

Surveying Commercial & Subsistence Agriculture

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INTRODUCTION

At the last count agriculture employed twice as many people as the mining sector and about four fifths of the number employed in the manufacturing sector. Together with domestic work, farm work is often seen as employment of last resort, a quasi-formal sector on the fringes of respectability. Much has been done since 1994 to improve job security, working conditions and, since 2003, pay for farm workers, but inadequate farm data allow only the sketchiest tracking of this process.

Income dynamics in agriculture are important for various reasons: On the commercial side, farming has put been under pressure by falling product prices in a global market and rising costs of production (Barrientos & Kritzing, 2004). For land reform reasons it is important to know if commercial farming is viable. At the same time workers are supposed to have benefited from farm labour market reforms, but with a few small exceptions (Du Toit & Ally, 2003; Conradie, 2007) we simply do not know to what extent this has happened. On the subsistence side, ASGISA has identified agriculture as a key industry in the second economy (Mlambo-Ngcuka, 2006). We need good baseline data on subsistence agriculture and ongoing collection of reliable statistics to monitor the success of this initiative.

Section 2 briefly discusses some of the problems with existing agricultural data while Section 3 provides an overview of South African Agriculture. Possible questions are discussed in Section 4.

PROBLEMS WITH EXISTING FARM DATA

Existing household surveys have notoriously poor agricultural coverage. On the commercial side, the Abstract of Agricultural Statistics and the Farm Census provide much better coverage. However, there is a consistent difference of about 25 percent between the two estimates of total agricultural value produced by these two surveys. For example, according to the Abstract agriculture was worth R68 billion in 2001/2002 (NDA, 2006), while the Farm Census recorded a total value of farm output of R53 billion (StatsSA, 2004). One of the possible reasons for this discrepancy is that the Abstract collects data at an industry level, directly from producers' organisations, while the Farm Census targets individual farmers, through a postal survey. Another possible reason for underreporting is that farmers may be afraid that the data they provide will be used against them in some way.

Poor agricultural statistics are often blamed on the lack of access to commercial farms, and it certainly is an issue in some cases (e.g. Du Toit, 1993; Du Toit, 2003).

The importance of who asks the questions is illustrated by the difference in response rate of four surveys of the fruit industry of the Western Cape. In 1994 (at the height of the transition tension), the Sociology Department at the University of Stellenbosch did a comprehensive survey of employers and employees on fruit farms. Their sample, taken with UNIFRUCO's blessing from its list of fruit exporters, produced a 93.5 percent response rate (Kritzinger & Vorster, 1996). Four years later a similar sample produced only a 45 percent response rate for a survey conducted by the Centre for Rural Legal Studies in Stellenbosch (Sunde & Kleinbooi, 1999). It is difficult to assess the success of 2000 survey conducted by Programme for Land and Agrarian Studies at the University of the Western Cape, but they have only managed to contact 77 farms (including 24 predominantly wine farms) of the 101 fruit farms surveyed in 1994 (Du Toit & Ally, 2003). My panel of fruit in the Hex River Valley has had an initial refusal rate of 10 percent and has a cumulative attrition of 7.5 percent after three waves. The sample of wine farms has had an initial refusal rate of 2.5 percent and has a cumulative attrition rate of 14 percent after four waves. Whatever the difference is between me and Stellenbosch Sociology on the one hand, and PLAAS and CRLS on the other hand (race, language, institutional reputation, support from organised agriculture, etc), this difference is real and should be taken into account when deciding to contract out interviews or not.

Once one has sorted out the access problem, the data may also suffer from other drawbacks, such as the absence of direct farm worker voice (Wilson, 1977). According to Hendrie (1977) the biggest problem with collecting reliable statistics is that questions are unclear, if not unanswerable. For example (Wilson et al, 1977: 2):

“Inconsistencies can arise from the way farmers complete the census questionnaires are illustrated by van der Vliet and Bromberger, (see chapter 8). Ten farmers in the Albany district were asked what they had recorded as the number of casual workers in employed on 31 August [the reference date used in the census]. Three had filled in zero (no casual workers on that specific day, seven had given a daily average for the month of August, and one had given an average figure. In total, the 10 farmers had recorded about 45 casual workers; while the answers to other questions show the actual number of casual workers employed was of the order of 270, and the workers were responsible for 69 man-years of labour.”

Face-to-face interviews will no doubt go a long way to avoid the misunderstanding described here, if the enumerator only knows what to look for. It is important to note that each of the interpretations made were equally valid, and that what we, the users of the data, would really want is an average for the year ending on 31 August. Unfortunately such an average does not exist in a largely uncomputerised world of farm labour records. Data for a particular day is the easiest to find, and at a squeeze one could call for the number of casual workers 'normally' employed, which would produce a guess in the order of a median.

While the Albany example illustrates the problem with a poorly phrased question there is always the issue of the unanswerable question, for example to ask a commercial farmer what the average age of his staff is, or a subsistence farmer what percentage of his maize crop he keeps as grain and what percentage he consumes as green mealies. In both cases the respondent could take a flier at the answer, but there

is no way in which these answers can be taken seriously. In addition, such guessing early on might 'contaminate' the rest of the interview so that the respondent starts guessing stuff that he or she could look up because they feel that your questions reveal that you know very little about farming in any case.

OVERVIEW OF AGRICULTURE IN SOUTH AFRICA

Agriculture is traditionally divided into livestock, field crops and horticulture. Field crops consist of grains, legumes, oil seeds, fibres and cotton, while horticulture includes fruit and vegetables. Commercial agriculture, worth R70 billion annually at current prices, is split roughly equally into livestock (R30 billion), field crops (R16 billion) and horticulture (20 billion) (NDA, 2006). Livestock value consists mostly of chicken and egg production (R13 billion), beef production (R7 billion) and dairy (R5 billion). Field crops are dominated by maize (R 10 billion), sugar (R3.5 billion) and wheat (R2 billion) while horticulture consists of about R4 billion each of deciduous fruit, citrus and vegetables (mainly potatoes). Most of South Africa's farm land is only suitable for extensive grazing (84 million hectares), but we also have 13 million hectares of arable land, of which 1.35 million hectares are irrigated (NDA, 2006). Based on the number of commercial farms, the most important provinces for agriculture are the Free State (10 300 farms), Western Cape (8 300 farms) and North West (7 600 farms) (NDA, 2006).

The distribution of agriculture is determined mainly by climate. In terms of rainfall, one can draw a straight line through Bloemfontein and Port Elizabeth. To the west of this line average expected precipitation is less than 500 mm per year and to the east it is more than 500 mm per year. The top panel of Figure 1 shows semi-desert to west of this line and grassland and wooded savannah to the east.

An average of 500 mm is often quoted as the minimum requirement for feasible dryland crop production, so one could say that crop production would only be feasible east of Bloemfontein – Port Elizabeth. This is indeed confirmed by the bottom panel of Figure 1, which shows that most of the areas between the Orange River and Gauteng has been converted into intensive (dryland) crop production. Sugar and subtropical fruit are found in KZN and along Eastern escarpment. The only departure from this pattern is seen in the south-western corner of the country which has a winter rainfall pattern and also a higher average rainfall than the rest of the Western half of South Africa. The higher average rainfall in the winter rainfall areas permits dryland wheat production in the Ruens and Swartland. The rest of the winter rainfall is stored to be used as irrigation for the horticulture practiced along the Cape Fold Mountains. These crops have to be irrigated because they are grown actively in summer when it does not rain in that part of the world.

Livestock production is dominated by small stock (mutton, wool sheep and goats) in the semi-desert areas west of Bloemfontein – Port Elizabeth. Cattle dominate east of the line. Dairies for fresh milk are close to the major population centres as a result of the high volume low value nature of fresh milk and milk for processing is produced in the coastal belt of the southern Cape where high rainfall ensures cheap fodder production. Chicken are also produced close to the urban centres.

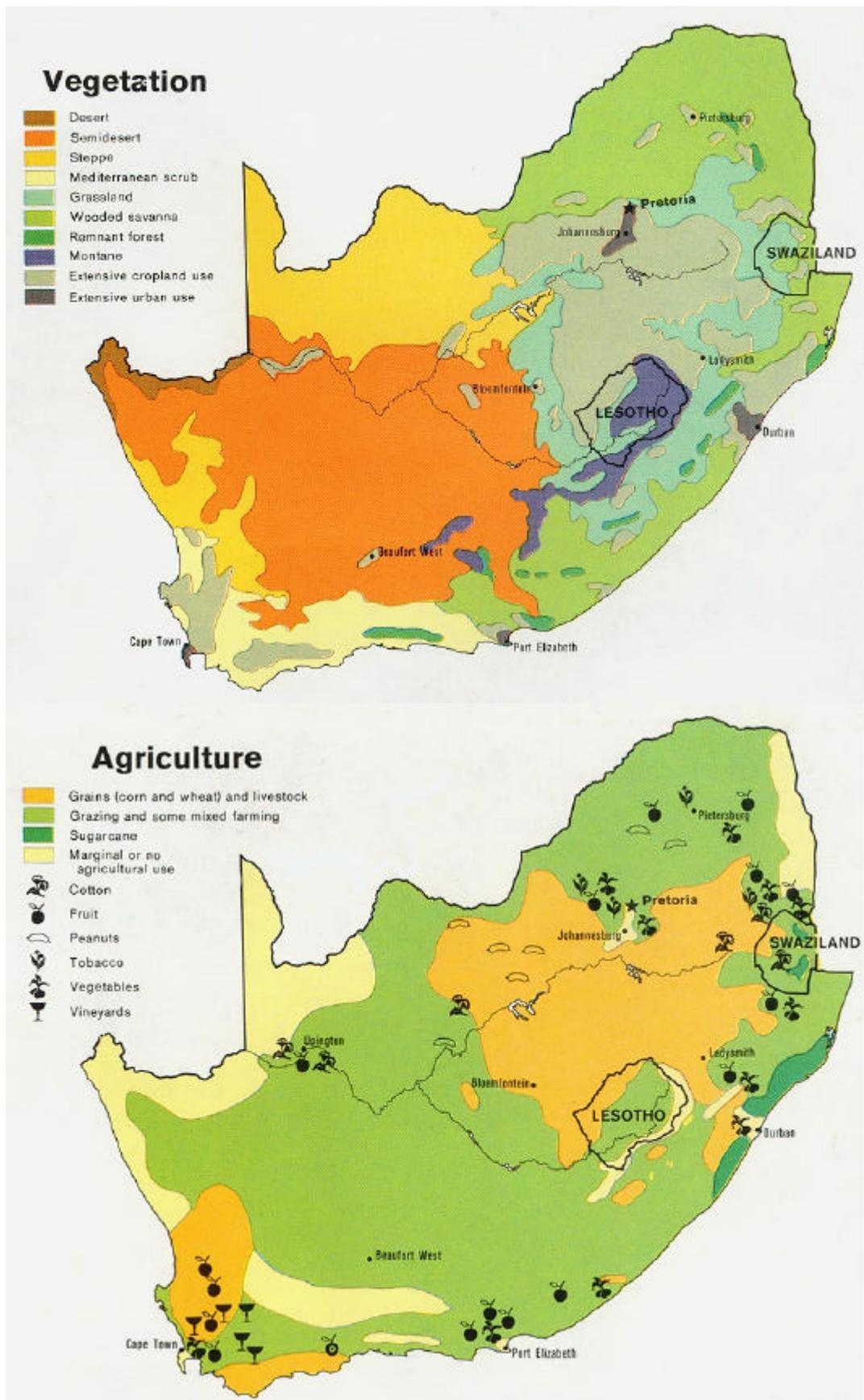


Figure1: Climate and agricultural production in South Africa (Source: University of Texas Libraries Map Collection)

A certain Mr Robinson, an Addo citrus grower, once gave me good advice: “Girly, in the Eastern Cape it is either hunting season or cricket season, and your interviews should not interfere with either.” This was facetiously meant, and understood, but the message is an important one – timing is everything in getting good farm data. Figure 2 shows one has the best chance of getting your questions answered.

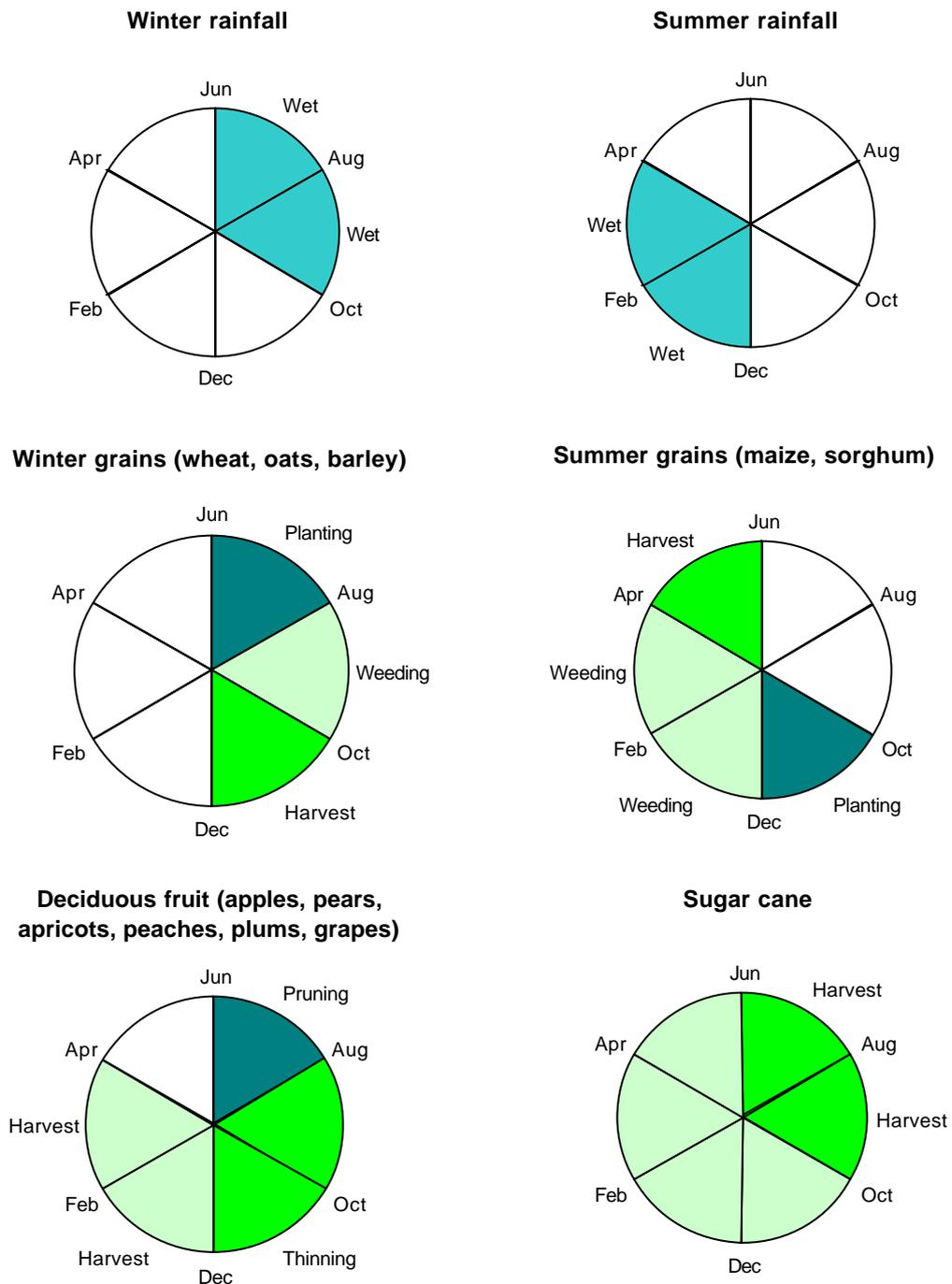


Figure 2: Rainfall seasons and production cycles for selected crops

Planting and harvesting are the busiest times on commercial farms. Casual staff are often brought in to assist in these periods, and the larger workforce, the use of specialised harvesting equipment or the running of a packing operation, take up all the attention of the owner. On fruit farms, the period after during and directly after full-bloom is critical too, because a number of crucial sprays need to go on in a very short period of time. In the Karroo the lambing period is crucial. Some dipping and dosing days are also quite busy, but they can be moved around slightly with sufficient notice. However, the strong seasonality described here and the strong habits of farmers should not be taken to mean that farmers (and their staff) are always too busy to be interviewed. In my experience, most farmers love visits in the quiet season, and good access is just a matter of getting the time of interviews right.

The other important issue with seasonality is that farmers think in terms of production seasons. Farming is the on place where it makes absolute sense to talk about this season and last season, depending on what time of the year you are in the field. Once the sample is drawn the best time can be identified.

SUITABLE INSTRUMENTS FOR SURVEYING FARM PRODUCTION

This section comments on available instruments for commercial and subsistence farming and proposes questions to be included in NIDS. In principle the questions to put in a farm module are straightforward: Land use, crop production, livestock keeping and inputs used in production. On the commercial side the main candidate is the 2002 Farm Census questionnaire (www.statssa.gov.za) and on the subsistence side I look at both PSLSD and KIDS98. The proposed questions come from one of these three instruments, sometimes with minor changes.

There are two main issues to decide on upfront.

1. Can one get away with the same questionnaire for commercial and subsistence production?
2. Does one have to drill down into production methods, or is it sufficient to just understand income (or consumption)?

PSLSD 93 used specialised questionnaires for subsistence and commercial farming. KIDS 98 is a specialised subsistence farming questionnaire and the 2002 Farm Census is really a specialised commercial farming questionnaire, although subsistence production was supposedly recorded with it. The dataset has not been released.

In my mind there is a difference between ‘subsistence’ farming and commercial farming, but it is not primarily characterised by the difference between private land ownership and the use of tribal land. In the broader subsistence category I want to include everybody who does not primarily produce for the market. Of course this group includes the typical subsistence farmer who runs cattle on communal grazing and plant a small fenced garden (as described amongst others in KIDS98), but it also includes urban food gardens, farm workers with the right to keep livestock and people like my mother who runs a huge flower garden ‘for her own pleasure’. The difference between these subsistence farmers and the rest is that they will often not produce

according to efficient techniques, and that you waste your time asking them about prices and values. 'Subsistence' farmers will almost never buy their inputs and will consume the majority of what they produce (although not always).

My mother's large flower garden is maintained by two fulltime gardeners who are both on the farm's payroll. The garden's irrigation system is linked to farm's distribution network and fertiliser and pesticides are taken in unmeasured quantities directly from the farm's supplies. This garden is not at all part of the formal farming activities, so my brother would not fill in any of this information when he completes his census form. My mother would never think of doing so either, since she does not think of her flower garden as being in 'farming' or of the money she occasionally generates for charity as an 'income' and if she was forced to complete the questionnaire she would not now where to begin.

Another 'subsistence' producer, for whom the census form for commercial agriculture would not work, is Booi Johannes, my brother's chief tractor driver. Booi is responsible for most of the pesticide spraying that happens on the farm, and since he is quite mechanically minded, is responsible for the routine vehicle maintenance too. Booi, like most of the other households on the farm, grows a vegetable garden on my brother's land. His vegetable garden is larger than most, because twice a year he borrows a tractor over a weekend to plough. His garden has quite a sophisticated drip irrigation system, which is also connected to the farm's irrigation main. Booi's dripper pipes are salvaged from old tomato fields, and the pesticides he uses are what are left over after he has sprayed the left over pesticides on my mother's rose garden. He and my mother have some sort of deal with seedlings and seeds, but I do not know exactly how it works. I am sure that some of the fertiliser comes from the shed too.

These are just two stories to illustrate the need to be flexible in formulating the subsistence questionnaire. The question of whether one should record production methods is also in a sense answered through these stories. If one cannot get values, then quantities and production methods might be the sensible thing to go for.

❖ SEPARATING COMMERCIAL AND SUBSISTENCE FARMERS

Having argued that one needs a separate module for commercial farming, it begs the question of how one would distinguish between commercial and subsistence farmers. PSLSD 93 does it based on an arbitrary cut-off of a farm income of R20,000, which can be improved on.

Proposal

Ask of all respondents

1. Are you a commercial farmer?
.... If yes, go to module on commercial farming
.... If no, go to q2
2. Do you grow crops or cut flower? Do you keep any livestock?
.... If yes, farmer, go to q3
.... If no, exit to other modules
3. Do you sell any crops, cut flowers, livestock or livestock products?
.... If yes, go to q4
.... If no, go to module on subsistence farming
4. Is it your intension to produce these crops/ livestock products for sale?
.... If yes, go to module on commercial farming
.... If no, go to module on subsistence farming
5. Does anybody else grow crops or cut flowers, or keep livestock?
.... If yes, they must complete this section separately

Question 2 is straight from PSLSD 93, but q3 and 4 are meant to identify first of all the 12 sellers of maize grain amongst the 218 who grow maize in the KIDS 98 sample (5.5%), and then to identify the one chap amongst the 12 who might be a commercial maize grower. The monitoring of programmes aimed at facilitating commercial production amongst people, who were previously subsistence farmers, will require this kind of data.

Question 5 is meant to ensure that vegetable gardens and other subsistence farming are picked up.

❖ COMMERCIAL AGRICULTURE

When new farms are added to an existing business, the new farm is sometimes managed as a separate entity, and talk as a separate farm. Where a farm business consists of more than one management unit, it is important to get the respondent to report on the entire business. The Farm Census requires separate forms for different provinces.

The sections in this module are

- Background & ownership details
- Land use & farm size
- Field crops & horticulture
- Livestock & livestock products
- Products harvested from the environment
- Other income
- Farm employment
- Farm expenses

- BACKGROUND & OWNERSHIP DETAILS

I am proposing that the background section of the 2002 Farm Census be used as an introduction to the commercial farm module. The Census has five questions on contact details which I removed for confidentiality reasons. I further assumed that the principal farmer's demographic details were would be collected in the household register.

The only other minor change is in q1, which records ownership of the farm. The first two choices listed in the Census are 'individual' and 'family'. The problem is that 'family' is not a form of ownership. In practice, family farms are either owned by a trust or run as a partnership. PSLSD 93 only asks about partnerships, which is not that far off, but having the longer list will catch the land reform projects which have complicated structures. Since family farms are more likely to have a strong patriarch, and therefore more paternalistic labour practices (e.g. see Du Toit, 1993), it might be interesting to know which farms are run as family business.

Proposal

Note: Please report of the business unit, regardless of the number of management units which might be farmed separately on a day to day basis.

1. Please indicate the ownership of the farm. Is this farm own by
 - a. Individual
 - b. Partnership
 - c. Public company
 - d. Private company
 - e. Private corporation
 - f. Public corporation
 - g. Co-operative society
 - h. Government enterprise
 - i. Trust
 - j. Tribal authority
 - k. Other (specify)
 2. Period covered by the questionnaire
 3. Who is the principle farmer? (From household register)
 4. Are any of _____'s family involved with the farm?
 5. Does _____ farm fulltime or part-time?
 6. What is _____'s highest agricultural qualification?
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- LAND USE & FARM SIZE

The Census' land use and farm size section is suitable and reasonably clear. It records land clearly as arable or grazing, which is a good principle. Question 3 is problematic. It reads as follows:

3. Land not owned by you but on which you farm
 - a. Corporate land (presumably land you manage for a corporation)
 - b. Share farming
 - c. Rented/ leased land

I have split q3 into three questions each about the size of arable and grazing land, with respect to corporate land (q4), share cropped land (q5) and rented land (q6) for the sake of clarity.

The question on arable land is not precise enough. It lists 'area under horticulture' on the same list as 'area under orchards' and 'area under vineyards'. Orchards and vineyards are horticulture. The orchards and vineyards questions are split into 'bearing' and 'non-bearing' which sensible, but it is also necessary to record how much vineyard is irrigated and how much is dryland. I added q3 to make this explicit.

Proposal

1. Give the composition and area of the farming unit as on 28 February

	Arable (hectares)	Grazing (hectares)
a. Land owned and farmed by you		
b. Land owned by you and rented out		
c. Land farmed by you for a corporate entity		
d. Rented land on which you farm		
e. Land farmed by you in a share cropping arrangement with the owner		

2. Indicate the use of open air arable land during the reporting period.

	Dryland (hectares)	Irrigated (hectares)
a. For field crops		
b. For horticulture (incl. orchards & vineyards)		
c. For cultivated pastures		
d. Temporarily fallow		

3. Split orchard/vineyard area into bearing and non-bearing.

	Dryland (hectares)	Irrigated (hectares)
a. Orchards		
b. Vineyards		

4. Total arable land under protective covers (incl. hail nets)

_____ Hectares

5. Total Natural pastures

_____ Hectares

6. Plantations (timber)

_____ Hectares

7. Woodlands, forest and underbrush not suitable for pasture (incl. protea veld)

_____ Hectares

8. Other land (farmyard, ponds, roads, wasteland)

_____ Hectares

- FIELD CROPS & HORTICULTURE

PSLSD asks only two questions on the total value of horticulture and field crops but get them wrong. Horticulture includes all vegetables and fruit, not only cut flowers. The Farm Census has better questions on the value derived from field crops and horticulture.

The approach in the Census is to precode all conceivable crops. The result is a longer questionnaire, but at least respondents are not uncertain of what is required. I have added seven crops to the list but kept the column headings as in the Census.

Proposal

Indicate the crops produced during the previous production season

	Area planted		Quantity harvested		Gross farm income R'000
	Dryland ha	Irrigated ha	Dryland ha	Irrigated ha	
Summer cereals					
1. maize for grain,					
2. sorghum for grain					
3. other summer cereals					
Winter cereals					
4. wheat					
5. barley					
6. other winter cereals					
Oil seeds					
7. sunflower seed,					
8. groundnuts,					
9. soybeans					
10. canola					
11. other oil seeds					
Legumes					
12. dry beans					
13. other legumes					
Fodder crops					
14. lucerne,					
15. maize for silage					
16. teff (grass)					
17. other fodder crops					

Other field crops

- 18. sugar
- 19. cotton
- 20. other (specify)

Vegetables

- 21. potatoes
- 22. green mealies/ sweet corn
- 23. tomatoes
- 24. onions
- 25. pumpkins
- 26. carrots
- 27. cabbage
- 28. green beans
- 29. other vegetables

Citrus

- 30. oranges
- 31. lemons
- 32. easy peelers/ soft citrus
- 33. other citrus

Subtropical fruit

- 34. pineapples
- 35. bananas
- 36. avocados
- 37. other subtropical fruit

Deciduous fruit

- 38. apples
- 39. pears
- 40. peaches/ nectarines
- 41. apricots
- 42. plums
- 43. table grapes
- 44. wine grapes
- 45. other deciduous fruit

Nuts

- 46. macadamias
- 47. pecans
- 48. other nuts

Other horticulture

- 49. tea
- 50. rooibos tea
- 51. flowers (excl. fynbos)
- 52. olives
- 53. nursery products

- LIVESTOCK & LIVESTOCK PRODUCTS

The livestock section in the Farm Census is clear and comprehensive. It splits data into stock numbers/ meat sales and other product sales. I propose that it is kept as it is.

Proposal

Indicate the farm's livestock numbers and animals sold during the last financial year.

	Number on farm on 28 Feb	Number sold to abattoirs	Number sold elsewhere	Gross farm income (R'000)
1. Beef cattle				
2. Sheep				
3. Angora goats				
4. Boer goats				
5. Other goats				
6. Pigs				
7. Horses				
8. Donkeys				
9. Chickens				
10. Ostriches				
11. Other poultry				
12. Game				
13. Other livestock				

Indicate the farm's production of livestock and poultry products.

	Quantity sold (Litres or kgs)	Gross farm income (R'000)
Livestock products		
14. Milk & cream		
15. Wool		
16. Mohair		
17. Hides and skins		

Poultry & ostrich products		
18. Chicken eggs		
19. Ostrich hides		
20. Ostrich feathers		
21. Other (specify)		

- PRODUCTS HARVESTED FROM THE ENVIRONMENT

This is a new section which loosely corresponds to a number of questions listed under 'Other products' in the Census. I propose a more complete list, including for example fynbos harvested from the veld.

Proposal

Indicate the farm's production of products harvested from the environment.

	Quantity sold (tons)	Gross farm income (R'000)
1. Firewood		
2. Construction materials		
3. Honey		
4. Fish		
5. Game		
6. Wild flowers		
7. Veld food		
8. Plants used as traditional remedies		

- OTHER INCOME

The Farm Census only records two sources of other income, services rendered and non-agricultural production. PSLSD 93 asks about government transfers. I suggest that all three are used. I have also added water rentals.

When it comes to farming services performed for neighbours one must just be careful not to count exchanges. An example of such an exchange is the case where a farmer who does not produce apricots helps his neighbour to pick apricots, in exchange for grape harvesting (which the neighbour does mostly by machine). Here labour was temporarily lent out rather than sold. Another more tricky case is where labour is exchanged for irrigation water. This case should be treated as two independent input sales.

1. Income received for work done for other farmers (e.g. ploughing, harvesting, threshing, baling, picking, spraying, shearing, water drilling, earth moving and transport) and the leasing of farming equipment, excluding leasing of land and the sales of fixed assets, vehicles, machinery, equipment and tools.
 2. Water rentals
 3. Income earned during the last financial year from
 - a. agri-tourism, incl. B&Bs
 - b. game farming
 - c. farm stalls
 - d. other farm-based retail stores
 - e. processing and small manufacturing
 - f. professional services rendered, incl. catering
 - g. shares (dividends and interest received)
 4. Government transfers
 - a. Drought relief
 - b. Subsidies
 - c. Running expenses (land reform projects)
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- FARM EMPLOYMENT

The 2002 Farm Census tried quite hard to record the entire farm community, e.g. the question on the number of dependents who live on the farm, but it implies that resident staff all have permanent jobs. This is no longer the case everywhere. In the De Doorns it was never the case: Virtually all farm women held 24-week seasonal jobs in 1976 (Levy, 1977). At the moment these women have permanent jobs, but the children of permanent staff are only taken on in a part-time capacity these days. Also, a growing number of permanent workers live in town (Conradie, 2007). Thirty years ago, tomato picking crews on my family's farm in Robertson consisted predominantly of women and older children. Gradually male pensioners began showing up and these days the gender split is about even and the average age is probably in the 30s rather than in the 50s. Labour questions must be flexible enough to make a distinction between job status and resident status. It must also recognise that seasonality does not determine job status. For example, it is common these days to find farm women appointed permanently on 9 month seasonal contracts.

I think it is worthwhile to monitor the composition of the farm community as well as the farm workforce over time, but it should be done in separate questions. Employers in the Western Cape can provide reasonable data on gender, the duration of employment and resident status of permanent and part-time workers, but do not know the age and highest level of education of these workers. I have given up getting gender breakdowns for casual and seasonal staff, never mind where they live. Age, gender, highest level of education, household size, etc. are best collected directly from farm worker households.

The Census also attempts to classify workers into skilled (A skilled farm worker is a person who has received two weeks of off-farm training and must have completed grade 9 or 10), semi-skilled (A semi-skilled farm worker is a person who can efficiently perform farm tasks after receiving a relatively short period of training), or unskilled (An unskilled farm worker has not received any formal education or training). These skills categories have no bearing on reality. On farms in the Western Cape skills are associated with job descriptions such as 'tractor driver' or 'supervisor'. Perhaps these categories can be included at a later date.

Finally, with respect to employment, I think the approach taken in KIDS 98 with respect to casual labour should be applied to commercial farms as well. All these elements are incorporated in the proposal below.

Proposal

Indicate employment during the reporting period.

	Main activity for which they are used.	Men		Women		
		Number	weeks	Resident	Number	weeks
Family labour						
1.	Owner who farms for him/herself incl. part-time farmers					
2.	Family directly involved in farming activities					
3.	Family involved in the farm but who do not get paid					
Permanent & part-time employees (incl. paid family members)						
4.	Managers					
5.	Foremen					
6.	Permanent workers					
7.	Part-time workers					
Seasonal staff						
8.	Regular seasonal workers recruited by the farm					
9.	Regular seasonal workers hired through a labour broker					
10.	Casual seasonal workers recruited by the farm					
11.	Casual seasonal workers hired through a labour broker					
Other casual staff						
12.	Other off-season casual staff recruited by the farm					
13.	Other off-season casual staff hired through a broker					

Note:

- Family members who receive regular salaries are considered full-time workers
- Contract length can be given in months or weeks, and must be given for the most common contract handed out during the past season.

- FARMING EXPENSES

The Farm Census and PSLSD 93 collect production costs under three headings, salaries and wages, running expenses and capital expenses. The Census does it in detail and PSLSD 93 only as main headings. As with crops, the itemised approach leads to a longer list which could be easier to fill in. However, if one specifies the income statement as main source of this data, there are totals for each of these headings which could just be written down. To save space I would suggest a variation on the approach taken in question N6 of KIDS 98, i.e. to collect most of the expenses data as totals and just itemise the most direct production costs.

The Farm Census's treatment of staff costs is not particularly helpful. Vorster & Kritzinger (1995) have shown complicated a computation of the non-cash benefits for farm workers can be. The problem is that most farmers do not have the faintest idea what it costs to provide these goods and services (Conradie, 2003). The best one could do is to include a list of goods and services which are provided to workers, appearing here as question 5.

Proposal

Please refer to your most recent income statement to complete the following section.

1. Date of statement _____

	R'000
2. Total running expenses	
3. Total capital expenses	
4. Report the subtotals for the following items	
a. Plant material (excl. for orchards/ plantations)	
b. Fertilisers (incl. kraal manure)	
c. Pesticides	
d. Packing materials	
e. Fodder & feed	
f. Livestock remedies	
g. Veterinary services	
h. Transport & haulage	
i. Fuel & lubricants	
j. Maintenance (machinery & vehicles)	
k. Salaries & wages	
l. Cost price of payments in kind	

❖ NON-COMMERCIAL AGRICULTURAL PRODUCTION

The only difference between non-commercial and commercial farming is that the market is deemphasised in favour of home consumption in non-commercial farming. As a result many of the same categories apply. The following sections are included in this module.

- Background, ownership & farm size
- Field crops & horticulture
- Livestock & livestock products
- Products harvested from the environment
- Other income
- Production methods & farm assets

- BACKGROUND, OWNERSHIP & FARM SIZE

I prefer the background section of PSLSD 93 (Section 7) to that of KIDS 98, because to me it is much clearer. I have scrapped the instruction to exclude small gardens attached to the dwelling, to include all production, but incorporated some question which apply to subsistence farmers equally. Question 3 in Section 7 must be scrapped; it makes the mistake of confusing grazing land and arable land.

In KIDS 98 soccer fields as a unit of land measurement seems to be a popular response in Question 4. The alternatives are to count paces or hand out 100m tape measures. Counting paces could even be calibrated for each enumerator over a standard distance, but ploughed land and walking uphill can all throw off the estimate considerably. A 100m tape measure is so cumbersome to handle that it will not necessarily be an improvement on pacing. Regardless of measurement system, I think arable land size should be converted to and recorded in hectares by the enumerator.

I am not sure of any of the proposed ways of measuring land size is suitable for estimating the size of communal grazing. I would collect that information in the community questionnaire and assign a proportional share of communal grazing to the household based on the number of livestock they own.

I would scrap question 5 in Section 7 of PSLSD 93. Questions 6 – 10 are good, except that I would perhaps scrap 8a in favour of putting a question in the community questionnaire about recent land sales.

Question 11 is unclear: Does it refer to water for stock watering purposes or water for irrigating pastures. Questions 12 -14 were scrapped by changing Questions 8 – 10 to refer just to land. The same happened with Questions 13 and 14.

Proposal

Land for Farming: Plot or Field

1. Is this land you are growing crops on

- Communal..... -1
- Private (Own Farm) .2
- Private (Rented)3
- Other (Specify).....4
-

2. What is the total size of the land available to all household members to grow crops on?

_____ hectares

3. Is this land you are grazing livestock on

- Communal..... -1
- Private (Own Farm) .2
- Private (Rented)3
- Other (Specify).....4
-

4. If privately owed, what is the total size of the land available to all household members to graze livestock on?

_____ hectares

5. What are the sources of water, if any, used on the land used for growing crops? (**Allow for multiple responses, up to three**)

6. And which is the main source? (**Single mention**)

	5. Sources of water used	6. Main Source
River/Stream	-1	-1
Dam	-2	-2
Borehole	-3	-3
Tank	-4	-4
Municipality	-5	-5
Rain	-6	-6
Neighbour	-7	-7
Other (Specify)	-8	-8
.....		

7. About how much of the land used for growing crops is the household able to water from these sources (and not counting rain)?

- Less than half -1
- About half -2
- More than half -3
- All..... -4
- None -5

8. Does the household have the right to sell any part of the land it uses?

- Yes -1
- No..... -2 ® **Go to Question ?**

9. **If Yes:** About how much of it can be sold? _____ hectares

10. How much do you think the household would be able to get for the land if they were able to sell it?

R _____

11. Of the land that is available to the household for growing crops, was any of it rented out to other people in the past 12 months?

Yes -1

No..... -2

® **Go to Question ?**

12. **If YES:** How much was paid to the household as rental for land use for crops?
(Rand)

R _____

13. Did the household have to pay rent for any of the land used for growing crops in the past 12 months?

Yes -1

No..... -2

® **Go to Question ?**

14. **If YES:** How much was paid in rent? R _____

15. Who is the principle farmer? (From household register) _____

16. Are any of _____'s family involved with the farm?

17. Does _____ farm fulltime or part-time?

18. What is _____'s highest agricultural qualification?

- FIELD CROPS & HORTICULTURE

PSLSD 93 and KIDS 98 both have crop code lists; I would replace this with a precoded list of crops as is used in the Farm Census.

When compiling that list there are two possible approaches. If the main aim is to understand food consumption, the crop list should follow directly from table in Section 3 of PSLSD 93. If on the other hand we are trying to understand what prohibits crop production among subsistence farmers in a specific area, then some version of the 'commercial' crop list makes most sense. Both approaches are shown below, the 'consumption proposal' first and the 'commercial proposal' second. I have added 'green mealies' and wheat to the list which appears in the Section 3 consumption table, and perhaps one should consider adding other fruit, onions, spinach and sugar cane, just because it is so widely grown. Has anybody thought about tobacco and dagga?

The questions asked about each crop come from PSLSD 93.

The most contentious of these is probably the one regarding units of measurement. I think PSLSD 93 give far too many options. I am not sure that enumerators can reliably tell the weight difference between a '50 kilo bag' and a '25 kilo bag', given that each crop has its own weight-volume ration.

Perhaps one can convert to two standard volumetric measures, which would word like an American bushel. My proposed 'little bushel' is a 10-litre plastic bucket. I realise that most of the water buckets used in Transkei are probably 25-litre frying oil drums, but most people will know what a 10 litre bucket looks like. As 'big bushel' I propose a 40-litre plastic crate, to be sent into the field with each enumerator. These plastic crates are cheap (R39 each at the coop) and great to sit on or to lug questionnaires around in. The solid version is slightly heavier and more expensive, but could be used to measure off loose weights. As with a bushel, the corresponding weights are product specific, but can be weighed in advance.

Other minor concerns is that one should perhaps introduce a storage category where storage is relevant, i.e. maize, dry beans, onions, pumpkins etc. Are donations to other households considered 'consumption' or 'sales'? I think we need a category for crop (and livestock gifts).

Questions must be located somewhere in the production cycle; it would be silly to ask how much maize meal is in storage if the maize is about to be harvested. But it would be very interesting to know at what stage people start giving away crops when the harvest approaches, and whether there are informal crop insurance systems at work. I liked the 'production' questions in section 9.1.3 of KIDS98, and have added to them where necessary.

Proposal for crop list based on consumption

1a.	1b.	1c. In what unit does the household usually measure the crop of _____?			1d. How many _____(units) of _____(crop) were harvested in the past 12 months?	1e. How many _____(units) of _____(crop) did the household sell in the past 12 months		1f. How many _____(units) of _____(crop) were given to pay for labour?	1g. How many _____(units) of _____(crop) were given to pay for the use of the land?	How many _____(units) of _____(crop) were given just given away?	How many _____(units) of _____(crop) are left in storage
Crop Name	Crop Code	25 l/ 10kg Bucket	25 kg Crate	Ton	Number	Number	Price	Number	Number	Number	Number
Maize grain/ samp											
Mealie meal											
Wheat											
Beans, Peas, lentils											
Potatoes											
Tomatoes											
Madumbes, sweet potatoes, roots, tubers											
Pumpkin/ squash											
Groen mielies											
Other vegetables											
Bananas											
Apples											
Citrus fruit											
Other fruit?											
Onions?											
Spinach?											
Sugar cane?											
Cotton?											
Peanuts?											

Proposal for a crop list based on Farm Census

1a.	1b.	1c. In what unit does the household usually measure the crop of _____?			1d. How many _____ (units) of _____ (crop) were harvested in the past 12 months?	1e. How many _____ (units) of _____ (crop) did the household sell in the past 12 months		1f. How many _____ (units) of _____ (crop) were given to pay for labour?	1g. How many _____ (units) of _____ (crop) were given to pay for the use of the land?	How many _____ (units) of _____ (crop) were given just given away?	How many _____ (units) of _____ (crop) are left in storage
		Bucket	25 kg Crate	Ton	Number	Number	Price	Number	Number	Number	Number
Crop Name	Crop Code										
Maize grain											
Wheat											
Other winter cereals											
Oil seeds											
Dry Beans											
Other legumes											
Lucerne											
Other fodder crops											
Sugar cane											
Potatoes											
Green mealies											
Tomatoes											
Onions											
Pumpkin/ squash											
Cabbage											
Other vegetables											
Bananas											
Avocados											
Mangos											
Other subtropical											
Deciduous fruit											
Citrus fruit											
Nuts											
Rooibos tea											
Flowers?											

- LIVESTOCK & LIVESTOCK PRODUCTS

The livestock section in PSLSD 93 is perfect; it just needs donkeys and horses added to the list. I changed the question about quantity of milk to daily; a cow gives about the same quantity of milk every day. One should think about changing the egg question too, but hens lay less reliably. The question regarding veterinary costs will be held over to the production method section.

Livestock: Cattle, Pigs, etc.

1. Does the household own or farm with any animals or poultry of any kind?

Yes-1 ® **Note: Ask every question from 2 to 7**

No.....-2 ® **Go to Section ?**

	Cattle	Sheep	Goats	Horses	Donkeys	Pigs	Poultry
2a. How many _____ (name of animal) does the household <u>own</u> at the moment?							
2b. In the past year, how many, if any, _____ were born?							
2c. In the past year, how many, if any _____ did the household sell?							
2d. In the past year, how much money did the household get from the sale of _____ ? (Rand)							
2e. In the past year, how many _____ , if any, did the household buy?							
2f. In the past year, how many _____, if any, did the household slaughter?							
2g. In the past year, how many _____, if any, did the household lose because they were stolen or died or were run over, or something like that (e.g. fined, impounded)?							
2h. At present, how many _____, if any, has the household loaned to someone else?							
2i. And, at present, how many _____, if any, has the household borrowed from someone else?							

MI_AGR2

3 **Ask all who have cattle or goats:**

3a. About how many litres of milk were obtained from your herd yesterday?

_____ litres

3b. And, how much of this was for **this household's own** use?

_____ litres

3c. And, how much of it was **for sale or exchange**?

_____ litres

3d. What was the value of milk sold or exchanged?

R _____ or don't know _____

4 **Ask all who have hens or ducks or other poultry:**

4a. About how many eggs were obtained from your poultry during the past week (last 7 days)?

4b. And, how many of these did the household **use**?

4c. And, how many did the household **sell or exchange**?

4d. What was the value of eggs sold or exchanged?

R _____ or don't know _____

5. **Ask all who have sheep:** In the past 12 months, how much did the household make, if anything, from the **sale of wool and mohair**?

R _____

6. **Ask all who own animals:** In the past 12 months, how much, if anything, did the household make from the sale of animal skins and hides?

R _____

- PRODUCTS HARVESTED FROM THE ENVIRONMENT

This section is perhaps more important in subsistence settings than for commercial farms.

Proposal

Indicate the farm's production of products harvested from the environment.

	Usual measure			Quantity harvested	Quantity sold	Quantity given away
	bucket	crate	ton			
1. Firewood						
2. Construction materials						
3. Honey						
4. Fish						
5. Game						
6. Wild flowers						
7. Veld food						
8. Plants used as traditional remedies						

- OTHER INCOME

PSLSD 93 asks three questions about other income, including payments for services, government transfers and 'other'. Given that this is a comprehensive income survey, which amongst other things looks at government transfers, the only questions one really wants to ask are:

Proposal

1. In the last 12 months, did the household receive anything by providing a service to other farmers, for example, ploughing or planting?

Yes -1

No..... -2 ® **Go to Question 3**

2. **If YES:** How much was it worth in rand? R _____
-

- PRODUCTION METHODS

Since cost of production is not really relevant in subsistence settings, the emphasis in this section is to try and find out to what extent traditional methods are still used and also where factors of production come from. Most questions were taken from KIDS 98. Farm assets come from PSLSD 93.

Proposal

1. With respect to crop production, which of the following inputs are used?

	Quantity used	How much did you buy?	How much did you received for free?
a. Seed	Kg		
b. Seedlings	Number		
c. Fertiliser	Kg		
d. Pesticides			
e. Roundup-ready maize	Kg		

2. Did you use a tractor to plough?

Yes
No

3. If yes, how much did you pay for the service?

- R _____
- Own tractor
- Free by friend / family member
- Free government service

4. Do you use an irrigation system?

Yes
No

5. If yes, what type of irrigation system is it?

Pressure source	Type of irrigation system			
	Flood	Sprinklers	Centrepivot	Drip/ micro
Electrical pump				
Diesel pump				
Pressured pipeline				
Gravity (self pressure)				

6. With respect to livestock, which of the following inputs are used?

	Quantity used	How much did you buy?	How much did you received for free?
a. Dip			
b. Feed			
c. Fodder			
d. Medicines			
e. Veterinary services			

7. Are any non-family members or family members who are paid involved with crop production?

Yes
No

8. If yes, how many for how many weeks and what are they paid?
(Use a fresh row for each mention)

Task or crop for which temporary workers hired (e.g., harvesting mealies)?	Total Number of PERSON DAYS of casual labour employed?		Daily wage	
	Number of workers	days	Cash (R)	In-kind (R)

Farming assets

9. Does this household own any tractors or other farming vehicles?

Yes -1

No..... -2 ® **Go to Question ?**

10. **If YES:** Approximately how much could you sell them for?

R _____

11. Does this household own mechanised farm equipment/pumps?

Yes -1

No..... -2 ® **Go to Question**

12. If yes: Approximately how much could you sell them for?

R _____

13. Does this household own other non-mechanical farm tools (Spades, hoes, etc.) ?

Yes -1

No..... -2 ® **Go to Section**

14. If yes: Approximately how much could you sell them for?

R _____

Conclusion

I have tried to show that timing matters for successful farm surveys, and that it is important to take a different approach for commercial and subsistence producers. My recommendation to survey what is sometimes called 'emerging small-scale farmers' with the commercial instrument means that we will start thinking of the potential beneficiaries of land reform and other government efforts as commercial. Good data on this class of producer will enable commercial agriculture to provide a better support role for these emerging commercial farmers.

I have tried to show what can and cannot be measured. The success of the instrument will have questions that make sense in the dusty reality of the farm yard. I have tried to think like a farmer, but it remains to be seen if the questions proposed here can be answered by real farmers out there.

I have also argued that agricultural production happens in more places than just on commercial farms and subsistence plots. To catch all of this it is essential to look for farmers everywhere and classify them properly. Similar, small scale manufacturing happens in places you would not expect. The one issue that has not been resolved is if, and why, one needs a sector specific production questionnaire for emerging and commercial producers.

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