FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

Scaling Seed Kits Through Household Gardens

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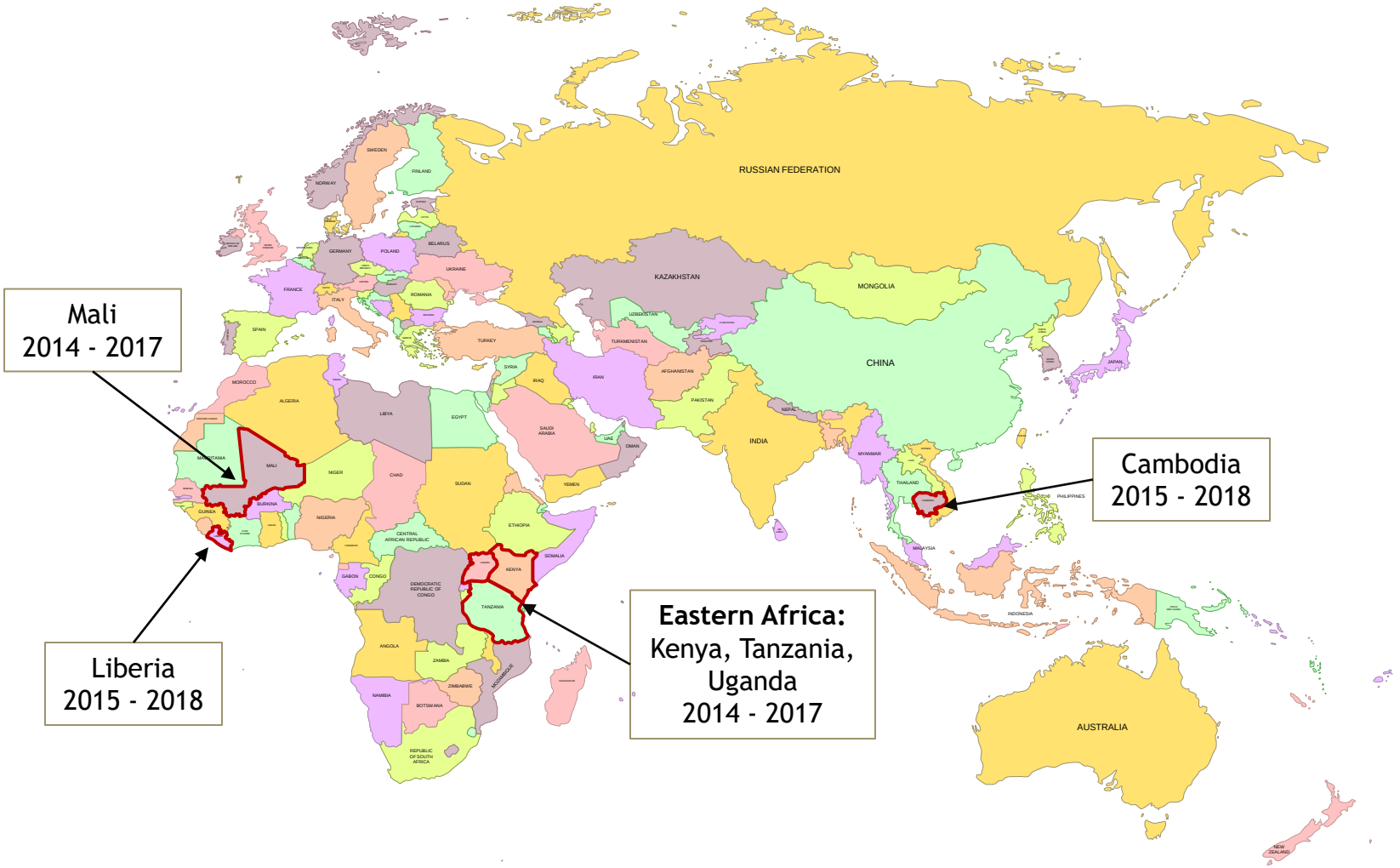
World Vegetable Center

Current World Vegetable Center – Feed the Future Household Garden Projects around the world

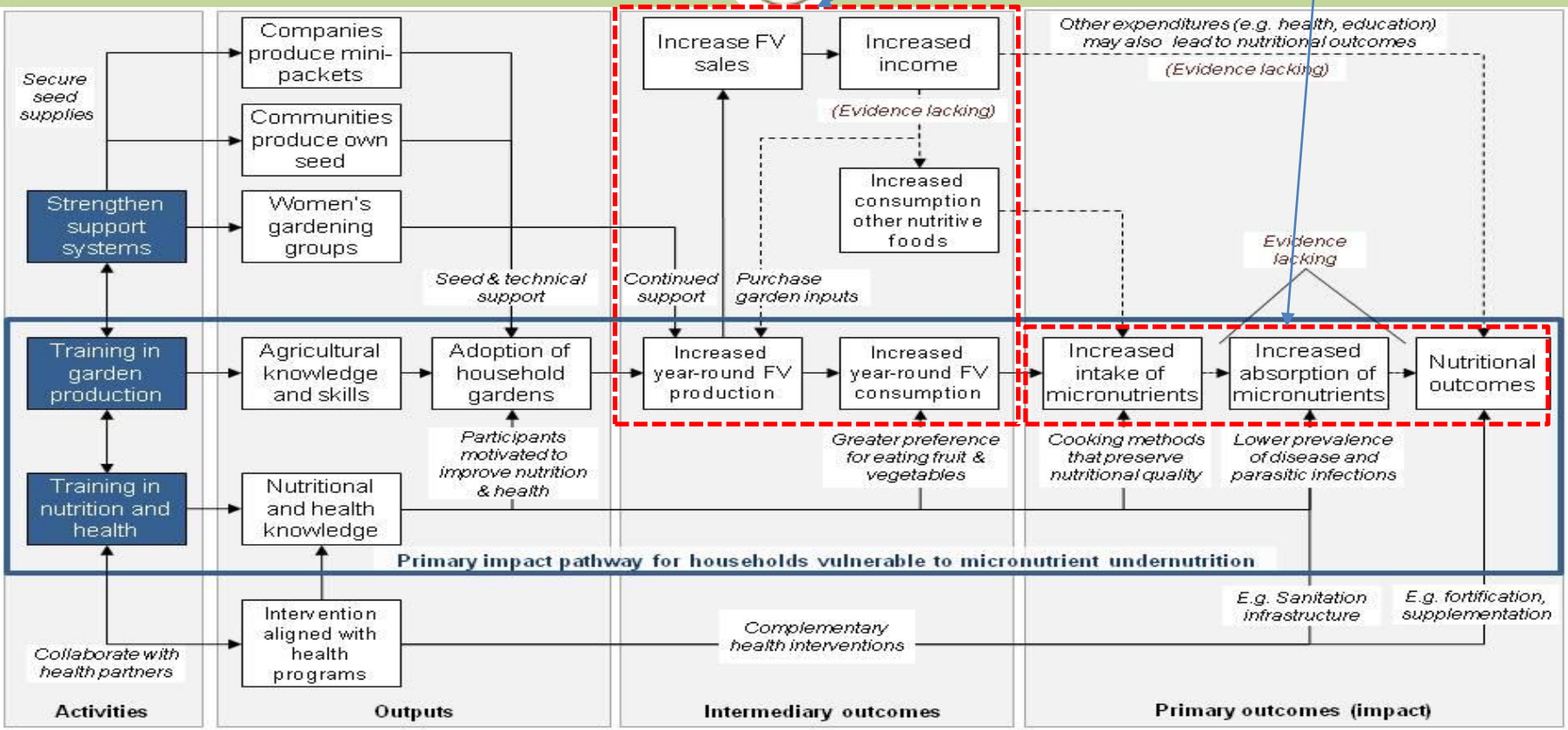


Intervention design

Interventions	Outcomes
1. Garden production	a. Diverse vegetables of both OP and hybrid types suited to location b. Good agriculture practices
2. Nutrition and health	a. Knowledge about health and nutrition from garden production b. Knowledge and practice of sanitation
3. Support Systems	a. Supply of quality commercial seeds b. Support from community and strengthened community groups

Theory of change

Data captured by baseline surveys to understand the choices made by households



Secondary outcomes that could increase impact:

- Gardening skills used in commercial fields
- Project benefits help to empower women
- Conservation of traditional species in household gardens
- Outputs spread to neighboring households and communities
- People realize economic opportunities in agriculture, nutrition/health

Secondary outcomes that could reduce (or have negative) impact:

- People start using pesticides in household gardens
- Women have less time for personal and family care
- Loss of traditional species
- Intense knowledge needs impede the diffusion process

FV = Fruit and vegetables

HG Sustainability

- Partnering and long term commitments critical
  - Implementing and scaling partners
  - Research Partners
  - Enabling and supporting institutions

HG Sustainability - Cambodia

Implementation

Research

Institutions

The Cambodia Landmine Museum and Relief Center

THE HANDA FOUNDATION

EAST-WEST SEED INTERNATIONAL

Scaling approaches

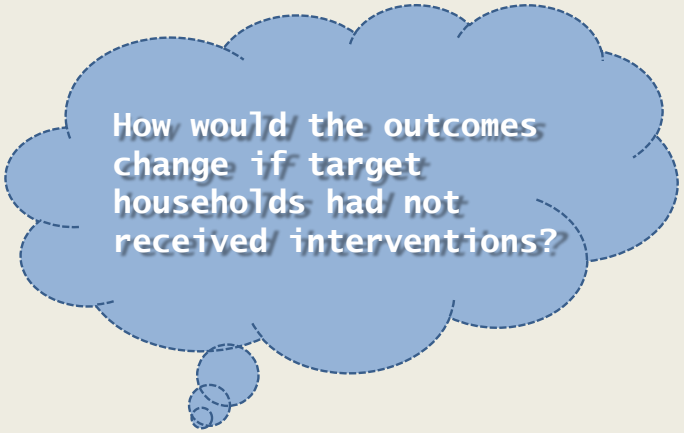
- Direct training of end users
- Hub-spokes model with community based trainers (CBT)
- Best practice models – demo sites
- Combination of some or all approaches
  - This is the Cambodian project model

Impact Evaluation

- At the World Vegetable Center we are interesting in finding out which interventions have worked and which have not through impact evaluations

- Household garden projects are suitable for applying a randomized controlled trial design to assess impact

- Randomization at the village level to avoid spill over effects….as much as possible



- Villages are assigned randomly to one or more intervention groups or a control and baseline data are collected before and after implementation (endline)
  - Primary indicators: vegetable consumption and dietary diversity; anthropometric and clinical signs
  - Secondary indicators: food and non-food expenditures (proxy for income), women's empowerment and vegetable production

An update and some innovations from Cambodia

- Experimental approach to Year 1
- Digital surveys through mobile devices
- Extensive use of GIS for analysis
- Moringa oleifera included in gardens
- Strong data analysis and trend spotting

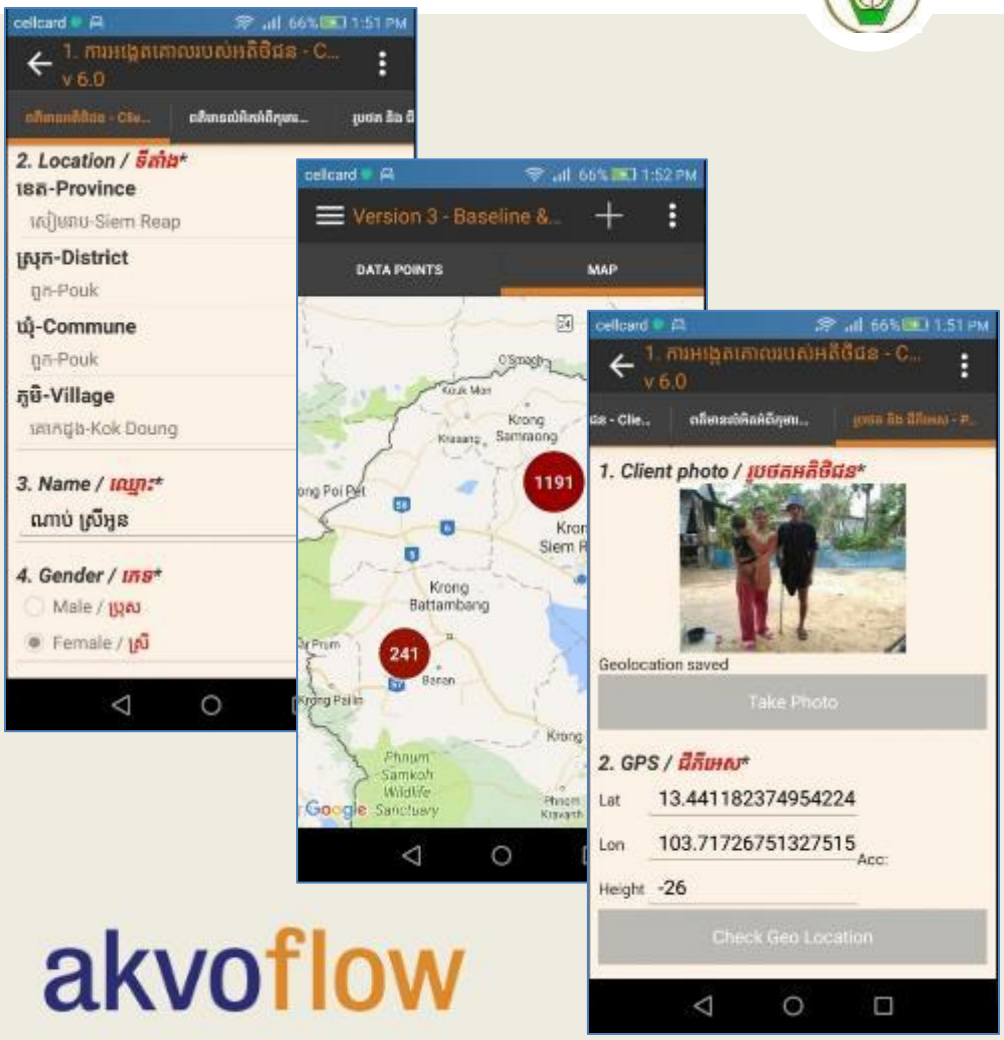
Experimental approach to Year 1

- Achieved over 1400 HHs across 6 districts in 2 provinces in Cambodia
- Full household garden training with over 26,000 individual seed packets distributed through seed kits
- Nutrition training in partnership with SNV Cambodia

- Experimentation:
  - Vegetable variety testing – 12 high nutrition vegetables with up to 60 different lines from East West Seed, Trang Nong, World Vegetable Center lines, local varieties and other companies – Field day September 12, 2016
  - Rotation testing according to different garden sizes – 6 x 6 meter, 10 x 10 meter
  - Wild zone perennial household gardens – incorporating spatial, temporal and species diversity to supplement the annual high rotation turnover project gardens

Experimental approach to Year 1

Digital surveys through mobile devices



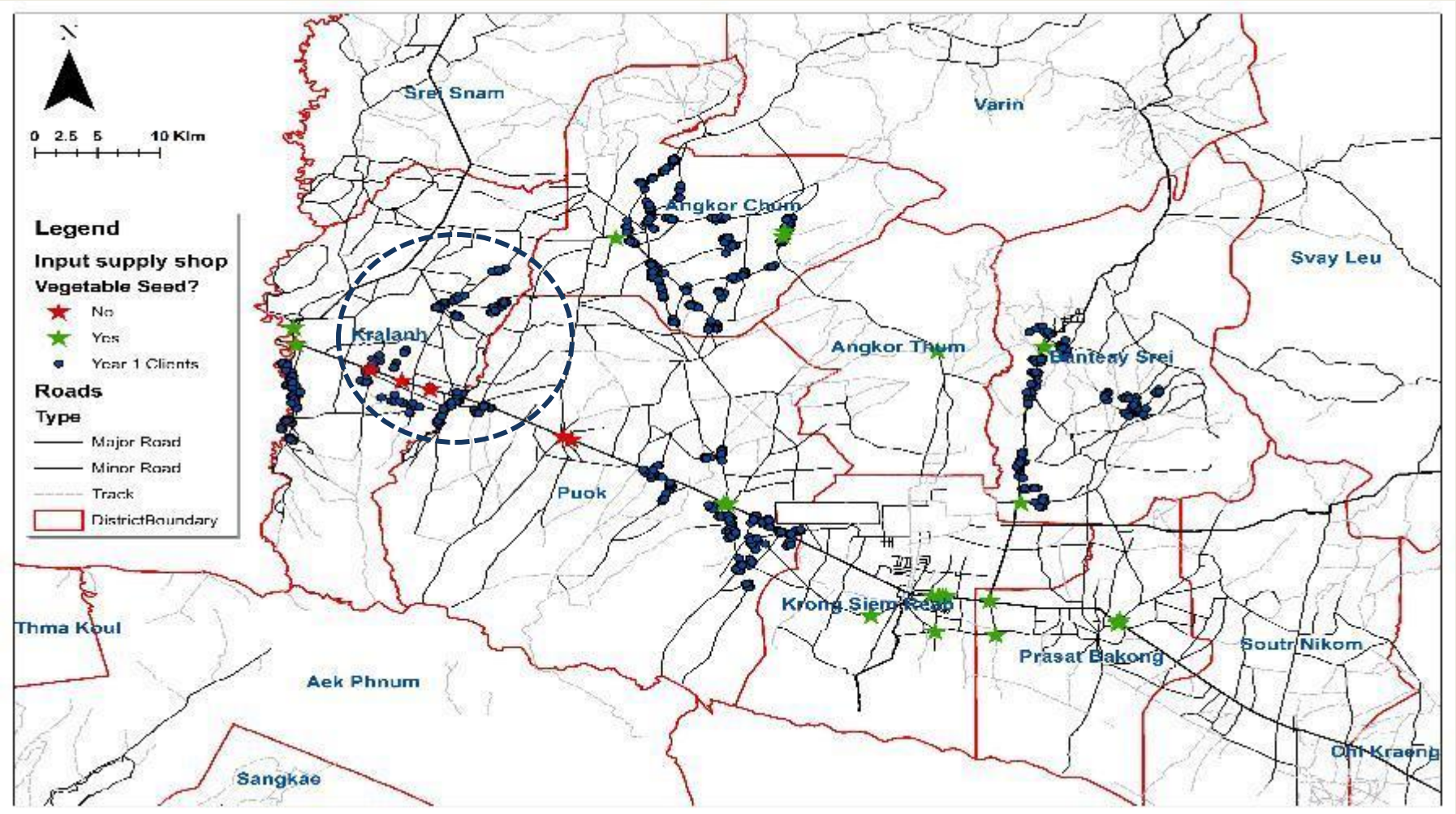
akvoflow

Partnership with Akvo using a multi-language tool for collecting, evaluating and displaying any quantity of geographically referenced data - using a simple Android smartphone app and an online dashboard.

Household garden clients for example, can be surveyed and returned to many times during the project to collect additional or updated data, such as training activities or technical assistance.

- Fast
- Flexible
- Simple interface
- Online maps
- Phone network not needed

Extensive use of GIS for analysis



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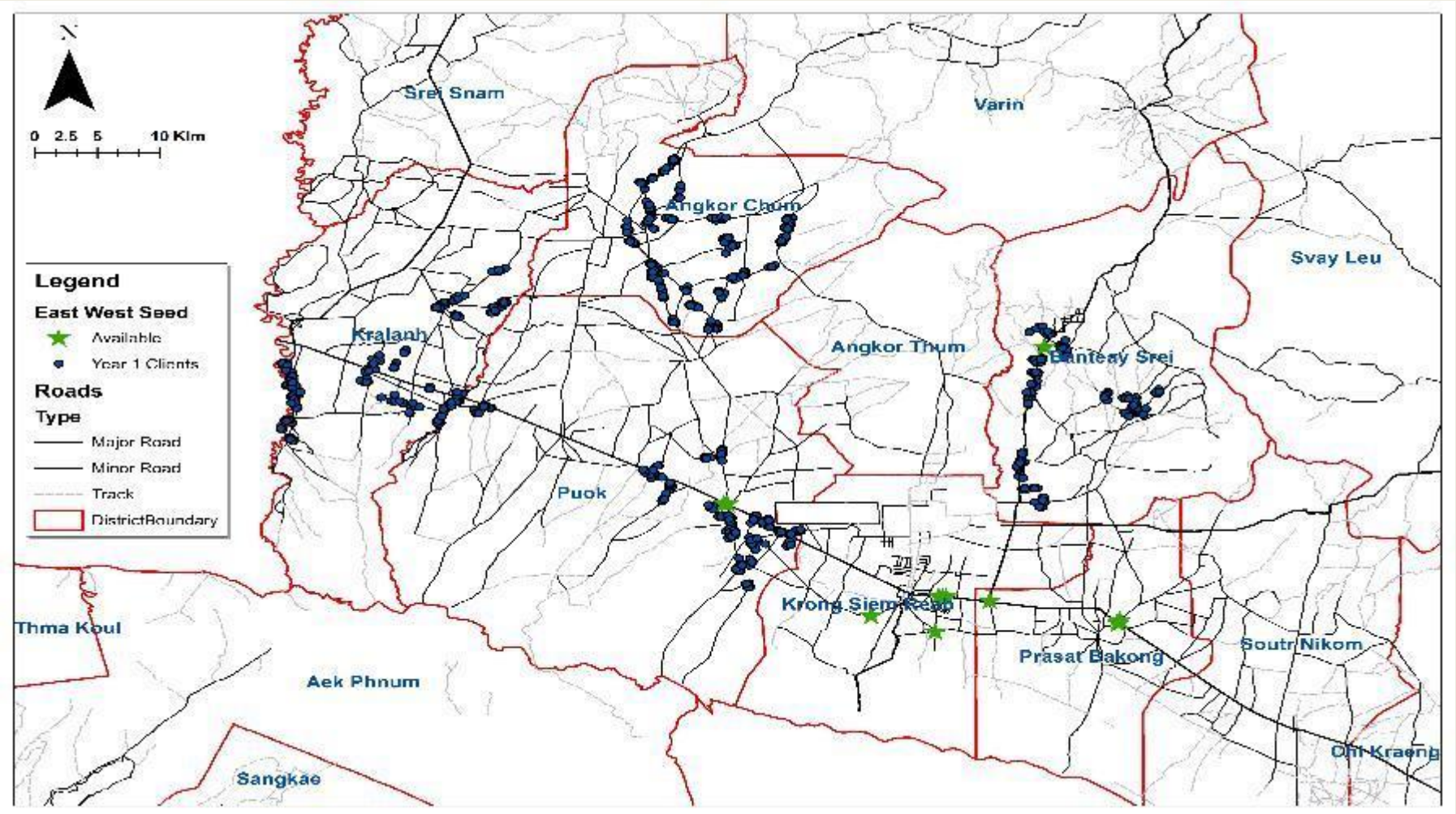

Moringa oleifera included in gardens

- Use of moringa as a living fence around household gardens: combined effect of fresh leaf supply and reduced use of poles cut from surrounds
- Distribution happening now of over 21,000 moringa seedlings – experiment this year, perhaps seed next year – a logistical challenge at the moment to distribute to six districts over two provinces – next year three times that as we scale!
- Collection of varieties of moringa from Cambodia and Thailand

Strong data analysis and trend spotting

- Over 6300 data points with rich attributes collected in 3 months from 1433 clients – Akvo Flow:
  - There is need for "data science" as the data expands over the remainder of the project. If one extrapolates 3 months of data collection to 24 months, by 7 times as many clients, the data being collected explodes!
- Exploratory use of data analysis tools such as "R"
  - R packages for analysis; Shiny and Slidify for communication
- "Big Data" is an emerging area in the development sector and may bring enormous possibilities to our understanding of complex agricultural, social and economic issues previously not possible to interpret.
- Akvo and the Cambodian project to conduct soil and water quality testing to measure pH, nitrite, nitrate and phosphorus through calibrated colour chart matching using the phone camera

Thanks for your interest!

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