

Lessons from Digital Green



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For more information visit: <http://kentarotoyama.org>.

Areas of interest:

Information and communication technologies and development (ICTD), aspiration-based social development, theories of social change, data-centric analysis of social justice issues

Smallholder Agriculture in India

~60% of population

0.5–3 acres of land

<US \$2 income per day

Challenges with land, water, loans, markets, agricultural knowledge



Photos: Rikin Gandhi



Agriculture Extension



Photo: Rikin Gandhi

Dissemination of expert agriculture information to farmers

“Train & visit” style of extension involves 1-on1 in-person interaction with farmers. Costly and slow.

~100,000 extension agents in India serving ~120 million smallholder farmers. 1 agent per 1200 farmers.



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**How can the speed and quality of
agriculture extension be improved
at a reasonable cost?**



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Rikin Gandhi

Founder and CEO
Digital Green

Photo: Digital Green

Early Experimentation



Photos: Rikin Gandhi



Reliable Methodology?

Video database

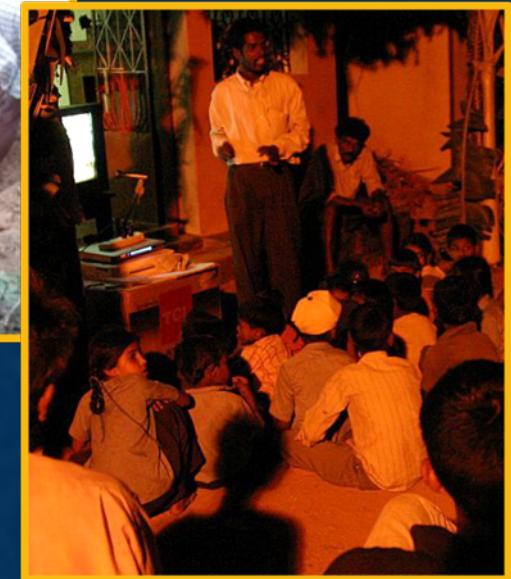


Photos: Digital Green

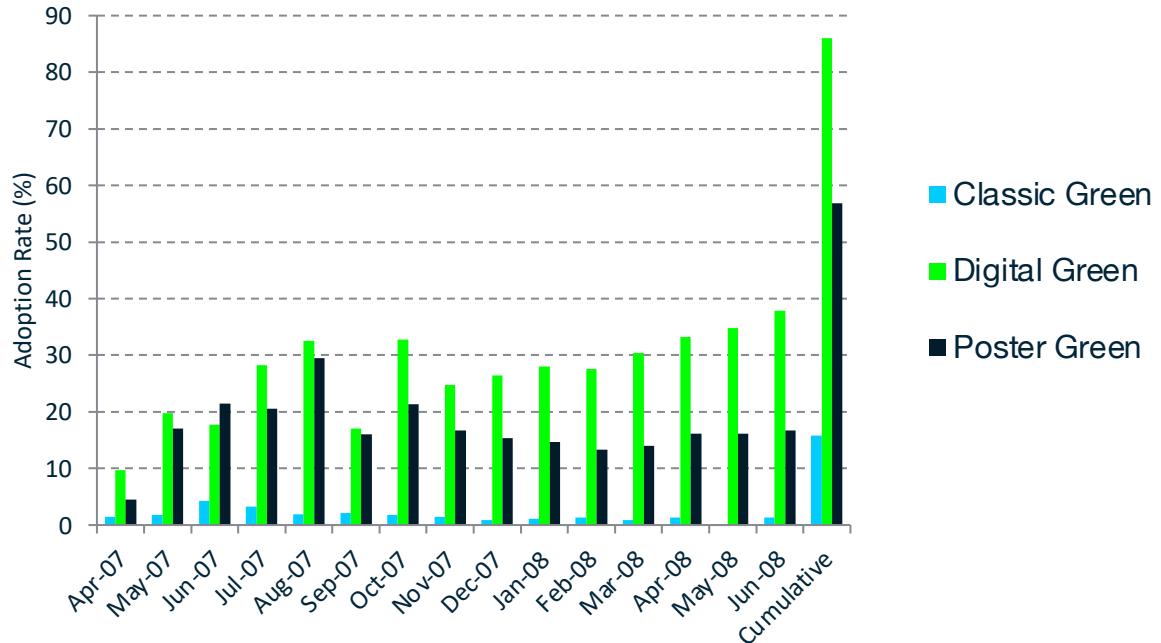
Participatory content production

Mediated instruction

Structured sequencing



Controlled Experiment



Digital Green was...

- **7x more effective** in causing new adoptions; and
- **10x more cost-effective**

...than T&V extension.

Source: Gandhi, R., Veeraraghavan, R., Toyama, K., & Ramprasad, V. (2007). Digital Green: Participatory video for agricultural extension. In 2007 International Conference on Information and Communication Technologies and Development (pp. 1-10). IEEE.
<https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=4937388>

Early Days as a Non-Profit



Photos: Randy Wang



Digital StudyHall



Big Partnerships



Photo: Kentaro Toyama



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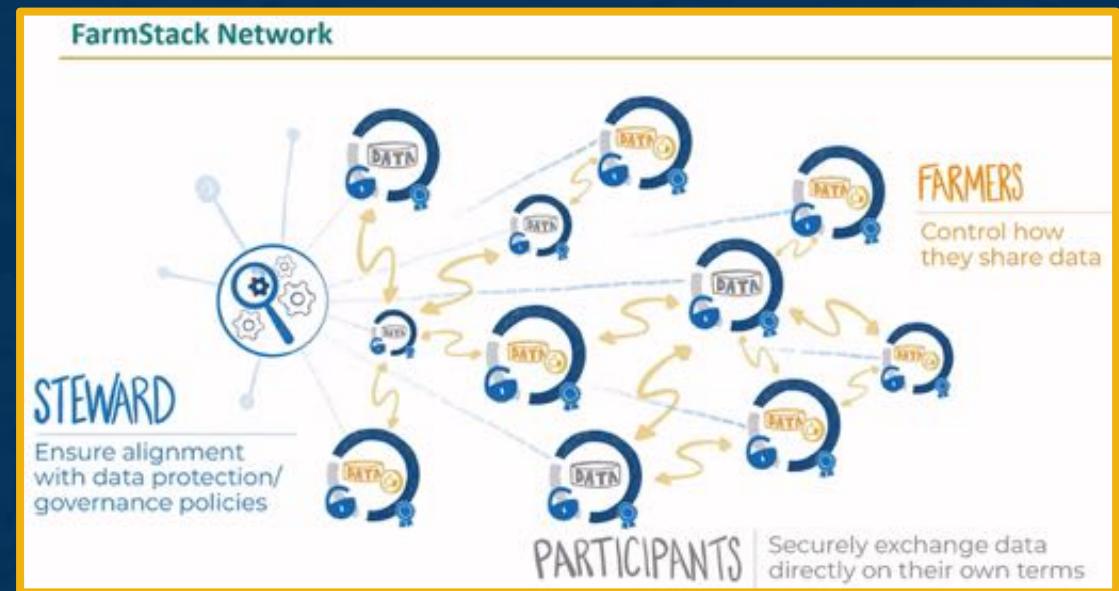
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Defining Its Role



Photo: Kentaro Toyama

Beyond Video



Source: Digital Green

Photo: Kentaro Toyama

Timeline

- 2006: Initial research
- 2008: Non-profit formation
- 2009: First major grant
- 2012: Big project with state of Bihar, India
- 2013: Expansion to Ethiopia
- 2016: Milestone: 1 million farmers impacted
- 2019: FarmStack
- The work continues...!



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Key Element 1: Program Identification

- 2006: Initial research **Innovation & program formalization**
- 2008: Non-profit formation
- 2009: First major grant
- 2012: Big project with state of Bihar, India
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Key Element 2: Champion + Organization

- 2006: Initial research
- 2008: Non-profit formation Rikin chose to run a non-profit!
- 2009: First major grant
- 2012: Big project with state of Bihar, India DG partners with agriculture organizations.
- 2013: Expansion to Ethiopia
- 2016: Milestone: 1 million farmers impacted
- 2019: FarmStack
- The work continues...!



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Key Element 3: Funding

- 2006: Initial research
- 2008: Non-profit formation
- 2009: First major grant *Money makes the world go 'round.*
- 2012: Big project with state of Bihar, India
- 2013: Expansion to Ethiopia
- 2016: Milestone: 1 million farmers impacted
- 2019: FarmStack
- The work continues...!



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Key Element 4: Scale + Impact

- 2006: Initial research
 - 2008: Non-profit formation
 - 2009: First major grant
 - 2012: Big project with state of Bihar, India
 - 2013: Expansion to Ethiopia
 - 2016: Milestone: 1 million farmers impacted
 - 2019: FarmStack
 - The work continues...!
- A lot of hard, hard work
by DG staff and partners.



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Key Element 5: Continuous Improvement

- 2006: Initial research
- 2008: Non-profit formation
- 2009: First major grant
- 2012: Big project with state of Bihar, India
- 2013: Expansion to Ethiopia
- 2016: Milestone: 1 million farmers impacted

2019: FarmStack
The work continues...!

Plan, act, evaluate,
reflect, repeat.



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What matters most...?

Key elements:

- 1) Program identification
- 2) Champion + organization
- 3) Funding
- 4) Scale and impact
- 5) Continuous improvement

**For the most part,
technology (only)
amplifies
underlying
human forces.**



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Top Rule for Technology Engagement

For impact with
For the most part,
technology,
technology (only)
seek to *amplify* an
amplifies
organization or
underlying
social trend aligned
human forces.
with the goal.



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Summary

Digital Green enables low-cost agricultural extension.

Many elements contribute to its ability to support smallholder farmers: innovation, funding, effort, evaluation.

Key among them was the decision by its founder to commit himself to impact and to start an organization.

For the most part, technology only **amplifies** underlying human forces.

Visit: <http://digitalgreen.org>



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