Utilization of Dairy Manure

Assessing potential to improve environmental outcomes in CA

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Sustainable Conservation helps California thrive by uniting people to solve the toughest challenges facing our land, air, and water.
Partnering with Farmers to Grow a Vibrant Future

Supporting Landowners to Restore California’s Lands and Water

Engaging Business to Solve Environmental Challenges
The dairy industry is important for California and the U.S.

- #1 milk-producing state
- $34.4B sales in 2014
- 50,000 jobs in 2014

¹ UC Davis, Contributions of the California Dairy Industry to the California Economy
The San Joaquin Valley is critical for the California dairy industry.

- **90%** of CA milk production
- **$13.9B** sales in 2012
- **29,900** jobs in 2012

1 UC Davis, *Contributions of the California Dairy Industry to the California Economy*
WATER QUALITY

AIR QUALITY

GREENHOUSE GASES
POLICY
• regulations
• permitting

TEST
• technologies
• practices

IMPLEMENT
• assist
• incentivize
The ideal dairy recycles most of its nutrients.
Nutrient imbalance threatens water quality.
With excess, nutrient exports are critical.

run-off, leaching

FEED

COWS

STORAGE

exports
Industry Consolidation will exacerbate problem of “excess” manure
How do we reduce the overall environmental footprint of manure generated by CA dairies?
To what extent could increasing the production and use of manure compost lead to better environmental outcomes in California?
• Environmental (cross-media)
• Market
• Policy / Regulatory
Challenges: Environmental

• Lack of good science:
  ▪ on manure in CA
  ▪ compost vs. status quo
  ▪ across environmental media
Challenges: Market

- Supply
  - Fragmentation
  - Quality control
  - Profit model

- Demand
  - Buyer restrictions
  - Nutrient management plans
  - Non-ag unclear
Challenges: Regulatory

• Within (introspection)
  ▪ Clarity
  ▪ (Seeming) conflicts

• Between
  ▪ Measurements
  ▪ Thresholds

• Focus on outcomes
  ▪ Flows vs. impact
  ▪ Cross media
Opportunities: Market

- Significant & consistent supply
- Significant potential demand nearby
- Centralized and decentralized
- Higher value/revenue, if QC
- Utilize other ag waste
Opportunities: Environmental

Improved:

- Methane
- Water quality
- Sequestration
- Air quality (?)

- Resilience
- Soil health
- Water use
Opportunities: Regs & Policy

- Water Quality
  - [Logo of California Environmental Protection Agency]
  - [Logo of Dairy Cares]

- Air Quality
  - [Logo of United States Environmental Protection Agency]
  - [Logo of San Joaquin Valley Air Pollution Control District]

- Short-Lived Climate Pollutants
  - [Logo of California Environmental Protection Agency]
  - [Logo of Air Resources Board]
  - [Logo of CDFA]

- Compost
  - [Logo of CalRecycle]
  - [Logo of CDFA]
  - [Logo of California Water Boards]

- Healthy Soils Initiative
  - [Logo of San Joaquin Valley Air Pollution Control District]
  - [Logo of California Environmental Protection Agency]
We need more manure composted and distributed
Path Forward

- Comprehensive, field-based research
- Pathogens & buyer requirements
- Guidance for inclusion in NMPs
- Clear & streamlined inter-agency permitting
- Inclusion in SB 1383, HSI, and AB 1045
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