digitalGREEN

Vinay Kumar

WCF Partners’ Meeting
24-25 October, 2012
Zurich
Digital Green uses social organization and technology to improve the efficiency of agricultural extension systems globally.
Project at Microsoft Research

Implementation in 4 Indian states

11,000 villages
1 million farmers

1,800 villages
125,000 farmers
Extend to health & nutrition
Ethiopia and Ghana

2006
2008
2009
2012
2015

Non-profit in USA and India

Scaled to 7 Indian states

WHERE WE WORK

HOW WE EVOLVED

HOW WE EVOLVED

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Agricultural Context

2 billion lives (1/3rd of humanity)
Dependent on
500 million small farms in developing countries with very low income

Green Revolution had mixed results..
• In Africa, mostly unsuccessful
• In India, increased yields, but rising input costs, declining soil fertility

Indiscriminate use of technology partially responsible for current agrarian crisis

A farmer from Yellachavadi village, outside of Bangalore
Agricultural Extension

Dissemination of expert agricultural information to farmers

Training & Visit: Face-to-face interactions of extension officers and farmers

500,000 extension officers in developing countries

Extension agent-to-farmer ratio:
1:2,600 in South Asia
1:1,800 in Sub-Saharan Africa

High recurring costs, weak accountability, under-resourced, limited training
Information Sources for Farmers in India

% farm households (n = 51,770)

- Other progressive farmers
- Salesmen (e.g., fertilizer, pesticide)
- Radio
- Television
- Newspaper
- Extension worker
- Cooperative
- Buyer
- Government demonstration
- Others

Main source of information about new technology and farm practices over the past 365 days (India: NSSO 2005)
Digital Video for Extension

Video provides...

- Resource-savings: human, cost, time
- Accessibility for non-literate farmers
Early Experimentation
Parameters Varied

Six months in field trying various combinations of actors in video, types of content, location and timing of screenings, method of distribution, degree of mediation, background of mediator, etc.

Over 200 days of surveys, ethnographic investigation, and iterative design
Initiation
- Mobilization
- Situational Awareness
- Training

Production
- Topic Identification
- Storyboarding
- Shooting
- Editing

Diffusion
- Dissemination
- Adoption
- Reporting

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Digital Green: Early Results

7 times more adoptions over Training & Visit model

Mediation

Repetition (and novelty)

Integration into existing extension operations

Social homophily between mediator, actor, and farmer

Desire to be “on TV”

Trust built from identities of farmers and villages in videos

15 months:
13 villages, 3 nights a week, 1,000 regulars
## Cost-Benefit

<table>
<thead>
<tr>
<th>System</th>
<th>Cost (USD)</th>
<th>Village/Year</th>
<th>Adoption (%)</th>
<th>Village/Year</th>
<th>Cost/Adoption (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training &amp; Visit</td>
<td>$840</td>
<td></td>
<td>11%</td>
<td></td>
<td>$38.18</td>
</tr>
<tr>
<td>Digital Green</td>
<td>$630</td>
<td></td>
<td>85%</td>
<td></td>
<td>$3 70</td>
</tr>
</tbody>
</table>

Note: Decreasing amortized cost of hardware with time and scale

digitalGREEN is **at least 10 times** more effective *per dollar* spent than a Training & Visiting system.
Videos

Local poultry farm Oriya Pragati Odisha
Poultry,
00:15:32  Produced On: 23 Feb 2011
3751 viewers | 1166 Adoptions

Planting technique of Little gourd
Planting technique of Little Gourd (Kumuli)
00:12:55  Produced On: 12 Feb 2011
6933 viewers | 1134 Adoptions

Harvesting of wheat
Harvesting,
00:10:36  Produced On: 05 Feb 2011
4485 viewers | 1033 Adoptions

AWARENESS ON HYGIENIC LIVING
Awareness,
00:15:16  Produced On: 20 Oct 2011
2442 viewers | 1011 Adoptions

Safe Technique of Cotton Picking
Cotton Picking,
00:05:31  Produced On: 03 Feb 2011
1866 viewers | 876 Adoptions

Planting technique in garlic cultivation
Planting technique of Garlic,
00:13:20  Produced On: 13 Oct 2010
4843 viewers | 872 Adoptions

Seed bed preparation in Cauliflower
Seed bed preparation in Cauliflower final
00:00 / 14:46  Produced On: 23 Oct 2010
21 Disseminations | 372 Viewers | 31 Adoptions

Farmer: JOGESH KILLO
Practices Shown: CAULIFLOWER NURSERY PREPARATION
Language: Oriya
Village: Dongadi Maliguda
Production Duration: 3 days
Produced On: 23 Oct 2010

Screening State Bar Graph showing month wise screening of the Video

Quessions Asked
53 Questions asked in total

BHAGBAN JANI  | 20 Nov 2010
Korput, Orissa

BHOJADASHI BENYA  | 22 Dec 2010
Korput, Orissa

MANA MUDULI  | 12 Nov 2010
Korput, Orissa

KUMULI JANI  | 12 Nov 2010
Korput, Orissa

videos.digitalgreen.org
Farmerbook

Keonjhar | Orissa

PadmaVati Singh

Follow
Ramakrishna
Chhatia
Adoption Rate 53.86%

Aug. 26, 2011 13 Views 7 Adopted

Questions Asked 2
Adoptions 7

Service Provider
Trinath Singh (VARRAT)

Videos Watched (13)
Videos Featured (0)

Planting technique of Little gourd
Last seen on Apr 06, 2012

Interculture operation in lady’s finger
Last seen on Apr 02, 2012

Sowing technique in bitter gourd
Last seen on Mar 31, 2012

Controlling leaf folder disease in paddy
Last seen on Mar 29, 2012

Planting technique in garlic cultivation
Last seen on Jan 24, 2012

Related Farmers

Subasini Das
Last adopted (Dec 09, 2011) : Interculture operation in tomato cultivation on Adoption Rate 46%

Aug 26, 2011 13 Views 6 Adopted

Basanti Singh
Last adopted (Dec 01, 2011) : Planting technique in garlic cultivation on Adoption Rate 42%

Aug 26, 2011 12 Views 5 Adopted

Kushala Nayak
Last adopted (Mar 02, 2012) : Transplanting in SRI Method on Adoption Rate 40%

Jan 26, 2011 15 Views 6 Adopted

farmerbook.digitalgreen.org
Initial assessment

$243 incremental increase in farmer income over 8 months

<table>
<thead>
<tr>
<th>Month</th>
<th>Activity</th>
</tr>
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<tbody>
<tr>
<td>Jun-10</td>
<td>Chili Nursery Raising, Beans Line Sowing</td>
</tr>
<tr>
<td>Jul-10</td>
<td>Chili Line Sowing, Beans Fertilizer Application</td>
</tr>
<tr>
<td>Aug-10</td>
<td>System of Rice Intensification</td>
</tr>
<tr>
<td>Sep-10</td>
<td>Bitter Gourd Pest &amp; Ginger Rot Management</td>
</tr>
<tr>
<td>Oct-10</td>
<td>Improved Onion Seed</td>
</tr>
<tr>
<td>Nov-10</td>
<td>Potato Line Sowing, Tomato Intercropping</td>
</tr>
<tr>
<td>Dec-10</td>
<td>Improved Poultry Rearing</td>
</tr>
<tr>
<td>Jan-11</td>
<td></td>
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# WCF - Digital Green Pilot Project

| Objective: | Improving quality and quantity of cocoa production through the exchange of better agronomic practices and technology |
| Duration: | July 2012 – June 2013 |
| Geography: | New Edubiase, Adansi South, Ashanti - Ghana |
| Implementing partners: | ACDI/VOCA & COCOBOD |

**digitalGREEN**
WCF - Digital Green Pilot Program

1 Edubiase BSC
10 communities
27 videos
210 dissemination
360 farmers
Glimpses of Cocoa farmers shooting videos
**WCF - Digital Green Pilot Project**

## Moving Forward

- Constitute technical advisory committee
- Establish proof of concept in Ghana
- Iterate design based on feedback and usage data
- Identify challenges and share learnings
- Explore expansions in Ghana and beyond including health and nutrition
Thank you