



Innovative Landscapes  
Catalyzing new advances  
in addressing sustainability

Sustainability is rooted in diverse factors that exist  
at a scale that cannot be solved by:

one group of farmers

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one community

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one company

The systematic Landscape approach  
comprehensively addresses this challenge



With support from leading agencies



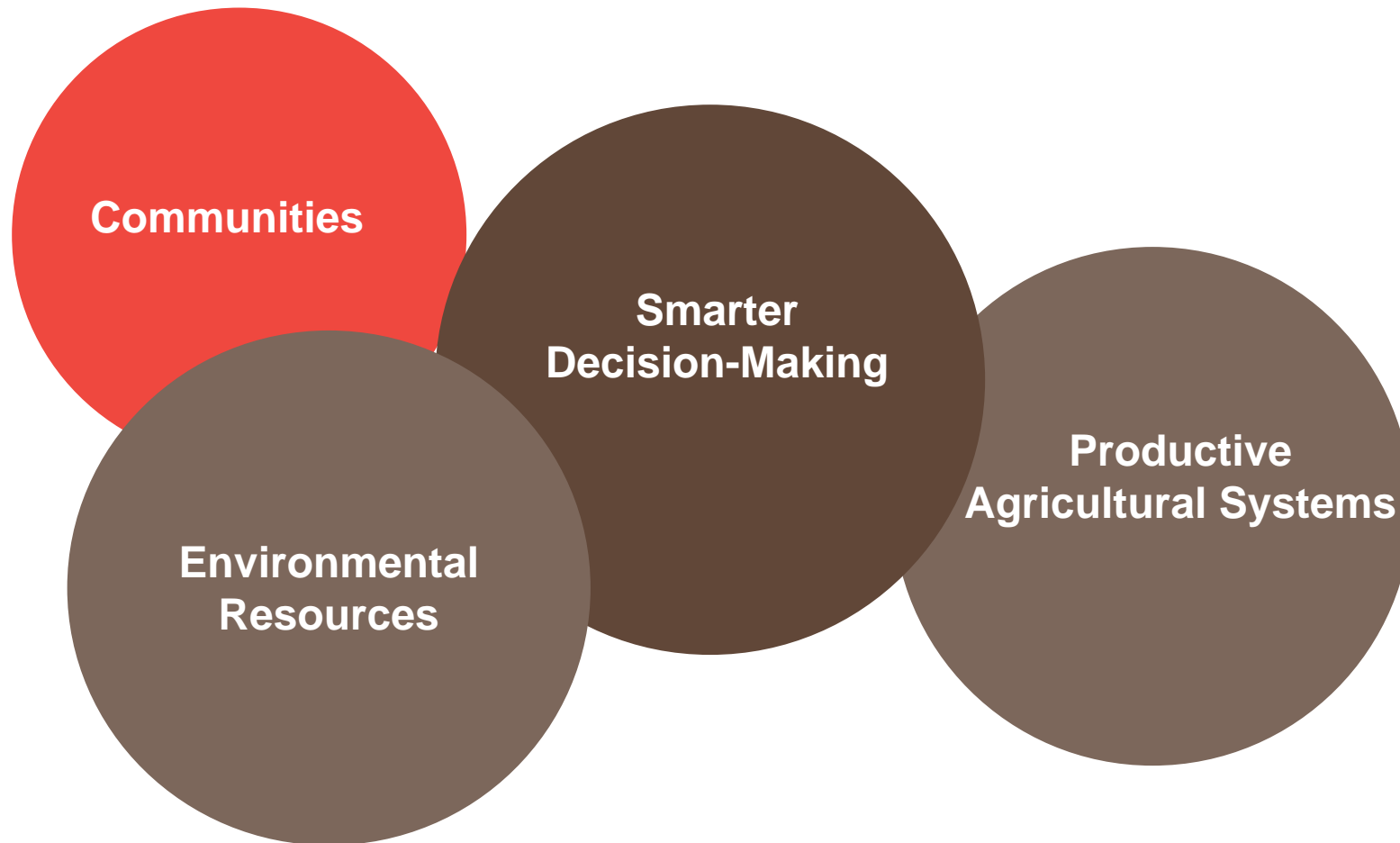


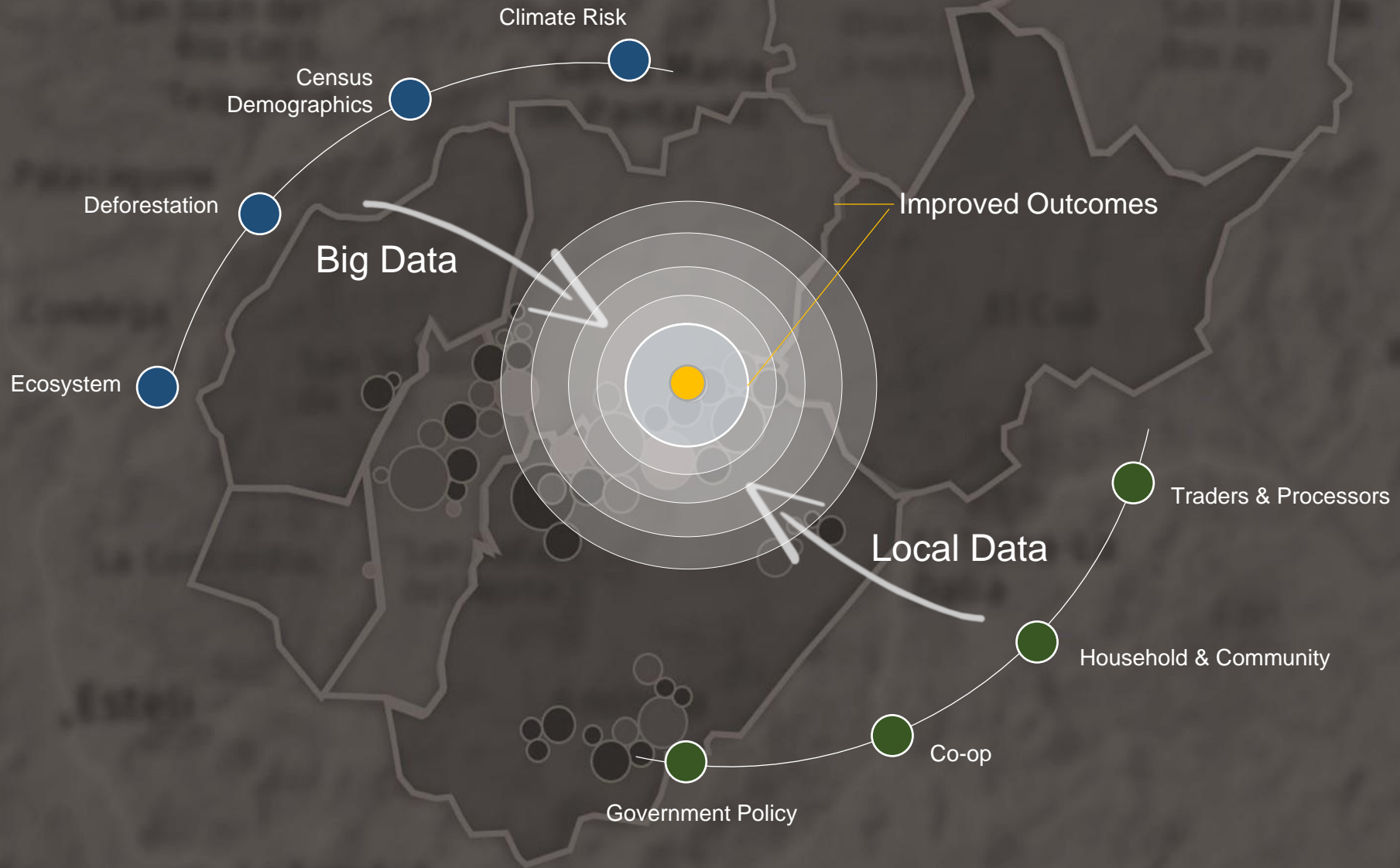
This landscape assessment is ground-breaking for the coffee sector, where industry actors have no equivalent precedent of working at the landscape level.

Kim Elena Ionescu,  
Chief Sustainability Officer, SCA

# Defining Sustainable Landscapes as Interlinked

# Defining Sustainable Landscapes as Interlinked





## Demonstrated Value

1

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Holistic common picture  
opens synergies to  
work together

2

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Empower local action  
with easy visual access  
... data democracy

3

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Smarter decisions for  
scaling up impact

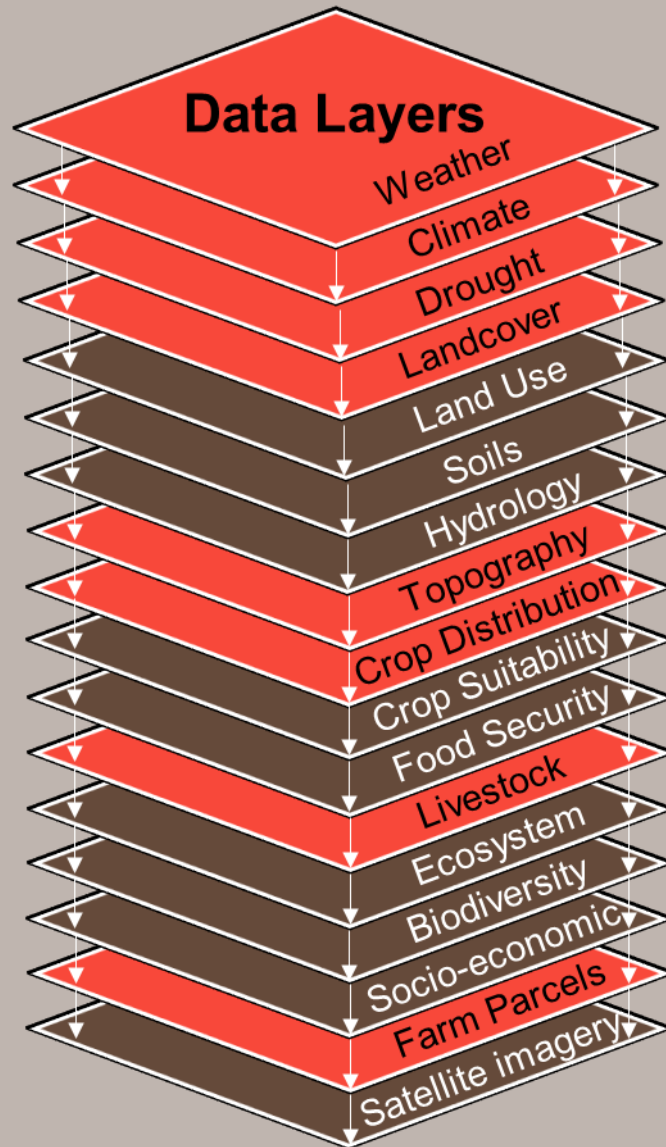


## Why not just the environment?

Knowing deforestation  
rates or water use is not sufficient.  
Better to understand actionable  
data on the economic and social  
**drivers** of deforestation.

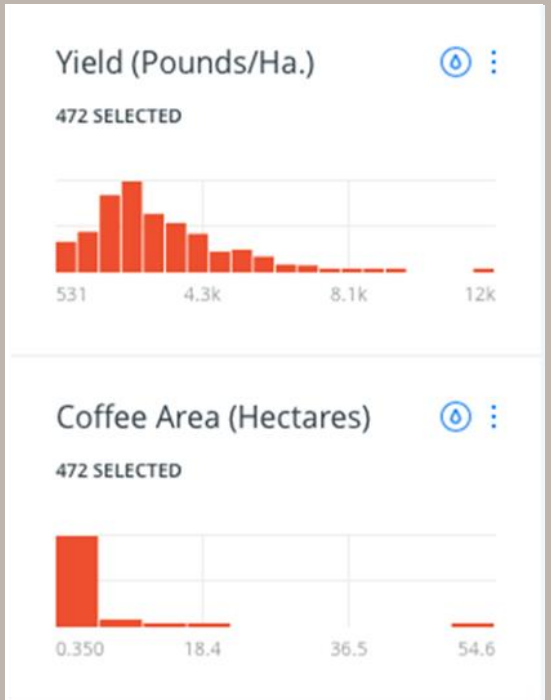
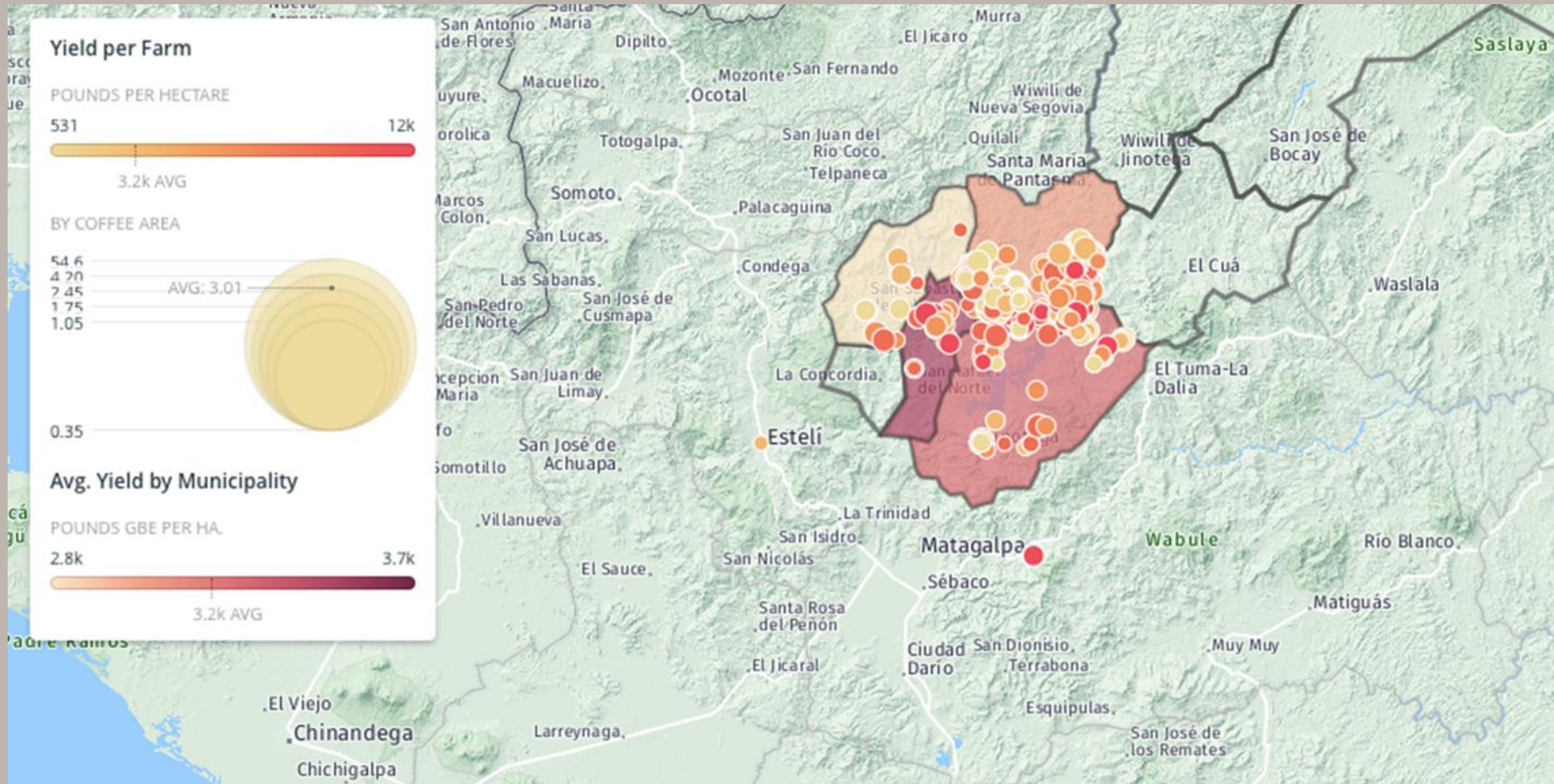
**Productive Landscapes are much more than an ecology, they are shaped by the dynamic tension between social, economic and environmental factors.**

Essential truths are revealed when these new tools map and capture these issues through the lens of key local actors who influence outcomes.



## Benefits of a SMART Landscapes Approach

Integrated local and geospatial layers can provide the ideal location-specific data for descriptive or predictive analytics and machine-learning algorithms



## LEGEND

### Circles

Circle sizes = production area  
Color = intensity of production

### Colour

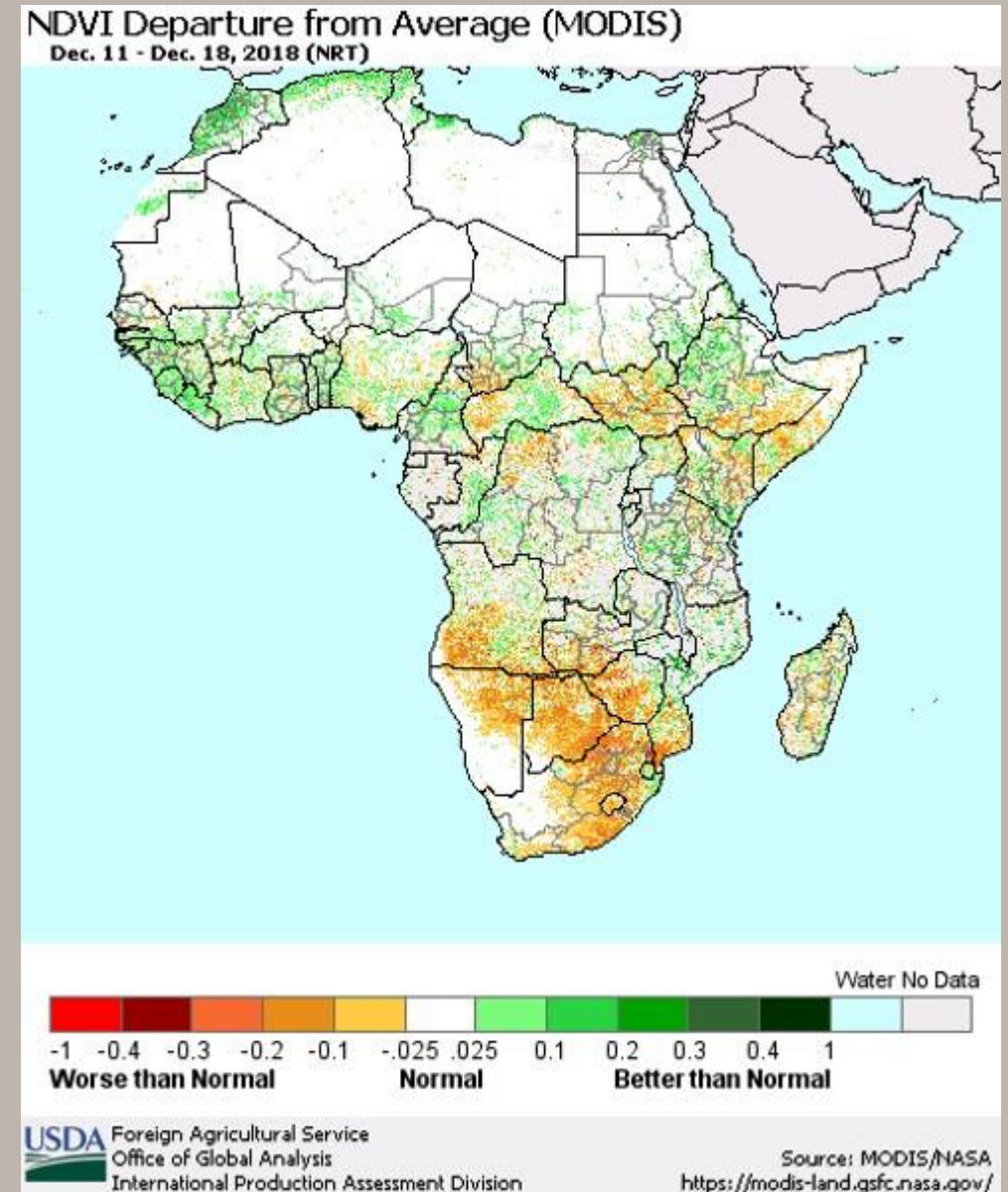
Color intensity applies to municipalities  
with a higher concentration

### Widgets

Widgets that allow diverse  
filters to focus or target

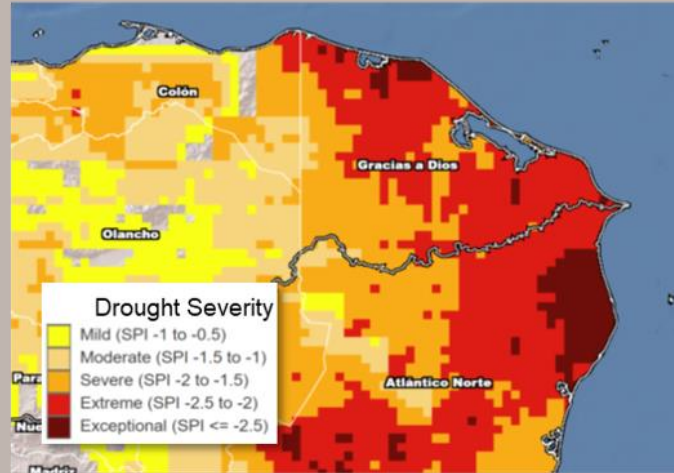
## Sample of the 235 available datasets (GADAS)

1. Percent Normal Rainfall (6 international sources, updated daily)  
+ 7-14 day Rainfall forecasts
2. NASA Microwave soil moisture (surface, subsurface, percent total)
3. Temperature forecasts (weekly Minimum & Maximums)
4. **NDVI Vegetation Index** anomaly (8-day summaries)
5. SPI Drought Alert (monthly)
6. Global Agricultural Lands e.g. rice lands (30-meter and mask)
7. Specific Croplands globally (500-meter and mask)
8. Global Crop Distribution IFPRI (34 crops; Area, Yield, Production, masks at 10-km level)
9. Global Total Land Cover (30m & 500m)
10. Lakes & Rivers (SRTM & Hydrosheds scale-dependent)
11. Global Reservoirs, Dams (including major use categories)
12. Global Irrigated Cropland – FAO
13. Geonames in detail - National Geospatial Intelligence Agency
14. Landscan Global Population Densities Oak Ridge National Laboratory

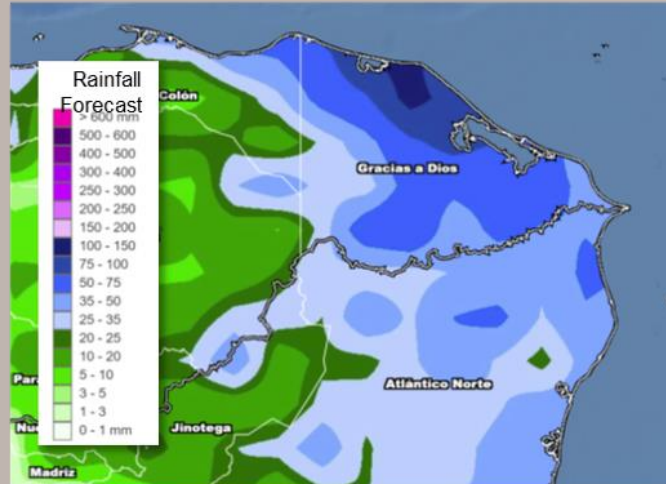


# Advanced Products & Functionality

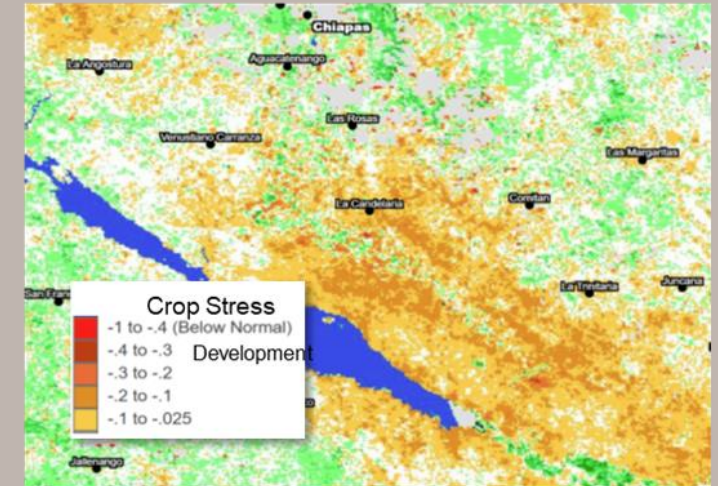
Early Warning Models



Tactical Weather Forecasts



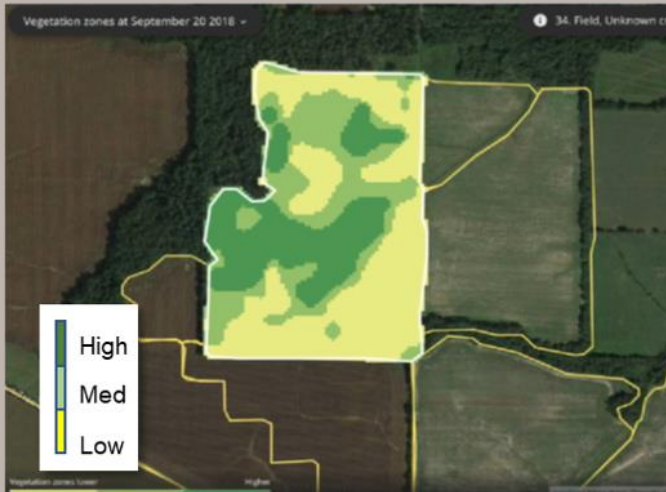
Weekly Crop Stress Models



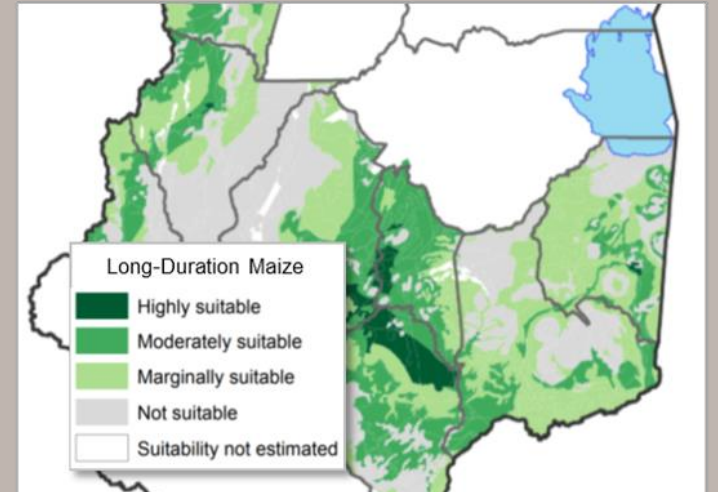
Field-Level Crop ID



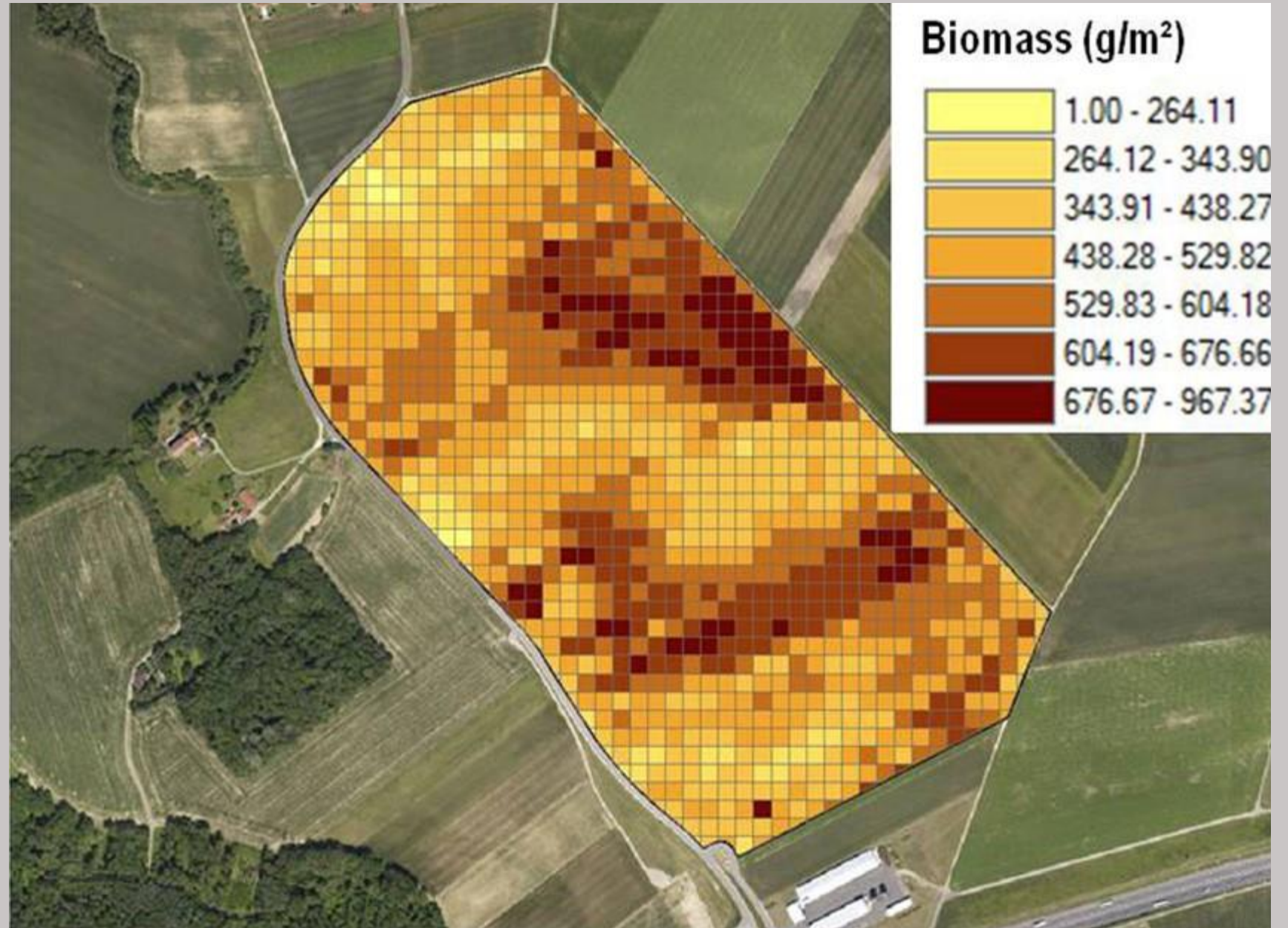
Crop Productivity Mapping



Crop Suitability Mapping



Opens door to  
precision farming for  
small farmers



# Integrating Diverse Data Streams to Improve Understanding

## Small Local Data

Farmer, farm, community,  
and cooperatives

## Big Data

Agricultural census,  
geospatial, private and  
public sources

## Dashboards

Integrating key data and  
advanced analytics optimizes  
insights and coordination  
among all stakeholders



# Dashboards

Managing complex  
data with clarity at  
your fingertips



## Benefits of a SMART Landscapes Approach

1

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**Shared understanding**  
of key issues in sourcing  
regions

2

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**Transparent and  
inclusive process**  
identifies key drivers  
of sustainability

3

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**More effectively target**  
risks and opportunities

4

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Accelerate progress  
and **impact with  
reliable metrics**

# Thank You

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## Wastewater From Coffee Processing

**i** Practices used to prevent water contamination from: crop processing wastewater, animals, domestic discharge, cleaning of agrochemical application equipment, etc.

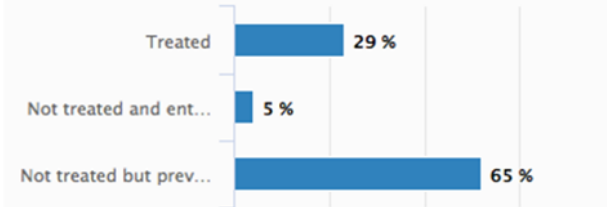
Community Leaders Declaring Presence of Strict Regulation on Water Disposal Practices



PO Checking on Water Conservation Practices  
\* During Internal Audits



Farmer Management of Wastewater from Coffee Processing



Dashboards with key primary info (surveys: HH, co-op, community)

## Production

**i** Total coffee (pounds of GBE) harvested per hectare

Yields

Pounds GBE per Ha.

\*Farm average based on 472 household surveys. PO average based on sampled producer organizations.



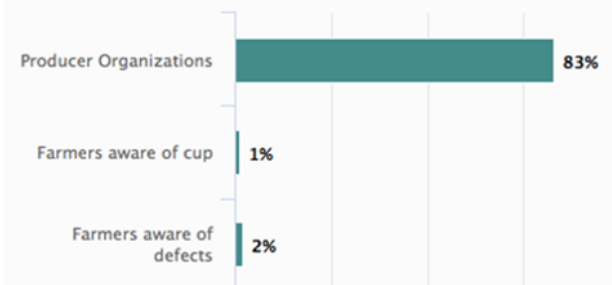
How Farmers Determine the Use of Fertilizers

\*Based on 472 Household Surveys



Know Coffee Quality

\*Based on PO and Household Assessments



Blending primary and secondary data allows better comparisons