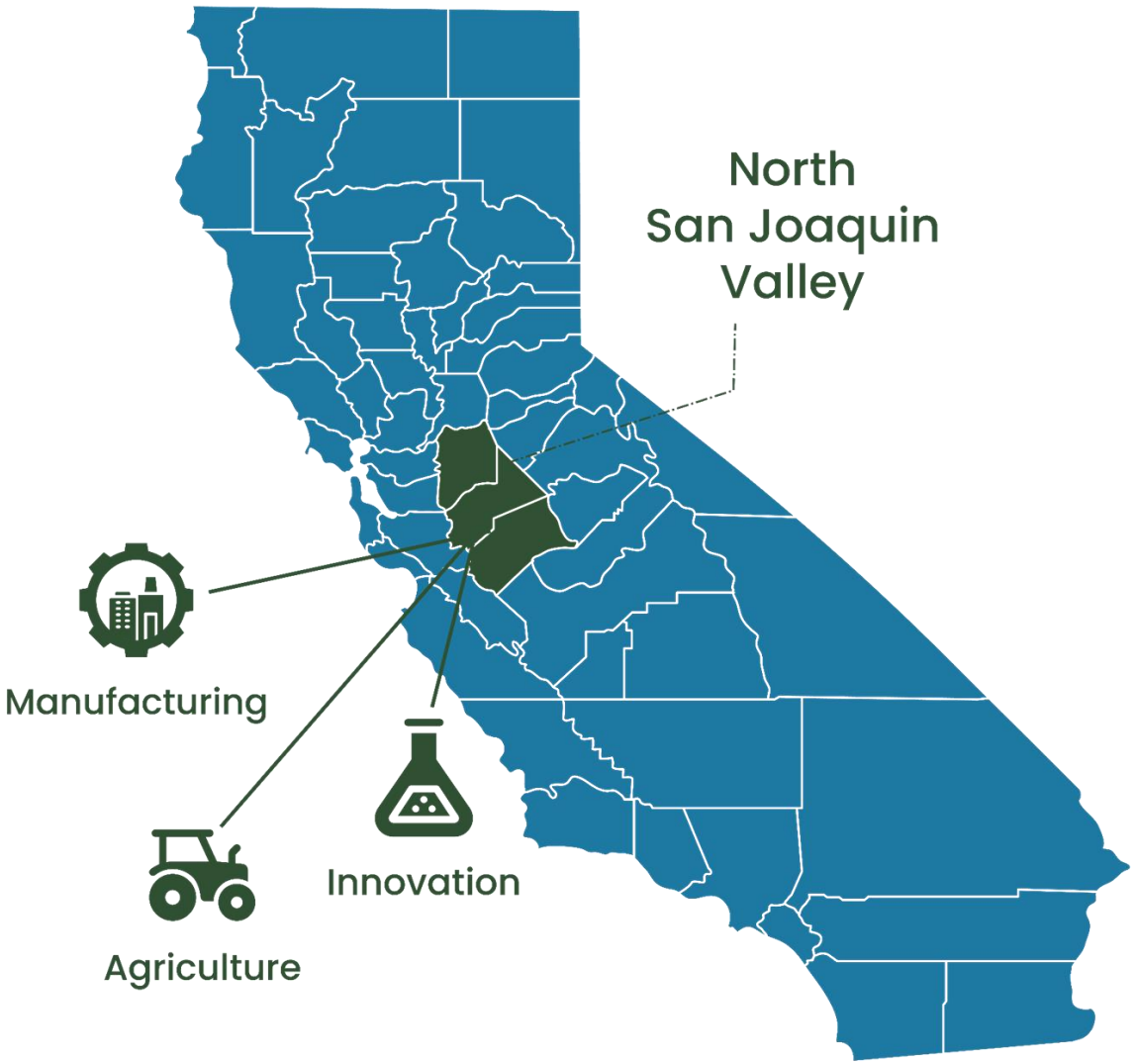
Advancing sustainable technologies that reduce emissions



PRODUCTS
fuels, chemicals, solvents, detergents, plastics, films, fabrics, polymers, ag inputs, food additives, fragrances, alternative proteins, construction materials

BEAM's strategic anchor region

- NSJV = Merced, San Joaquin, & Stanislaus Counties, 1.6 million people
- CA's agricultural heartland, directly neighboring Bay Area biotech hub to West and forested Sierras to East
- Heart of SJ Valley, most productive & crop diverse region in US
- Global food manufacturing leader across multiple categories



NSJV is uniquely positioned to lead in bioindustrial manufacturing

Only region in USA to combine:

leading level ag production
+
leading level manufacturing
+
driving distance to “superstar tech city”



SOURCE: CitiesGPS Analysis for Stanislaus 2030 Investment Blueprint, 2022

First BDO Zone in California

NORTH SAN JOAQUIN VALLEY, CALIFORNIA ISSUED 'AA' BDO ZONE RATING FOR TREE NUT BIOMASS

– Rating to Unlock New Regional Biomanufacturing Opportunities –

February 15th, 2024



The BDO Zone Initiative has issued a 'AA' BDO Zone rating covering 1,104,000 tons per year of underutilized woody and nut tree biomass in the North San Joaquin Valley, California.

https://bdozone.org/north-san-joaquin-valley-california-issued-aa-bdo-zone-rating-for-tree-nut-biomass/

Regional Crop Residues in North San Joaquin Valley (NSJV)

TOP 12 NSJV CROPS BY DRY TONNAGE

1. Corn for silage or greenchop (4,517,173)
2. Tomatoes (2,296,854)
3. All hay (1,788,592)
4. All haylage (1,283,065)
5. Grapes (1,174,968)
6. Almonds (402,237)
7. Walnuts (331,664)
8. Sweet potatoes (224,296)
9. Corn for grain (157,466)
10. Cucumbers (125,709)
11. Peaches (119,385)
12. Sweet cherries (116,553)

TOP 12 NSJV CROPS BY ACREAGE

1. Almonds (394,350)
2. All hay (208,927)
3. Corn for silage or greenchop (175,506)
4. Grapes (130,552)
5. All haylage (111,794)
6. Walnuts (106,884)
7. Tomatoes (55,687)
8. Cotton (47,766)
9. Corn for grain (32,399)
10. Wheat for grain (23,354)
11. Sweet cherries (21,584)
12. Sweet potatoes (20,477)

NSJV will produce over

2.7 Million Bone Dry Tons per year

of sustainable biomass feedstock from ag residues by 2045
(byproducts / waste streams not in use as food products)

Region also leads in Eggs, Poultry, Beef Cattle, Dairy.
Estimated 1,426,054,958 gallons of milk and 2,782,275 tons of livestock manure produced each year.

NSJV is surrounded by forested and agricultural land offering additional feedstock opportunities from adjacent regions.

Source: USDA Census of Agriculture, 2017

Resources for Bioeconomy Firms & Projects

- Local & state incentive navigation
- R&D partnerships
- Specialized Bioeconomy Programs launching in 2024:
  - Accelerator
  - Subsidized consulting services
  - SBIR/STTR matching grants
  - Innovation Vouchers to access R&D resources
  - Workforce Development resources
  - Connections to feedstock suppliers
  - Site identification
- Regional community of public and private collaborators supported by federal, state, and local public funding alongside private investors

Growing Ecosystem of Partners Supporting Regional Bioeconomy

















































































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Let's Collaborate!

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