

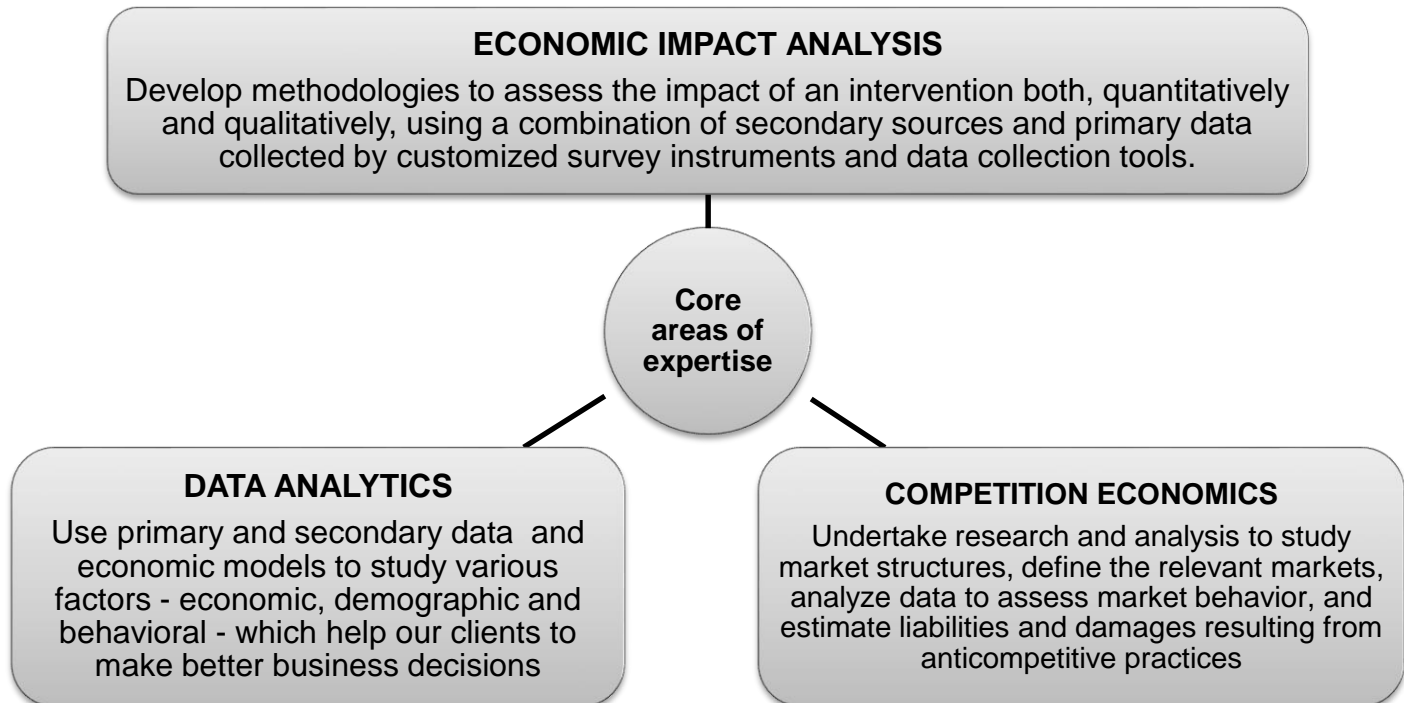
Innovative methods for measuring adoption of agriculture technologies

Post conference workshop
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About us

Nathan India, a wholly owned subsidiary of Nathan Associates Inc., is a boutique **strategy consulting firm with a difference**; it uses the principles of economics to analyze problems and deliver solutions to organizations in both the public and private sectors.



Introduction

Motivation

- As part of our new strategy, we are exploring projects related to agriculture, natural resource management, biodiversity and climate change, where we think there is relevance of economics and data analysis.

Proposed Methodology

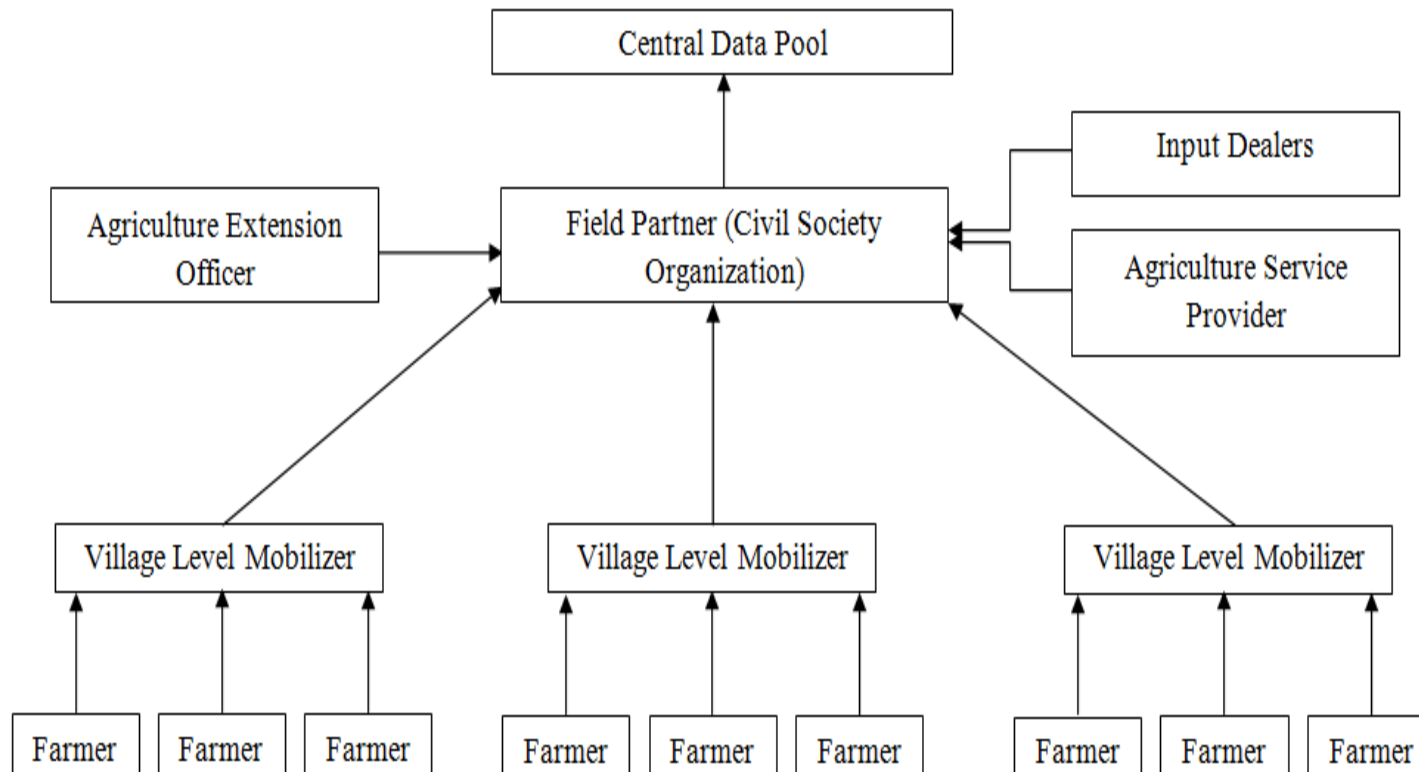
- Partner with Civil Society Organizations (CSO) in identified mandals/sub-districts
- Engage with a village level mobilizer in each identified village who can canvass groundnut farmers in the village for carrying out the survey.
- To collect data using computer assisted personal interview method with mobile tablet and customized survey instrument in an android based application.

On Ground

- For this pilot study, based on the views from local CSOs, we understood that, instead of one village level mobilizer in each village, a mobilizer can cover all villages in 3-4 mandals/sub-districts in and around his home mandal/sub-district.



Proposed Methodology



Relevant experiences

- Socio - Economic Impact of Water and Sanitation Program (2011-14) for **Friends of Women's World Banking**, Ahmedabad, India.
- Impact of Internet on Small and Medium Enterprises (SMEs) in India (2013) for **Google India**.
- Quantitative Research for the Agent Network Accelerator India Pilot (2013) for **MicroSave India** and **Gates Foundation**.



Innovative features

- Village level mobilizer,
- Digital mode of data collection,
 - Minimum error in data collection,
 - No separate data entry costs
- Customized Android® based application for primary data collection with GPS and voice recorder
- Real time data collection



Self Evaluation

- **Low cost and effective**
 - Compared to traditional method of data collection, this method is cost effective and high in quality
 - In general, survey agencies in India charge around \$25-\$30 per survey, whereas in this method the survey cost is around \$12-\$15 per survey.
- **Versatile, efficient, and commercially scalable**
 - Collected data can be accessed through a central server any time any where through internet
- **Geographical area covered**
 - Anantapur and Kurnool districts of Andhra Pradesh
- **Sampling Methodology**
 - Sample mandals based on population proportion to size considering total groundnut area in all mandals in two identified districts
- **ICRISAT promoted technology**
 - Tracked twelve ICRISAT promoted technologies on groundnut farmers



Lessons learnt

- This methodology might work in case of crops that are cultivated in large areas.
- Changes to the methodology originally proposed.
- Control on the devices
- Differential understanding/perception of farmers on the technologies.
- Hindrance from certain village heads.
- Identification of farmers at home during daytime is difficult, because of,
 - Agricultural land is far from home,
 - Farmer is moving to nearby town for input purchase
- Mobile network issues

Business model

Potential buyers of the data

- Input dealers including seed companies, fertilizers and pesticides manufacturers
 - Provides basic insight on demand for their products
 - (Can tie up with private sector companies (input dealers) and collect data with additional survey questions wanted by input dealers)**
- Data management companies like CMIE, Indiastat, etc
 - Process and sell to public based on subscription
- Research institutes and organizations
 - Analyze and publish articles using data collected
- International donors (non-agricultural), MFIs, NBFCs
 - To understand socio-economic profile, financial inclusion of a particular community



Challenges and solutions

Challenges in outsourcing to private sector

- Continuity is questionable in the long run, i.e., outsourcing to one private entity for 20 years.
- Private data collection is expensive compared to government.
- Authentication of the data to be noted while doing with private sector.

Solutions

- 5 year cycle for private would be a better option.
- Quality concerns in case of government agencies data collection.
- Data collection by government agencies will be cheaper but there are quality issues, can be done by tinkering “crop and season data”.



Experiences gained by Nathan

- Different types of technologies and training of enumerators
 - Training of trainers, training enumerators by providing details about technologies.
- Survey instrument and Android application
 - Designing the data instrument with questions on the technologies and developing of application.
- Data collection and monitoring



Android application snapshots

NATHAN SECTION A : GENERAL

Name of the Enumerator?

Name of the NGO?

Place of residence of the enumerator

Mode of transportation used by the enumerator to come to the place of this interview

Bus

Time required to travel from his/her location to this village/hamlet (HH-MM)

Hour Minutes

GENERAL INFORMATION - LOCATION

State

District

Name of the Mandal?

Name of the Gram Panchayat

NATHAN SECTION C: LAND HOLDINGS, USES AND GROUNDNUT CULTIVATION

What is the total operational land (acres) holding of your household in the past 12 months

In the past two years, how many times have you lost more than 20% significant portion of your crop production due to unexpected weather (in g. low rainfall, flooding, unexpected monsoon time, hail, etc)

Number of years you have been producing groundnuts

Have you accessed credit in the past 12 months for agricultural production

Yes No

from where

why not

Do you insure your crops (i.e., do you have crop insurance policy)

NATHAN Technology Adoption Selection

SOIL BUND Currently Using Ever Used

FIELD/BOUNDARY BUNDS Currently Using Ever Used

BROAD BED AND FURROW Currently Using Ever Used

LAND LEVELING Currently Using Ever Used

CONTOUR BUNDS Currently Using Ever Used

POLYTHENE MULCHING Currently Using Ever Used

NALA PLUGS/RFOG Currently Using Ever Used

SUNKEN PITS Currently Using Ever Used

FARM PONDS Currently Using Ever Used

MASONRY CHECK DAMS Currently Using Ever Used

WELL RECHARGE PITS Currently Using Ever Used

PENNING SHEEP/GOAT/CATTLE Currently Using Ever Used

NEXT

Thank You



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