

## Implications for conservation agriculture

Strategies for scaling up conservation agriculture need to recognize which local actors are critical to local knowledge development and transfer and target them for special consideration in any communication campaigns. These findings offer a starting point for identifying the individuals who are likely to be key agents in whether or not the promotion of conservation agriculture will be successful.

In many ways, farmers in Kapchorwa appear primed for adopting conservation agriculture practices as a system. Farmers and non-farm agents appear to be strong supporters of the idea that rotating crops is best practice and that tillage causes land degradation. However, there is a group of non-farm agents who are not in agreement with the idea that tillage causes land degradation, and many farmers are quite neutral on the on the idea of maintaining permanent crop cover.

The network map of information flows for Kapchorwa, highlights that many of the central actors support the belief that tillage causes land degradation. Clearly in the position to be most influential is the local agrovet stockist who links the greatest number of farmers and non-farm agents. Nevertheless, there are still a number of ties for degree and betweenness centrality. This indicates that there are a number of equally well-connected agents. Indeed, extension agents have a relatively important role in the network as indicated by the degree and betweenness centrality of the NAADS coordinator.

Overall, farmers may overall be neutral as to the adoption of conservation agriculture production systems, but several key agents are in position to be supportive of such a change in practices. They will be crucial to any success strategy. However, a few important peripheral actors are not on board, including the bank, tractor owner, and surprisingly the Uganda Wildlife Authority. These latter actors pose a potentially significant opposition and should be included in any discussions of the issue.

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## Network opportunities for promoting conservation agriculture

### Kapchorwa, Uganda



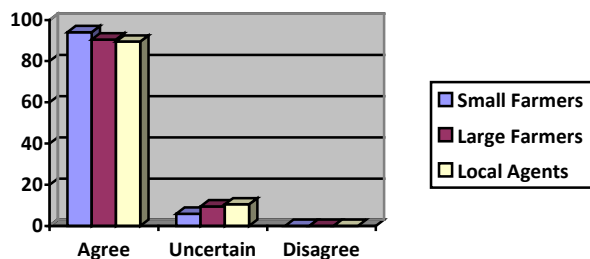
What are the opportunities and constraints in local agricultural production networks to introduce and scale up conservation agriculture? In Kwoisir Sub-county, 97 farm households were surveyed about their network contacts and beliefs about agricultural production. Follow-up interviews were conducted with 19 of the most frequently-reported farmers' agricultural production contacts. Based on these findings, this brochure:

1. Identifies central actors in the Kapchorwa/Kwoisir Agricultural Production Network
2. Describes perspectives on agricultural production and predispositions for conservation agriculture
3. Maps information flows and beliefs about whether tillage causes land degradation

## Beliefs about agriculture production

In order to understand the predisposition of farmers and agents toward conservation agricultural production practices, we asked them whether they agreed with three statements concerning the principles of conservation agriculture. Believing that there may be differences in perspective according to farm size and position as various community agents/service sector providers, the following graphs report the percentage of respondents in each

### Rotating crops is best practice:



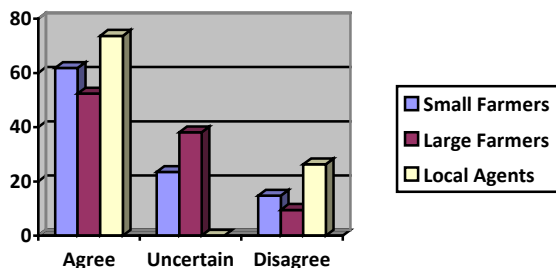
category. Small farmers have three acres or less in cultivation.

We did not find compelling evidence of interdependence among these beliefs. Farmers and non-farm agents consider them independent concepts, not a set of behaviors associated with a particular style of agricultural production. There is a widespread perception amongst agents and farmers that rotating crops is a best practice.

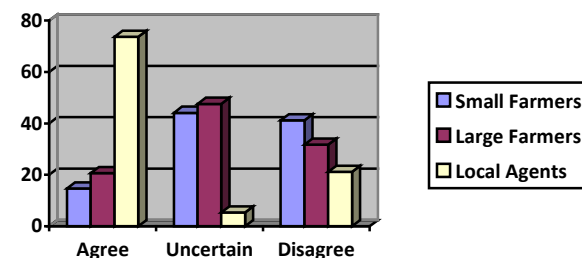
Furthermore, the majority of farmers agree that tillage causes land degradation. However, a considerable portion of large farmers are undecided on this issue.

A different story is revealed about maintaining a permanent crop cover. While the large majority of the service sector believes maintaining a crop cover is good, many small and large farmers remain unconvinced and a considerable portion of both farming populations disagree.

### Tillage causes land degradation:



### One should maintain a permanent crop cover:



## Analyzing network structure

In analyzing Kapchorwa's agricultural production network, we identified actors who had the highest number of contacts, and which actors exercised the most control over the flow of information between actors in the network. In network analysis, these two measures are known as degree and betweenness centrality. The table below presents the top-scoring actors for each type of measure. The actors who have the most contacts do not necessarily exercise the most control over the information flows between contacts. The chief, NAADS coordinator, women's group leader, and local agrovet appear in the top four scores for both measures. These actors represent key individuals to be engaged in efforts to promote knowledge of conservation agriculture production and practices.

### Central Actors in Kapchorwa/Kwosir Agricultural Production Network

Agent	Degree Centrality	Rank	Agent	Betweenness Centrality
NAADS Coordinator	20	1	Local Agrovet Stockist	28.25
Chief	20	2	Women's Group Leader	16.93
Counselors	19	3	Chief	14.19
Local Agrovet* Women's Group Leader*	18	4	NAADS Coordinator	14.15

\* Tied for fourth.

