Appendix 2
Socio-economic Surveys

A2.1 Scope

Socio-economic surveys were conducted on almost 600 farms in Uganda, Ethiopia and Tanzania. The surveys were preceded by the biological surveys, which enabled the socio-economic surveys to focus on areas that were known to have coffee wilt disease (CWD). As with the biological survey, the countries were partitioned into administrative units, and sampled as widely as possible using clustered sampling techniques. Infested farms were identified with the assistance of staff from local agricultural offices, together with those involved in the biological surveys.

A questionnaire developed at the project's 2001 Mukono workshop in Uganda was used as a guide in interviewing farmers. Data collected included household characteristics (age, education and gender of head of household and average family size), farm characteristics (average size of farm, type of land tenure, crops cultivated, number of years of coffee farming, average number and age of coffee trees and use of inputs including labour) and farmers' perceptions of CWD (knowledge of CWD, years since CWD first observed, number of trees lost to CWD, cause of CWD and when the disease spreads, whether CWD is changing and the reasons why this might be so). Each country adapted the questionnaires to make them more appropriate for the needs of each individual country. Using binomial logistic regression, the factors were regressed against the severity using GenStat (GenStat, 2000).

Coping strategies adopted by farmers were also identified and factors influencing them analysed using binary logistic regression in Statistical Package for Social Scientists (SPSS, 1988). Factors included in this analysis were all of the household and farm characteristics (described above). Chi-square tests were carried out on these variables to assess their relationships, and the variables were also checked for multicollinearity.

Socio-economic surveys for CWD were conducted on almost 600 farms in East Africa. The surveys were coordinated by CAB International – Africa Regional Centre (CABI-ARC) and undertaken in collaboration with the respective National Coffee Research Systems (NCRs) of each participating country, i.e. Uganda, Ethiopia and Tanzania. The surveys were preceded by the biological surveys, which enabled the socio-economic surveys to focus on areas that were known to have CWD. As with the biological survey (described in Appendix 1), the countries were partitioned into administrative units and sampled as widely as possible using clustered sampling techniques, whereby three to four farms were sampled in every village (see Appendix 3). Infested farms were identified with the assistance of staff from local agricultural offices, together with those involved in the biological surveys. The approximate number of farmers interviewed in each administrative unit was predetermined during a workshop held in Mukono, Uganda in June 2001 (see Appendix 1).

A2.2 Data analysis

Data were entered into Excel spreadsheets, 'cleaned' and analysed using GenStat (GenStat, 2000) and SPSS (1988). Descriptive statistics were used to summarize the household characteristics, the farm characteristics and the farmers' perceptions of CWD. Other analyses were carried out as per the objectives of the survey as given below:

1. *Identifying socio-economic factors underlying the incidence and severity of CWD*: Household characteristics, farm characteristics and farmers' perceptions that may have an influence on the severity of CWD were identified and using binomial logistic regression, the factors were regressed against the severity using GenStat (GenStat, 2000).

2. *Assessing the socio-economic impact of CWD at household and national levels*: Two main questions were asked to guide this analysis:

   a) What has changed following the onset of CWD?

In order to assess the socio-economic impact of CWD, at both the household and national levels, the following criteria were used:

- changes in the importance of coffee as a source of income;
- changes in coffee production (yield);
- changes in input use;
- liquidation of assets;
- changes in the household expenditure using income from coffee; and
- impact of CWD at the national level.

   b) How much of this change can be attributed to CWD?

At the household level, there are several factors that may have caused changes, such as the decline in coffee prices, and changes in farm or crop size (expansions or reductions) that may not be directly related to the onset of CWD. To determine how much of this change is attributable to CWD, a binomial logistic regression was carried out using GenStat (GenStat, 2000).

At the national level, potential coffee production, taking into account the percentage loss in yield attributable to CWD, was graphed against the actual coffee production. Using average coffee prices, the loss in income attributable to CWD was calculated and graphed.

3. *Identify farmer coping strategies for CWD and the factors that influence the strategies*: Coping strategies adopted by farmers were identified and factors influencing them analysed using binary logistic regression in SPSS (1988). Factors included in this analysis were all of the household and farm characteristics (described above). Chi-square tests were carried out on these variables to assess their relationships, and the variables were also checked for multicollinearity.

A2.3 Number of farms surveyed in each administrative unit during the regional socio-economic survey for CWD.

TANZANIA			UGANDA	
District	**Division**	**Number of farms**	**District**	**Number of farms**
Bukoba	Bugabo	21	Bugiri	4
	Kiziba	2	Bundibugyo	4
	Misenyi	10	Bushenyi	3
Karagwe	Kaisho	53	Hioma	3
	Kituntu	10	Iganga	5
Muleba	Muleba	3	Jinja	4
			Kamuli	5
Total		**99**	Kayunga	15
ETHIOPIA			Kibaale	3
Region	**Zone**	**Number of farms**	Kiboga	12
SNNP	Benchi maji	4	Kyenjonjo	5
	Gedeo	63	Luweero	31
	Sidama	24	Masaka	40
	Sheka	1	Mpigi	37
Oromiya	Bale	4	Mukono	58
	Illulabor	10	Rakai	38
	Jima	11	Rukungiri	2
	W.Wellega	9	Sembabbule	8
Amhara	S.Wello	1	Wakiso	38
	West Gojam	6	Mubende	41
Gambella	Abobo	3		
Total		**136**	**Total**	**356**
			GRAND TOTAL	**591**

A2.4 Sample form of regional baseline socio-economic questionnaire survey for CWD (Ethiopia).

Questionnaire No._____ (referenced to the Biological survey)

Section A IDENTIFICATION

(N.B. Respondent should be either farmer/spouse/adult child – someone with sufficient knowledge)

Region_____ Zone_____ Wereda_____

Kabele (Division)_____ Farmer's Name_____ If not farmer,

Respondent's Name_____

Enumerator's Name:_____ Supervisor's Name:_____

Date:_____

Section B HOUSEHOLD AND SOCIO-ECONOMIC CHARACTERISTICS

1. Age of household head _____ years
2. Sex of household head 1 = Male ❑ 2 = Female ❑
3. Formal education – highest level attained (circle answer)

   i) Non-formal education iv) Higher Education

   ii) Primary school v) Other (specify)_____

   iii) Secondary school
4. Household members residing on farm?

Age group	Male	Female	Total
0-16 years			
>16-60 years			
>60 years			
Total			

5. Remembering the time of CWD incidence in your farm, what were/are your household sources of income (rank according to importance)?

[Farming, Wage earner, Artisan, Trader, etc] (Please state currency)

Source	Before CWD		After CWD	
	Rank	Income per year (Birr)	Rank	Income per year (Birr)

6. How long have you been in coffee farming? _____ years

Section C FARM OR PRODUCTION UNIT CHARACTERISTICS

7. What is your total holding? _____ ha

8. Changes in crop enterprise mix before and after CWD, changes in numbers/ acreage and purpose for which they are used.

(Rank in order of importance)

Type of Enterprise	Before CWD					
	Area / Number	Gender[1]	Purpose[2]	Quantity produced per unit area	Quantity sold per year	Income per year
A: Crop farming						
i)						
ii)						
iii)						
iv)						
v)						
vi)						
Additional crops not there before CWD						

Current (after CWD)					
Area/ Number	Gender[1]	Purpose[2]	Quantity produced per unit area	Quantity sold per year	Income per year

1 = (men = M, women = W, children = C, all family = A)
2 = [C = cash generation, F = food-subsistence, B = both cash & food, O = other (specify)]

9. Number of livestock before and after CWD.

   *Before*_____: Cow_____; ox_____; heifer_____; calf_____; steer_____; hen_____; donkey_____; mule/horse_____;

   *After*_____: Cow_____; ox_____; heifer_____; calf_____; steer_____; hen_____; donkey_____; mule/horse_____; Additional_____

10. Activities introduced as a result of CWD

    i) _____ iii) _____

    ii) _____ iv) _____

11. Have you liquidated any assets due to the on-set of CWD? Yes/No ❑

12. (If yes, to Q. 12.) What assets have you liquidated (type and value per year)? _____

Section D COFFEE PRODUCTION

13. Type of coffee, age, area and number of trees on field (NB. Variety always Arabica)

Type of Coffee	Area by age of trees (years) <5	5-15	>15	Area (ha)	Initial (planted) number of trees	Current number of trees	Average spacing
Improved selection							
Local type							

14. Cropping system (circle answer)

    a. Pure stand

    b. Inter-cropping (bananas, beans, cassava, multi-purpose tree species, etc.)

Section E RESOURCE USE AND MANAGEMENT

15. Changes in labour use for coffee activities before and after CWD

Activity	Before CWD										
	Frequency	Family labour						Hired labour			
		Male			Female						
		No	Hours per day	Days per month	No	Hours per day	Days per month	No	Hours per day	Days per month	Wage
Weeding											
Mulching											
Pruning/De-suckering											
Stumping											
Harvesting											
Post-harvest processes											
Spraying											

After CWD										
Frequency	Family labour						Hired labour			
	Male			Female						
	No	Hours per day	Days per month	No	Hours per day	Days per month	No	Hours per day	Days per month	Wage

16. Changes in input use due to CWD

Type of input	Before CWD			After CWD		
	Amount per 0.25 ha	Frequency in a year	Cost per year (Birr)	Amount per 0.25 ha	Frequency in a year	Costs per year (Birr)

17. What are your future plans with regard to coffee?

_____

Section F COFFEE WILT DISEASE INCIDENCE

I FARMERS' PERCEPTION OF THE DISEASE

18. Do you now the disease coffee wilt? Yes/No ◯

19. (IF yes, what is its local name? – _____)

20. Do you think it is worse than CBD?

21. When did you first realize the existence of CWD in your field? (Give year)_____

22. On which field did you first observe it? 1. On garden or on forest coffee? 2. On local types or on improved selections?

23. How has the CWD progressed in your coffee field?

Year (Input year from Q. 21 as year 1)	Number of trees infected	Number of new trees planted	Yield from field per year	Yield per an average aged healthy coffee tree per year
1.				
2.				
3.				
4.				

24. How many trees are presently infected in your field? (Also give total number of trees on the farm)

    Number of infected trees:_____Total number of trees on the farm: _____

25. What factors do you think might have led to the spread of the disease over the years? (Rank based on importance) (e.g. neighbour's animals, firewood, affected planting material, runoff, implements, etc.)

    i)_____ ii)_____ iii)_____

    iv)_____

[Enumerator should try to establish where the field is situated (e.g. uphill, near a forest etc.), whether the neighbouring fields are affected and their management (e.g. mulching, pruning, etc.)] _____

26. In your view how is the disease transmitted?

    Temporally:_____

    Spatially:_____

27. In your view when does the disease spread most (circle answer)?

    i) Rainy/wet season iii) Windy

    ii) Dry season iv) None

28. Is the disease severe:

    1. On the weeded plot or on the unweeded plot?
    2. On the shaded coffee or on the unshaded coffee?
    3. On the young coffee or on the old coffee?
    4. On densely planted coffee or on sparsely planted coffee?

29. In your view what is the trend of occurrence of this disease over the years? (Circle answer)

    a) Increasing

    b) Same

    c) Decreasing

30. Please explain answer to Q. 30 – Why?

    _____

    _____

II CHANGES IN HOUSEHOLD EXPENDITURE DUE TO CWD

31.

Expenditure item	Percentage of total household expenditure coming from coffee BEFORE CWD	Percentage of total household expenditure coming from coffee AFTER CWD	Trend of share of income from coffee for the items	Trend of value of income from coffee for the items
Education				
Food				
Hire of labour				
Health				
Investments				
Leisure				
Other				

III FARMERS' TECHNOLOGICAL INTERVENTIONS ON CWD

32. What CWD control methods have you been using?

Method *	Source of advice •	Year of start of use	Farmer's perception of method ♣	Cost of method (each time)	Method still being used (Yes / No)	If method stopped, reason for abandoning

** Uprooting and burning = 1, pruning infected stems = 2, chemical use = 3, concoctions (e.g. urine, ash and tobacco mixture) = 4, extra care for infected tree = 5, abandon field = 6, other (specify) = 7*
• Fellow farmer = 1, Extension worker = 2, Local leader = 3, Radio = 4, Training workshop = 5, Visiting researchers = 6, Newspapers/pamphlet = 7, Other (specify) = 8
♣ Worked very well = 1, Worked satisfactorily = 2, Worked – but not well = 3, Did not work = 4

33. If not using any control method, give reasons why.

_____

Section G POLICY INTERVENTIONS

34. Is there any developmental activity by any body to tackle CWD in your area? Yes/No

35. If yes, describe the detail

_____

_____

36. Have you planted new coffee trees recently (past 3 years)? (Circle answer) Yes/No

37. (If yes to Q. 37.) Where do you get replanting material?

Materials	Source	Cost	Perception on cost of materials *	Availability **

** High = 1, Medium = 2, Relatively low = 3*
*** Readily available = 1, Available (medium) = 2, Not readily available = 3*

38. Have you been paying for coffee seedlings? (Circle answer) Yes/No

39. If a coffee variety that is resistant to CWD were developed:

    a) How much would you be willing to pay per seedling?

    _____

    b) How many new coffee stems would you be willing to plant?

    _____

40. Do you know of any NGOs/groups in this area which have provided coffee intervention programmes?

Name of NGO	Type of intervention

THE END ***THANK YOU!***