

Appendix 4.3

Project Report

Title: Crabwood Oil Study: Equitable Use of NTFPs in Guyana: Report of the Family Level Survey

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Family Level Survey

Introduction-Research and Approach by Twydale Martinborough, April 2002

Iwokrama International Centre for Rainforest Conservation in collaboration with the UK-based Centre for Ecology and Hydrology, has embarked on a socio-economic survey of crab oil producers in Guyana. Conducted over a five and a half month period (April 30th-October 19th, 2000) the survey targeted households that are actually involved in the production of craboil for commercial and/or domestic purposes, excluding non-producers. Twenty-six (26) villages spread across three administrative regions of Guyana were investigated. Altogether, the number of households interviewed is 131 constituting the craboil-producing population of the survey area. Delineated by region, 88.5% of the surveyed households is situated in Region 10 along the Berbice River; 10.7% in Region number 9; and the remainder in Region 3.

Residents of the primary communities were employed in the capacity of researchers to administer the questionnaire in their respective communities. This was felt to be the best approach to solving the data-gathering dilemma of target population's potential unwillingness to divulge the said information to unfamiliar persons. This may have manifested in the form of distrust or a general discomfort when among "strangers".

These researchers, with the exception of two (2) were subject to a one-day workshop the purpose of which was four-fold:

- Ensure an understanding of the research, its aims and objective.
- In the absence of pre-testing the questionnaire on a sample of the target population, feedback on the general structure of the questions, sensitivity of data pursued and the general approach that was best given area-specific circumstances.
- Provide some training on questionnaire administration.

Seven (7) specific areas were targeted in this study. These include:

1. Longevity of the producers
2. Magnitude of production
3. Quantity of seeds consumed by the activity
4. Crab oil Selling Prices
5. Production cost
6. Income generation
7. Trading links

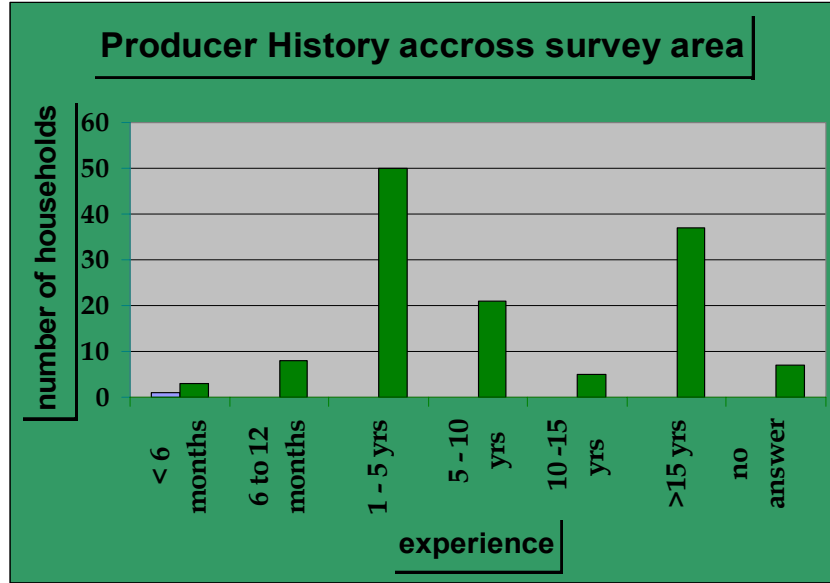
Longevity of producers

There was a 94.7% overall response rate to this question (124 answers provided). Crab oil production experience in the survey area ranges from less than six months to more than fifteen years. It is noteworthy that 40.3% of the respondents to this question have been making the oil for more than one but less than 5 years; all of these respondents reside in Region 10.

29.8% of the respondents have been engaged in the crab oil making for greater than fifteen years and of these 37 households, 7 were from Region 9.

16.9% of the respondents have been in the business of oil production for more than one but less than five years.

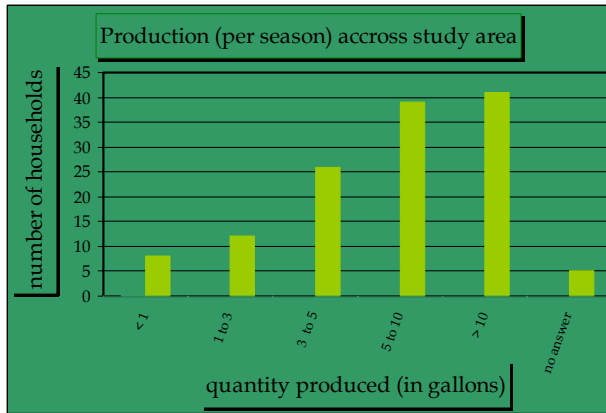
For Region 9, the response to this question was 78.6% (11 households). Three of these households have been producing for 5 to 10 years and only one for less than 6 months.



Experience (time)	Number of households	Expressed as % of answers to question
< 6 months	3	2.4
6 to 12 months	8	6.5
1 - 5 yrs	50	40.3
5 - 10 yrs	21	16.9
10 - 15 yrs	5	4.0
>15 yrs	37	29.8
no answer	7	

Alternatively, for Region 3, there was a zero response rate. Note that there was only one crab oil producing household in this area that once had an abundance of same. In Region 10 however, there was a 97.4% response rate to this question (i.e. only 3 households did not venture an answer).

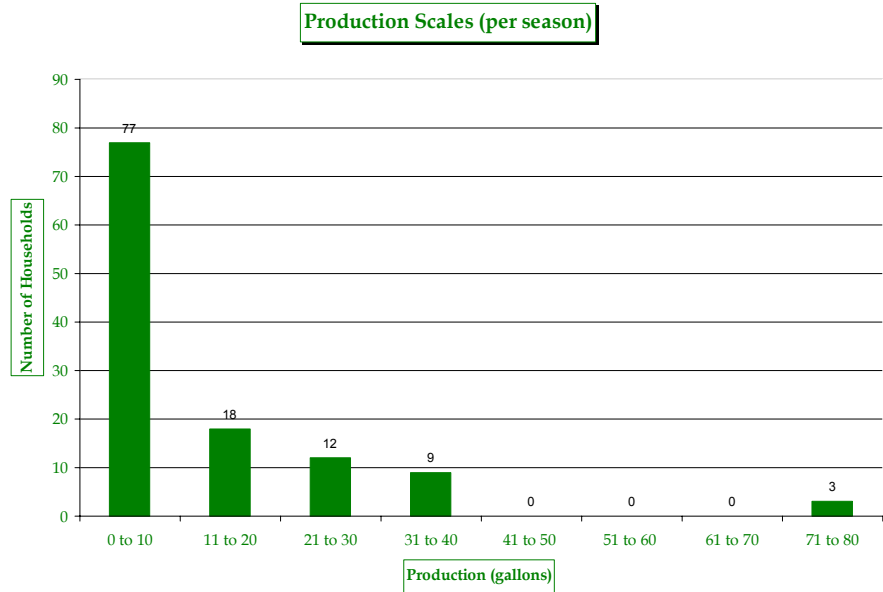
Magnitude of production



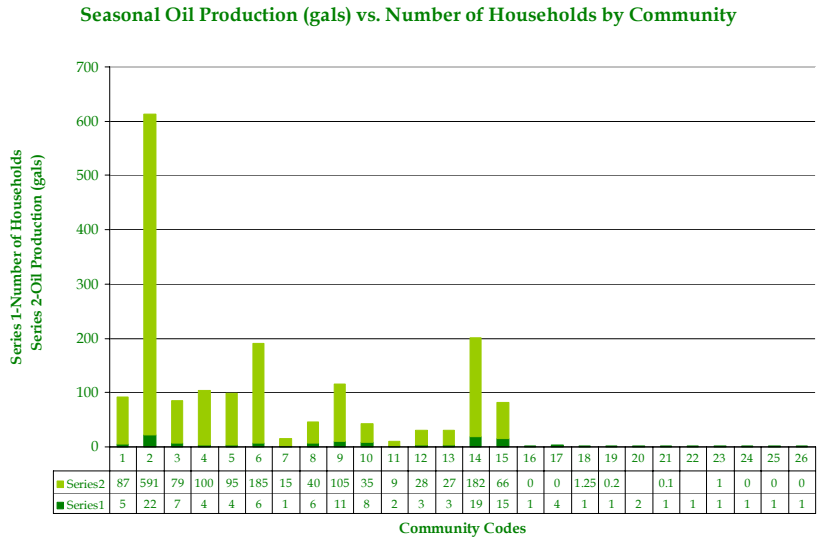
The overall response rate to this question was 96.2% (126 answers). There was a 0% response rate from Region 3; 64.3% response rate for Region 9; and 100% for Region 10. The lowest levels of production can be found in Region 9. There are 8 households producing less than one gallon of oil per season (6.3% of all respondents to this question) and all reside in Region 9.

32.5% of the respondents produce in excess of 10 gallons of crab oil per season. All these producers reside in Region 10. All of the 31% of the respondents that produce between five and ten gallons of oil per season reside in the communities of Region 10. The dominance continues in the 20.6% of households that produce between 3-5 gallons.

More specifically, the question of actual production levels per household was asked. The response rate was 90.8%. Substantiating the estimates stated above, it was revealed that 67.4% (77 households) of the respondents produce between 0 and 10 gallons of oil per season; 15.1% (18 households) between 11 and 20 gallons; 10.1% (12 households) between 21 and 30 gallons; 7.6% (9 households) between 31 and 40 gallons; and only 2.5% (3 households) between 71 and 80 gallons per season.



Community specific production enquiries revealed exponentially large scale production in Ebini (Region 10) with 591 gallons being produced by a producer community of 22 households. Similarly, in Friendship (also of Region 10), it is revealed that a crab oil-producing community of 6 households contributes 185



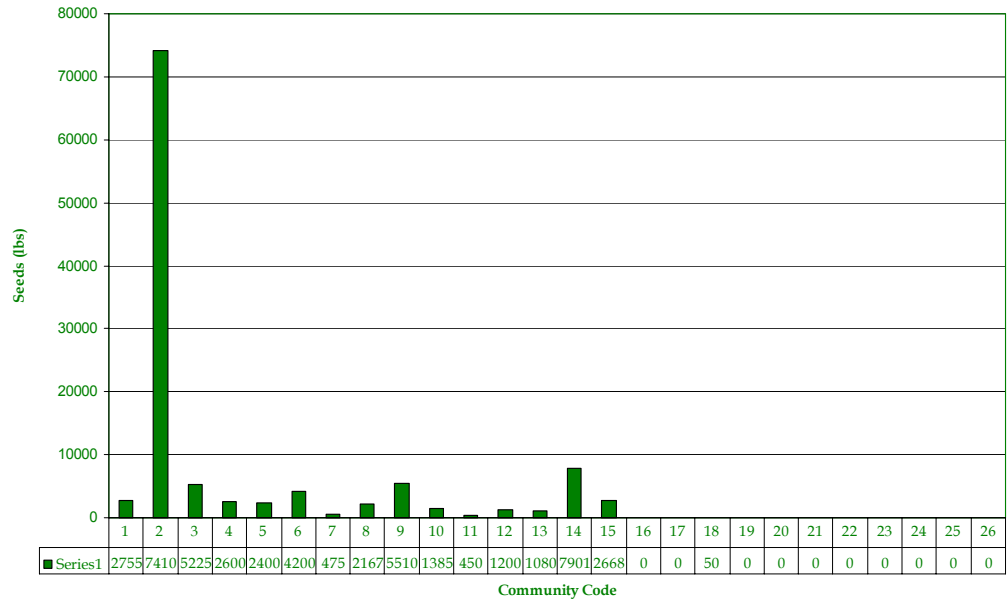
gallons of oil per season. The 19 households of DeVeldt (Berbice River) supply 182 gallons of oil per season. These three and Maria Henrietta constitute the group of communities producing in excess of 100 gallons of oil per season.

Quantity of seeds consumed by the activity

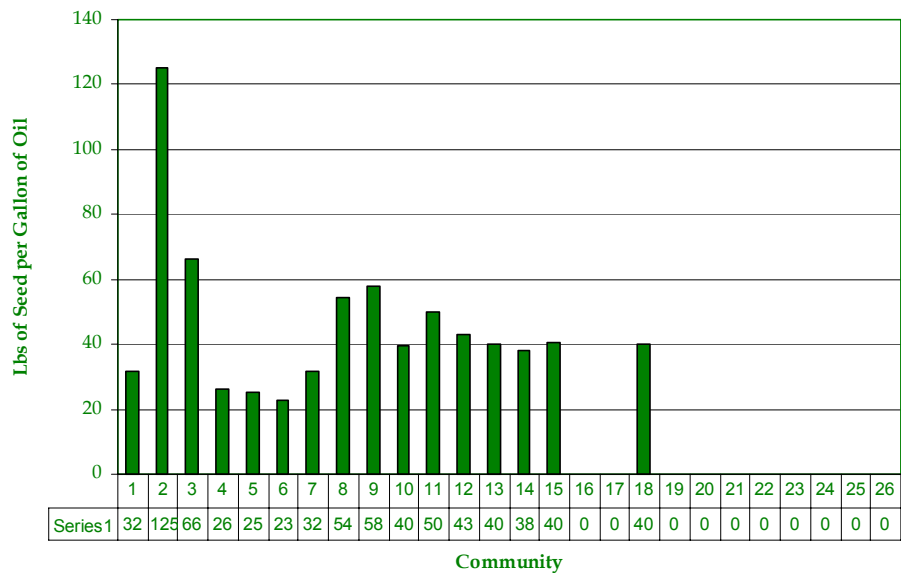
The question of seed consumption was responded to by 81.7% of the households interviewed. There are, however, some alarming estimations given: there is inconsistency in the perceptions of the quantity of seed utilized in the production of the oil. As the graph below reveals, community 2 (Ebini), the largest producer of crab oil, estimated a seed consumption rate of 74,100 lbs. This figure is way in excess of what any other community estimates, yielding an average seed consumption per gallon rate of 125 lbs.

On the question of seed consumption per gallon of oil produced, the responses were similarly inconsistent. 38.5% (10) of the communities estimated seed consumption per gallon of oil produced to be less than or equal to 40 lbs. 19.2% (5) of the communities estimated the same to be 43-66 lbs. 38.5% of the communities did not submit a response to this question. There may have been some difficulty estimating seed weight.

Crabwood Seed Consumption by Community



Seed Consumption per Gallon of Oil (by community)



Crab oil Selling Prices

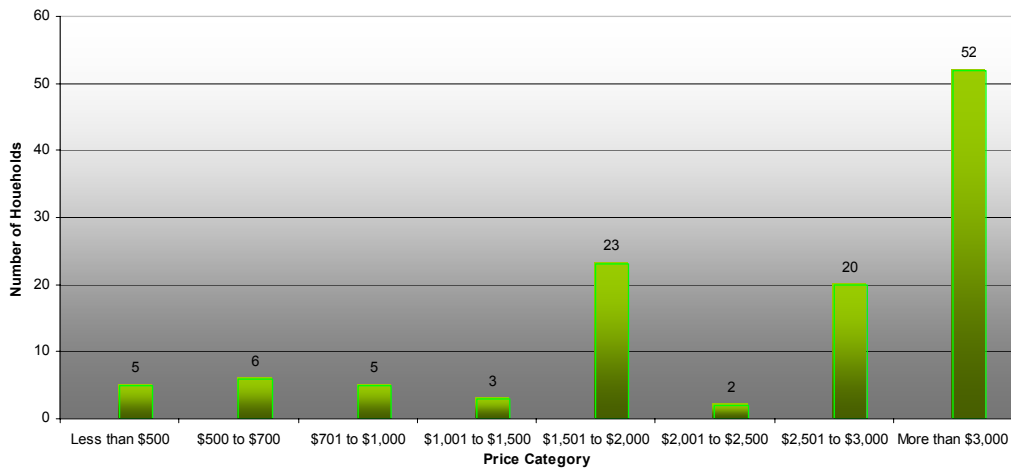
The question of the price at which crab oil is sold was answered by 88.5% of the total number of interviewees. This price ranges from less than GY\$500 (US\$2.6) to in excess of GY\$3000 (US\$15.8). Notably, 44.8% of the responsive households

reported selling the oil at prices in excess of GY\$3000; 19.8% at prices ranging from GY\$1501-\$2000; and 17.2% between GY\$2501-\$3000.

DeVeldt reported the highest occurrence of selling prices in excess of GY\$3000 (16 of its 19 crab oil producing households enjoy this price). In the case of Ebini, the largest crab oil producing community, all prices offered to the oil producers reportedly fell within the range of GY\$1501-GY\$2000 (US\$7.9- US\$10.5). In Friendship there was uniformity in pricing as was in Weruni where only one household reported differently (14 of 15 reported price in excess of GY\$3000 and 1 GY\$701-1000). All other communities reported mixed pricing regimes, which may well be a result of different textures of oil and which distributor or retailer is approached. For some communities, such as Ituni, though there were only eight crab oil producers, the selling prices reported covered three price categories: 6 of the 8 households reported a price of less than GY\$500, 1 reported in excess of GY\$3000 and 1 between GY\$500 and GY\$700. That Ituni should be subjected to such relatively low prices is a questionable given that it is located closest to the mining town of Linden and Georgetown.

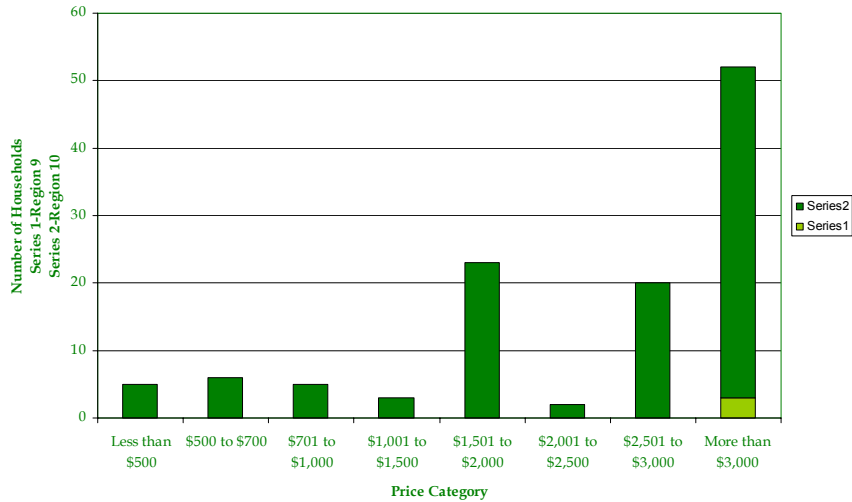
The question of price changes over the past five years has led to a combination of mixed results (with respect to increases or decreases) uninterpretable answers. Thought the larger portion of DeVeldt’s answers fall into the category of interpretable, there is the impression that prices generally fluctuate. The extent of the fluctuation is unclear. Ebini has reported a decline in price to the tune of GY\$1000. (i.e. the price per gallon of oil changed from GY\$3000-GY\$2000).. Convversely, Maria Henrietta reports an improvement in price per gallon if GY\$1590.

Selling Price per Gallon of Oil



The price distribution over the regions cannot be determined from the data given. The 1 household of Region 3 and 11 of the 14 of Region 9 did not respond to this question. As the graph below indicates, this has resulted in a regional price distribution that is Region 10 biased. It is highly probable that the

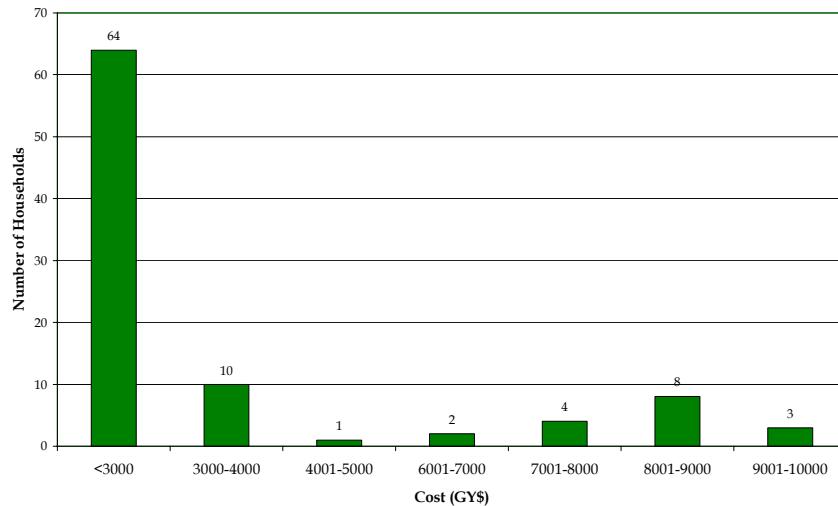
Selling Price per Gallon by Community



unresponsive households of Regions 3 and 9, up the time of the survey, did not produce for commercial purposes. The three responsive communities of Region 9 however, did reveal per gallon selling prices in excess of GY\$3000 (US\$15.8).

Production cost

Production Cost per Gallon of Oil



To ascertain the cost of producing a gallon of crab oil, producers were asked to estimate the costs of all the inputs required. There was a 70.2% response rate to this question and the responses were mixed. 64 of the 92 respondents indicated a cost of less than GY\$3000. These responses were from the residents of all communities except Ebini. Here again, this community has reported estimates that are well in excess of those of the other communities. All reports of costs between GY\$4000 and GY\$10000 were had from the Ebini producers. Included in the inputs were aluminum drums (valued at approximately GY\$2000) and basins for kneading the pulp. These are not items that will have to be purchased for each batch of oil produced and as such, the costs recorded here can be seen as start-up costs or that incurred every 2 years (approximately).

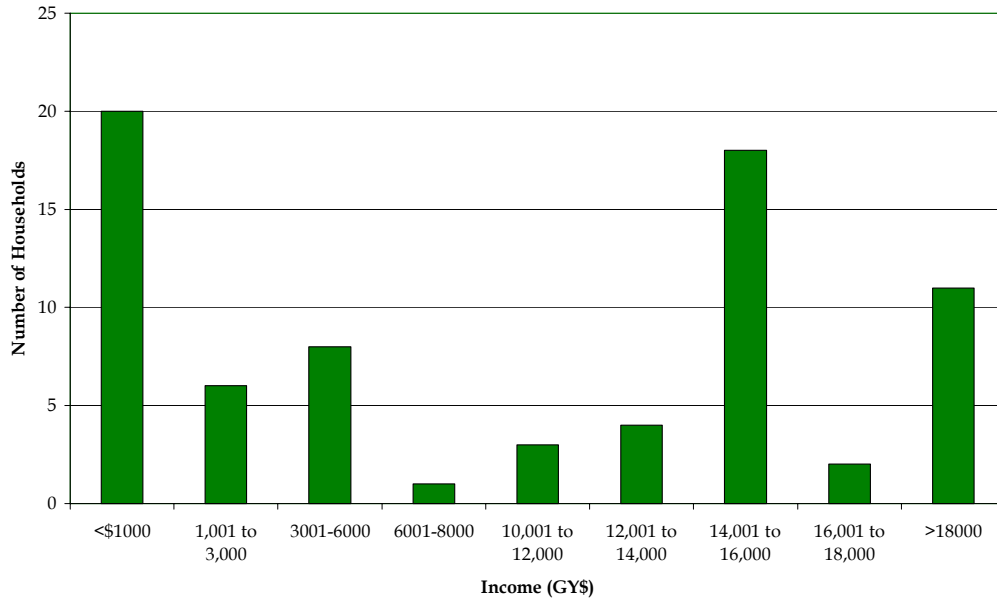
There are no contributions to this question from Regions 3 and 9. All answers examined above were had from the producers of Region 10. This is not surprising given the scale of production in these regions.

Income Generation

It is not contrary to expectation that this question has a response rate of 56.5%. This is in part due to the unwillingness of persons to reveal income earnings and the inability to estimate same. It is worthwhile to note that some of the producers included in this research are inconsistent in their production and more so sale of the oil. It is important to note also that seasonal production is most often in excess of seasonal sale. At the time of this survey, it was revealed that some producers had in stock, crab oil produced two or three seasons prior.

With the exception of two households of Surama (Region 9), all answers provided were those of the households of the Region 10 communities. Annual income contribution of crab oil to the Surama households is reported to lie within the range of GY\$1001-GY\$3000. Deducting these two from the relevant category in the graph above, the income contribution distribution across Region 10 becomes clear. Weruni, St. Lust and Dubulay, all identified as relatively low producing area, constitute 95% (19 of the 20) households reporting an income of less than GY\$1000. DeVeldt like Maria Henrietta and Gaetroy consistently report high income bands (GY\$10001 to in excess of GY\$18000, GY\$12001 to in excess of GY\$18000 and GY\$12001 to GY\$16000 respectively). In each case there was one instance of unusually low income earnings from the sale of crab oil. On the other hand, Fort Nassau had a strangely mixed response to this question: two households estimated their income to be between GY\$1001 and GY\$3000, two between GY\$10001 and GY\$12000 and two between GY\$14001 and GY\$16000. It may be of interest to examine the spatial distribution of these income blocks for some correlation to the income differences.

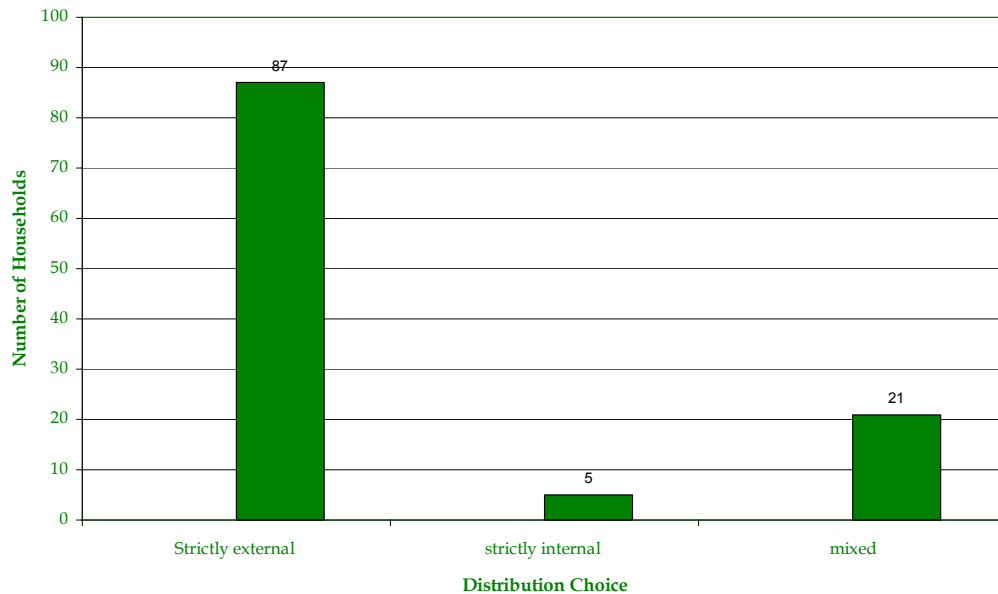
Crab Oil Income Contribution



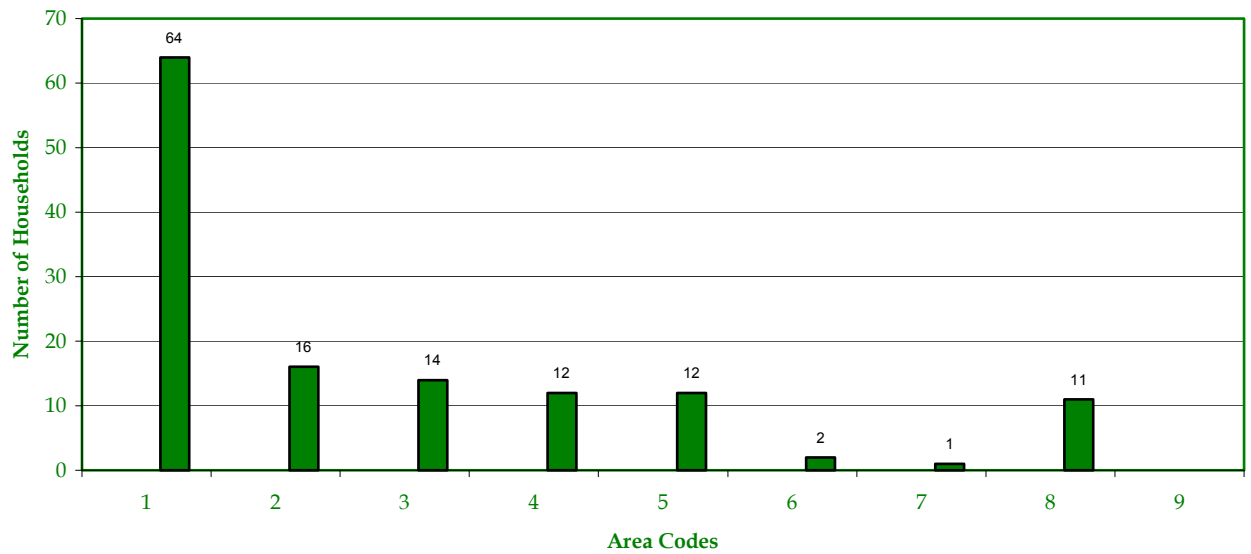
Trading links

86.3 % of the total number of persons interviewed in this survey submitted an answer to this question. The 13.7% non-answers came almost exclusively from Regions 3 and 9 where there are 15 target households. As the graph immediately following shows, 87 of the 113 respondents (77%) sell oil exclusively to external distributors.

Distribution Behaviour



Targets of Strict External Distributors



Name of Community	Code
Gaetroy	1
Ebini	2
Fort Nassau	3
Sand Hills	4
Cabatali	5
Friendship	6
DeHope	7
Coomaka	8
Maria Henrietta	9
Itini	10
Dubulay	11
St. Lust	12
Torani	13
DeVeldt	14
Weruni	15
Santa Mission	16
Surama	17
Rupertee	18
Annai Central	19
Crash Water	20
Wowetta	21
Kwatamang	22
Massara Village	23
Yakarinta Village	24
Toka Village	25
Aranaputa Valley	26

FAMILY- LEVEL QUESTIONNAIRE (if crab oil is made in household)



Name of community

1. How long have you been making Crab oil?

- (a) less than 6 mths (b) 6 to 12 mths (c) between 1 and 5 yrs
(d) between 5 and 10 yrs (e) between 10 and 15 yrs (f) more than 15 yrs

2. Briefly describe how you make Crab oil:

3. How large is your family?

- (a) 2 (b) 3 (c) 4 (d) 5 (e) 6 (f) more than 6

4. How many family members are involved in making crab oil?

- (a) 2 (b) 3 (c) 4 (d) 5 (e) 6 (f) more than 6

5. Who in the family is/are involved in the production of Crab oil?

- (a) Mother (b) Father (c) Children-female(), male ()
(d) Relatives- female(), male ()

6. What times of the year do you make the oil? _____

7. How many gallons do you make in a season?

- (a) less than 1 gal (b) 1 to 3 gal (c) 3 to 5 gal (d) 5 to 10 gal
(e) more than 10 gal (state how many) _____

8. Please give here the amount of oil you made over the past 5 years:

<u>Year</u>	<u>Amount made</u>
1999	
1998	
1997	
1996	
1995	

RESOURCE AVAILABILITY AND UTILIZATION

9. Do you collect the crabwood seeds yourself? YES NO

10. If no, explain the relationship between the collector and you:

Are you related? YES NO
 Is it a chainsaw operator? YES NO
 Logger YES NO
 Crab oil maker YES NO
 Seed collector YES NO

11. Do you buy the seeds from the collector? YES NO

12. How much do you pay for a rice bag of seeds?

(a) less than \$500 (b)\$500 to \$600 (C)\$600 to \$700 (d)\$700 to \$800
 (e) \$800 to \$900 (f)\$1000 to \$1100 (G)\$1200 to \$1300 (h) more than \$1300

13. How many pounds of seeds do you process into crab oil each season?

14. How many pounds of seed do you need to make one gallon of oil?

15. In how many different areas are the seeds used by you collected?

Name(s) of area(s)	Distance from your home	Transportation used to get to area	Time taken to get to area

16. How many pounds of seeds (average) are collected on each trip (by you or by the collector)?

17. Is crabwood harvested for lumber in the area where you get crabwood seeds? If yes, please give some details of the operation(s):

Are crabwood trees felled? YES NO

Are crabwood trees ripped with a chainsaw into rough lumber? YES NO

Are logs skidded and shipped by truck and river? YES NO

18. Do you know which animals, if any, feed on crabwood seeds? If yes, which animals, and at what time of day/night?

19. Do you know any stories about crabwood seeds or the making or use of crab oil? If yes, give details (write on the back of this sheet, if necessary).

20. List any other uses of crabwood seeds, apart from extracting crab oil:

21. List the uses of Crab oil:

Use	Method of Application

22. Is the bark of the crabwood tree used? If so, for what? By how many persons in this community?

23. When do you collect the bark and how much do you collect?

24. Are the leaves of the crabwood tree used?

25. If so, for what?

- Tea _____
- Painful or dry skin _____
- Laxative/clean out _____
- Other _____

26. How many community members collect the leaves?

- Less than $\frac{1}{2}$ _____
- Approximately $\frac{1}{2}$ _____
- Approximately $\frac{3}{4}$ _____
- More than $\frac{3}{4}$ but not all _____
- All _____

27. When do you collect the leaves and how much do you collect?

28. When trees are cut down, do the chainsaw operators collect the bark and the leaves of the crabwood tree?

MARKET AND MARKETING

29. Is there anything you do to increase how much oil you sell? If so, What?

30. Who buys Crab oil?

- (a) people within the community
- (b) people from neighbouring communities

names of communities

- (c) traders within the community
- (d) Traders from neighboring communities

names of communities

(e) traders from Georgetown and distant communities

names of communities

(f) others? Who and where from?

31. How much do you charge for a gallon/pint of your oil?

- (a) less than \$500
- (b) \$501 to \$700
- (c) \$701-\$1,000
- (d) \$1,001-\$1500
- (e) \$1,501-\$2,000
- (f) \$2,001 to \$2,500
- (g) \$2,501-\$3000
- (h) more than \$3,000

32. Has this price changed in the past 5 years? If so, by how much?

- (a) less than \$30 (b) \$31-\$50 (c) \$51-\$70 (d) \$71-\$90
(e) \$91-\$100 (f) \$101-\$125 (g) \$126-\$150 (h) more than \$150

33. How much does it cost you to make a gallon of oil? Give details of what is used to make it (e.g. quantity of firewood, cost of bottles, etc.).

34. On average, how much do you get annually from the sale of crab oil?

- (a) less than \$1,000 (b) \$1,001-\$3,000 (c) \$3,001-\$6,000 (d) \$6,001-\$8,000
(e) \$8,001-\$10,000 (f) \$10,001 to \$12,000 (g) \$12,001 to \$14,000 (h) \$14,001 to \$16,000
(i) \$16,001 to \$18,000 (j) more than \$18,000

35. On average, how much do you save, on an annually basis, from the use of crab oil?

- (a) less than \$200 (b) \$201 to \$500 (c) \$501-\$700 (d) \$701-\$1000
(e) \$1001-\$1200 (f) \$1201 to \$1500 (g) \$1501-\$2000 (h) more than \$2000

36. What problems, if any, do you experience in the crab oil business?

Finding a market _____
Getting a reasonable price for oil _____
Getting seeds _____
Transporting oil to market _____
Other _____

Name of person who collected this information _____

Date