Client data in inclusive insurance

IMC Panel Session

November 2018

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Introduction to alternative data

Hollard.

Using Data to Drive Inclusive Insurance

Microinsurance conference Nov 2018 Zambia

In Hollard Life, we believe data is an essential enabler of our purpose

Predicting and providing the right products to the right customers at the right time

Personalised, life-stage appropriate solutions

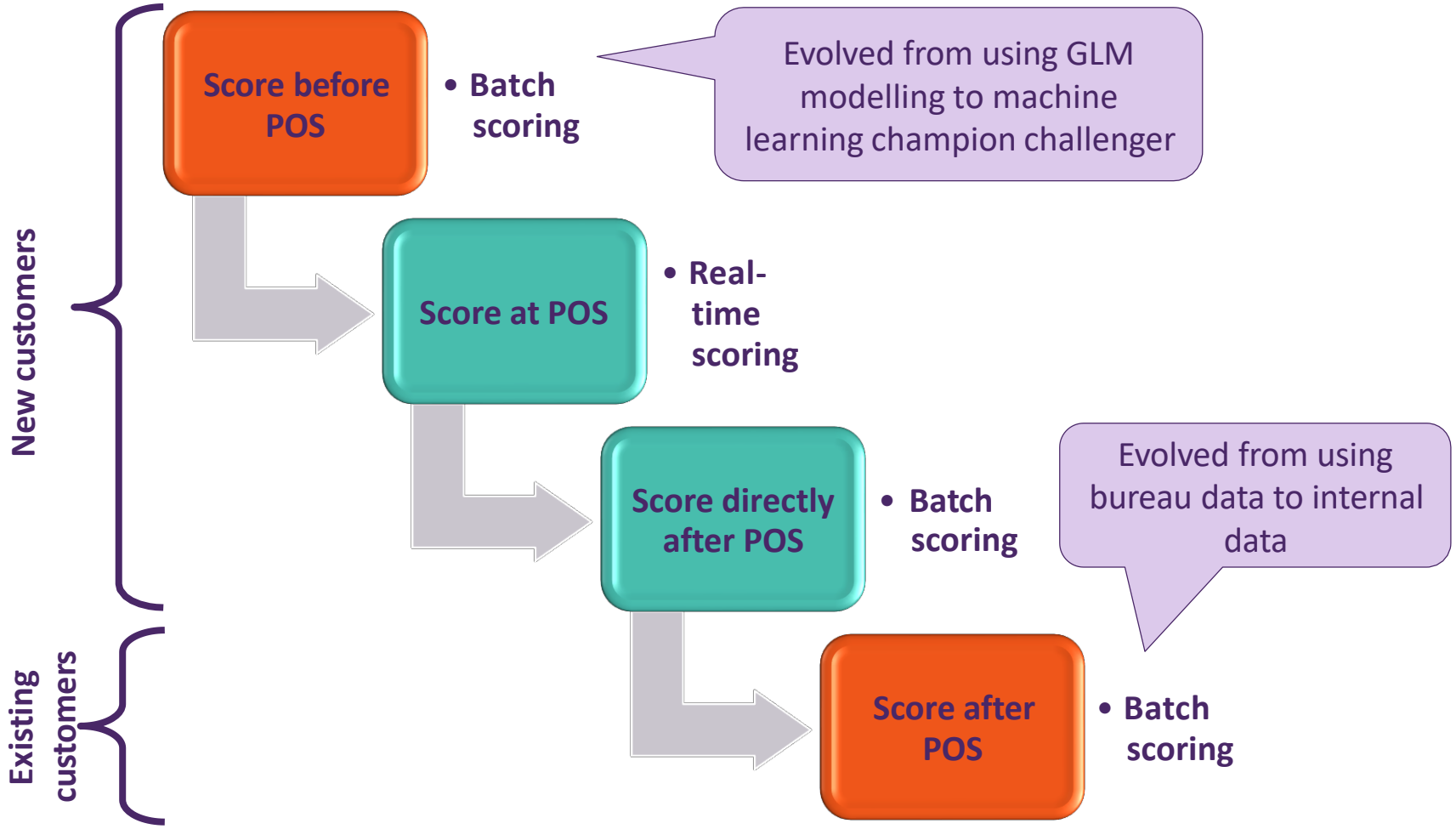
Creating better futures by ensuring our customers' dignity and dreams

Enhanced access to insurance **and** additional, non-insurance solutions

Understanding customer needs and helping address them

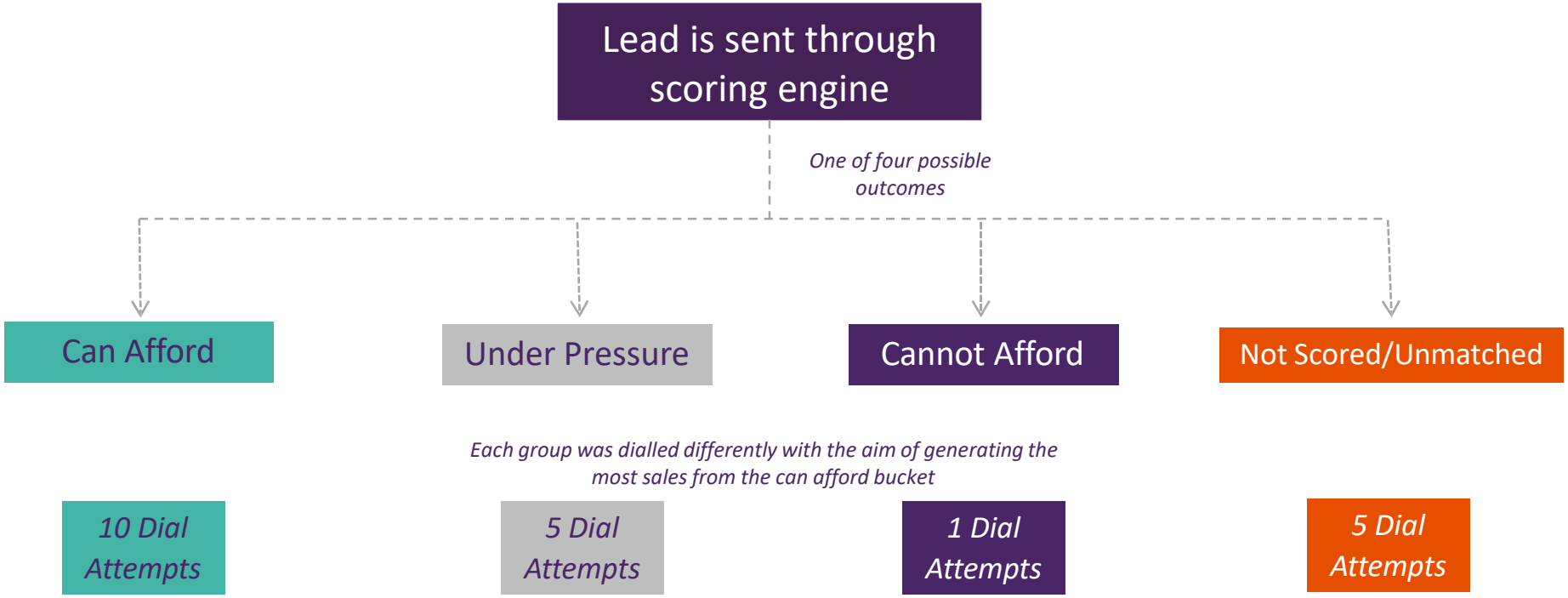
Hollard.

We use credit bureau data to better target customers and manage affordability – creating value for customers and Hollard



Hollard.

We have to use phone number matching to obtain bureau data and the score outcome is used to influence dial strategies and interact with customers



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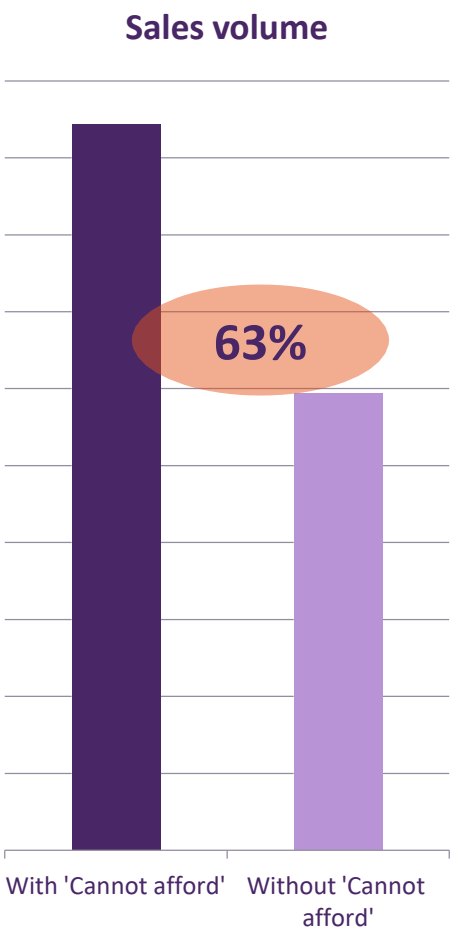
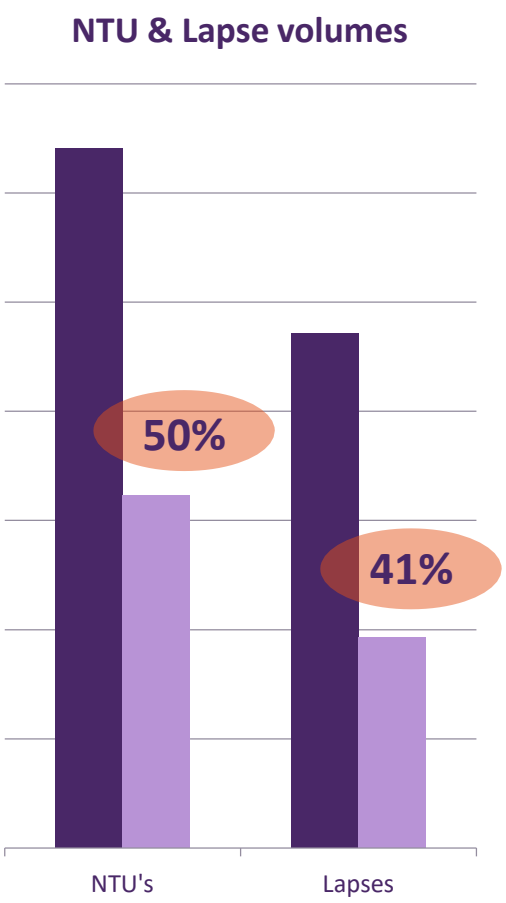
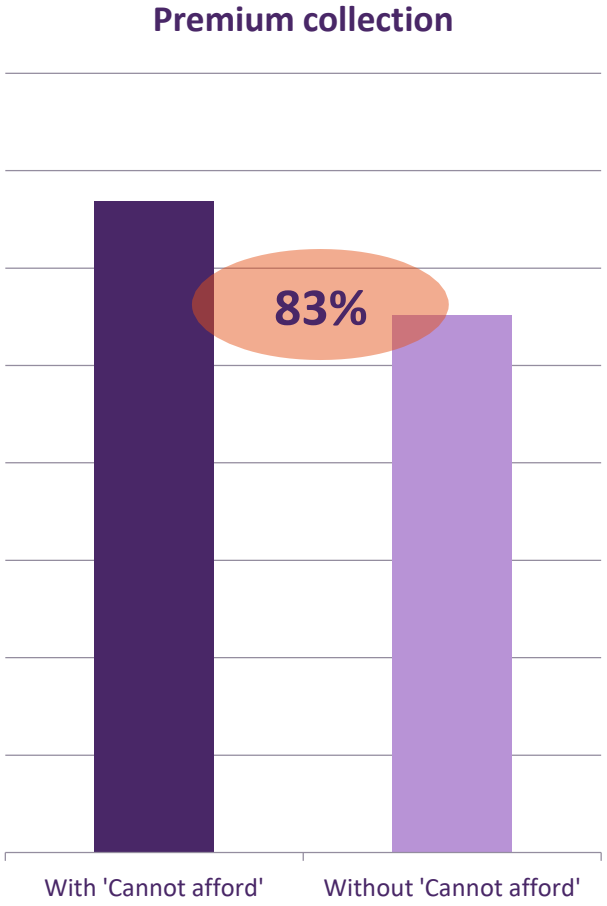
Reducing poor quality sales results in less overburdened customers and right-sizing of the entire value chain







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We are starting to explore partner data – with an initial focus on retail shopper data – to better manage risk

Retailers	Funeral Parlours and Brand affinities	Credit providers
• Customer shopping data	• Customer engagement data	• Credit payment behaviour

Basket-level data gives us:

- A more holistic understanding of customers
- Enhanced ability to identify unknown correlations between retail and insurance behaviour
- A greater ability to provide the right product to the right customer at the right time
- The biggest challenge which has delayed this work has been to find a model to access the data

But we are also careful not to ignore the value inherent in internal customer data and behaviour

- Data is **immediately accessible**, which helps with **ease of use**
- It is a **powerful predictive tool of our own book performance**
- Can allow **more personalised risk pricing** to potentially widen access
- Enables us to **help customers with needs met by other financial solutions**
  - **Credit (multiple categories), savings, and insurance are used interchangeably** to meet some needs and if we can predict and assist, we can provide the most appropriate solutions
  - We can also **make credit more affordable** (esp. for low-income customers) by **using insurance experience and data as proxy collateral for credit scoring**
  - Opportunities for synergies are vast – **education funding, development loans, home loans, incremental building funding** – it just requires **intelligent design**

All of this must be customer-needs led – and trust remains the biggest driver and threat to non-traditional engagement channels

Hollard.

Hollard.

Using Data to Drive Inclusive Insurance

Microinsurance conference Nov 2018 Zambia

Picture-Based Insurance

Smartphone Pictures for Affordable Crop Insurance

Francisco Ceballos
Associate Research Fellow, International Food Policy Research Institute (IFPRI)

International Microinsurance Conference
Lusaka, November 8th, 2018

Research team: Berber Kramer, Tim Foster, Koen Hufkens, Samyuktha Kannan, Miguel Robles

Partners: HDFC ERGO General Insurance Company, Borlaug Institute for South Asia

RESEARCH PROGRAM ON Policies, Institutions, and Markets

Led by IFPRI

Challenges in agricultural insurance

Traditional **indemnity-based insurance**:

- High administrative costs, asymmetric information (e.g. moral hazard)
- Limited supply to small farmers

Index-based insurance designed to overcome these challenges

- Issues: Basis risk, understanding, and farmer engagement

Picture-Based Insurance (PBI) to combine the best of both worlds?

- Taking advantage of increasing smartphone penetration in rural areas
- Easy-to-understand, high farmer engagement, and reduced basis risk
- Augmenting information flow to the insurer

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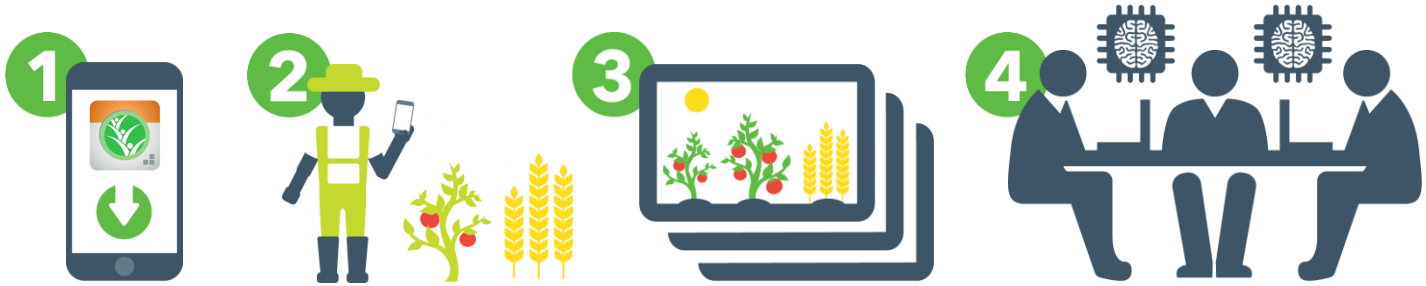
PBI: Seeing through a farmer's eyes



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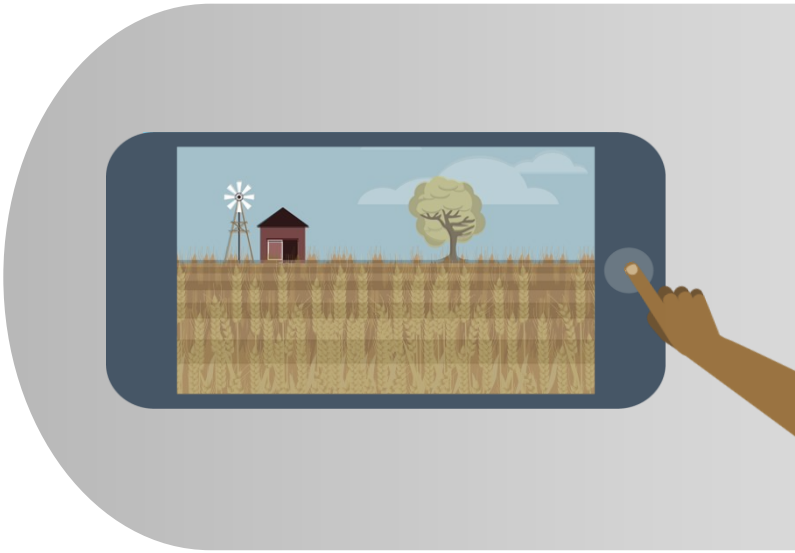
Degree of damage	0-19% (none/mild)	20-49% (moderate)	50-74% (severe)	75-100% (extreme)
% of sum insured	0%	35%	65%	100%



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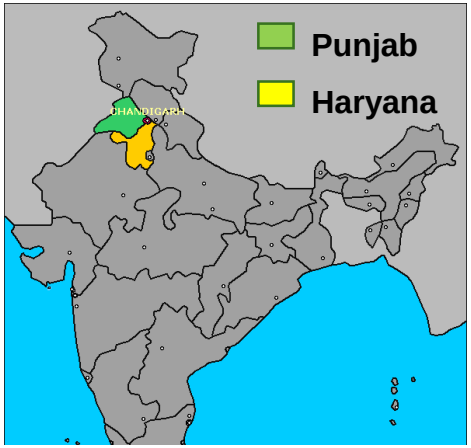
Formative evaluation

RCT in Haryana and Punjab, India
50 villages, 750 wheat producers



RESULTS:

1. Considerable farmer engagement √
   - 67% provided at least one picture per month
   - Many farmers liked visiting plot more often
2. Picture-based monitoring helps reduce basis risk √
   - Particularly suitable for severe damage (where WBI performed poorly)
3. The approach improves demand for insurance √
   - Higher WTP for PBI, but still below actuarially-fair premiums
4. No evidence of tampering or moral hazard √
   - No moral hazard: Similar input use and yield
   - No tampering or fraud observed (manual review of pictures)

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Value-added services: Advisories

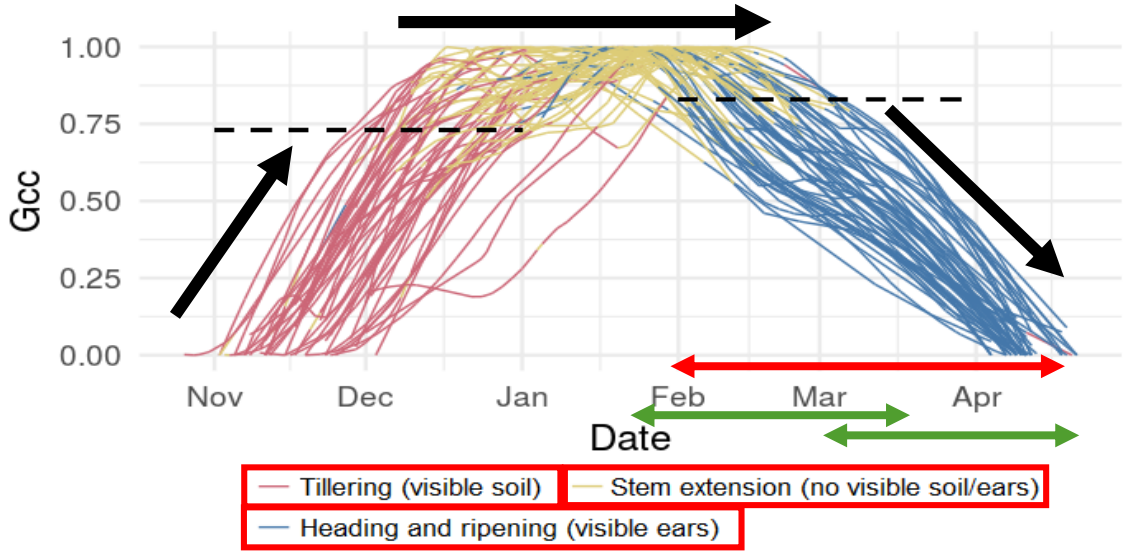
Incorporated during second year, evidence indicates:

- Enhanced farmer engagement
- Improved knowledge of agricultural practices
- Potential reduction in insurer's risk exposure

Looking ahead: Automation is key to bring to scale

Horizon detection and region-of-interest (ROI)

Normalized greenness predictive of growth stage



Work in progress: Automating damage detection through ML algorithms

- Large training sets required, two seasons is not sufficient

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Picture-Based Insurance: What's Next?

- **4-Year Impact evaluation**, with focus on higher value/risk crops (e.g. tomatoes) and other states (e.g. Odisha)
- **Alternative scaling-up strategies + value-added services** (advisories, pest detection, credit, etc.)
- **Ensuring technology is transferable to other geographies and crops**, with particular interest in Africa
- **Vision**: Not a stand-alone product; use PBI to reduce basis risk within existing index-based products

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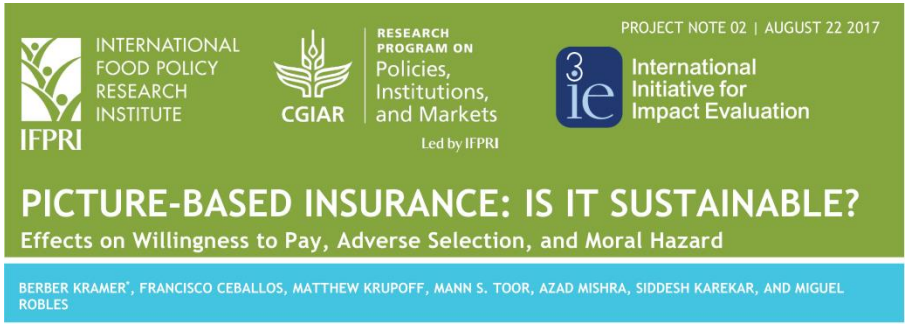
For more information:



Project notes and more available at: **https://www.ifpri.org/project/PBInsurance**

THANK YOU!

IFPRI®

Munich Re: Alternative Client Data for Inclusive Insurance

Belhassen Tonat
btonat@munichre.com

8 November 2018

50 Years of Munich Re in Africa

Munich RE

Agenda

50 Years of Munich Re in Africa

Munich RE

Financial Inclusive Insurance

- What is it?
- Pain points

Alternative data cases

Claims processing

- Drones
- Satellite / Aerial Imagery

IoT and Risk Management

- HSB
- Bosch
- Relayr

Financially Inclusive Insurance

Source: Google

Over 2 billion adults worldwide currently lack access to affordable financial products and services
(By CGAP (Consultative Group to Assist the Poor))

20 October 2018 a blaze tore through an informal settlement in Khayelitsha, Cape Town, South Africa – 1 dead and thousands displaced

Microinsurance pain points

Source: Google

Alternative data source cases

Source: Google

Drone deployment with PrecisionHawk

Accelerate post-disaster response with high-resolution real time imagery

In 2017 Ecuador's 7.8 magnitude earthquake occurred. Within days drones were deployed to assess damage a process that previously took weeks

Municipalities can prioritize clean up and repairs to quickly return to full function post-catastrophe

Source: Google

Remote Sensing Initiative

50 Years of Munich Re in Africa

Munich RE

Satellite / aerial imagery

Roof damage and assessment of monetary value

Immediate automatic pay-out

Munich Re's solution will be able to cut the loss adjuster's effort by 50% or even 66%

Source: Google

IoT Partnership with Bosch

Use of sensors to predict malfunctions and seek to avoid them

Optimise production by considering connecting manufacturing process

5 - 10 % higher production performance by reducing scrap

75 % of all maintenance tasks can be carried out remotely

IoT Partnership with HSB – Church programme

50 Years of Munich Re in Africa

Munich RE

Early warning system for building owners, schools, religious groups and other organizations

HSB's IoT service saved customers more than $500,000 by avoiding property losses from frozen pipe leaks

Responds within 3-5 seconds in the event of e.g. indication of water damage initiate closer of valve within 3-5 seconds

Image from google

IoT Partnership with Relayr

IoT power that uses insights from existing equipment, machines and production lines to improve our customers' experience.

Ultrafast time to market; a new heat treatment line can be in place in days instead of standard 6-12 months.

Reduced maintenance costs with Predictive Maintenance providing 16% uptime increase.

Thank You

50 Years
of Munich Re
in Africa

Munich RE

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Data types and use cases in insurance

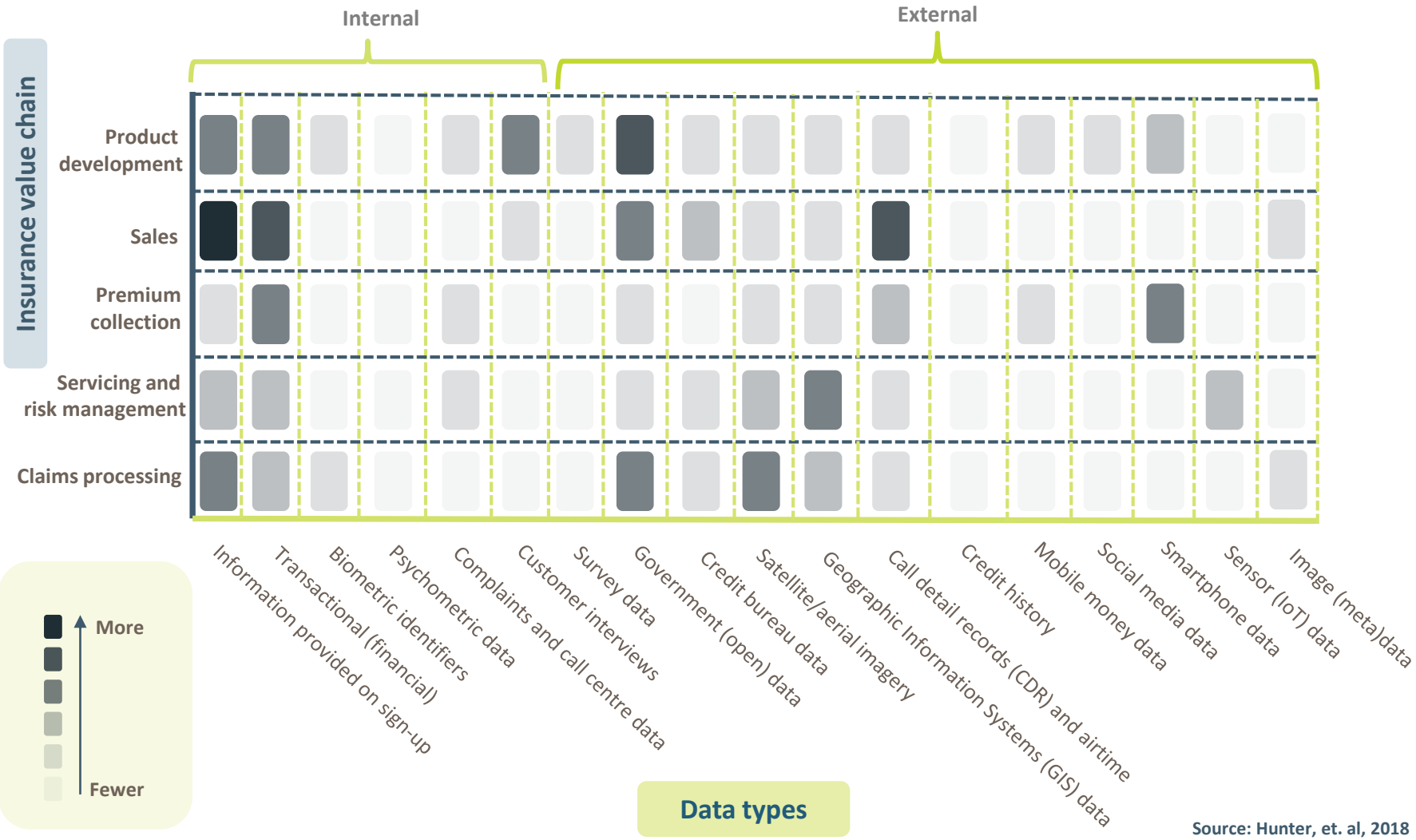
Internal data

Information provided on sign-up
Transactional
Biometric identifiers
Psychometric data
Complaints and call centre data
Customer interviews

External data

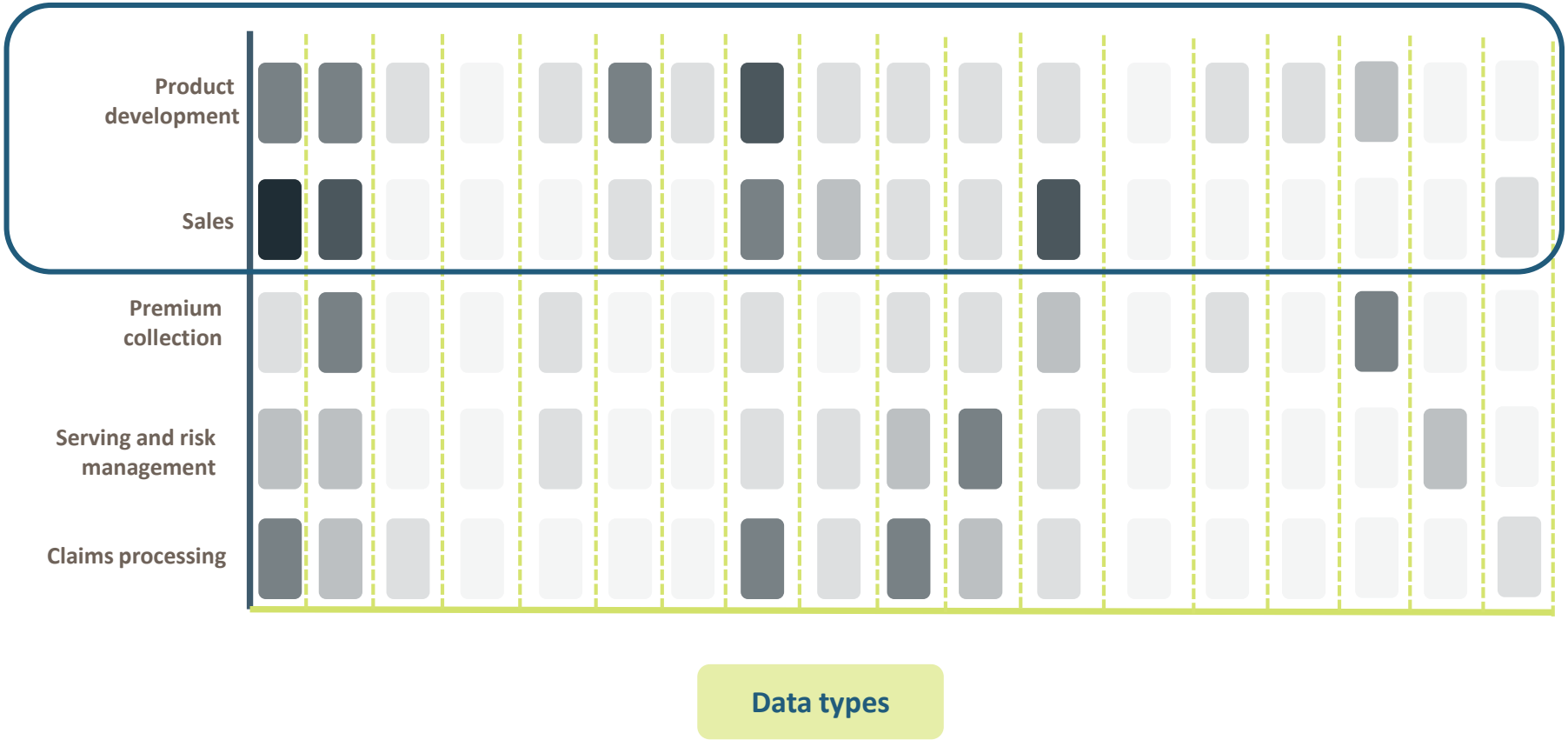
Survey data
Government (open data)
Satellite/aerial imagery
GIS data
CDR and airtime
Credit history
Mobile money data
Social media data
Smartphone data
Sensor (IoT) data
Image metadata

The insurance product lifecycle and data uses



Source: Hunter, et. al, 2018

Most observed use cases are for identity and clients reached



Source: Hunter, et. al, 2018

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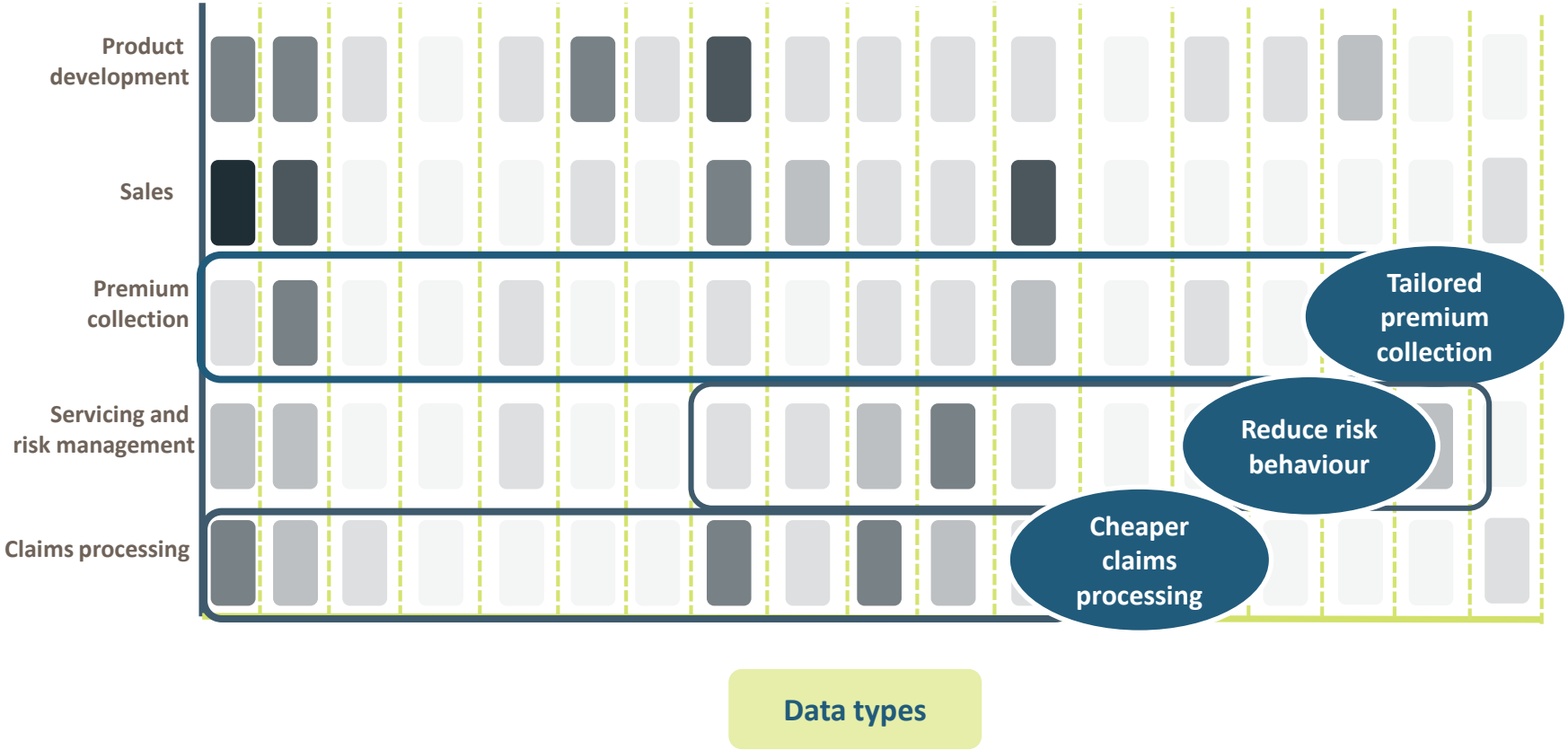
Emerging use cases of data applications



Source: Hunter, et. al, 2018

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Key trends

- **Limited quality customer data** available
- Client data becoming a strategic priority
  - **Focus for most – internal data**:
    - Standardising customer data capturing and storage
    - Linking data systems to create single-customer views
  - Some experiments with:
    - **Test and learn** / trial-and-error approach
    - **Innovation departments**

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EXTRA SLIDES

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Four questions

1. Does picture-based loss monitoring help reduce basis risk?
2. Can pictures be used to monitor crop growth stages?
3. Does this approach improve demand for insurance?
4. Should we worry about tampering and moral hazard?

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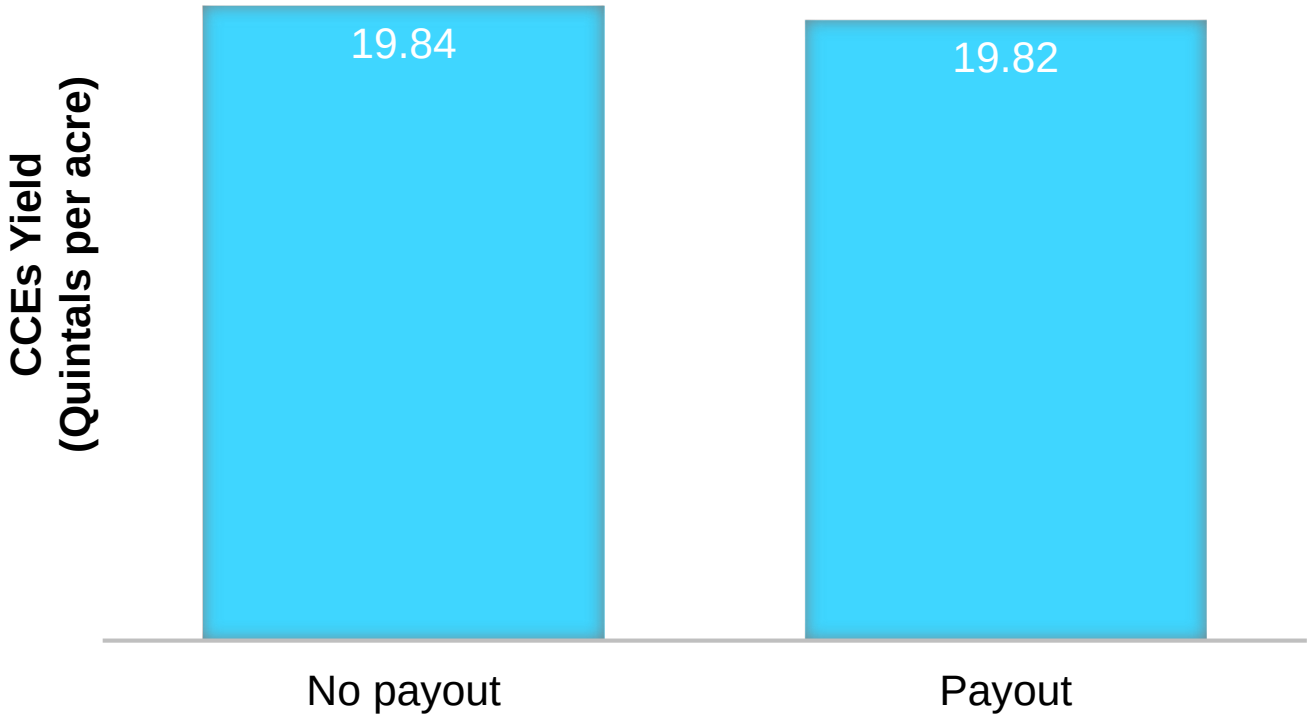
Lower yields among farmers with insurance payouts?

Weather index-based insurance



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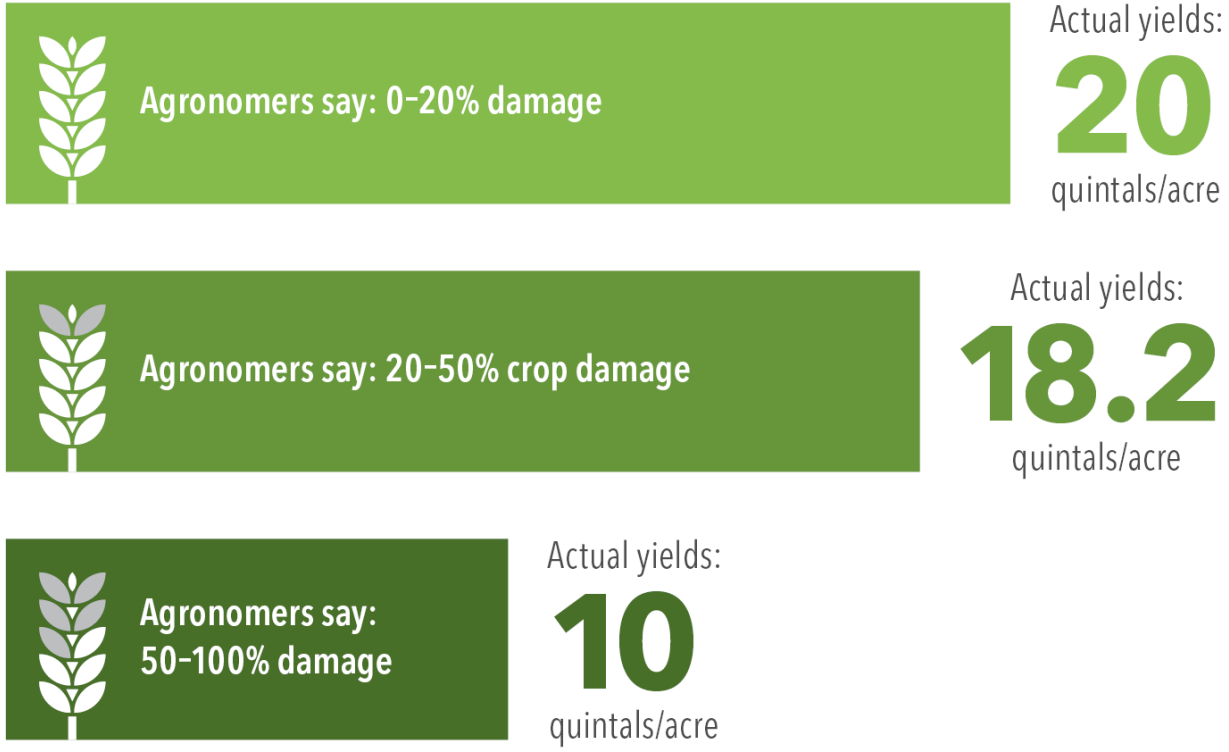
Picture-based loss assessment performs better



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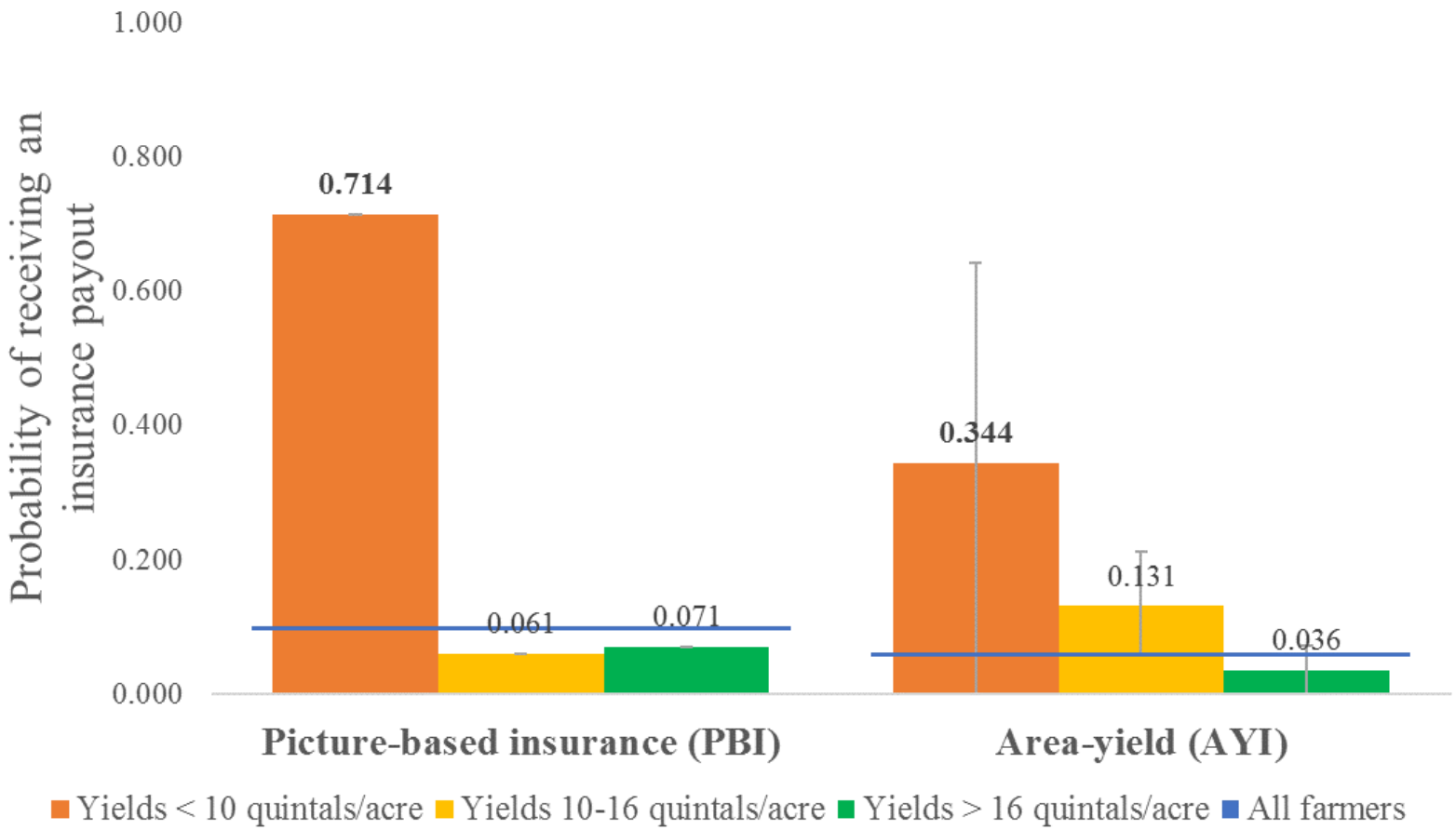
Comparison with area-yield index-based insurance



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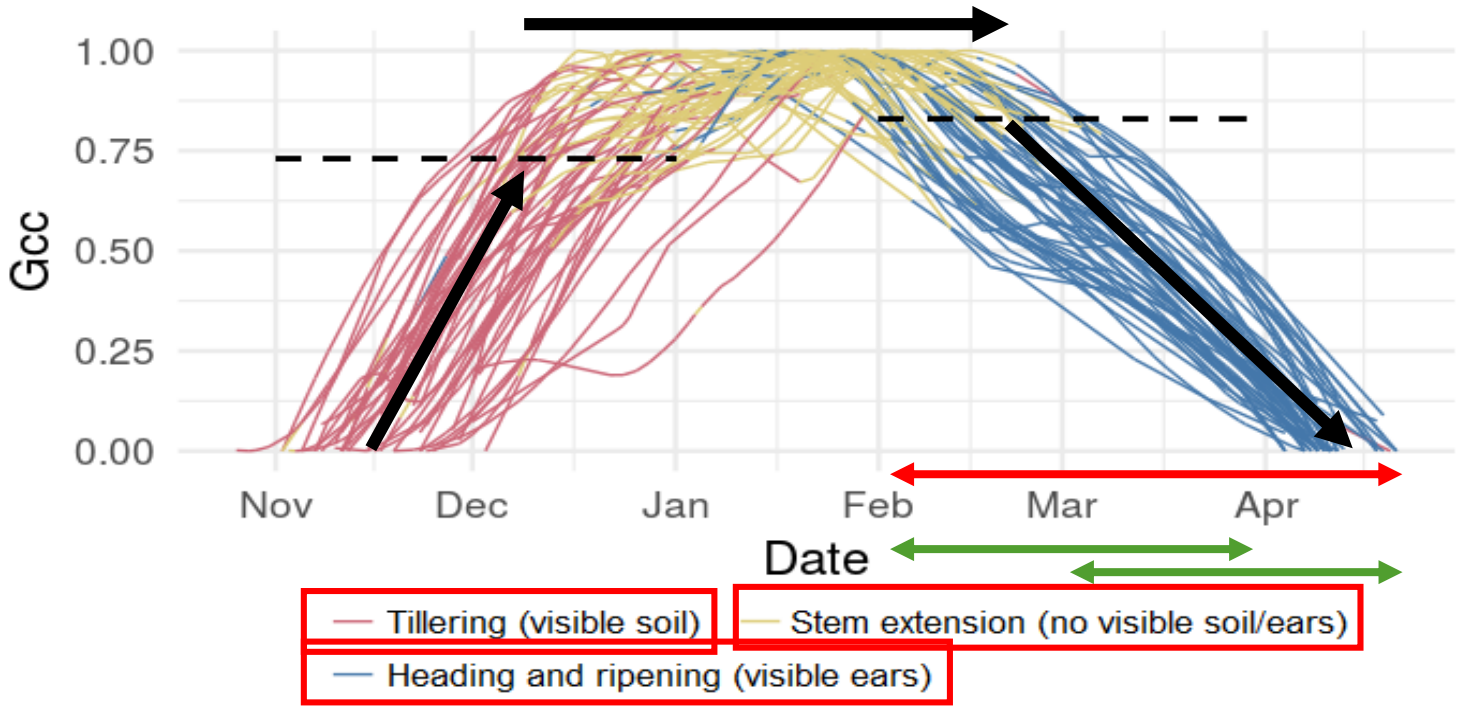
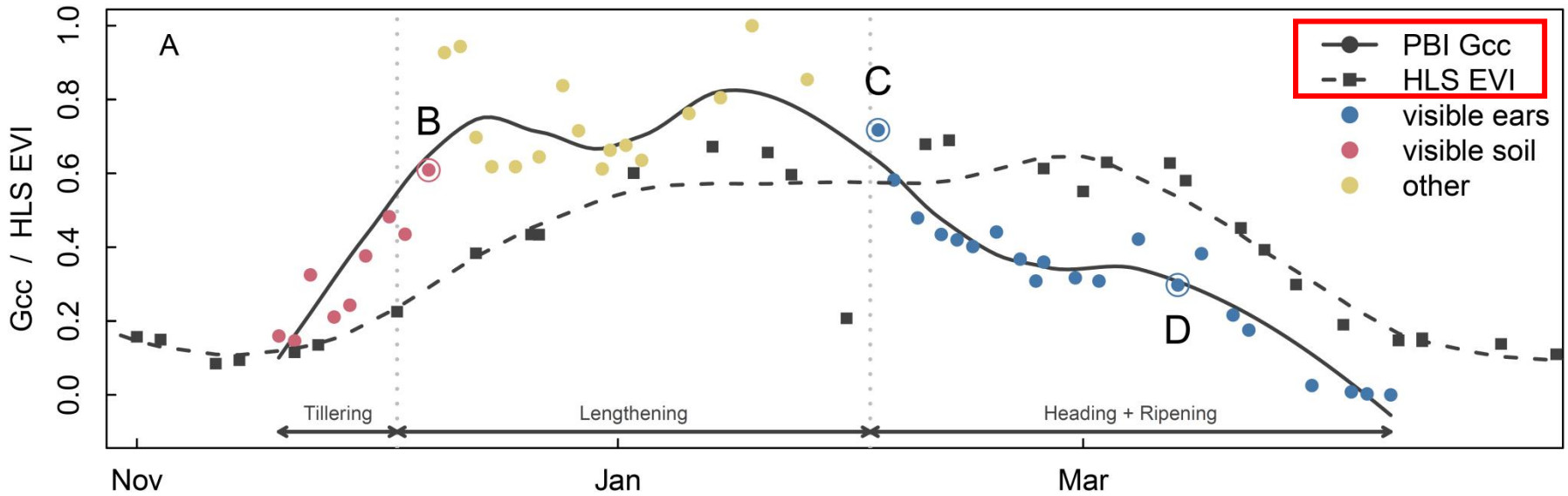
Normalized greenness is predictive of growth stage



Note: 'Gcc' stands for green chromatic coordinate, with its value normalized by the maximum gcc for the site. See details in Hufkens et al. (2018)

Application for weather insurance: cover a specific crop **growth stage** instead of a fixed **calendar period**, which can help shorten the coverage period and reduce costs

Comparison: Example site



B. End of Tillering

C. Start of Heading + Ripening

D. Lodging

Four questions

1. Does picture-based monitoring help reduce basis risk? √
2. Can pictures be used to monitor crop growth stages? √
3. Does this approach improve demand for insurance?
4. Should we worry about tampering and moral hazard?

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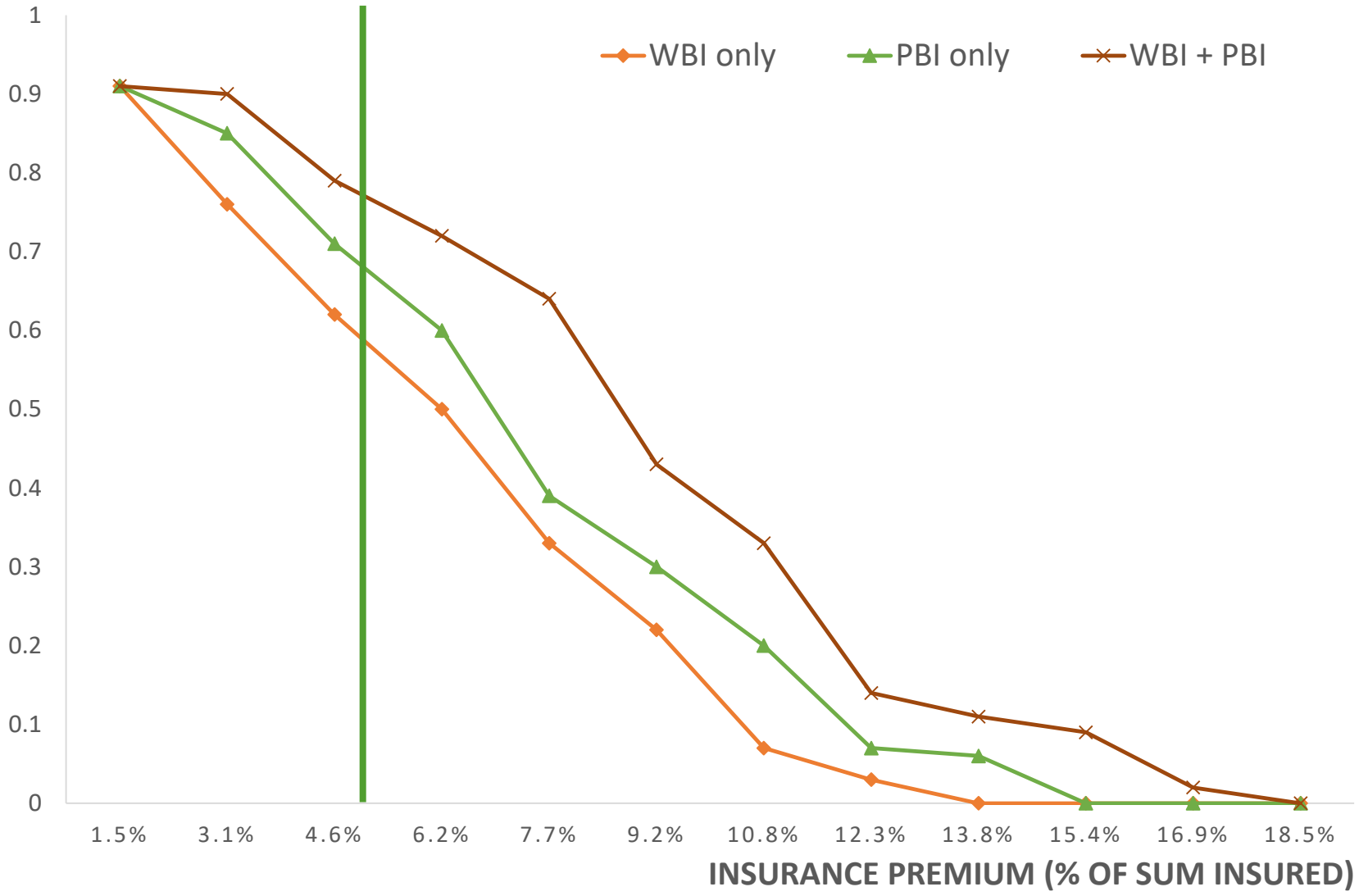
Demand is higher for PBI than for WBI



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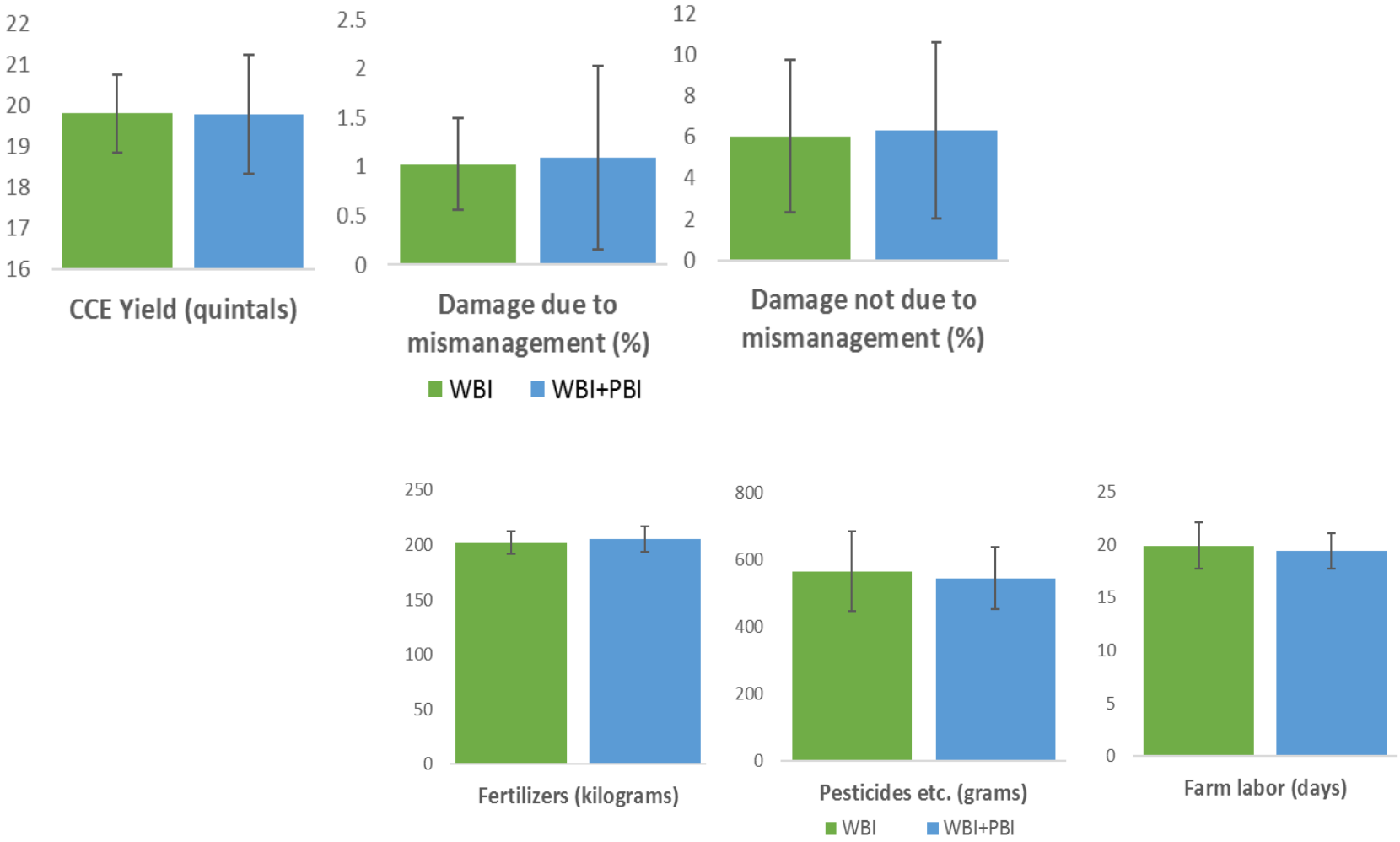
No evidence of tampering or moral hazard



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Scale-Up Plan

1 STATE OF HARYANA (0.74 million)
Scale-up model: Commercial, retail approach

2 STATE OF ODISHA (1.77 million)
Scale-up model: Link with digital crop registry

3 STATE OF TAMIL NADU (0.6 million)
Scale-up model: Link with digital crop registry

Scale-up model: Link with PlantWise

4 ALL INDIA
Scale-up model: Couple with national insurance scheme (PMFBY)