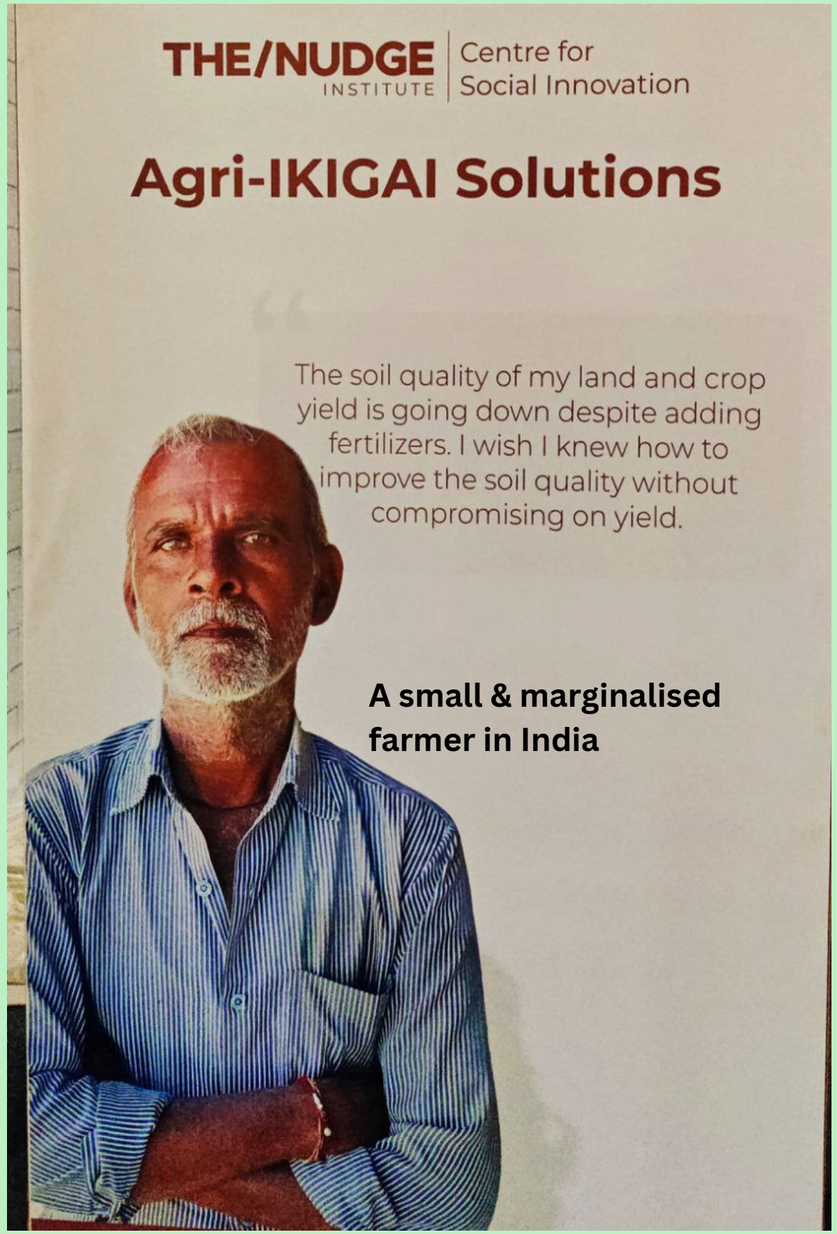
AgriSim

Impacting the lives of small and marginal farmers



Problem ?

Know by experience

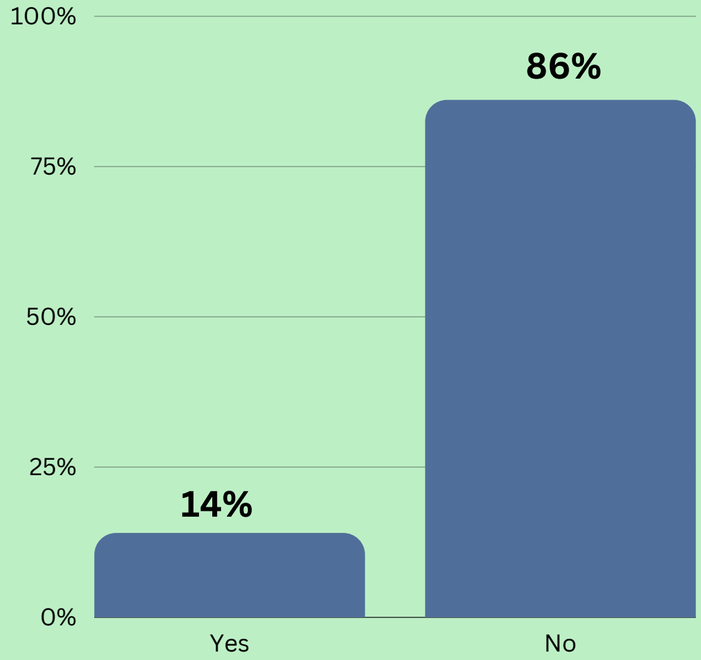
- Crops that grow & fail ✅

Don't know

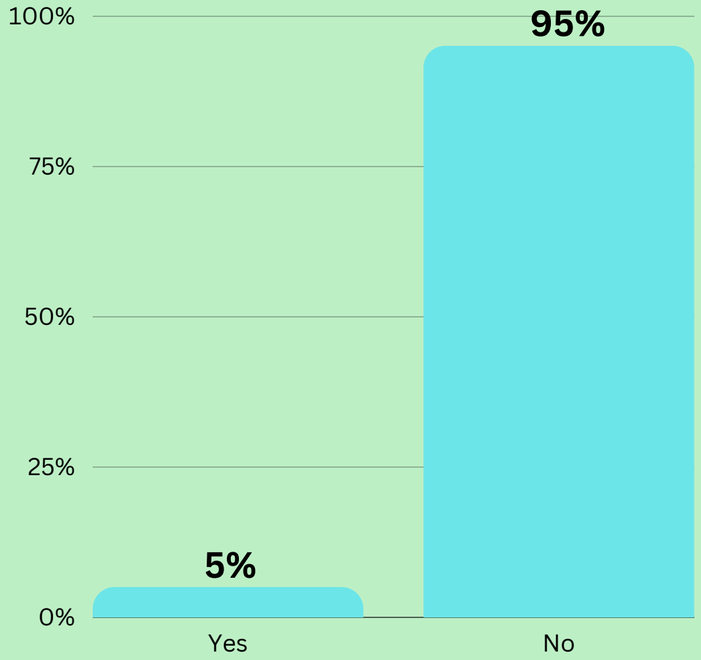
- Quality & type of soil ❓
- Fertiliser types for max yield ❓
- High value crop yields ❓

AgriSim

Issue with fertilisers?



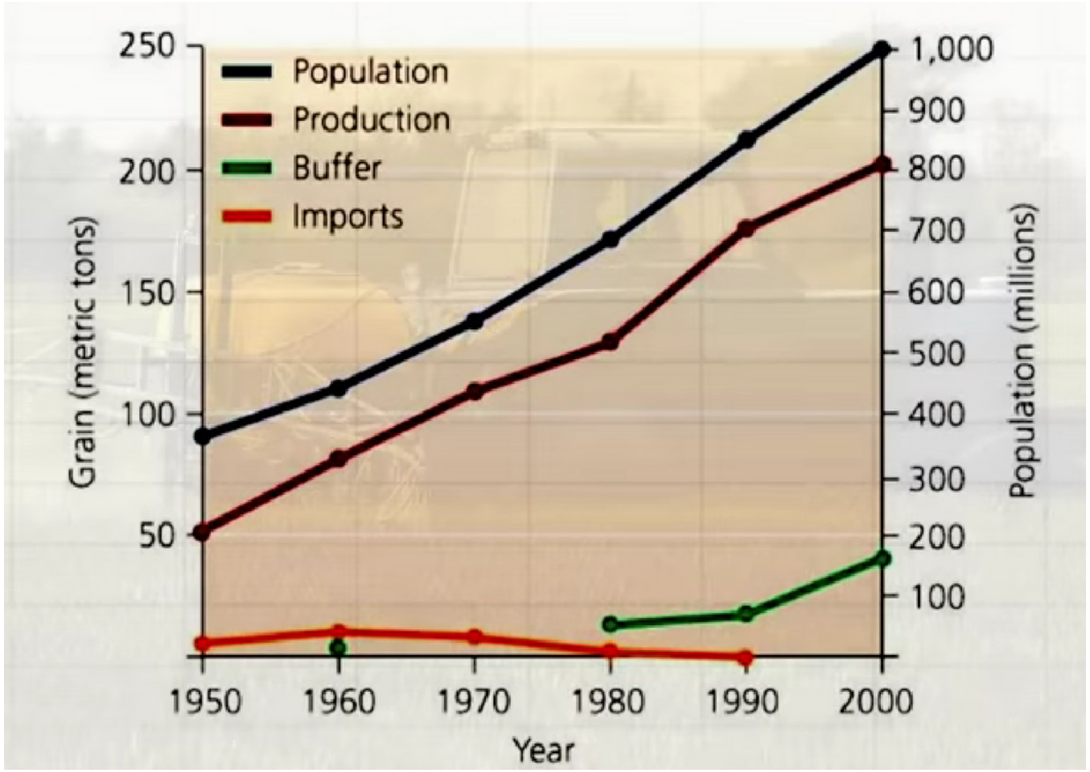
Got Soil Testing?



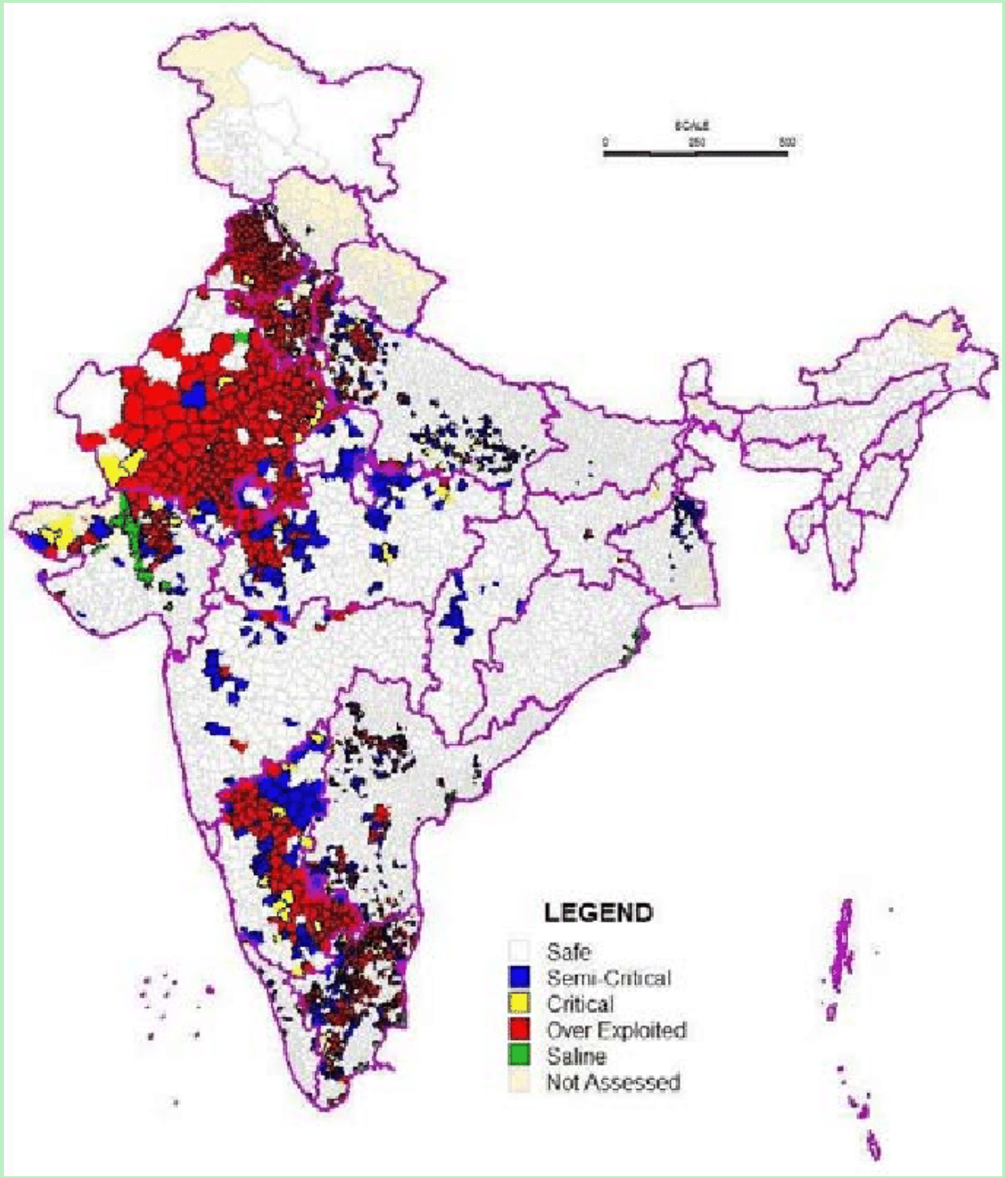
- **Same crops | Same location | Different fertilisers**
- **Not very adaptive to new advisory and rely on own/ relatives' knowledge**

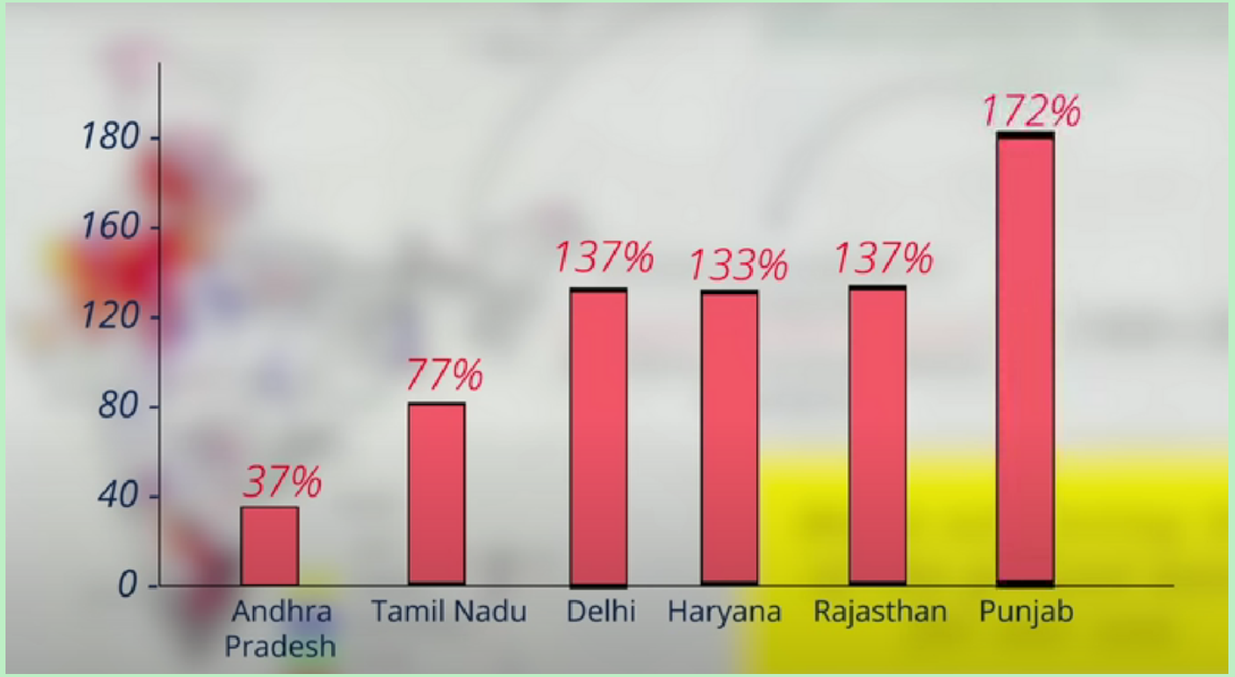
The Bigger Problem

Remember Green Revolution ?



Crop/Food	Water Requirement (kg of water per kg of food produced)
Potato	500-1500
Wheat	900-2000
Alfalfa	900-2000
Corn	1000-1800
Sorghum	1100-1800
Soybeans	1100-2000
Rice	1900-5000
Chicken	3500-5700





Ground Water Exploitation

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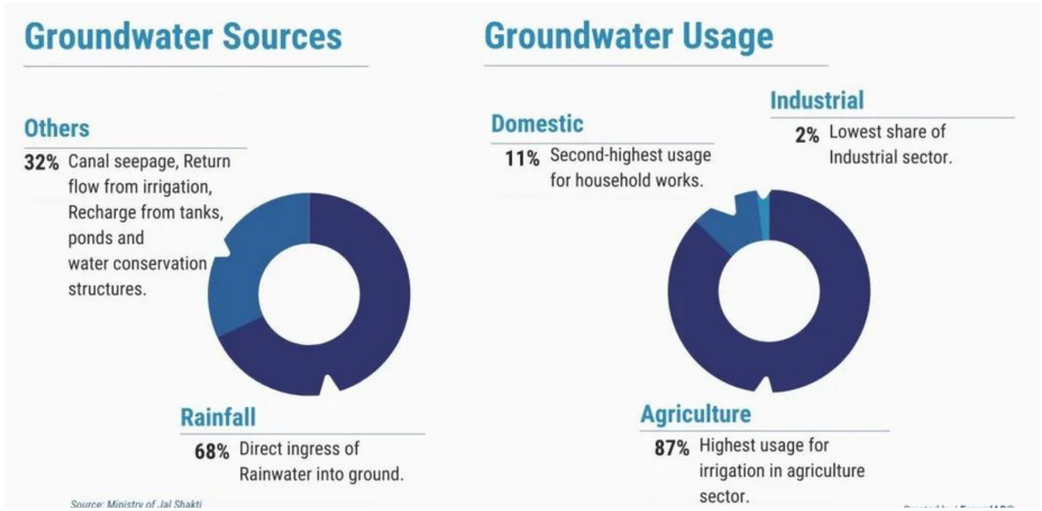
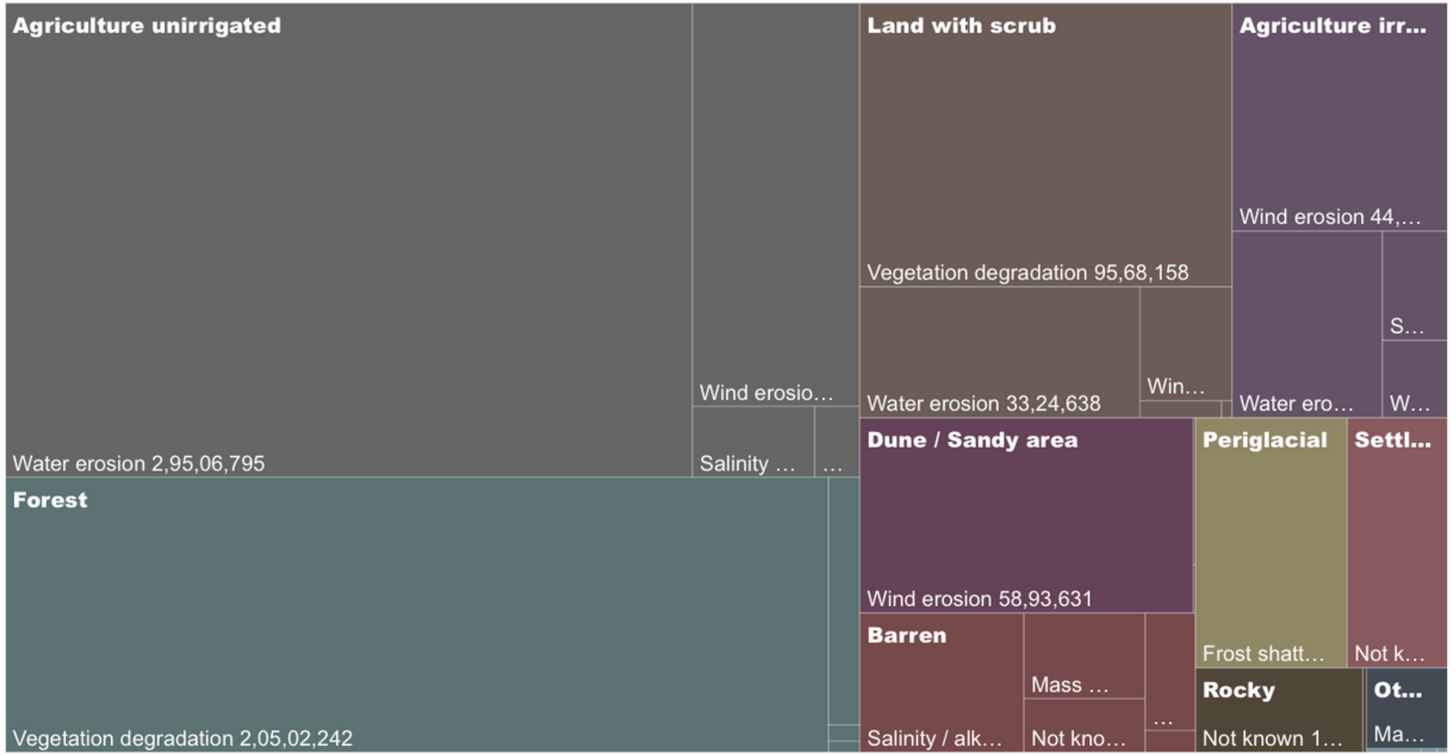


Area degraded by land type and reason for degradation in 2018-19



97.85M

Total area degraded in 2019-19

94.53M

Total area degraded in 2003-05

Telangana Paddy Side - Effects

1 Acre of paddy production = 10M tones of of CO2 eq GHGs

= 100 M tones of of CO2 eq GHGs

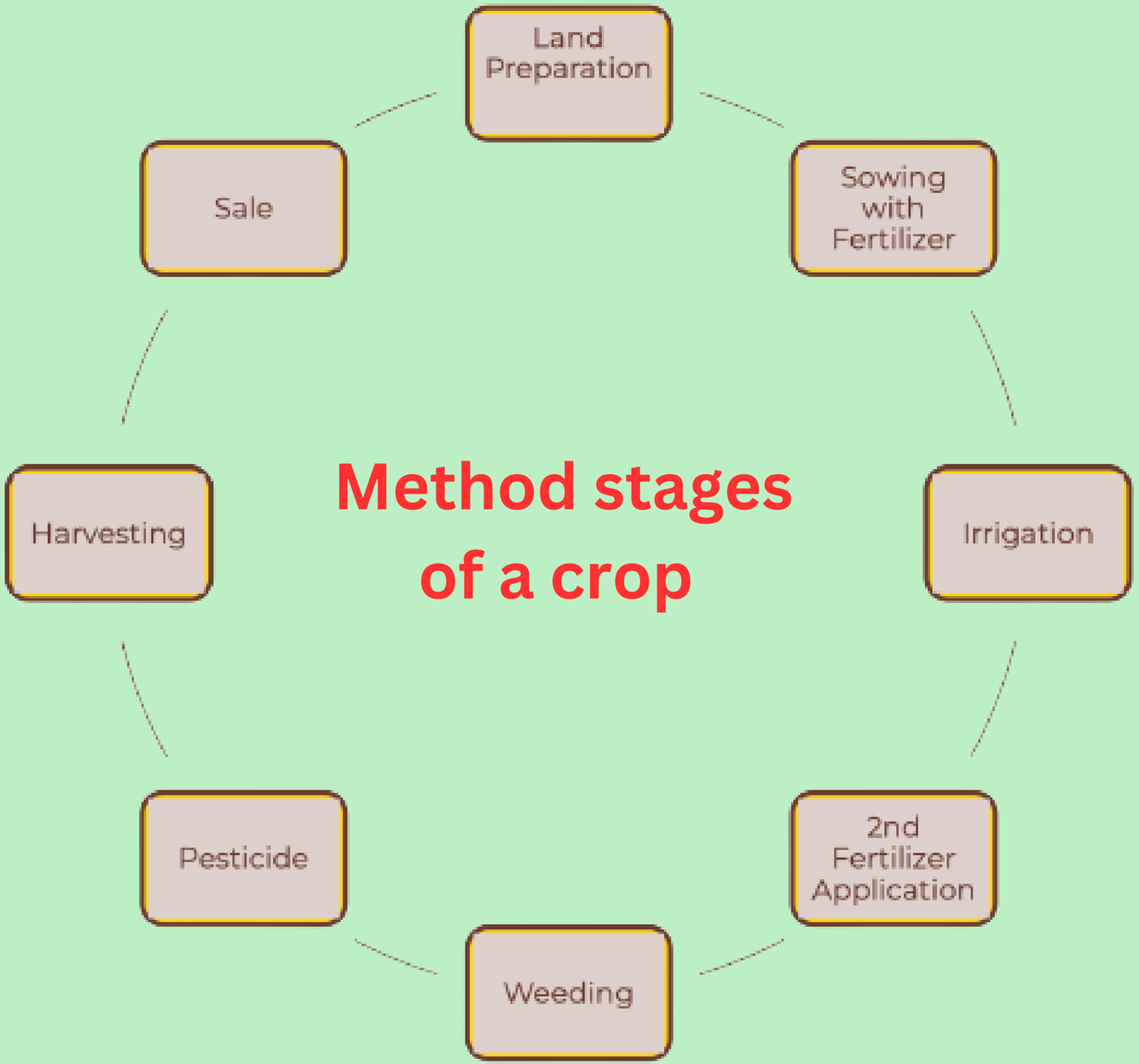
= 21 M Cars driving on road for 1 year

= 1.6Bn Trees or 50M ht area of forest

Data of 2021: Times of India and other articles

Just Imagine the condition of a farmer if this situation continues for 10-15 Years !!!

Method stages of a crop



~~Supply chain optimization~~

OR

Yield Optimization

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- Improve yield efficiency
- Crop Diversification
- Increase Profitability

Market Roadmap

Phase 01 :

Building MVP

Testing it with dataset

built the model with available dataset and worked on it's accuracy

Improving Accuracy

Current accuracy : **94%** for yield prediction with limited dataset available*

Market Roadmap

Phase 02 :

Building optimization algorithm

once we get big dataset we will be building Simulation optimisation, and accurate model

Soil Quality Maping

Collaborating with panchayats and other govt bodies to get soil quality data and it's maping

User Centric App dev

Market Roadmap

Phase 03 :

Govt Collaboration and Strategic Partnership

Collaborating with govt agencies by showcasing it's Impact by demonstrating insights on agricultural prod. and socio economic growth

Market Transformation & Sustainability

Supply Chain Integration

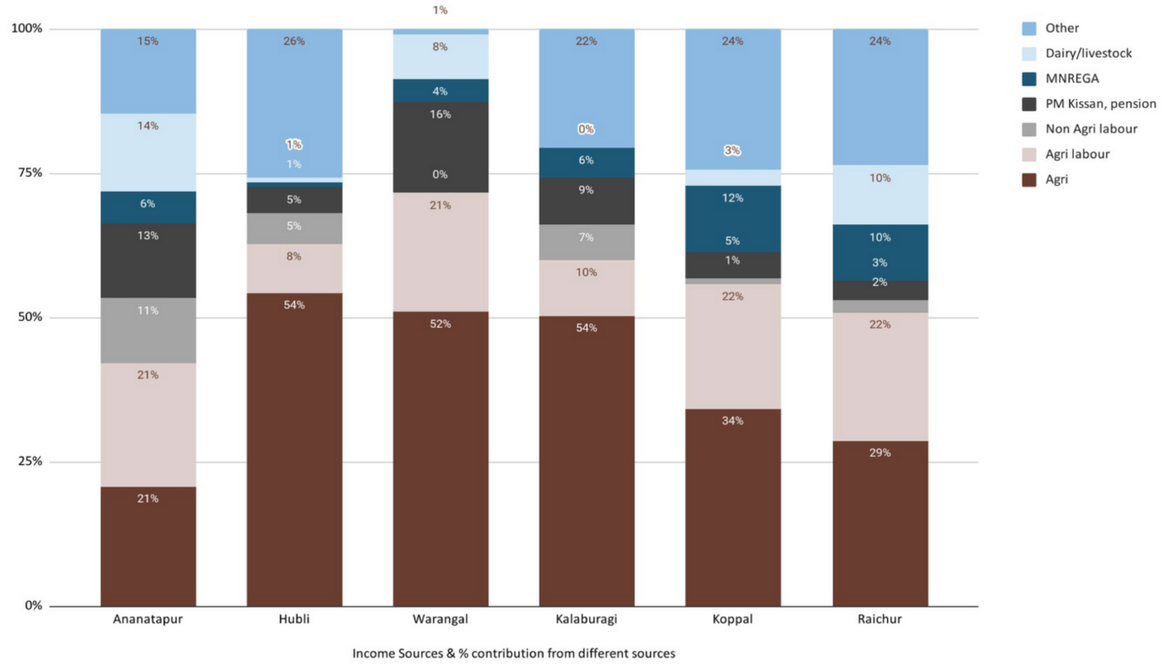
Collaborating with agribusinesses to Integrate Agrisim's data into thier Supply chain operation

Thank You

References & Support Slides

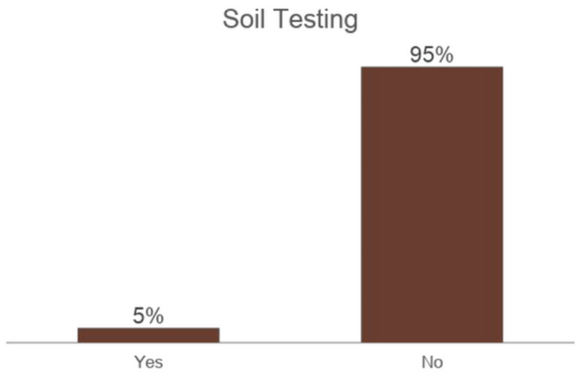
State/ Group of UTs	Average monthly income per agricultural household(₹)
Arunachal Pradesh	19,225
Assam	10,675
Gujarat	12,631
Haryana	22,841
Jammu & Kashmir	18,918
Jharkhand	4,895
Karnataka	13,441
Kerala	17,915
Maharashtra	11,492
Punjab	26,701
Uttar Pradesh	8,061
Group of N E States	16,863
Group of UTs	18,511
All India	10,218

Source : pib : 16 dec 2022



Income Sources & % contribution from different sources

Distributions of source of income



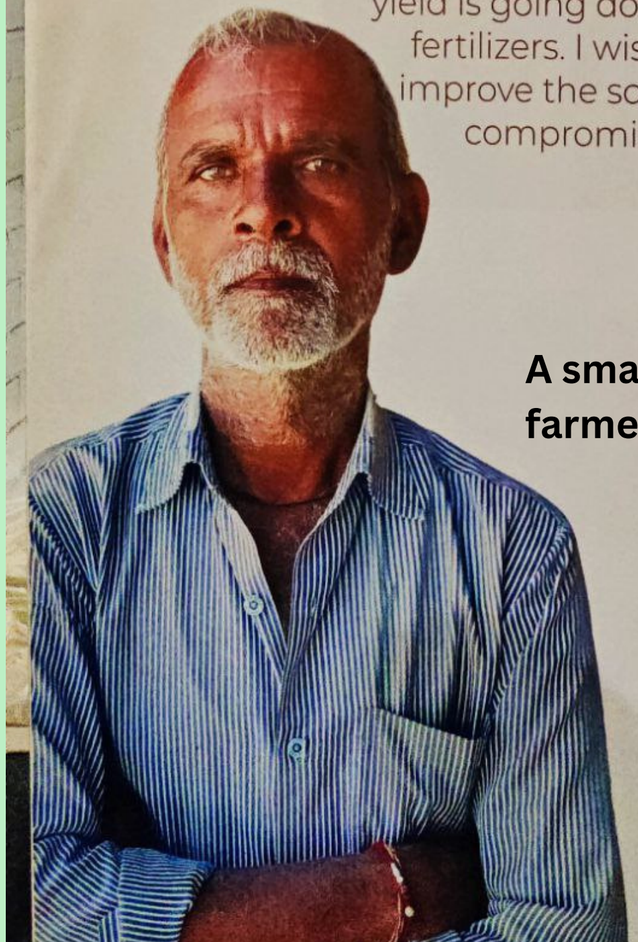
- For same crops, farmers are using different quantity of fertilizers even in the same location
- Farmers rely on their own knowledge or check with other farmers
- They don’t think there is need for any advisory here.
- Hypothesis : Likely opportunity to use more scientific practices to increase yield/lower input costs

Same crops, Same location, different fertilisers
Not very adaptive to new advisory and rely on own/ relatives' knowledge

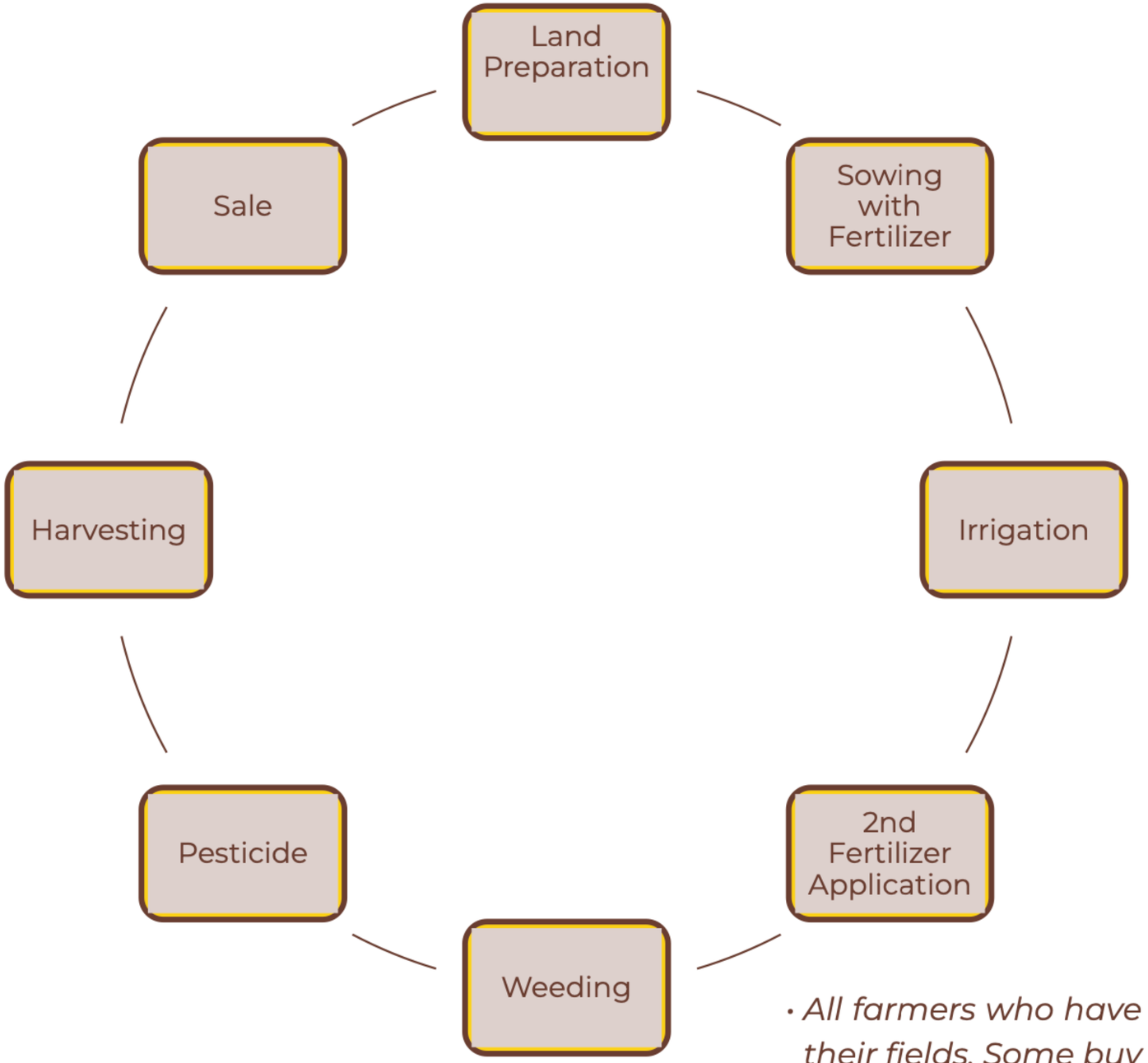
THE/NUDGE INSTITUTE | Centre for Social Innovation

Agri-IKIGAI Solutions

"The soil quality of my land and crop yield is going down despite adding fertilizers. I wish I knew how to improve the soil quality without compromising on yield.



A small & marginalised farmer in India

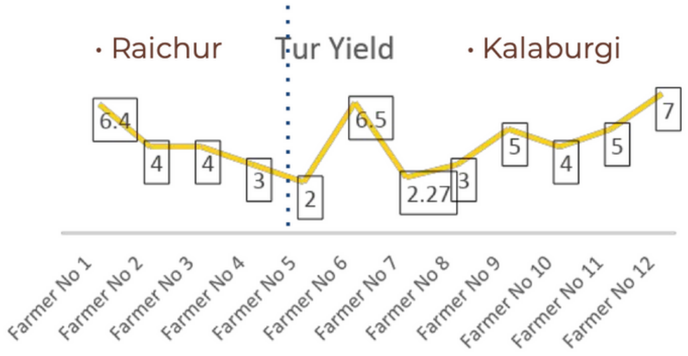


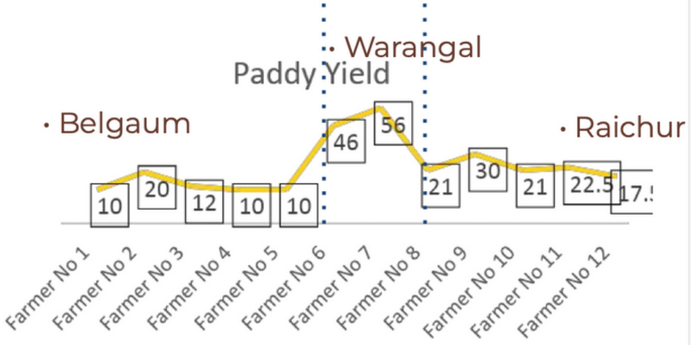
- *All farmers who have sc*
  their fields. Some buy F

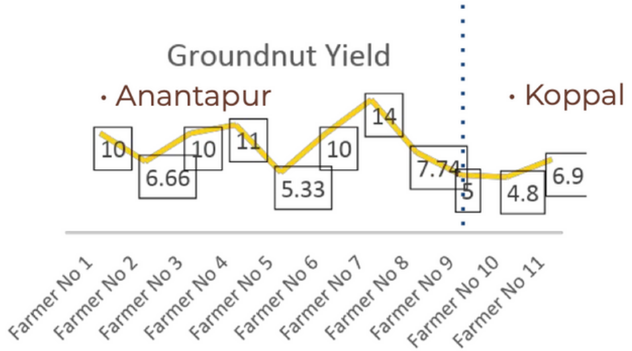
Results?

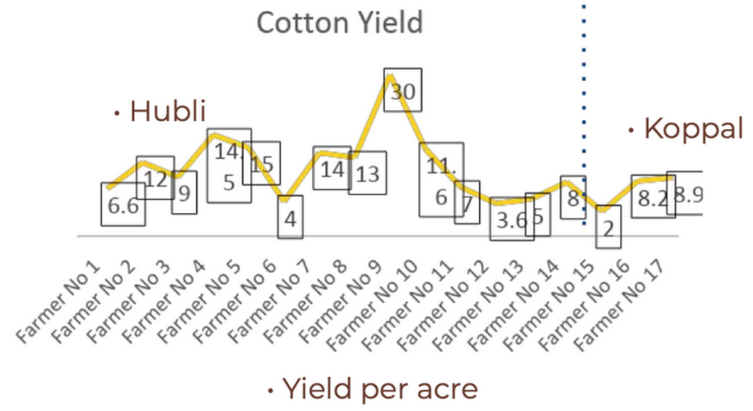
Variability in Yield per acre - An opportunity to improve Agricultural Practices ?

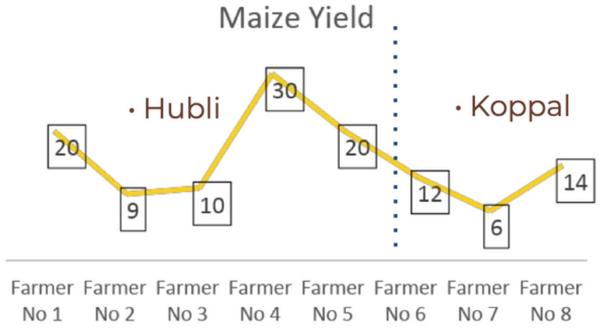
- Per acre yield for same crop varies , within a location/across locations
- Soil Quality could be one parameter as mentioned by farmers



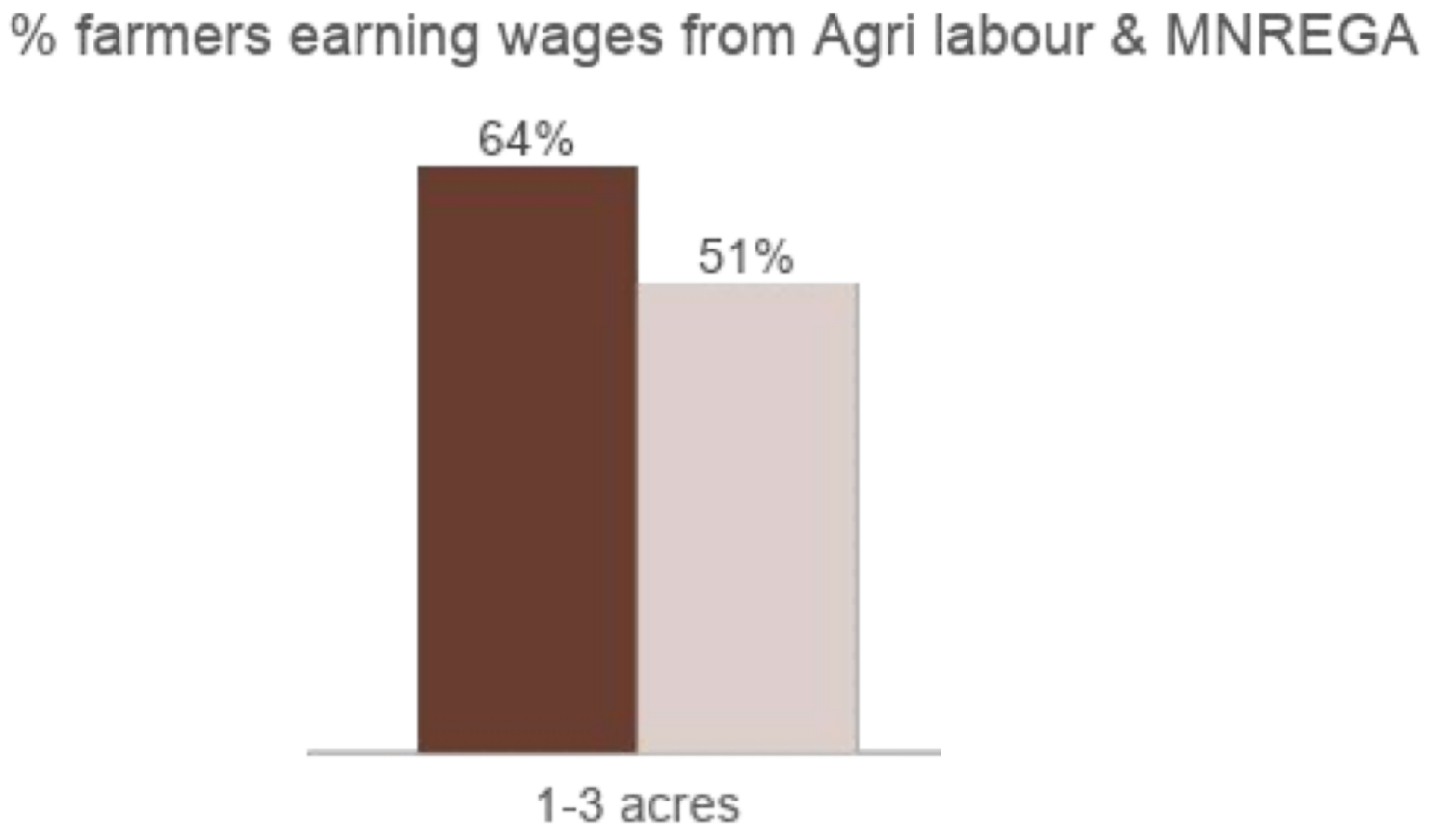




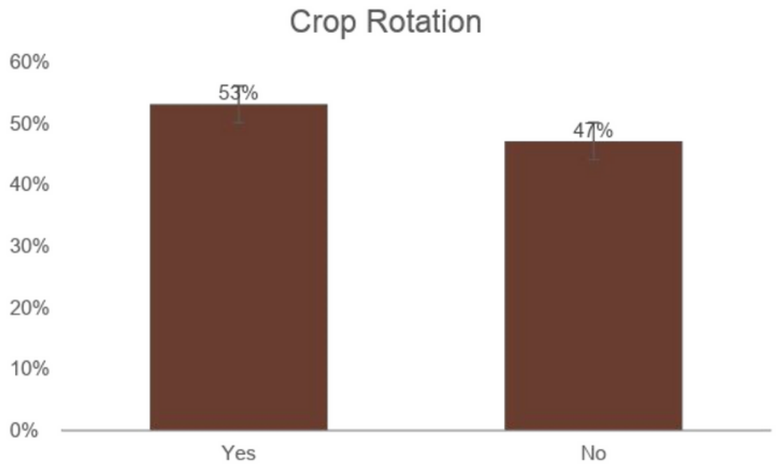




• Yield per acre


% farmers earning wages from Agri labour & MNREGA
64%
51%
1-3 acres

- More than 50% of farmers change the crops on the same land periodically.
- Crop rotation is mostly done to maintain soil health



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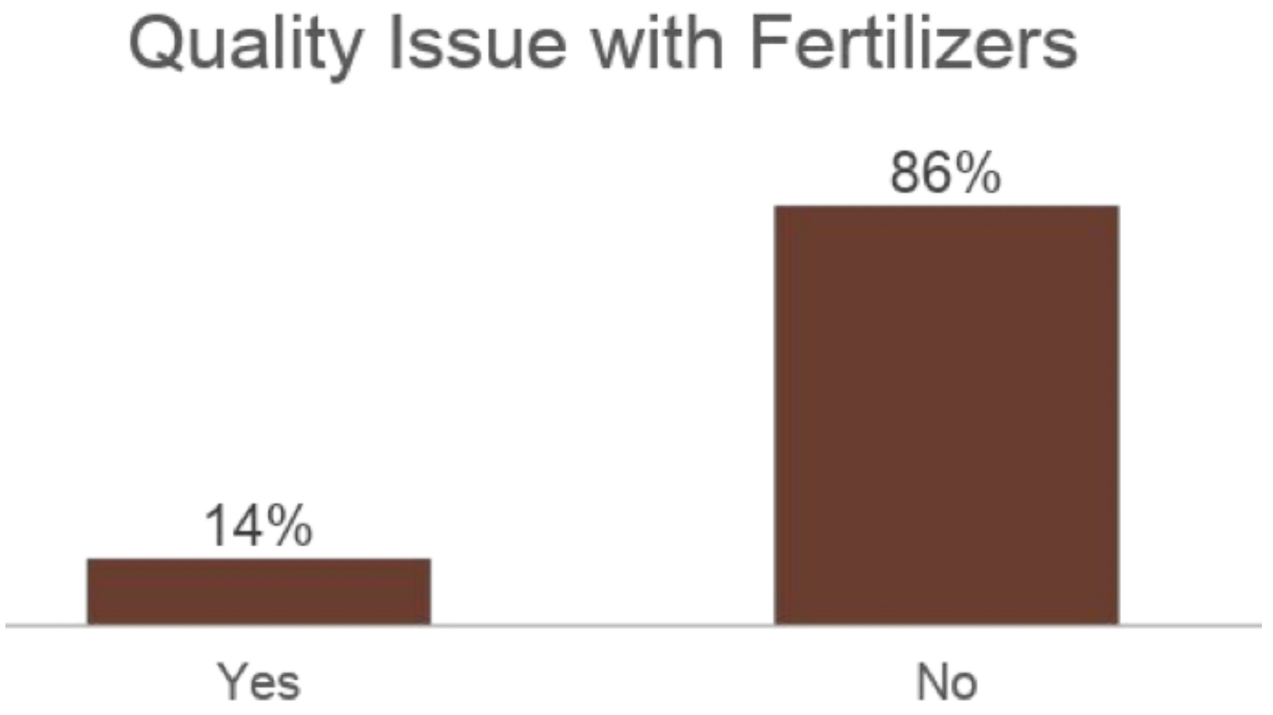
Quality Issue with Fertilizers
86%
14%
Yes
No

Variability in Yield per acre - An opportunity to improve Agricultural Practices ?

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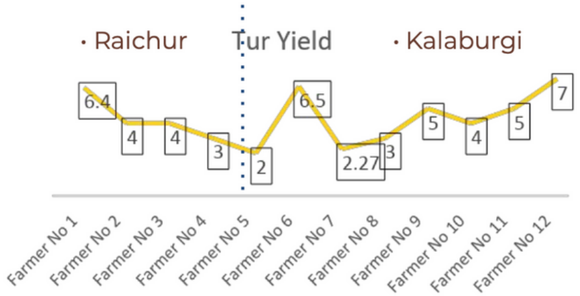

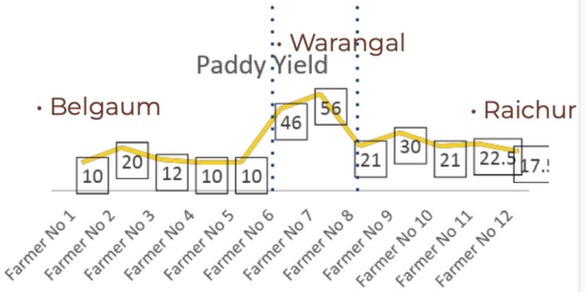

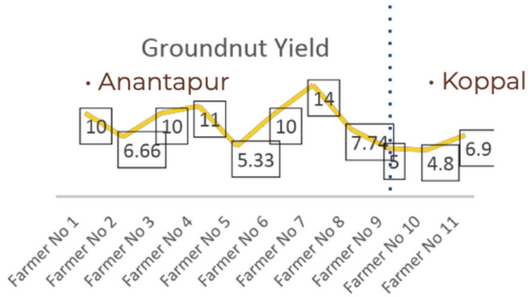

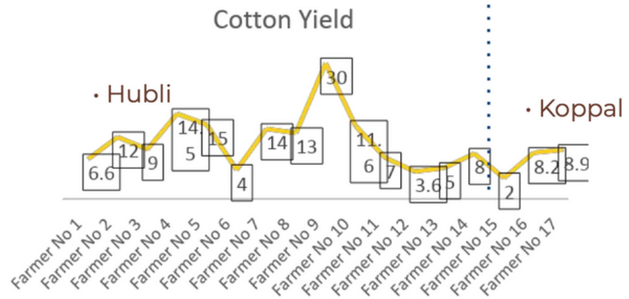

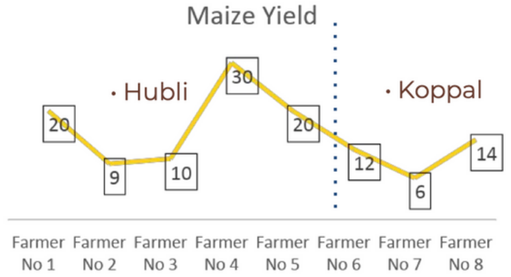

• Yield per acre