Resuscitating Rapid Rural Appraisal:

A New Survey Methodology for Improving Food Security Outcomes in International Agricultural Development

Emma Flemmig[1], Steven C. Hodges[1], A. Ozzie Abaye[1], Kurt Richter[2] and Wade E. Thomason[1]

[1]Department of Crop & Soil Environmental Sciences, Virginia Tech, Blacksburg, VA
[2]Global Center for Food Systems Innovation, Michigan State University, East Lansing, MI
Corresponding author: eflemmig@vt.edu | 424 Smyth Hall, Blacksburg, VA 24061

ABSTRACT: International agricultural development workers have tried repeatedly, with limited and variable success, to improve participation from smallholder farmers when designing projects to improve rural food security and agricultural productivity in the Global South. Scores of individuals have continued to modify and reinvent the ways we interact with the rural poor and the research systems of developing nations. The reality is that current funding structures for international development simply offer neither the flexibility nor the project longevity necessary for success when using genuinely participatory designs. This conundrum - *the desire to utilize farmer voices while lacking the structural support to implement changes* - inspired a hypothesis to flip the strategy.

Could a new kind of participation (i.e. Rapid Rural Appraisal) method be created that naturally feeds into current international development priorities and program monitoring and evaluation practices?

This method would contrast continuing attempts to improve and increase the newer Participatory Rural Appraisal methods by fundamentally-redesigning the more structured, rapid style of assessment. A technically-sound, user-friendly, open-source survey methodology was designed for agricultural development specialists from any discipline, but particularly crop and soil scientists in mind. The methodology details and survey structure, along with supporting examples from the results of 600-household surveys recently conducted in rural central Haiti (2014 - 2015) and northern India (2016) are available through the corresponding author.

STEP 1. A Brief History of International Development Strategies

Transfer-of-Technology Model (TOT) : *Still Flourishing, albeit unintentionally*
- From ag development's inception in the 1940s to the post-Green Revolution 1970s
- How to do it? Transfer the technology in the Global North to the Global South

Rapid Rural Appraisal (RRA): *Considered paternalistic, but still flourishing under a different name*
- Initial response to TOT's shortcomings, in the early 1980s, to increase consideration of traditional practices
- TOT often failed because outsiders paid insufficient attention to non-Western epistemologies
- RRA is usually a semi-standardized set of information-gathering practices
- For "experts" to extract **Indigenous Technical Knowledge (ITK)** from farmers quickly
- RRA focused almost exclusively on rural knowledge deemed "useful" and useable by Western scientists
- As you can imagine, important information was often lost or ignored during many RRAs

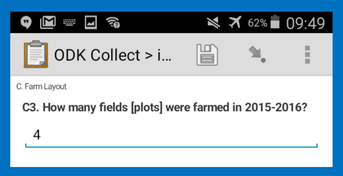
Rural People's Knowledge (RPK) & Responses to RRA: *PARTICIPATORY, BUT NOT REALLY*
- Endless variations, critiques & methodological variations have been pursued as improvements to TOT & RRA
- Collectively transitioning to emphasize RPK in place of ITK
- General-acceptance of outsiders' inability to distinguish between useful & non-useful rural knowledge

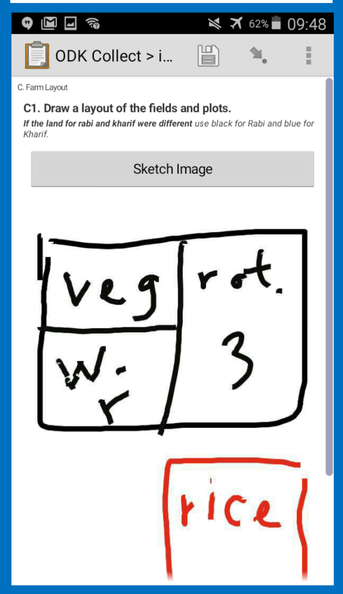
Common methods advocated after RRA was *(appropriately)* **deemed inadequate**
- Participatory Rural Appraisal
- Participatory/Community Action Research
- Farming Systems Research
- Agroecosystem Analysis

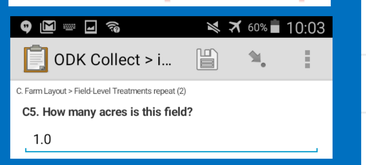
Our Pragmatic Response to Bureaucracy: *Social Science & Agricultural Research Compatibility*
- Unfortunately, agricultural research budgets and directives constrain utilization of these participatory methods
- Participation Issues: time-consuming, biophysical scientists' discomfort with qualitative analyses, foreign language expertise, as well as, potential demand for high-level anthropological or economic research skills
- Essentially, **we are still using TOT** – and giving little more than "lip service" to rural farmers' participation
- Our methodology does not undermine the very important arguments disparaging RRA/TOT attitudes
- BUT it does return to the original RRA purpose—making RPK more user-friendly for ag researchers
- This standardized system combines a technically-sound platform to bring farmers' and rural peoples' realities to the funding leaders and bureaucratic realities of Western monitoring and evaluation practices

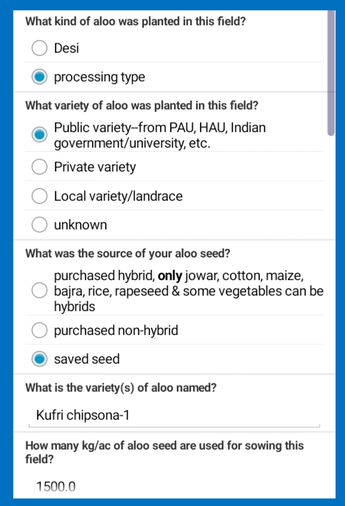
STEP 2. Examples of a Standardized Survey Module

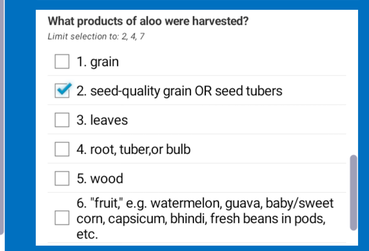
Remember! Western Epistemology vs. RPK / Indigenous Epistemologies Means:
- Alternative valuations of varied financial, ecological & cultural capitals exist
- Sound guidance for outsiders interpreting temporal & spatial relationships is emphasized

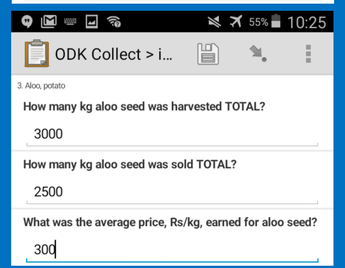


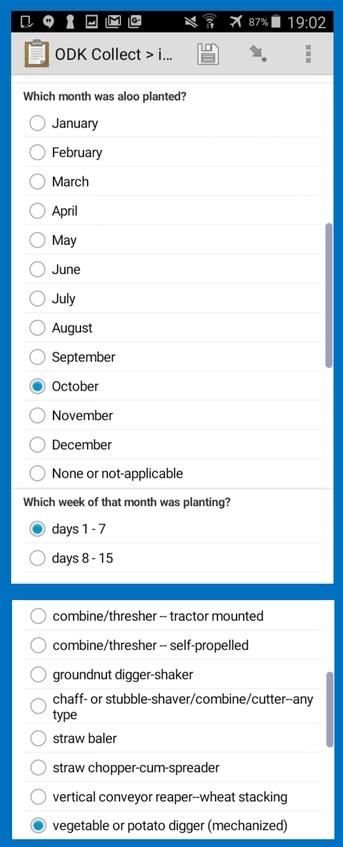






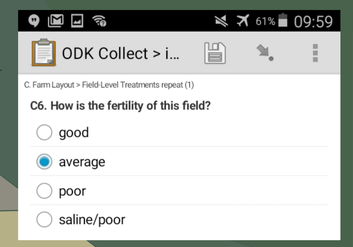


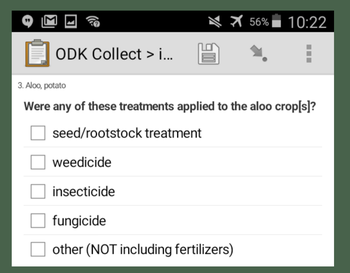


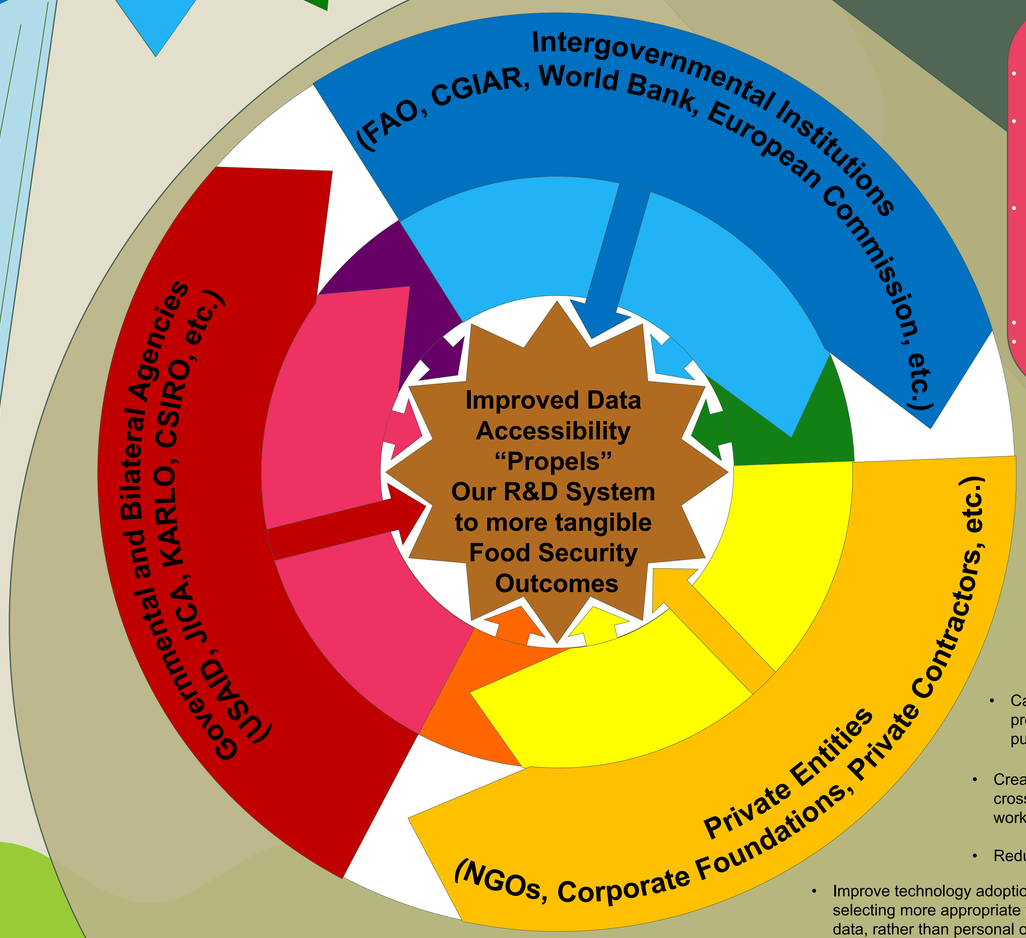


STEP 3. Add Discipline- or Project-Specific Components

- With specialist input, supplemental templates will be designed to augment the versatility
- Build in cultural dynamism to maximize coverage of non-Western attitudes and knowledge of cultural practices







STEP 4. Screen for Positive Deviants

- Find characteristics of households that are more food secure than common metrics predict
- Use positive deviants to initiate research and/or development, rather than a predetermined research priority or a trendy technology

An example of positive deviance from Haiti:
- **Increased Dietary Diversity** (a popular food security metric) is significantly ($p<0.05$) correlated to: **INCREASED** land allocation (% personal holding compared to their regional mean) of 1) cassava, 2) plantains, 3) avocados, and 4) coffee.
- Maize is most emphasized in Haitian research
- This trend indicates a latent, previously unknown conflict that needs to be explored.

STEP 5. THINK BIG (e.g. Big Data)

- Currently aid investments are based on outdated and highly inaccurate estimates of national food security, widespread use of this method can help shift our emphasis to the ***most*** food-insecure households
- Enable indexing of socioeconomic & technical knowledge with large-scale soils & climate data
- Allow comparison within and among countries in a fashion never feasible or available previously due to the standardization
- Can build a database by mining reports from former projects and survey work that has not been published and/or indexed
- Create more fluid reporting and assessment metrics that crossover between agencies and organizations already working together frequently, i.e.
- Reduce double, triple (…or worse) reporting
- Improve technology adoption and dissemination rates by selecting more appropriate target locations based on farmers' data, rather than personal or political interests and biases
- Increased documentation of success, therefore, increases donor willingness to ***invest*** in 'positive deviants' and practices that are already improving farmer and rural livelihoods with less Western intervention
- Easy-to-use programs & easy-to-follow instructions empower researchers in resource-poor environments to take on their own program priorities, and apply for grants
- Raise farmers' voices with a user-friendly participatory data format to shift top-down structures towards bottom-up empowerment
- KEY: Non-perfect is better than continuing to neglect the participatory process— as a whole— because time and financial resources are limited in international agriculture & food security R&D

MORE! …about the Survey & Method's Features

- All programs designed for open source software— the **Open Data Kit** suite [ODK Collect, ODK Build, ODK Aggregate] for **Android tablet-based data collection & R for statistical analysis**
- Microsoft Excel is our preferential template format [vs. ODK Build], so directions for utilizing open source spreadsheet programs, as well as for common, non-open source programs like **SAS and ArcGIS**, are developed as supplemental guides
- Survey templates are available for both ODK Collect, **as well as, paper-based data collection**
- Supplemental guides include information on **sampling design**, for hiring and **training enumerators**; cultural considerations for survey customization; and **detailed instructions for editing** the template(s)
- Specialist input will be used to develop the **discipline-specific template additions**
- **Needs Assessment** and / or **Monitoring & Evaluation** opportunities are endless