Fostering Resilience in Sonoma County

Dr. Glenda Humiston, State Director
Funding and Technical Assistance for:

- Business & Cooperatives Development
- Renewable Energy & Broadband
- Community Facilities & Rural Utilities
- Water, Sewer & Solid Waste Systems
- Single, Multi-Family & Farmworker Housing

FY 2013: $1.2 Billion
FY 2014: $1 Billion

CA Portfolio: ~ $7 Billion

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Over 300 California Firms Produce an Array of Biobased Products

February 2012: President Obama’s Executive Order Requiring Federal Agencies and Contractors to Utilize Biobased Products.
Opportunity: Cellulosic Nanomaterials (CNC)

- **Stronger**
- **Lighter**
- **Cheaper**
- **Renewable**

**Tensile strength of CNC Compared to:**

- **Wood pellets**
  - $155  (100% conversion)

- **Fuel Ethanol**
  - $255  (@100 gallons/ton)

- **High Brightness Paper**
  - $450  ($1,000/ton - 45% yield)

- **Cellulose Nanocrystals**
  - $1,350  ($6,000/ton - 22.5% yield)
Fujitsu’s “smart” farming uses hundreds of sensors to monitor temperature, air current, moisture, CO2, lighting, fertilizer, & soil pH. Engineers use tablets to monitor readings uploaded to the cloud.

It's the “Internet of Things” growing food in a completely antiseptic space –3,000 heads of a lettuce a day that sell for three times the normal price!

“The low-potassium lettuce …doesn’t taste bitter…is very crunchy, and it will stay in the same condition for more than two weeks.”
Complete Greenhouse Monitoring System from Kraków Poland

System design for Internet of Things in agriculture & logistics. Pilot projects are in Tianjin, Shanghai, and Anhui, China.

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Sustainable Food, Fiber & Natural Resources Need Better Technologies

Precision Applications

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Other Partnerships Developing Fast

UC Merced Blum Center for Developing Economies

&

Tuolumne County Economic Development Authority

Sacramento Region Tech Companies
There are more than 500 tech companies growing and thriving in our region. Explore who they are and what they're doing on our Tech Company Map.

Serving the Central Sierra

Forbes ReInventing America - The Ag Tech Summit
Pursuing Net-Zero Water Use for Ag
U.C. Davis: Jess Jackson Sustainable Winery Building

Showcasing “smart” technology that maximizes environmental capabilities of winery, brewery, and food-processing complex.

✓ Automated systems to clean equipment
✓ High-purity filtration of rainwater
✓ Off-peak processing, …and more!

90% of water & chemicals from each cleaning cycle is captured and processed for future use in the complex, eventually being used as many as 10 times.

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April 17 – 19: West Hills College Coalinga hosts a competitive hackathon designed to partner young farmers with mobile application developers from

The event kicks off with Young Farmers & Ranchers from California Farm Bureau Federation informing invited developers of business needs. Coder teams then spend the weekend creating apps and judges render verdicts Feb. 22.

Organized by the California AgTech Roundtable, a pro bono group formed in 2013 to help create jobs in rural California through agricultural technology.
Technology alone will not deliver Climate Resiliency

“I THINK YOU SHOULD BE MORE EXPLICIT HERE IN STEP TWO.”
Understanding diverse “reservoirs” can bridge gaps in natural availability of water.

Healthy watersheds in the Sierra & Cascade Ranges can produce 9 – 16% more water.

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Report #3: From Crisis to Connectivity

- Examines historical disconnections that have led to water crises in CA
- The connectivity approach offers a model for designing strategic and systemic solutions

Offers guiding principles for implementing a resilient water infrastructure

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Industry Clusters & Value Chains

SUPPORT
- Consulting
- Marketing
- Conservation
- Financial Services
- Repairs
- R&D

PRODUCTION
- Land
- Water
- Labor
- Buildings
- Seeds
- Equipment

PROCESSING
- Aggregation
- Packaging
- Cold Storage
- Handling
- Recycling / Waste Management

DISTRIBUTION
- Sales
- Logistics
- Warehousing
- Import / Export
- Containers
- Transportation
- Infrastructure

Agro-Tourism & Food

Goods Movement

Technology
- Materials
- Data
- Research

Renewable Energy
- Air Quality
- Utilities
- Energy Grid

Manufacturing
- Investor s
- Workforce
- Equipment

Travel

Inventory

Entertainment
- Restaurants
- Marketing

Vehicles
- Packing
- Warehousing

Import / Export
- Containers
- Transportation
- Infrastructure
Traditional Urban Planning: one shade of green outside urban areas.

What does “Green” Mean??

Rural – Urban Connections: details on rural parcels!

Facilitates regional planning, economic development and better use of infrastructure!

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Rural-Urban Connections Strategy
Sacramento Area Council of Governments
www.sacog.org/RUCS

CROP MAP

I-PLACE3'S

ECONOMETRIC MODEL

DIET/LAND NEEDS

INFRASTRUCTURE/FISCAL MODEL (IMPACS)

LAND USE PLAN

SCENARIOS

Rural Development

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Strategy for a Sustainable Economy = SYNERGY

Synergia (Greek): creation of a whole greater than the simple sum of its parts.
Synergos (Greek): "working together".

WORKFORCE & TRAINING
SUPPLIER NETWORKS
ACCESS TO CAPITAL
INFRASTRUCTURE
BUY/PROCURE LOCAL
TRADE / NEW MARKETS
LOCAL ECON/ECO-SYSTEMS
RESEARCH AND INNOVATION
OPERATIONAL IMPROVEMENTS

Triple Bottom Line:
PEOPLE
PLANET
PROSPERITY

Invest Local

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Private Sector

Foundations

Government Agencies

Economic Development Corporations

Prosperity

People

Planet

Financial Institutions

Community Colleges & Job Training

NGOs

Coop Extension & Research Institutions

USDA

Rural Development

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www.caeconomy.org

...harnessing the power of regional collaboration to spur economic innovation and growth

Seven Action Teams:

Advancing Manufacturing        Capital
Housing                        Infrastructure
Regulations                    Workforce

✓ Working Landscapes

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Working Landscapes

Agriculture ~ Forests ~ Fisheries ~ Mining
Watersheds ~ Energy ~ Recreation ~ Habitat

1.2 Million Jobs in California
$318 Billion Direct Sales & Exports
272,000+ New Jobs in Five Years

http://www.caeconomy.org/resources/entry/2013-california-economic-summit-playbook

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A study of economic value of Sonoma County’s working lands and natural areas: $2.2 - 6.8 billion per year.
“Layers” of Funding & Economic Activity Will be Needed

Value of Biobased Products will help finance forest health activities – probably not enough.

Augment that with:

Cap & Trade Credits

Need to also monetize value of “reclaimed” water produced from forest health activities!
Equity capital invested in rural areas is just as successful as in tech-oriented metro regions. A study of 18,000 investments found no statistical difference between rural and metro regions measuring key variables: jobs created, type of industry, length of venture, exit, or performance.

Patricia Scruggs et al, “The Role of Equity Capital in Rural Communities,” 2010

www.rurdev.usda.gov/Reports/CA-CalFOR.pdf
Connect the Intangible Capital!

Knowledge Capital:
- Information
- Research
- Processes
- Intellectual Property

Social Capital:
- Customers
- Vendors
- Partners
- Brands
- Reputation

Human Capital:
- Experience
- Competencies
- Management Skills
- Workforce
California Rural Development
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