Report of the Ethnographic Field School in Belize (June 2015 Season)

Center for Applied Anthropology, Northern Kentucky University

Prepared, published, and copyrighted by the Center for Applied Anthropology, Northern Kentucky University, May 1, 2016.

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We also appreciate the assistance of Bryn High and Zachary Lawrence, Northern Kentucky University Electronic Media and Broadcasting students, for their assistance during the field school. In addition, we also thank Sarah Hume for editing drafts of this report, although any errors still contained within are our own.

Funding for this project has been provided by the NKU Undergraduate Research Council Award

Table of Contents

Introduction

This report documents the findings of the ethnographic field school organized by the Center for Applied Anthropology (CfAA) at Northern Kentucky University (NKU) in Orange Walk District, Belize, during June 2015. The Sugar Industry Research and Development Institute (SIRDI) facilitated ethnographic research in the communities of San Antonio, San Estevan, San Lazaro, and Yo Creek. The aim of the ethnographic field school was to train students in basic ethnographic methods as well as collect data in collaboration with SIRDI and the farming associations (i.e., Belize Sugar Cane Farmers Association [BSCFA], Corozal Sugar Cane Producers Association [CSCPA], and Progressive Sugar Cane Producers Association [PSCPA]) to use in their agricultural and economic development programs. This field season's research focused on the following broad topics: attribute analyses of sugar cane farming knowledge (i.e., types of sugar cane, soils, pests, insecticides, herbicides, and fertilizers as well as methods of controlling the froghopper pest) and community perspectives on issues related to sugar cane farming (i.e., impacts of a decrease in sugar cane prices, why protective gear is not worn when spraying agrichemicals, and what questions the community suggests be asked).

Background

While the educational aim of the ethnographic field school is to train students in basic ethnographic methods, the applied purpose of the field school is to collect and analyze data that can then be used by SIRDI, BSCFA, CSCPA, and PSCPA in the development of programs for betterment of the sugarcane farming communities in northern Belize. As posted on the field school's web site:

> Students will learn about the local culture by doing participant-observation and conducting ethnographic interviews in a community-based research project. Students will learn research ethics, unobtrusive observation, participant observation, field note writing and coding, ethnographic and life history interviewing, ethnolinguistic data collection, community mapping, rapid assessment procedures, qualitative data analysis, and other ethnographic methods in addition to basic ethnographic writing. After successful completion of this course, students will have:
>
> - developed a basic understanding of Belizean culture,
> - formulated an understanding of ethical and validity issues in ethnographic research,
> - practiced skills in research design and ethnographic methods of data collection,
> - applied basic ethnographic research methods in a non-western culture,
> - engaged in a community-based research project, and
> - analyzed ethnographic data resulting in an ethnographic monograph. (Center for Applied Anthropology at Northern Kentucky University 2016)

Since the literature review was written for last season's report (Hume et al. 2015), there has been one notable anthropological publication related to farming in Belize, titled *Q'eqchi' Maya Swidden Agriculture, Settlement History, and Colonial Enterprise in Modern Belize* (Downey 2015). In addition, another recent publication focuses on the link between economy and environment in managing the Cockscomb Basin Wildlife Sanctuary, titled *Governing though the Market: Neoliberal Environmental Government in Belize* (Medina 2015). Finally, a book, *Pesticides and Global Health: Understanding Agrochemical Dependence and Investing in Sustainable Solutions* (Dowdall and Kotz 2014), has been published that reviews the effects of agrichemicals within farming communities in

Guatemala that includes a literature review of recent research on the effects of agrichemicals on human health among socially and economically marginalized farming communities.

Methods

Upon arrival in the villages of San Antonio, San Estevan, San Lazaro, and Yo Creek, Antonio Novelo (Jungle River Tours) introduced the field school members to village council representatives and explained our collaborative research project to gain local approval for our presence in the community. Each village council gave their permission and was supportive of our efforts to learn about their communities. We presented the councils of San Antonio, San Estevan, San Lazaro, and Yo Creek with printed copies of last year's report (Hume et al. 2015).

Participants of the field school (Clara Maxine Bone, Hannah Grace Howard, Charlee Hutchinson, Stefan Kienzle, Marguerite Kinne, Samantha Louise Krieger, Katie Nicole Ragland, Cassidy Ann Reeves, Linette Sabido, and Rachel Lee Tidwell) conducted house-to-house interviews in a census sampling methodology. The Cooperative Center for Study Abroad hired Antonio Novelo (Jungle River Tours) as the field school's land agent. He served as both as cultural liaison and research assistant during field research in the aforementioned communities. Mr. Novelo would explain our general purpose and introduce students to community members. Students would then present the informed consent statement in English (Appendix K) and Spanish (Appendix L) and upon agreement to participate, have the informant sign a copy (on file) and were offered an unsigned copy for the informant's records.

Interviews were generally conducted on the informant's property (e.g., porch, house, etcetera) with a pair of students, one serving as the primary interviewer and the other as observer. The standard method used for this research was the ethnographic interview (Spradley 2016), which is informant centered (Levy and Hollan 1998) rather than interviewer centered. Interviews were from five minutes to an hour in length, depending upon the informant's time constraints and willingness to be interviewed by the students. Ideally the interview would flow naturally from topic to topic and would end when the interviewer or the informant perceived a natural stopping point or when the informant no longer seemed comfortable or interested in continuing the interview (Levy and Hollan 1998).

During the first week of interviews while at Yo Creek, the students asked descriptive and structural questions (after Spradley 2016, 120-131) to elicit information about the following domains of knowledge: types of cane, soil, pests, insecticides, herbicides, fertilizers as well as methods of controlling froghopper infestations. In addition, students asked the following open ended questions to elicit propositional statements (after D'Andrade, Basso, and Selby 1976): (1) "Why don't some people wear protective gear (i.e., safety glasses, respirators, and gloves) when spraying pesticides, insecticides, and herbicides?", (2) "If cane prices decrease, what will you do to maintain your livelihood (bills, food, education, healthcare, etcetera), family, farm, and production?", and (3) "What do you think we should be asking farmers/community members about that would help you?". During the interviews in San Antonio, San Estevan, and San Lazaro, the students also asked informants to pile sort (after Bernard 2011, 233-235; Sillitoe, Dixon, and Barr 2006, 154-158) the types of cane, soil, pests, insecticides, herbicides, fertilizers with the aim of created attribute tables of each domain of knowledge (after Bernard 2011, 402-406; Sillitoe, Dixon, and Barr 2006, 195-199;

Spradely 2016,173-184). Students digitally recorded interviews and took field notes during and directly after each interview.

During field research, draft attribute tables were developed from the collected data (interviews and pile sorts). Upon return from the field, Stefan Kienzle analyzed data from each interview (field notes and digital audio recording) and consolidated the data into the attribute tables and propositional statement frequencies. Douglas Hume then revised the attribute tables by removing attributes with only one response as well as calculating the counts and responses for attributes and types. Hume also consolidated similar propositional statements and calculating both total and percentage responses propositional statement table.

Attribute Analyses

One aim of this field season's research was to begin formally collecting data on domains of sugar cane farming knowledge central to sugar cane farming and of interest to SIRDI, BSCFA, CSCPA, and PSCPA for developing educational programs as well as develop cultural models (see Chapter V: Cultural Models in Hume 2005) of sugarcane farming among communities in Northern Belize. The findings below are not complete, but serve as a step in the process of discovering and documenting the shared knowledge of sugar cane farming in northern Belize.

Sugar Cane Types

The sugar cane attribute table (see Appendix A) shows the cane types and attributes mentioned by at least two informants. Informants offered the most attributes and responses for the following three cane types: (1) B79-474 (18 attributes, 68 responses), (2) BBZ (11 attributes, 28 responses), and (3) Blanca (11 attributes, 25 responses). The three most common attributes of cane types were: (1) thick (10 types), (2) matures late (7 types), and (3) matures faster (7 types). The three highest responses for attributes were: (1) thick (25 responses), (2) most common (15 responses), and Mexican seed (13 responses). The three most common attributes for specific cane types were: (1) most common – B79-474 (15 responses), (2) thick B79-474 – (10 responses), and (3) soft– BBZ (8 responses).

Soil Types

The soil attribute table (see Appendix B) shows the soil types and attributes mentioned by at least two informants. Informants offered the most attributes for the following three soil types: (1) clay (7 attributes), (2) sandy (6 attributes), and (3) rocky (6 attributes). The four highest responses for soil types were: (1) black (16 responses), (2) sandy (11 responses), and (3 and 4) clay and rocky (both had 9 responses). The most common attribute of soil types was uncommon (3 types) with the rest of the attributes being used one or two times. The four highest responses for attributes were: (1) ideal for growing cane (12 responses), (2) under black soil (6 responses), and (3 and 4) hotter and drains water (both with 4 responses). The two most common attributes for specific types of soil were: (1) ideal for growing cane – black (11 responses) and (2) under black soil – white lime (5 responses).

Pest Types

The pest attribute table (see Appendix C) shows the pest types and attributes mentioned by at least two informants. Informants offered the most attributes for the following three pest types: (1) rats (7 attributes) and (2 and 3) froghopper and grasshoppers (both had 5 attributes). The three highest responses for pest types were: (1) froghoppers (19 responses), (2) rats (9 responses), and (3) lupa worms (7 responses). The two most common attributes of pest types were: (1) eats leaves (6 types) and (2) prefer BBZ (5 types). The three highest responses for pest types were: (1) eats leaves (14 responses), (2) most common pest (11 responses), and (3) prefer BBZ (7 responses). The most common attribute for specific type of pest was most common pest– froghopper (10 responses).

Pesticides/Insecticide Types

The pesticide/insecticide attribute table (see Appendix D) shows the pesticide/insecticide types and attributes mentioned by at least two informants. Informants offered the most attributes and responses for the following two pesticides/insecticides: (1) malathion (7 attributes, 18 responses) and (2) Jade 08FR (6 attributes, 22 responses). The two most common attributes with the most responses were: (1) effective against froghoppers (8 types, 20 responses) and (2) effective against worms (6 types, 10 responses). The most common attribute for specific types of pesticides/herbicides was effective against froghoppers –Jade 08GR (8 responses).

Herbicide Types

The herbicide attribute table (see Appendix D) shows the herbicide types and attributes mentioned by at least two informants. Informants offered the most attributes for the following three herbicide types: (1) 24D/Flash (7 attributes), (2 and 3) Diuron/Durex and Ametryne 500G/L (both with 6 attributes). The highest responses for herbicides was among five types: (1) Paraquat/Gramasone (12 responses), (2 and 3) 24D/Flash and Diuron/Durex (both with 11 responses), and (4 and 5) Bullgrass and Helosate/Wipeout/Glyphosate/Roundup (both with 10 responses). The most common attribute, both in use and responses was banned (7 types, 7 responses) with the remaining attributes being used between 6 to 2 times. The most common response for a specific herbicide was Paraquat/Gramasone – banned (6 responses).

Fertilizer Types

The fertilizer attribute table (see Appendix D) shows the fertilizer types and attributes mentioned by at least one informant. Initially, when informants were asked about the different types of fertilizer, they reported urea/salt and a series of three numbers, such as 20-20-20, which were later discovered to indicate the rating of nitrogen, phosphorus, and potassium in the fertilizer. Attributes of the different number combinations and urea/salt were collected, but informants had difficulty stating attributes of the number combinations. During the third week of data collection, the three number system of naming fertilizers was changed to the ingredients of the three number combination, nitrogen, phosphorus, and potassium

as well as urea/salt. Therefore, the number of responses for the attributes of fertilizer types is low.

Informants offered the most attributes and responses for the following two fertilizers: (1) urea/salt (7 attributes, 10 responses) and (2) nitrogen (5 attributes, 7 responses). The two most common attributes for fertilizers were: (1) makes the cane bigger and (2) makes the plant greener (both with 2 types). The four highest responses for fertilizer attributes were: (1) can be obtained from sunlight (3 responses) as well as (2, 3, and 4) makes the cane bigger, makes the plant greener, and helps the cane grow well (each with 2 responses). The three most common attributes for specific types of fertilizers were: (1 and 2) can be obtained from sunlight – nitrogen and nitrogen only fertilizer –urea/salt (47-0-0) (each had 3 responses) and (3) helps the cane grow well – urea/salt (2 responses).

The attribute tables described above are not complete. There are several contradictions in the data, for example, B79-474 is reported as being difficult to cut by seven informants and easy to cut by four informants. In addition, informants were asked to free-list attributes of the cane types and not asked whether each attribute was applicable to the different varieties of cane. During the next field season (June 2016), the attribute tables will form the basis for specific questions about the attributes to correct errors, verify attributes, and complete missing data.

Community Perspectives

The second aim of this field season was to ask specific questions about froghopper mitigation, responses to the future decrease in sugar cane prices, why protective gear is not worn when applying agrichemicals, and what questions the community would like to be asked. The findings below are not complete, but serve as a step in the process of discovering and documenting the perspectives of sugar cane farming community members in northern Belize.

Froghopper Mitigation

Informants that farmed sugar cane were asked, "what methods do you use to get ride of froghoppers?" The majority of the informants (33.33%) reported that they used whatever insecticides that were given to them by their farmer's association or SIRDI (see Appendix E). The next most common answer was that they used Jade as an insecticide (30.95%). Due to the focus on the attribute analyses and speaking with few farmers that made decisions about what insecticides are used on their fields to combat froghoppers, the overall response rate was low (42 responses). In the coming field season, this question will be asked again to elicit additional responses.

Sugarcane Price Decrease

At the request of SIRDI, informants were asked, "if cane prices decrease, what will you do to maintain your livelihood (bills, food, education, healthcare, etcetera), family, farm, and production?" Of the 350 informants we asked, the majority of informants responded that they would either plant crops other than sugar cane to serve as an economic buffer (18.29%), get another job (16.86%), or that they did not have a plan (10.29%), see Appendix F. Several informants responded that a decrease in sugar cane prices would not affect them (7.43%). Since the sugar cane prices have

decreased by 21% from 2014 to 2015 (Naturalight Productions Ltd. 2015), informants will be asked how they have responded to the price decrease during the June 2016 field season.

Protective Gear

At the request of the PSCPA, informants were asked, "why don't some people wear protective gear (i.e., safety glasses, respirators, and gloves) when spraying pesticides, insecticides, and herbicides?" Of the 134 informants that were asked, the majority of informants responded that people do not know how dangerous the chemicals are (19.40%), the protective gear is uncomfortable (19.40%), the protective gear is too expensive (17.16%), or that they did not know (11.94%), see Appendix G. Since this question was only asked during the last third of interviews, informants will be asked this question again during the June 2016 field season to collect additional data.

What should we be asking?

At the request of the Institute for Social and Cultural Research, National Institute of Culture and History, informants were asked, "what do you think we should be asking farmers/community members about that would help you?" Many informants reported that they had difficulty answering this question because they had not spent time thinking of what questions they would like asked of their community members. To make sense of the variety of answers informants gave, responses were coded into categories.

The three most common issues that informants suggested that should be asked of their communities included "education costs of children" (9.70%), "child labor" (8.96%), and sugar cane organizations (i.e., SIRDI and BSCFA)" (8.96%). There are an additional 41 categories/topics that informants suggested be asked of the community for their responses (see Appendix H).

In the coming June 2016 field season, the topics that were mentioned by at least two informants will be placed in the following two sentence frames to elicit additional community perspectives: (1) "What are the effects of (the) _____ in your community?", and (2) "What are the problems of (the) _____ in your community?".

Conclusion

This report documented the findings of the ethnographic field school organized by the CfAA at NKU in Orange Walk District, Belize during June 2015. The June 2015 field season successfully met its goals, to focus on collecting data on cultural models of sugar cane farming by completing attribute analyses of sugar cane farming knowledge (i.e., types of sugar cane, soils, pests, insecticides, herbicides, and fertilizers as well as methods of controlling the froghopper pest) and community perspectives on issues related to sugar cane farming (i.e., impacts of a decrease in sugar cane prices, why protective gear is not worn when spraying agrichemicals, and what questions the community suggests be asked). Since the data collected are not complete nor has the agreement among community members been assessed, the future field season (June 2016) will continue to explore the content and variation of sugar cane farming within northern Belize communities.

Appendix A: Sugar Cane Attribute Table

	Sugar Cane Type																			
Attribute	B79-474	BBZ	Blanca	CP-26	CP-2086	Piña	Bamboo	Brazil	290	Chalecudo	Purple	Ragna	Chaparo	Q80	B59	BVZ-8240	BVZ-8290	PR	Count	Responses
Thick	10	3	2			1		1	1		1	1		3	3				10	26
Matures late		1	2				2	1			1		1					2	7	10
Matures faster	1			2	1	1		1	2				1						7	9
Mexican seed				1	2	2			6		1	1							6	13
Good for sugar	2	1		3	2		1												5	9
Soft	1	8					1									2			4	12
New variety				2	2	6				1									4	11
Heavy	2	4		1		1													4	8
Tall	6	1				2													3	9
Pest resistant	4		2				1												3	7
Hard	2		2							1									3	5
No longer planted			1				3					1							3	5
Older variety	2		2				1												3	5
Prone to ticks										1	1		1						3	3
SIRDI recommended				1	1				1										3	3
Easy to cut	4	1																	2	5
Eaten by rats	1	4																	2	5
More vulnerable to pests		3															2		2	5
Short			4												1				2	5
Can be cut early				2	2														2	4
Grows in well rocky soil	2							2											2	4
Grows well in highlands	2							2											2	4
High sugar content	3	1																	2	4
Grows well in sandy soil	2									1									2	3
Purple												1		2					2	3
Does not grow well in highlands				1	1														2	2
Grows well in lowlands		1						1											2	2
Limited growth area				1	1														2	2
Most common	15																		1	15
Difficult to cut	7																		1	7
First variety			4																1	4
Grows like a pineapple						3													1	3
Green	2																		1	2
Light			2																1	2
Must be replanted every 3 years			2																1	2
Not often farmed			2																1	2
Count	18	11	11	9	8	7	6	6	4	4	4	4	3	2	2	1	1	1		
Responses	68	28	25	14	12	16	9	8	10	4	4	4	3	5	4	2	2	2		220

Appendix B: Soil Attribute Table

	Soil Type							
Attribute	Clay	Sandy	Rocky	Black	Red	White Lime	Count	Responses
Uncommon	1	1	1				3	3
Ideal for growing cane		1		11			2	12
Under black soil	1					5	2	6
Hotter		2		2			2	4
Drains water		2	2				2	4
Common in San Estevan				1	2		2	3
Needs calcium		2	1				2	3
Common				1	1		2	2
Retains water	2			1			2	3
Needs fertilizers	1		1				2	2
Easier to work in during rain	1					1	2	2
Common in Shipyard and Corozal	1				1		2	2
Common in Pine Ridge		3					1	3
Common in Progresso					2		1	2
Requires more cultivation			2				1	2
Damages machinery			2				1	2
Cooler	2						1	2
Count	7	6	6	5	4	2		
Reponses	9	11	9	16	6	6		57

Appendix C: Pest Attribute Table

	Pest Type											
Attribute	Rats	Froghopper	Grasshoppers	Lupa Worms	Chapulin	Peccary	Snakes	Raccoons	Pisotes	Squash Bugs	Counts	Responses
Eats Leaves	1	3	2	4	3	1					6	14
Prefers BBZ	2		1			1		2	1		5	7
Occurs during dry weather	1			1	1						3	3
Eats Roots	1		1							1	3	3
Most common pest		10	1								2	11
Is hunted						2			2		2	4
Eats house structure			1		1						2	2
Not a year round problem				1						1	2	2
Does not occur every year	1			1							2	2
Occurs one year after harvest	1							1			2	2
Dangerous to farmers							3				1	3
Does not eat cane							2				1	2
Every year		2									1	2
May overpopulate	2										1	2
Does not occur during cold weather		2									1	2
Seasonal problem		2									1	2
Count	7	5	5	4	3	3	2	2	2	2		
Responses	9	19	6	7	5	4	5	3	3	2		63

Appendix D: Insecticide/Pesticide Attribute Table

	Insecticide/Pesticide Type														
Attribute	Malathion	Jade 08GR	Regent	Primex	Tamaron	Engeo 24, 7 SC	Landex	Lorsban	Karate	Sevin	Hongos	Aktera	Atana	Counts	Responses
Effective against froghoppers	4	8	1	1	2	1	2		1					8	20
Effective against worms	2	3		2				1	1	1				6	10
Dangerous	3		1		1	2								4	7
Liquid	4					1								2	5
Effective on lumber				2				2						2	4
Expensive		3	1											2	4
Long lasting		3	1											2	4
Spread with airplanes												2	2	2	4
Effective against froghopper eggs	1	2												2	3
Protective clothing required			2							1				2	3
Dangerous - its use has stopped			1				1							2	2
Pellet		3												1	3
Type of fungus											3			1	3
Kills instantly					2									1	2
Mixed with water	2													1	2
Odorous	2													1	2
Counts	7	6	6	3	3	3	2	2	2	2	1	1	1		
Responses	18	22	7	5	5	4	3	3	2	2	3	2	2		78

Appendix E: Herbicide Attribute Table

	Herbicide Type										
Attribute	24D/Flash	Diuron/Durex	Ametryne 500G/L	Paraquat/Gramasone	Bullgrass	Helosate/Wipeout/Glyphosate/Roundup	Gessapex	Amigan	Ramazyn	Count	Responses
Banned			1	6						7	7
Expensive	1			2	2		1			6	6
Fair Trade recommended	2	2	2							6	6
Kills grass	2		1		3					6	6
Kills wide leaf plants	3	2							1	6	6
Liquid	1		1		2		2			6	6
Mixed with other herbicides		1	1	1		2				5	5
Kills vines	1		1					2		4	4
Mixed with 24D		3				1				4	4
Powder	1						2	1		4	4
Used outside the field/between fields		1				3				4	4
Hazardous to cane				1		2				3	3
Uncommon					1			1	1	3	3
Kills shrubs					2					2	2
Was drunk by farmers				2						2	2
Used biannually						2				2	2
Rain resistant		2								2	2
Count	7	6	6	5	5	5	3	3	2		
Responses	11	11	7	12	10	10	5	4	2		72

Appendix F: Fertilizer Attribute Table

	Fertilizer Type					
Attribute	Urea/salt	Nitrogen	Phosphorus	Potassium	Counts	Responses
Makes the cane bigger			1	1	2	2
Makes the plant greener	1	1			2	2
Can be obtained from sunlight		3			1	3
Gives the plants better leaves		1			1	1
Helps a young plant grow faster		1			1	1
Helps cane grow faster	1				1	1
Helps cane grow longer	1				1	1
Helps the cane grow well	2				1	2
Makes soil thicker and more compact			1		1	1
Mixed with other fertilizers	1				1	1
Multiple types		1			1	1
Needed to make cane sweet				1	1	1
Nitrogen only fertilizer (46-0-0)	3				1	3
Used with 2800	1				1	1
Counts	7	5	2	2		
Responses	10	7	2	2		21

Appendix G: Froghopper Mitigation

What methods do you use to get rid of froghoppers?	Count	Percentage
Unspecified insecticides (whatever the association or SIRDI provides)	14	33.33%
Jade (insecticide)	13	30.95%
Bug bags	3	7.14%
Aktera (insecticide)	2	4.76%
Three step system	1	2.38%
Confidor (insecticide)	1	2.38%
Glue covered posts driven into the ground	1	2.38%
Malathion (insecticide)	1	2.38%
Regent (insecticide)	1	2.38%
Karate (insecticide)	1	2.38%
Tamaron (insecticide)	1	2.38%
Hongos (insecticide)	2	4.76%
Jade and Aktera (insecticides)	1	2.38%
Total	42	100.00%

Appendix H: Sugar Cane Price Decrease

Answer	Count	Percentage
Plant other crops in addition to cane to serve as a buffer	64	18.29%
Get another job	59	16.86%
Doesn't know, does not have a plan	36	10.29%
Get a second job	27	7.71%
Would not be affected	26	7.43%
Migrate to another area (e.g., United States)	23	6.57%
Start raising livestock (e.g., pigs and chickens)	21	6.00%
Already has a second business	9	2.57%
Commit crime (e.g., smuggling)	7	2.00%
Spend less and only buy basic necessities	7	2.00%
Take out loans	6	1.71%
Sell fields	6	1.71%
Continue to grow cane, as there are not any other options	5	1.43%
Family member would find another job	5	1.43%
Use less fertilizer	5	1.43%
Will not replant cane	4	1.14%
Family member has a job to support them	3	0.86%
Has a pension, so will not be affected	3	0.86%
Reduce educational costs of children (not pay for school)	3	0.86%
Begin subsistence farming	3	0.86%
Already has a second job	2	0.57%
Become a cane cutter/sprayer	2	0.57%
Change cane type and fertilization to increase yields	2	0.57%
Lay off their workers	2	0.57%
Plant more cane to make up for price difference	2	0.57%
Reduce cane production	2	0.57%
Use savings	2	0.57%
Depend upon children	1	0.29%
Diversify farming and finance	1	0.29%
Farm cotton or limes instead of cane	1	0.29%
Go on strike	1	0.29%
Go to the doctor less to save money	1	0.29%
Live in an extended family to share collective income	1	0.29%
No other option, as other crops will not grow in this area	1	0.29%
Encourage girls to acquire education	1	0.29%
Sell equipment	1	0.29%
Share resources among family and neighbors	1	0.29%
Start beekeeping	1	0.29%
Stop using electricity	1	0.29%
Use cane delivery truck to haul other products	1	0.29%
Work more hours	1	0.29%
Total	350	100.00%

Appendix I: Protective Gear

Answer	Count	Percentage
People do not know how dangerous the chemicals are	26	19.40%
The protective gear is uncomfortable (hot, too restrictive)	26	19.40%
The protective gear is too expensive	23	17.16%
I do not know	16	11.94%
People are not used to wearing the protective gear	7	5.22%
Farmer's do not invest in protective gear for part-time/daily laborers	5	3.73%
People are careless/lazy	4	2.99%
It is a bad habit - not to wear the protective gear	3	2.24%
People are stubborn	3	2.24%
People do not have the gear	3	2.24%
People have not worn protective gear in the past	2	1.49%
The workers do not have the money to purchase the protective gear	2	1.49%
Farmer's to not care about the workers	1	0.75%
People are confident in themselves	1	0.75%
People are used to the chemicals	1	0.75%
People have not been trained in how to use the protective gear	1	0.75%
People may be allergic to the protective gear	1	0.75%
People not part of a farmer's association do not use protective gear	1	0.75%
People only now know about the risks due to fair trade agreements	1	0.75%
People think that the risks are reduced by spraying lower	1	0.75%
People who only spray once do not buy protective gear	1	0.75%
Protective gear slows work	1	0.75%
The protective gear may only be used once	1	0.75%
The protective gear instructions are only in English	1	0.75%
There is not a law requiring the use of protective gear	1	0.75%
There is too much protective gear	1	0.75%
Total	134	100.00%

Appendix J: What should we be asking?

Answer	Count	Percentage
Education costs of children	13	9.70%
Child labor	12	8.96%
Sugar cane organizations (i.e., SIRDI and BSCFA)	12	8.96%
Large versus small farms	7	5.22%
Sugar cane factory	6	4.48%
Equality (between famers/non-farmers and rich/poor)	5	3.73%
Government assistance	5	3.73%
Job availability/growth	5	3.73%
Agrichemical use	4	2.99%
Village council	4	2.99%
Water quality	4	2.99%
Development	3	2.24%
Farm worker pay	3	2.24%
Happiness	3	2.24%
Mosquitoes born diseases	3	2.24%
Roads	3	2.24%
Street lights	3	2.24%
Youth groups	3	2.24%
Community helping each other	2	1.49%
Farmer ownership of cane	2	1.49%
Farmworker safety	2	1.49%
Field burning	2	1.49%
Health care	2	1.49%
Litter	2	1.49%
National politics	2	1.49%
Weather	2	1.49%
Women's communal activities	2	1.49%
Young people/youth	2	1.49%
Abandoned properties	1	0.75%
Alcohol abuse	1	0.75%
Crop diversity	1	0.75%
Farming manuals	1	0.75%
Food security	1	0.75%
Health education	1	0.75%
Investments	1	0.75%
Library	1	0.75%
Loans	1	0.75%
Police/law enforcement	1	0.75%
Poverty	1	0.75%
Property maintenance	1	0.75%
Quality of production	1	0.75%
Replanting programs	1	0.75%
Rise in sugar cane payments	1	0.75%
Small businesses	1	0.75%
Total	134	100.00%

Appendix K: Informed Consent Statement – English

College of Arts and Sciences
Department of Sociology, Anthropology, and Philosophy
Landrum Academic Center 217C
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INFORMED CONSENT TO PARTICIPANT IN A RESEARCH PROJECT

TITLE OF PROJECT: Ethnographic Field School

NAME OF PRINCIPAL INVESTIGATOR: Dr. Douglas Hume, Northern Kentucky University

CONTACT NAME AND PHONE NUMBER FOR QUESTIONS/PROBLEMS: Douglas Hume, Ph.D., Associate Professor of Anthropology, Northern Kentucky University, humedl@nku.edu or 859-572-5702.

PURPOSE OF RESEARCH: This research project records the way of life of sugar cane farmers in Northern Belize with the intent to share the results on the Internet, journals and conference proceedings as well as in a report to the Belize Sugar Cane Farmer's Association, Institute of Social and Cultural Research, and the Sugar Industry Research and Development Institute.

PROCEDURES/METHODS TO BE USED: The interview includes questions about your household economic behavior and sugar cane farming methods. The interview is estimated to last between five minutes to one-half hour. The audio recording of the interview will be securely stored and destroyed after it is transcribed. Data collected in this study will then be anonymous, as we are not collecting names or other identifying information. You will not be paid for being in this study.

RISKS INHERENT IN THE PROCEDURES: There are no known risks.

BENEFITS: It is hoped that the results of this research will influence how the Belize Sugar Cane Farmer's Association and the Sugar Industry Research and Development Institute develop educational programs about farming, health, and economics for sugar cane farming families in Northern Belize.

CONFIDENTIALITY: The only identifying information that we will keep on record is this signed document, which may be inspected by the Institute of Social and Cultural Research and other human protection bodies. This document will not be connected with you interview data.

LIABILITY: Neither the researchers, their agents, or you (the participant) are liable for any damages or penalties from participating in this research.

PARTICIPATION: Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled.

Your signature acknowledges that you have read the information stated and willingly sign this consent form. Your signature also acknowledges that you have received, on the date signed, a copy of this document.

_____	_____	_____
Participant name (printed)	Participant signature	Date

_____	_____
Witness to signature (project staff)	Date

Appendix L: Informed Consent Statement – Spanish

College of Arts and Sciences
Department of Sociology, Anthropology, and Philosophy
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FORMULARIO DE CONSENTIMIENTO INFORMADO PARA PARTICIPAR
EN UN PROYECTO DE INVESTIGACIÓN

TITULO DEL PROYECTO: Ethnographic Field School

INVESTIGADOR PRINCIPAL: Dr. Douglas Hume, Northern Kentucky University

CONTACTO EN CASO DE PREGUNTAS/PROBLEMAS: Douglas Hume, Ph.D., Profesor Adjunto de Antropología, Northern Kentucky University, correo electrónico: humed1@nku.edu; teléfono: 859-572-5702.

OBJETIVO DE LA INVESTIGACIÓN: Este proyecto de investigación registra el modo de vida de los cañeros en el norte de Belice con el propósito de difundir los resultados por Internet, en revistas académicas y actas de congresos, así como en un reporte a la Asociación de Cañeros de Belice, el Instituto para la Investigación Social y Cultural, y el Instituto de Desarrollo e Investigación de la Industria Azucarera.

PROCEDIMIENTOS/MÉTODOS DEL ESTUDIO: La entrevista incluye preguntas sobre la economía doméstica y los métodos empleados en el cultivo de la caña de azúcar. La entrevista durará entre cinco minutos y media hora y será grabada. La grabación se almacenará en un lugar seguro y se destruirá luego de su transcripción. La información recopilada en esta investigación es anónima, ya que no registramos nombres ni otros datos personales. No se recibirá ningún tipo de compensación económica por participar en esta investigación.

RIESGOS INHERENTES EN LOS PROCEDIMIENTOS: No hay riesgos conocidos.

BENEFICIOS: Se espera que los resultados de esta investigación tengan un impacto en cómo la Asociación de Cañeros de Belice y el Instituto de Desarrollo e Investigación de la Industria Azucarera desarrollan sus programas educativos sobre agricultura, salud y economía para las familias cañeras en el norte de Belice.

CONFIDENCIALIDAD: En cuanto a información identificatoria, sólo guardamos esta hoja con su firma, la cual puede ser inspeccionada por el Instituto para la Investigación Social y Cultural y otros organismos de protección de derechos humanos y civiles. En ningún momento este documento podrá ser emparejado con la información que Ud. comparta en la entrevista.

RESPONSABILIDAD LEGAL: Ni los investigadores, ni sus agentes ni Ud. (el/a participante) serán responsables por daños o sanciones como resultado de su participación en esta investigación.

PARTICIPACIÓN: La participación en este proyecto es voluntaria. Si decide participar en esta investigación, tiene derecho a anular este formulario y dejar de participar en cualquier momento sin sanciones o pérdida de beneficios a los que tenga derecho.

Su firma confirma que Ud. ha leído la información contenida en el mismo y que firma este formulario de consentimiento por su propia voluntad. Su firma también confirma que Ud. ha recibido una copia de este documento en la fecha indicada.

_____	_____	_____
Nombre del/a participante	Firma del/a participante	Fecha

_____	_____
Testigo (un miembro del equipo de investigación)	Fecha

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