Implementation of a Mobile-based Customised Advisory Service for Farmers of Odisha, India

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Precision Development (PxD)

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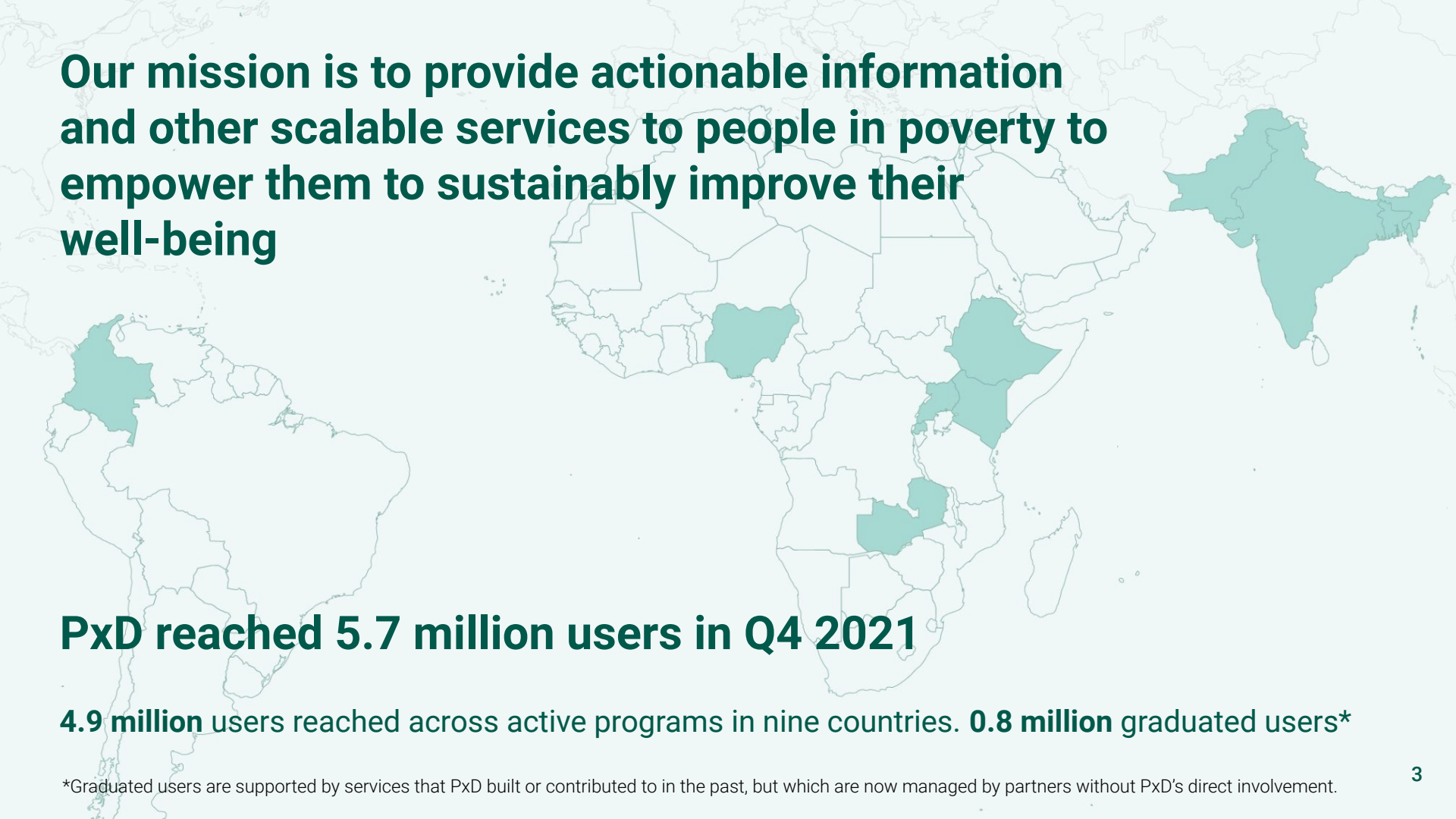
- PxD overview
- Odisha
  - Introduction to BOT
  - Building the service
  - Operating the service
  - Transitioning the service

Our mission is to provide actionable information and other scalable services to people in poverty to empower them to sustainably improve their well-being



PxD reached 5.7 million users in Q4 2021

4.9 million users reached across active programs in nine countries. **0.8 million** graduated users*

*Graduated users are supported by services that PxD built or contributed to in the past, but which are now managed by partners without PxD's direct involvement.

Challenge

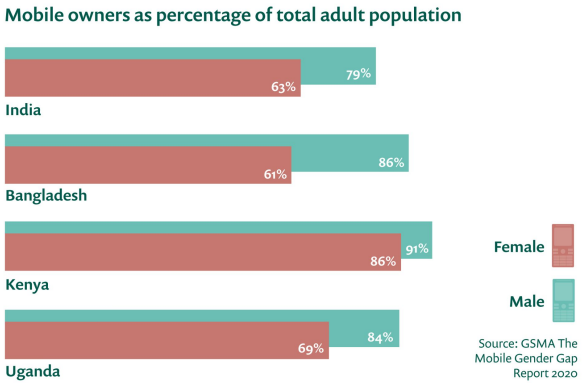
Unfortunately, many smallholders are far from their full potential. They are stuck in a poverty spiral!

On top of tangible deliverables for helping farmers, improved information access has the ability to deliver meaningful changes in farmer behaviours & farm outcomes

High quality information exists, but farmers simply do not have adequate access

Opportunity

Mobile phones enable access at scale, and farmer-level data enables customization



Key Elements Differentiating PxD's Model

- Low-cost communication
- Iteration & learning (A/B tests, RCTs)
- Human-centered design
- Data science
- Customization & targeting
- Free to the user

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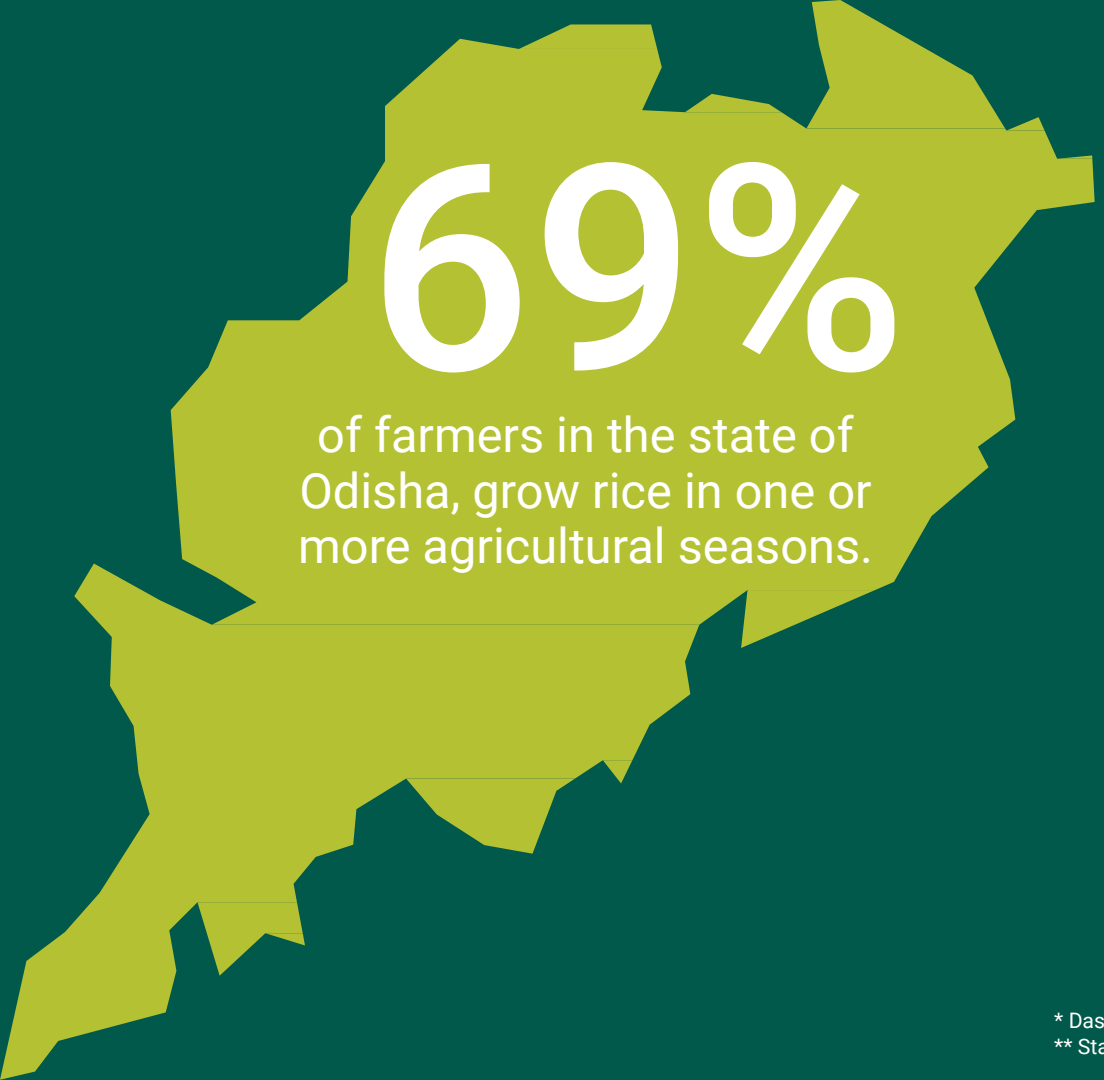
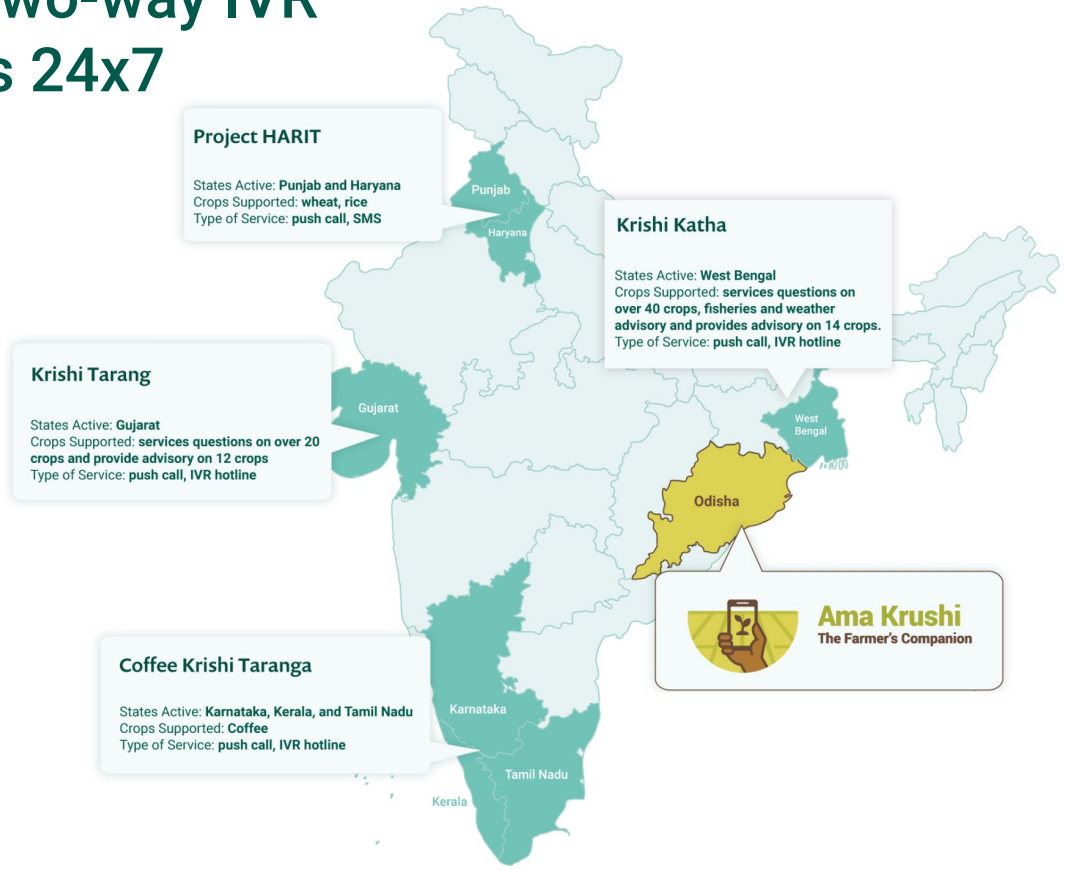


- Average rice yields in Odisha have been found to be 25% lower than the national average* and only 50% of the potential yields **
- Farmers found to be lacking knowledge on the latest and most appropriate seed varieties as well as on best practices
- For the small fraction of farmers whose knowledge is supplemented with advice, that information may be a) not timely, b) too infrequent, c) not relevant, or d) not trusted.

* Das, S. (2012). Rice in Odisha. Metro Manila, Philippines: IRRI
** Statistics, D. o. (2015-16). State of Indian Agriculture. New Delhi: Government of India

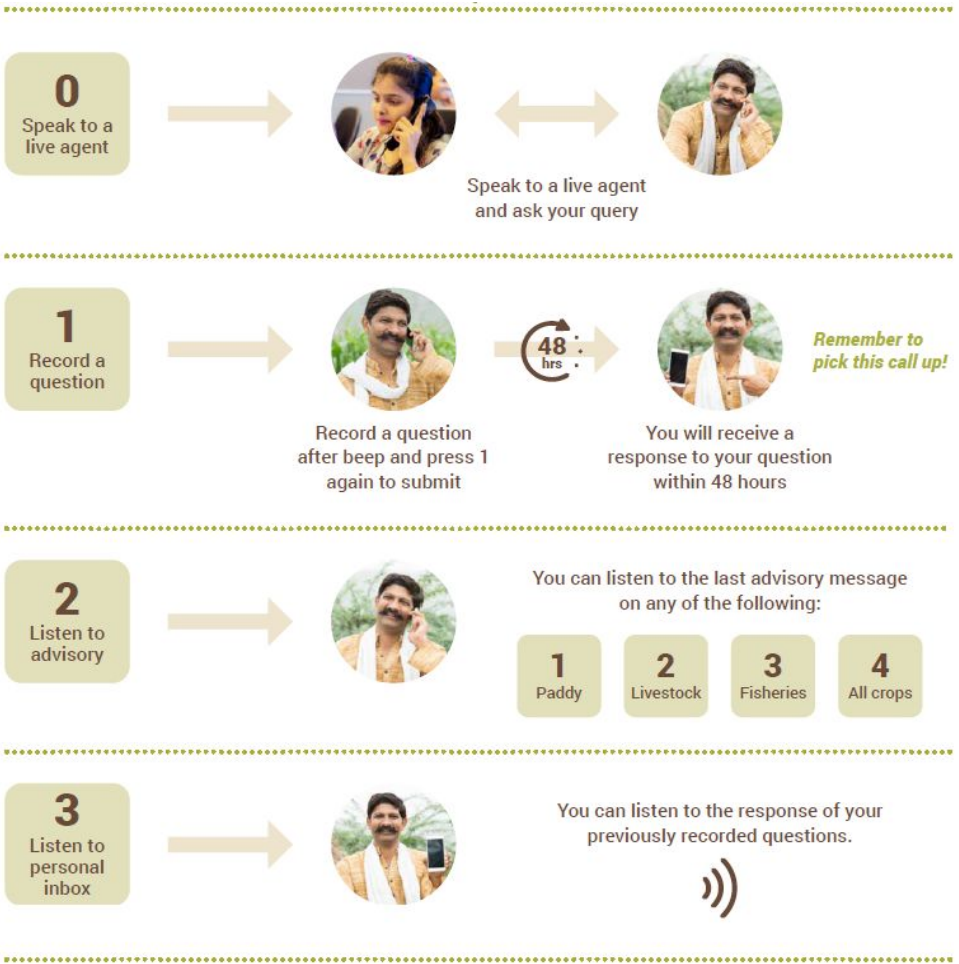
Ama Krushi: A customized two-way IVR helpline available to farmers 24x7

Model	Build - Operate - Transfer programme with the State Govt of Odisha (GoO); 2018 - 2022
Reach	Serving **2.2 million farmers** across all 30 districts in Odisha & growing
Content	Content across 20+ crops, livestock & fisheries
Partners	GoO, PxD, BMGF and JPAL-South Asia



What do farmers get when they access 155 333?

- **Customized weekly advisory voice calls** with content tailored to farmer crop, agronomic conditions and location in local language
- **Timely reminders** to encourage adoption of the right practices
- **Access to an inbound hotline** to ask questions, listen to agronomic advisory or prices



Tried and tested with millions of Odisha farmers and extension workers across crops, livestock and fisheries.

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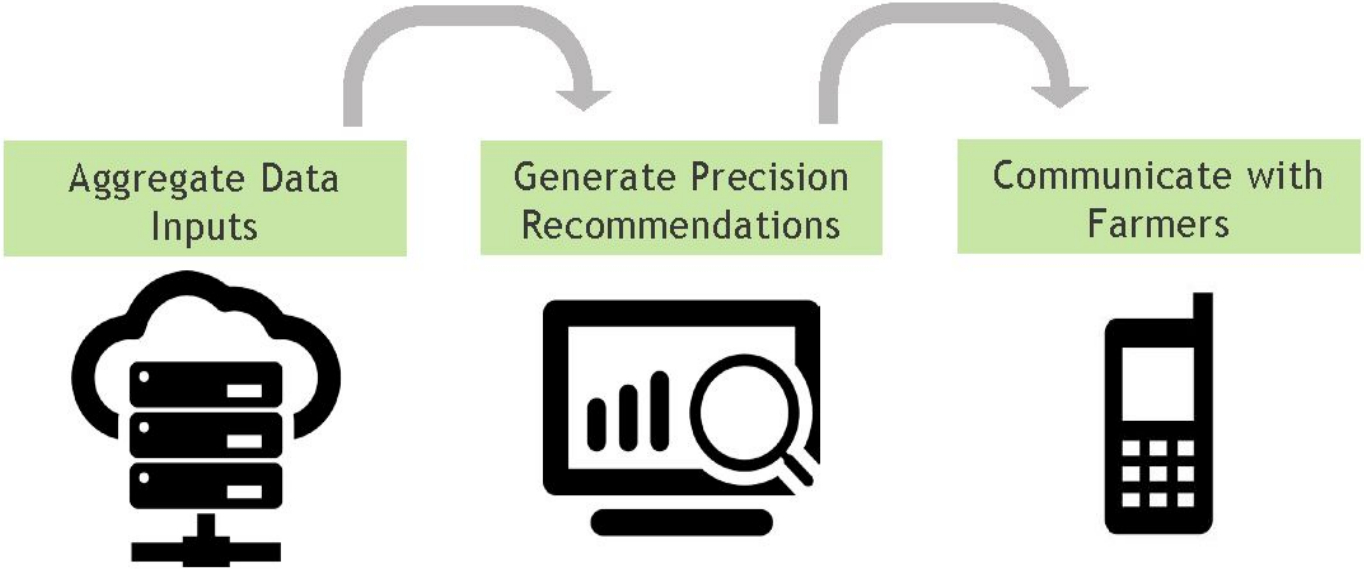
Building the service

Farmer characteristics through profiling (location, dialect, crops); agronomic data (soil, weather)

Agronomic information (input recommendations, farm management advice), behavioral economics

Outbound voice calls, SMS & WhatsApp.
Inbound calls via agents & IVR



Building the service

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Aggregate Data Inputs

Availability, form and quality of farmer data

Are you starting from scratch?

Are there systems that you can take advantage of?

What do your start up costs depending on?

Building the service

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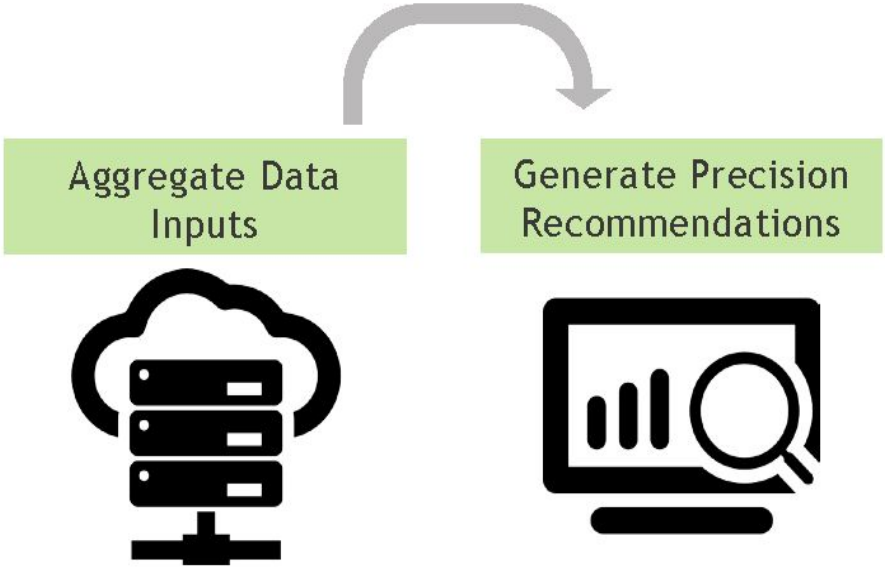

Advisory landscape & partnerships

What are the existing extension systems and what synergies can be built?

How much is known of farmer information gaps and how they relate to productivity?

Building the service

Technology landscape and it's opportunities

What technology is available to you?

Are there legal frameworks to keep in mind?

Are farmers aware of your service, can they use it without too much trouble?

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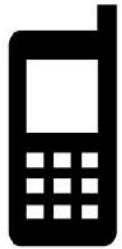
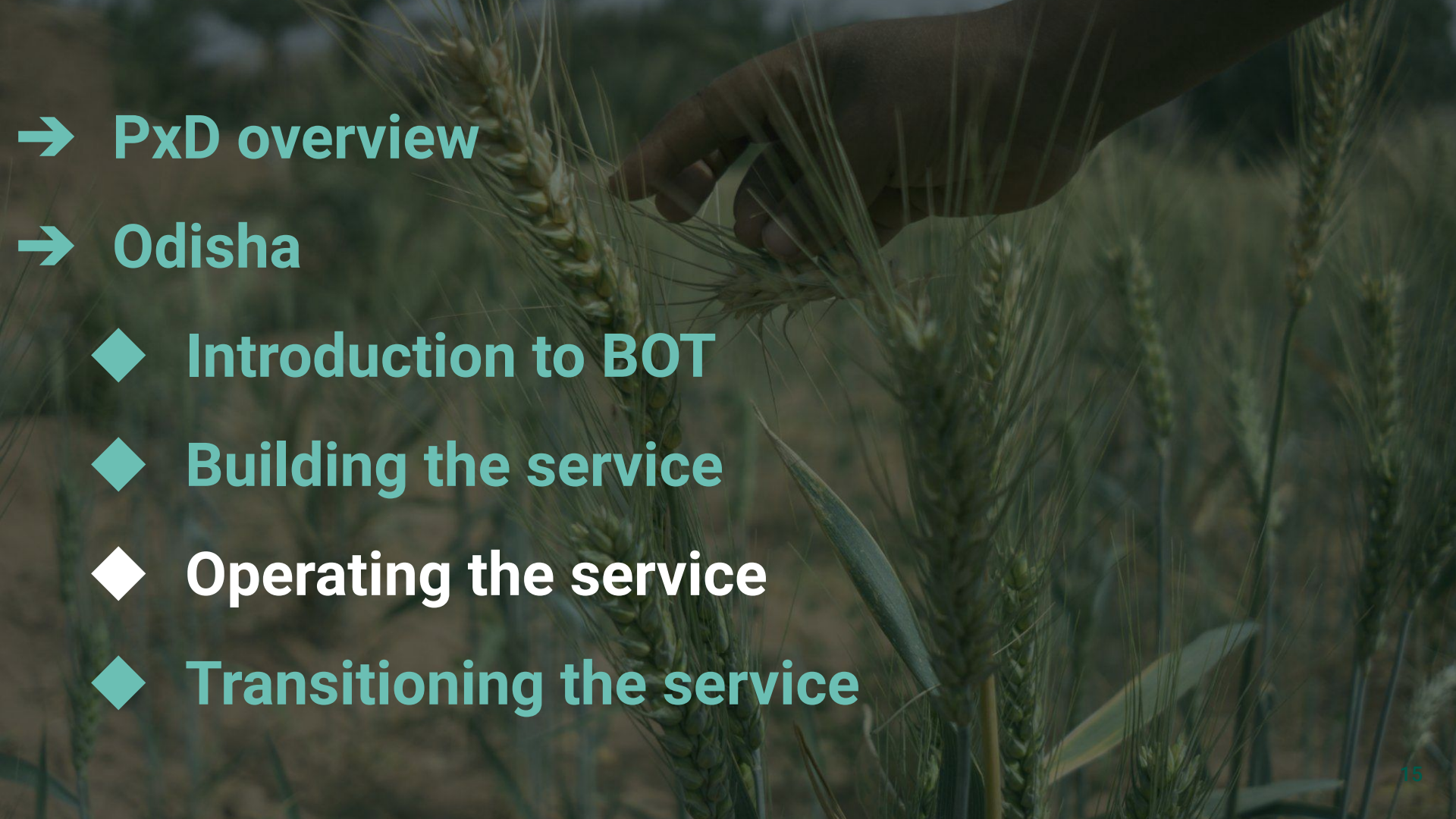
Inbound calls via agents & IVR

Communicate with Farmers





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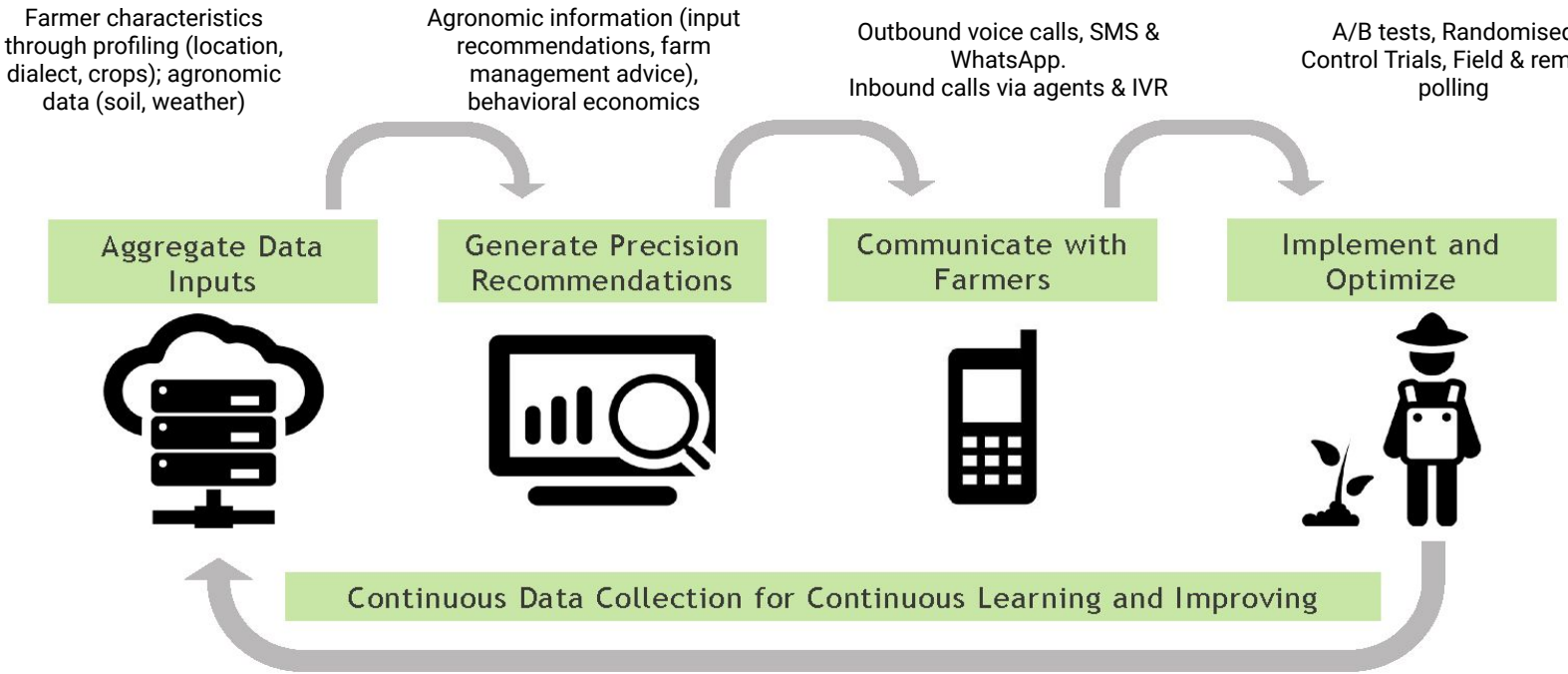
Technology is effective when it is user-centric, dynamic and iterative

Operating the service



Lenses of iteration

User Experience

- Menu design
- Usability
- Service up rate
- Reach

Delivery

- Time of day
- Frequency and length
- Order of menus
- Jingles

Content

- Framing
- Reminders
- Language
- Comprehensibility

Cumulatively these can make the difference between communications with no impact, and communications with high impact.

Simple, targeted messages can impact knowledge & adoption of sustainable practices

Flood tolerant (FT) seeds are evidenced to increase farmers' investment and yields in low lying areas of Odisha, India. Yet, adoption remains low.

Two voice messages focused on highlighting the benefits of FT seeds significantly increased adoption and knowledge among farmers with low land:

- 25% increase in adoption
- 7.5% increase in knowledge
- Est cost-benefit ratio of 17: 1
    - Estimated income increase of 72 INR per hectare against a marginal cost of 4.1 INR

The volume and framing of messages are important for influencing behaviour

Last Rabi season, we tested sending farmers fewer messages. Messages were:

1. Focused on high-impact practices
2. Framed using a standardized, logical template

Preliminary findings:

- 5.5 pp increase in pick-up rates
- 1.8 pp increase in listening rate
- 7.6 pp increase in adoption of seed treatment

Institutionalisation within the Department of Agriculture & Farmers' Empowerment (GoO)

Capacity Building	Ama Krushi training sessions conducted at block-level **with extension workers & community leaders** ("training the trainer model"); extension officers involved in farmer registration
Content Design & Validation	Content designed in collaboration with local university & dept experts (**Weekly Content Review Committee for livestock & agriculture**); integrated messaging across different bodies
Data for Decision-making	**Farmer engagement data shared weekly** (e.g. in Crop Weather Watch Group meetings attended by policy makers at various levels within the government); Participation in government pandemic response
Supplementing GoO's gender and inclusion strategy	Collaborations with **SC & ST department, Pradan** (a GoO partner), **FARD** to serve the diverse needs of farmers and provide targeted outreach (eg: through designated community resource persons)

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Transitioning Ama Krushi

The Ama Krushi Service was conceived as a **Build-Operate-Transfer** Model. We are currently working to **completely handover management & operations of the service** to the Government of Odisha & it's designated partner

Outlined below is our three-dimensional approach to enable a robust functional transfer.

Dimension A	**Internal Activities:** Internal looking and encompasses two phases: *transition management* planning as well as *process codification and knowledge management.*
Dimension B	**Inter-Party Activities:** Focuses on the inter-party aspects of the transition and encompasses two phases; *resource identification* as well as *capacity building and function transfer*
Dimension C	**Handover Learning Agenda:** Focuses on Monitoring, Learning, and Evaluation (MLE) of the transition. It is also undertaken in two phases; *planning for transition learning* and *handover monitoring & reporting.*

What is a successful transition?

What is the ideal pace of transition?

How portable is your technology really?

Who does what?

What about those that you leave behind?

Post the handover, PxD plans to monitor the service for a year.

We will **release key transition findings as a Whitepaper** to help inform similar transition efforts both internally and for other organizations.

PxD'S Future Plans

Scale and Impact

Reach 100 million users, iterate and improve impact per farmer, and refine evidence base

New Technologies

Communications: WhatsApp, Telegram, photos, videos, chatbots, AR, VR

Data: weather forecasts, remote sensing, satellite, drone imagery, machine learning

New End Users

Extension workers, input suppliers, crop off-takers, etc.

New Sectors

Addressing information poverty more broadly, including education, nutrition, gender, etc.

Commercial Partnerships

For-profit agro-businesses (without excluding the poorest, or losing farmers' trust)

Geographic Expansion

Africa (additional states in Nigeria; DRC, West Africa, North Africa, etc.)

South Asia (additional states in India, Pakistan, Bangladesh; Afghanistan, etc.)

Latin America and Caribbean (Brazil, Colombia, Mexico, Peru, etc.)

Southeast Asia (Indonesia, Vietnam, Thailand, Myanmar, Philippines, etc.)

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Empowering users with quality information at their fingertips.

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