One Acre Fund

Farmers First

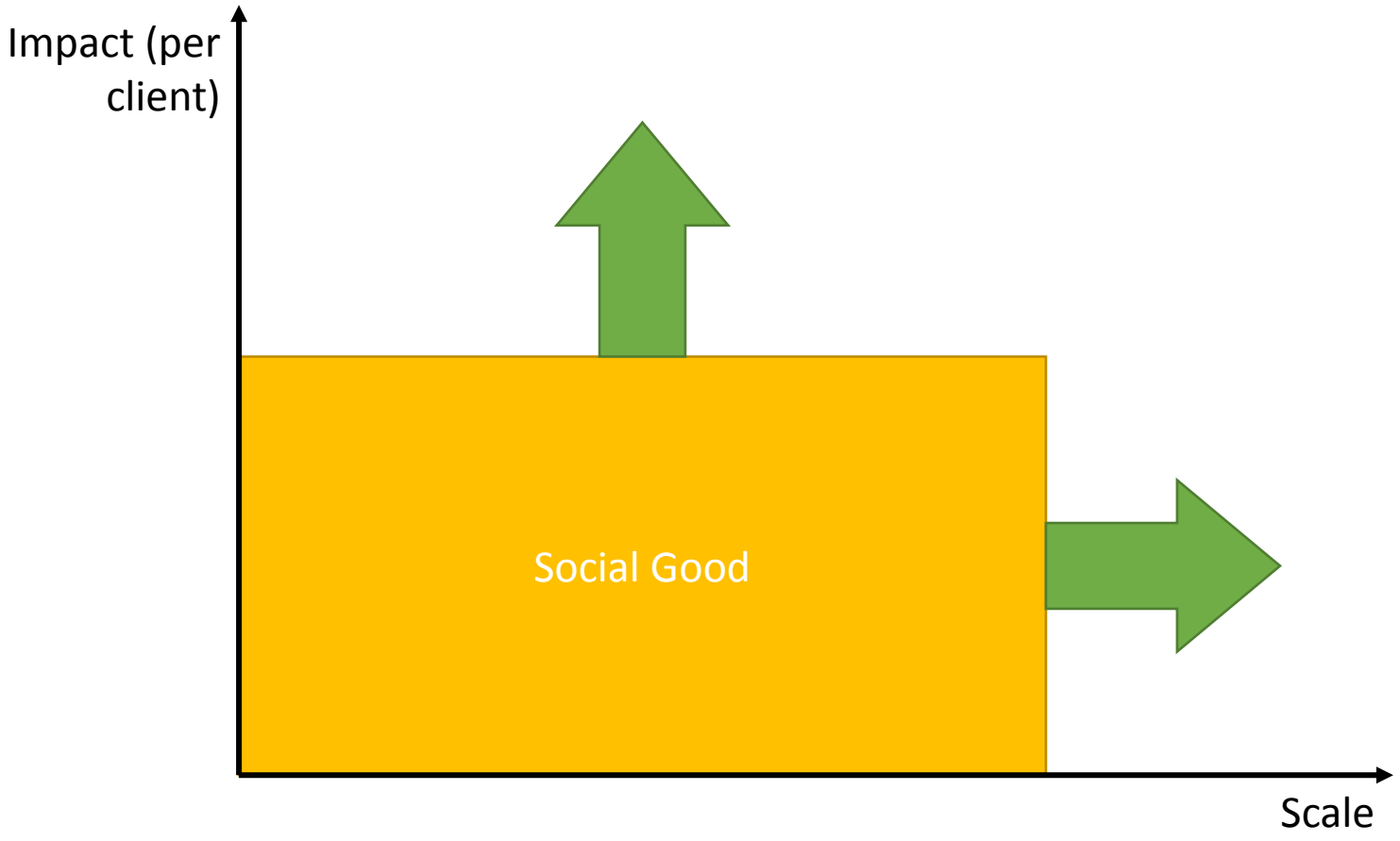
Summary

- **Why are we all in this room?**
  - Our shared mission and what we can learn from each other
- **The example I know best: One Acre Fund**
  - Basic background on our program
  - How we do research in the field
- **The task ahead of us**
  - My opinion on how we should do research

Why are we here? Our shared mission

Farming is the dominant economic activity of the world's poor

We need to work together more



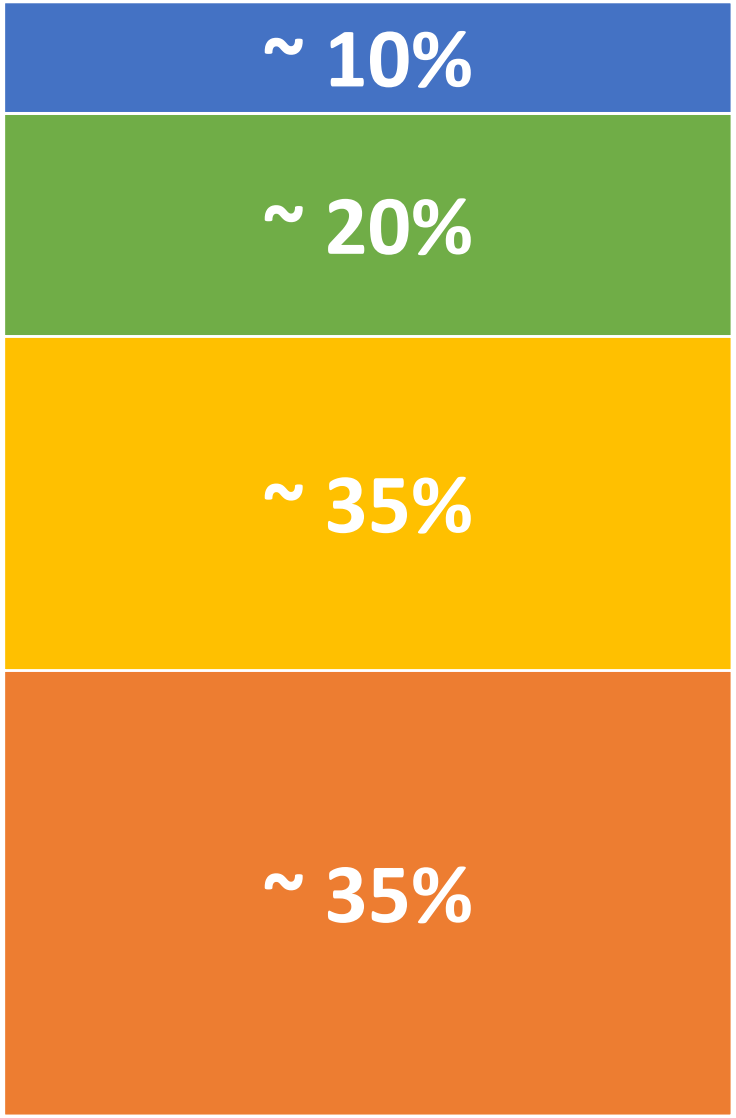
Researchers: Thinking about impact but not about scale

NGOs: Thinking about scale but not about impact

One Acre Fund

- **We serve one-acre farm families in East Africa**
  - Staple crop farmers in Kenya, Rwanda, Burundi, and Tanzania
  - Comprehensive model that doubles farm profit per acre
- **We are a non-profit, but operate like a business**
  - Farmers pay for services, largely covering field costs
- **8 years old—starting initial scale-up**
  - Currently serve 175,000 farm families with 2,000 staff—98% who live alongside our families in rural areas
  - Will directly reach at least 1 million families by 2020

Keep it simple, stupid: three things will change the world



Mechanization, GMOs, pesticides, herbicides, economies of scale, further plant breeding, soil analysis, micro-soil analysis, irrigation

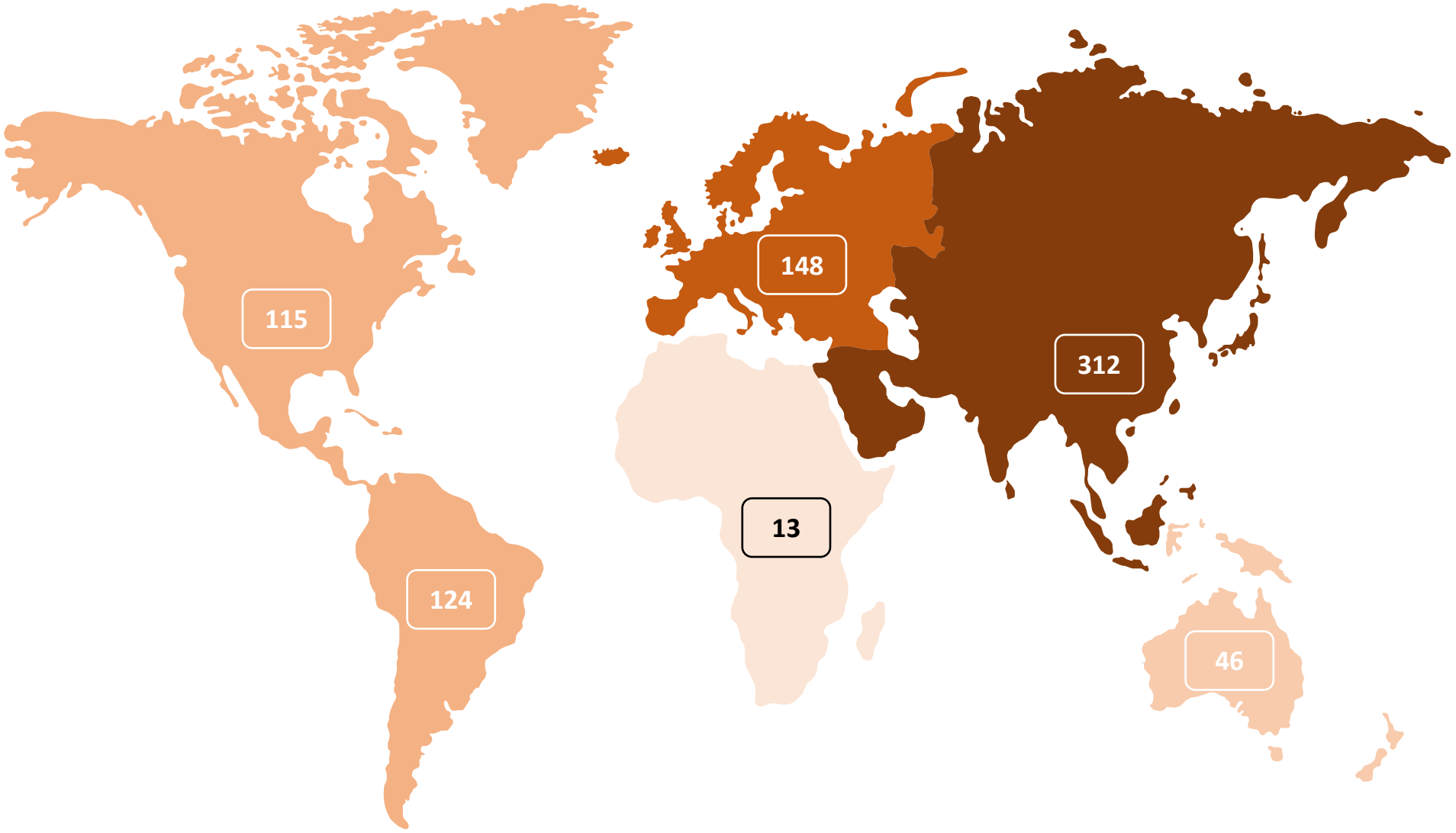
Better farming practices

Fertilizer

Improved seed

Source: Duvick (1992), Fuglie et al. (1996), Cardwell (1982)

World fertilizer use (KG per arable hectare)



Source: World Bank, World Development Indicators

Innovation 1: Complete “market in a box” for one-acre farmers

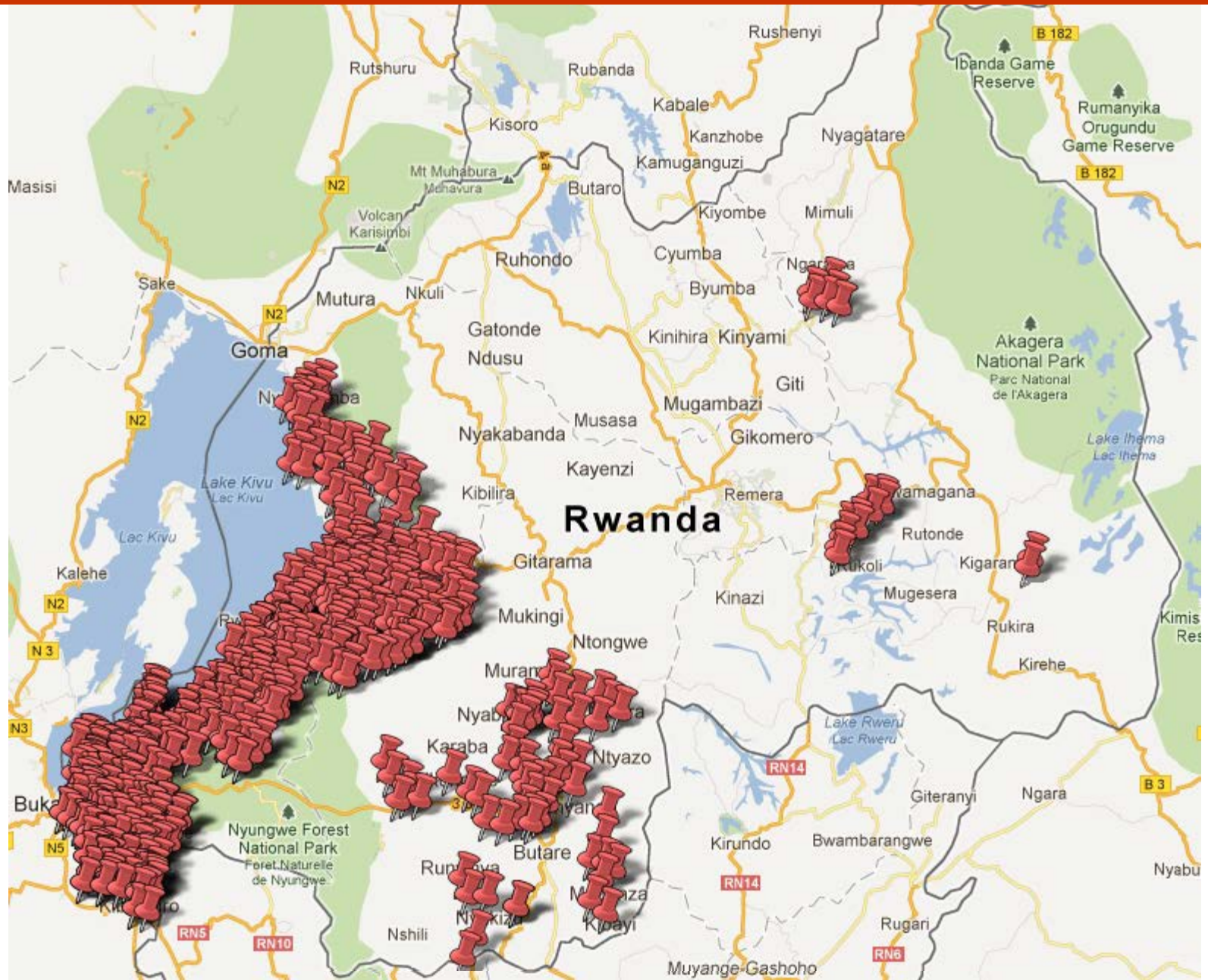
Producer groups

Productive asset loan (seed & fertilizer)

Training

Post-harvest support

Innovation 2: Rural distribution



Our program is growing very quickly

Core program 2013

- 180,000 farmers
- $120 income/farmer
- $30 donor cost/farmer

Core program 2016

- 450,000 farmers
- +$135 income/farmer
- $20 donor cost/farmer

~$50M direct value created for farmers

+

Gov't Services 2016

- 1,500,000 farmers
- +$45 income/farmer
- $5 donor cost/farmer

~$50M direct value created for farmers

+ *Building capacity of African gov'ts for nationwide, sustainable change*

+ *Proof points for other African gov'ts to reform agriculture systems*

In addition to a core program, we have a large R&D operation

Direct field operation

Producer groups

Productive asset loan

Training

Post-harvest support

Research operation

One Acre Fund's R&D approach

- **Product Selection Criteria**

Impact	Adoptability	Simplicity	Operability
Can a product significantly improve a client's income?	Are a significant number of clients willing to purchase the product?	Is the product simple enough that all clients can achieve a consistent result?	Can we scale the product with minimal increase in operational complexity?
>$20 incremental income (after repayment) per adopter	>50% of farmer network expected to adopt	Level of skill required to adopt technology successfully	Level of operational complexity at scale (FTEs or $)

One Acre Fund's R&D approach

▶ Product Testing Framework

	Phase One	Phase Two	Phase Three	Phase Four
# Farmers	0	100-300	1,000+	50,000+
Trial Type	Research station	Trial District	1-2 Core Districts	Full-country rollout
Testing Priorities	Initial impact estimates, initial simplicity estimates	Confirm impact and simplicity under real farmer conditions, initial adoptability and operability estimates	Confirm adoptability and operability at scale	Finalize all four criteria

Sample innovation: grevillea trees

- **Long-term farmer income (3-6 years)**
- **Many benefits**
  - High demand for timber
  - Household uses
  - Soil and environmental health
- **Behavior change**
  - Most farmers buy trees from nurseries with limited scalability
  - Farmers harvest trees too quickly

Sample innovation: grevillea trees

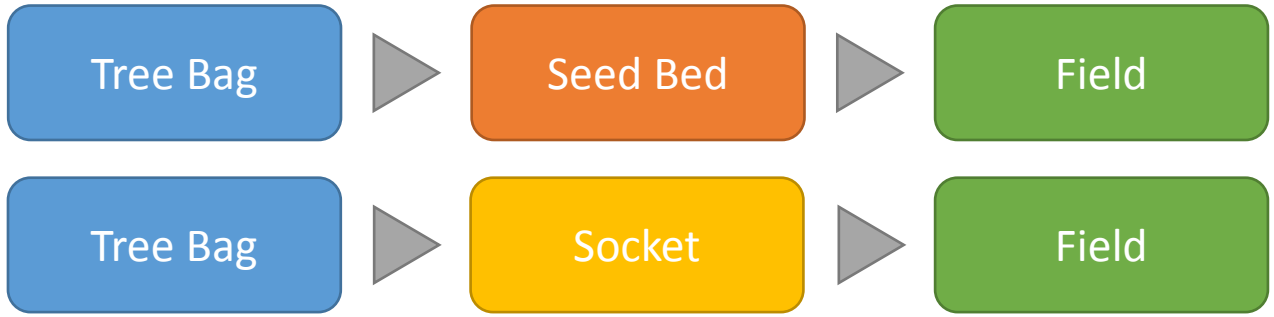
Impact

- Tested dozens of tree bag and tree socket soil mediums and fertilizers
- Goal: consistent planting method to produce as many seedlings as possible
- Each viable seedling translates into a tree worth $10+ within five years

Sample innovation: grevillea trees

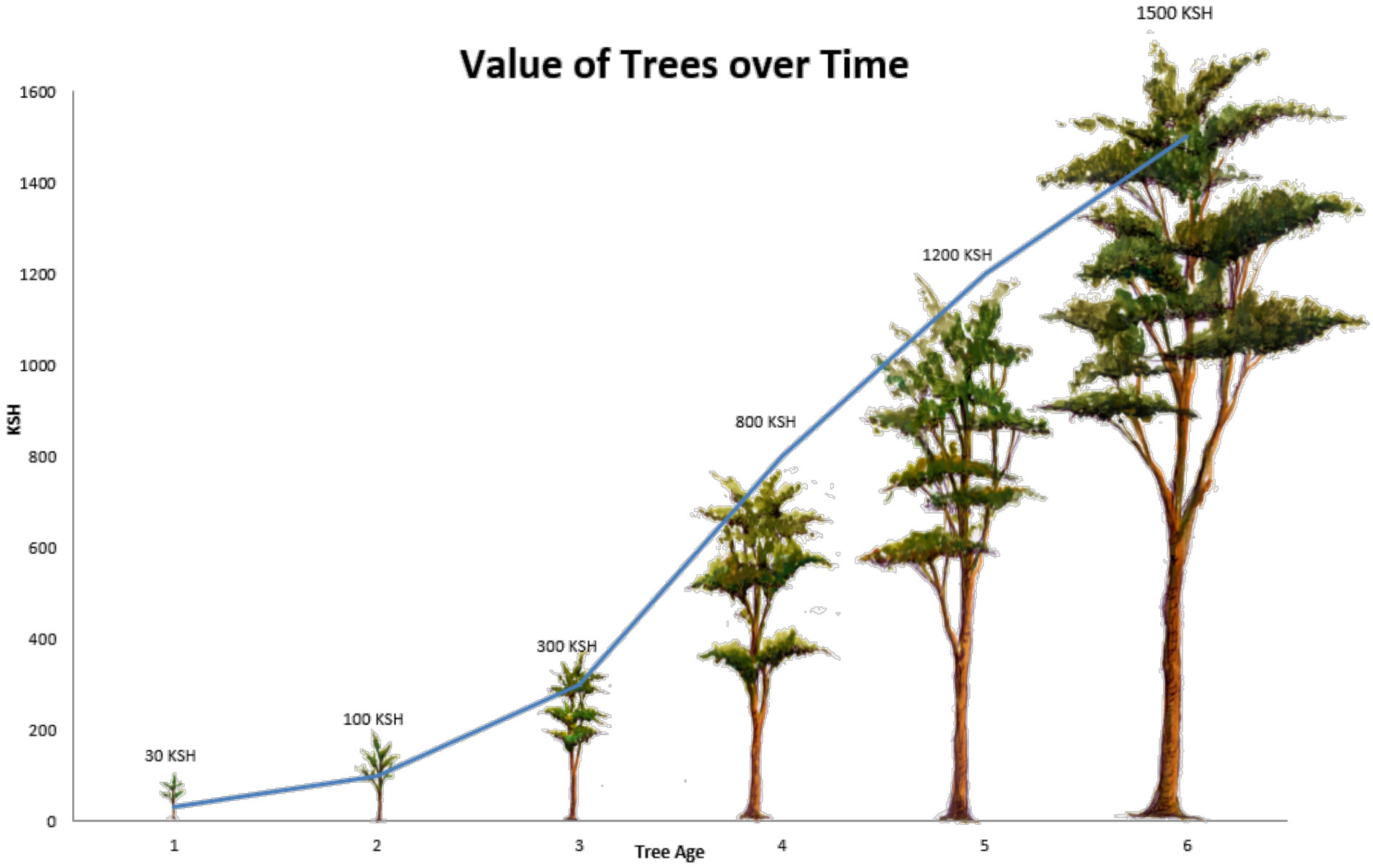
Adoptability: Planting method

- **Two critical paths:**

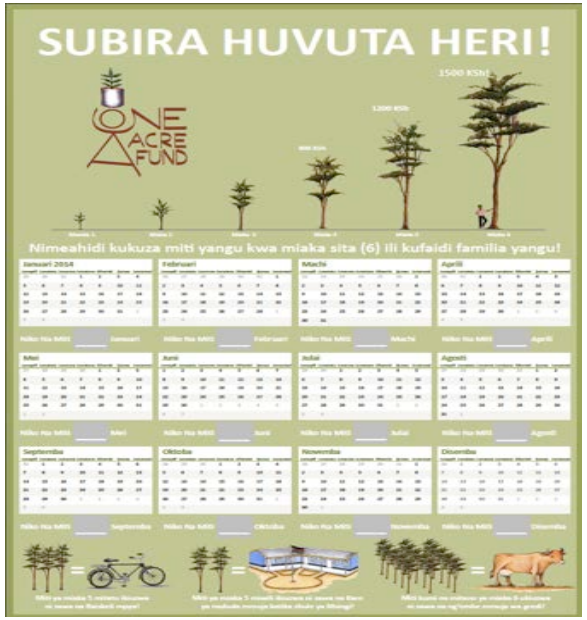


- **We tested both configurations with 500+ farmers**
- **Socketing (pictured) looks like the best option**

Sample innovation: grevillea trees



Sample innovation: grevillea trees



Adoptability: Behavior

- **High temptation to sell early**
- **Behavioral interventions**
  - Tree pledge signposts and calendars (pictured) to remind farmers to hold onto trees ("Patience Brings Success")
  - Tree "values training" emphasizing long-term uses of trees
- **Ongoing Phase 1-2 trials**

Sample innovation: grevillea trees

Operability

Seed testing

Warehouse operations

Seed packaging

- **We created the supply chain from scratch**
- **Not that hard—minimal inputs requirements for grevillea**

What is next? There is a lot of work left to be done

- **Sub-Saharan Africa alone has 220m+ undernourished people**
  - The majority of undernourished people are farmers whose profession is to grow food.
  - We have a lot of work left to do.
- **NGOs are producing scale, but little impact.**
- **Researchers are producing impact, but no scale.**
- **We need to learn from each other.**
  - We see the world very differently
  - But we share the same goal

Possible lessons for each other

The NGO sector

- **Care more about impact**
  - Our organizations exist to produce impact. It is insane that we do not measure it more.
- **Increase R&D capacity**
  - More trials, more people >> better results for farmers

For Researchers

- **Abandon academia!** We need you in the field.
- **Seek more realistic conditions**
  - Larger N, larger land sizes
  - Actual farmer conditions
- **Work with <u>scalable</u> partners**
  - Partners will help you scale your impact *after* you publish the paper

- **Questions?**