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School-Facilitated Juvenile Delinquency: A Critical-Interpretive Analysis of the Schooling Experiences of Low-Achieving High School Males in Jamaica

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Abstract

Juvenile delinquency, as a known antecedent of crime, poses a significant threat to human security in Jamaica. This paper shows how the school system facilitates juvenile delinquency through the use of policies and practices that hurt low-achieving students, driving them away from conventional social values. Normative conceptions of modern education paint a picture of a fair and inclusive merit-based system that offers students from all backgrounds equal opportunities for social mobility. These views contrast earlier theorizations of education as being a tool of capitalism that exists primarily to reinforce existing inequalities. Juvenile delinquency has been framed in the literature as a resistance to this capitalist-based education system. While it can be argued that the social reproduction thesis is no longer applicable in an era of universal education, a low-performing school setting is one place where this thesis might still obtain. Against this background, this paper seeks to offer a more nuanced interpretation of juvenile delinquency from a developing country perspective based on ethnographic data collected with low-achieving high school males. More specifically, the paper critically assesses dominant policies and practices that obtain in the education system and discusses how these policies and practices effectively marginalize low-achieving youth and, in so doing, push them toward delinquency.

Keywords: juvenile delinquency, low-achieving males, Jamaica, resistance, human securit

1. Introduction

Juvenile delinquency is a major social problem for many countries around the world, with adverse implications for sustainable development and human security. A correlation between juvenile delinquency and crime exists[2] but is not precisely understood. However, studies have shown juvenile delinquency to be a stable predictor of delinquency in adulthood[3], and substantial evidence links a majority of adult criminals to delinquency in their youth[4]. Therefore, a deeper understanding of juvenile delinquency is likely to impact crime-fighting positively; as well as aid in combating human security threats.

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[2] see Kosterman et al. 2001; Xu, 2006; Guan, 2012; Loeber and Farrington, 2012
[3] Xu 2006
[4] Pereira and Da Costa Maia 2017

A deeper understanding of juvenile delinquency is particularly urgent in Jamaica, which is a country of fewer than three million people, but which consistently features at the top of global crime statistics. Homicides, in particular, are of grave concern in Jamaica, which had a homicide rate per 100,000 population of 57.1 in 2017[5], compared to the global average of 5.3. Crime in Jamaica is not only severe but also costly and youth-dominated. Crime is estimated to cost Jamaica five per cent of its annual GDP, which equates to approximately half a billion United States Dollars (USD) per year[6]. Of equal concern is the disproportionate involvement of young people, who virtually dominate crime statistics in Jamaica. Youths (ages 15 – 29) accounted for roughly 98 percent of all major crimes, 80 percent of all violent crimes and 75 percent of all murders in 2002. Statistics also show that males commit the vast majority of these crimes[7].

The purpose of this paper is to examine the issue of juvenile delinquency from the perspective of the schooling experiences of low-achieving students and to show how the school system can be viewed as facilitating juvenile delinquency through the insistence on policies and practices that hurt low-achieving students. Additionally, building on the work of social reproduction theorists, who pushed back against the perception of meritocracy in education, the paper offers a more nuanced interpretation of the view that juvenile delinquency is resistance to capitalism.

2. Theoretical Background, Research Design and Methodology

In keeping with the sociological view of juvenile delinquency as described in the United Nations 2003 World Youth Report, juvenile delinquency in this paper refers to the repeated violation of legal and social norms by young people[8]. As Bintube notes, "all societies have certain norms, value[s], beliefs system [sic], customs and traditions which are socially constructed and implicitly accepted by its members as conducive for their well-being and the sustainability of the ecosystem. Infringement of these cherished norms and customs is labelled anti-social; [sic] deviant behaviour and/or crime in some respects[9]".

Most studies on juvenile delinquency have been quantitative, employing surveys of large numbers of youth to identify risk and protective factors that correlate to deviant conduct. Commonly identified factors include race, gender, socioeconomic and family background, peer influence, parental

[5] UNODC, 2019
[6] Inter-American Development Bank, 2017
[7] Smith and Green 2007, 418
[8] United Nations, 2003
[9] Bintube 2017, 12.

absenteeism and school failure. The majority of these factors correspond to the "individual level", and can be linked to events occurring within the individual's life, personal sphere, or control. To the contrary, qualitative studies have looked at the broader environment or system within which delinquency is precipitated, laying more blame on the structure than the agent. While acknowledging the usefulness of quantitative approaches, Smith criticized the paradigm, noting that "quantitative researchers usually do not critically interpret school objectives, social interactions, or students' perspectives and agency[10]". Smith called for more qualitative research on disadvantaged schools with large numbers of marginalized students as a rebalancing of positivism in juvenile delinquency research. Ilan agrees, describing mainstream criminology as an examination of crime that does not "recognize, consider or probe the lived experiences of those who offend.[11]" Ilan adds that ethnographic research challenges positivist criminological perspectives through "nuanced reportage" of social worlds and the meanings that actors within them attach to various phenomena.

The theoretical base of this paper is the social reproduction thesis within qualitative studies on juvenile delinquency and sociology of education, which challenge the perceived egalitarian nature of the education system. Bowles and Gintis, for instance, argued that schools replicate the values and attitudes that capitalist societies need; and that the overall goal of education is to foster a subservient workforce[12]. Bowles and Gintis believe that schooling teaches students to be docile and to respect hierarchy and authority. In sum, the social reproduction argument was that "schools were not exceptional institutions promoting equality of opportunity; instead they reinforced the inequalities of social structure and cultural order found in a given country[13]".

The social reproduction thesis, or the idea that schooling is not meritocratic nor socially uplifting, goes against our normative understanding of the education system, which is widely perceived as the bedrock of an equal society in the post-WWII era[14], and the socially accepted way that people from lower-class and marginalized backgrounds can access social mobility. However, the social reproduction thesis may still be applicable in modern education; especially at low-performing schools with high concentrations of low-achieving students, many of whom come from lower-socioeconomic and marginalized backgrounds. In the Jamaican context, these schools are typically plagued with underperformance and behavioral problems[15]. In such settings, the conformist image that Bowles and Gintis paint does not seem to apply as violence, victimization, subpar output, disrespect for authority

[10] Smith 2000, 300.
[11] Ilan 2007, 28.
[12] Bowles and Gintis 1976
[13] Collins 2009, 34
[14] Themelis 2007
[15] The Jamaica Information Service, 2014

and defiance of rules are commonplace. These behaviors are perhaps a component of what is normatively considered as “delinquency” today, which some authors see as a rebuke of capitalism manifested by the rejection of education.

However, rejecting “oppressive” capitalist-based education does not necessarily free one from the grasp of capitalism, as Paul Willis' 1977 book showed. Willis investigated a group of senior high school boys (“the lads”) in the British midlands in the 1970s whose outright rejection of school, glorification of violence, smoking, and drinking, he described as a form of protest against capitalism, influenced by their milieux[16]. The boys' rejection of schooling marshalled them into working-class jobs, an outcome that both supports and contrasts Bowles and Gintis’ arguments.

The debate up to that point was dominated by arguments characterizing the education system as a disguised form of oppression. Willis added the perspective of the boys' agency, or the effect of their individual actions on their educational outcomes. He concluded that while the system might have been set up against the boys, their embodiment of what Willis calls a *counter school culture* led to their failure. In other words, rejecting the perceived 'capitalist school agenda' lead right back to entrapment by the capitalist system through working-class jobs. Willis’ argument elucidated a structure-agency dynamic, or the interplay between structure (education system and capitalism) and the agency (personal actions) of the boys, which is still relevant to understanding contemporary juvenile delinquency.

Nevertheless, several gaps remain. Not only were these studies conducted several decades ago, but they were also conducted in multiethnic, industrialized settings where manual labor and the factory floor were staples of society. Furthermore, given that the majority of studies on juvenile delinquency were conducted in the developed world (especially North America and Europe), they are not fully applicable to developing country contexts such as Jamaica, which is a mostly monoethnic, middle-income country. It is of value, therefore, to understand how the structure-agency dynamic plays out in an era of modernization and heightened emphasis on universal education in developing country contexts. Additionally, in keeping with Smith[17], it was crucial to investigate how the imperatives (policies and practices) of the education system matched the expectations and abilities of its marginalized students. It was also crucial to understand the influence educational imperatives have on students and how they influence students’ attitudes and behaviors.

This paper has two main objectives: (1) to describe students’ schooling experiences against the backdrop of school policies and practices, and (2) to examine how school policies and practices align

[16] Willis 1977
[17] Smith 2000

with the abilities, values and identities of low-achieving youths. The paper is based on a study conducted over six-months at West Hill High[18], a public secondary school in Jamaica. Data collection lasted approximately 47 days, which amounted to more than 300 contact hours with students. Following on-the-ground data collection, I continued to collect data virtually via social media platforms. This data collection is still ongoing. The decision to focus on low-achieving males was based, in part, on Smith's[19] call for data from schools with large populations of disadvantaged students from marginalized backgrounds; as well as the fact that juvenile delinquency and crime, in general, in Jamaica is a predominantly male issue[20]. Additionally, given that evidence shows linkages between delinquency, social class and students' achievement at school[21], it was essential to collect data from environments that featured significant numbers of students from lower-socioeconomic backgrounds and from those considered low-achievers, in particular.

West Hill High is a co-educational public secondary school in Western Jamaica. The school is located on the outskirts of the region's largest city and is classified as a rural school by the Ministry of Education. However, many students are from urban, inner-city and volatile communities. The school population ranges from lower to middle-income backgrounds. Based on benchmark passes (bp)[22], the school's performance in Caribbean regional examinations[23] falls toward the lower end of the spectrum[24] , and student performance in English Language and Mathematics has been described as "unsatisfactory"[25]. In addition, the school is notorious for student-related behavioral challenges. The school's capacity, student-teacher ratio, enrolment figures, and student attendance rates are in keeping with national averages.

Ethnographic methods were used to gather data from students. Semi-structured interviews (with teachers and staff), informal discussions with parents and guardians, and a makeshift project were also conducted. Most data were collected from a group of eighth-grade boys, who were selected based on a shortlist of students with behavioral issues obtained from the school administration, along with some of their close friends. There were a total of 13 boys in the core group of participants. The 13 boys came from five different classes (streams) and comprised multiple peer groups. The boys' ages ranged

[18] West Hill High is a pseudonym used to maintain anonymity
[19] Smith 2000
[20] UNICEF, 2018, 12; Jamaica Constabulary Force, 2018
[21] Ring and Svensson 2007
[22] One "benchmark pass" equates to a final year student who passes five (5) or more subjects including Mathematics and/or English Language in Caribbean regional examinations
[23] Several Caribbean countries use a centrally administered secondary school exit examination system (described later)
[24] If we were to classify schools into the following five categories based on benchmark passes, [A: 81% - 100%bp, B: 61% - 80%bp, C: 41% - 60%bp, D: 21% - 40%bp, E: 0% - 20%bp], West Hill High would correspond to the lowest category, E. This means that less than 20% of all final year (11th grade) students at West Hill High attain 5 or more passes in Caribbean regional examinations.
[25] Based on a confidential document obtained at West Hill High

from 13 to 15. The boys came from a mixture of urban, inner-city, rural and suburban settings, and were mostly from lower or lower-middle-class backgrounds. The boys' academic abilities were mostly low. However, one boy had a notably high academic performance. Please see Table 1 for a detailed description of the boys' backgrounds. All names used in this paper are pseudonyms.

Table 1. Personal background of study participants

Alias	**Age**	**Socioeconomic Status**	**Academic Performance**	**Community Profile**	**Extent of Delinquency*[26]**
Alrick	13	Lower	Moderate	Inner-city	Mild
Marlon	14	Lower	Very low	Inner-city	Extreme
Paul	13	Lower-middle	Very low	Suburban	Severe
Billy	14	Middle	Very low	Rural	Extreme
Leo	15	Lower-middle	Very low	Urban	Serious
Orane	14	Lower-middle	Very low	Inner-city	Moderate
Joseph	13	Lower	Low	Rural	Serious
Dean	14	Lower	Moderate	Rural	Serious
Bob	13	Lower-middle	Moderate	Inner-city	Moderate
Keith	13	Lower-middle	High	Rural	Mild
Niel	13	Lower	Low	Unknown	Mild
Chris	13	Lower	Low	Inner-city	Serious
Sheldon	13	Lower	Moderate	Inner-city	Serious

*
Mild – minor impertinence (e.g. disregarding instructions, talking back to teachers)
Moderate – major impertinence and antisocial behaviors (e.g. swearing, provocation, skipping classes)
Serious – unruly behavior, aggression, and violation of laws that apply only to children (e.g. fighting, truancy, smoking, drinking, running away from home)
Severe – behaviors that violate both child laws and adult laws (e.g. robbery, bullying, assault, theft, fraud)
Extreme – involvement in major criminal offending (e.g. drugs, violence, weapons, shootings)

3. The Orthodoxy of the Classroom

Jamaica's Ministry of Education's mission is to provide "quality care and education in an innovative, inclusive and enabling environment thereby creating socially conscious and productive

[26] Serves only as examples of typical behaviors for each category. Students did not necessarily commit all the offences listed as examples for each category.

Jamaicans". Its vision is to produce "...students who are literate and numerate, [and students who] realise and explore their full potential...[27]". The operationalization of these goals, by public education institutions (PEIs), have varying effects on students but seem to be particularly skewed against low-achieving students from marginalized backgrounds. This section demonstrates how the insistence on the use of particular language in school, as well as the standard practices of streaming[28], testing, and ranking, affect students. I will also detail how the insistence on particular codes of dress and personal image clashes with the desires and tendencies of students.

3.1 Language and Respect

As a former British colony, Jamaica's official language is English. However, a local dialect, patois, is widely spoken. Patois, or English creole, is an amalgamation of multiple languages that reflects the country's colonial heritage and African roots. Patois has long been considered dirty and uncouth, and until recently, was associated with the lower classes[29]. Therefore, children are encouraged to speak standard English, especially in formal settings like a school. My data show that most students are neither competent nor comfortable with using standard English and have grown accustomed to speaking patois, which in many cases is widely used in their social environments outside of school. However, the expectation that students use standard English in school remains, and is even one of the official school rules.

Language is deeply intertwined with the show of respect, which is a probable explanation for the insistence on language standards in formal school settings. The following narrative demonstrates the embeddedness of language in the show of respect.

> A teacher related a story of an exchange between Ms. Jones (a teacher) and a "disrespectful" student. The story starts with two students conversing about the news that a particular teacher would be leaving the school (resignation).
>
> *Student A: Yuh noh hear seh di short fat teacher a leff [Have you heard that the short fat teacher is leaving?]*
>
> *Student B: Which teacher dat? Wha she name? [Which teacher? What's her name?]*
>
> *Student A: Minno know but she use to teach wi last year [I'm not sure but she taught us last year].*
>
> *Student B: Mi hope a no da woman deh inno [I hope it's not the woman I am thinking of].*

Ms. Jones overheard the students talking and interjected, reminding Student B that referring to a

[27] Ministry of Education, Youth and Information, 2019
[28] Referred to as *tracking* in North America
[29] Wassink 1999

teacher as “da woman [that woman]” was disrespectful. However, closer scrutiny of the conversation reveals a discrepancy. Given the fact that Student B is hopeful that the departing teacher is not the person she is thinking of, we can assume that Student B has some amount of affection or admiration for the teacher she has in mind and would regret to see her leave. However, the term “da woman [that/the woman]” is widely perceived as negative and disrespectful in the Jamaican dialect and ends up clouding the essence of Student B’s utterance, as more emphasis was placed on the form than on the substance of the exchange.

In another scenario, Ms. Brown, a teacher, in mediating an issue involving a group of boys, asked one of the boys a question. He responded “how yuh mean” with a questioning tone. In the Jamaican dialect, this response means “Sure”, or “I would not have a problem with that”. Ms. Brown, however, scolded the boy for his improper language, which she perceived as disrespectful. “Boy, don't you dare talk to me like that. You do not answer an adult like that. Say ‘Yes Sir’ or ‘Yes Miss’,” she said.

These narratives show how pervasive the influence of the dominant language is and how stringent the requirement to speak standard English can be, especially for students who do not master it and feel discomfort when forced to use it. Students are regularly flagged for "inappropriate language", even though such language is tolerated or promoted in their milieux. The narratives also show how the insistence of language (form) ignores and misconstrues the intentions of students who are sometimes reprimanded on the basis of how they speak and not the meaning of what they say.

3.2 Streaming, Testing and Ranking

The Ministry of Education employs a policy of streaming, whereby students are placed into one of three “pathways”, under the ministry’s Alternative Pathways to Secondary Education (APSE) program. The issue of streaming is widely contested in the literature with proponents arguing that it gives low-achieving students a chance to learn in an environment that caters to their particular learning needs[30]. Opponents of streaming, however, argue that it excludes around low-achieving students, confining them to inferior education and socialization only with their low-achieving peers[31]. This, they believe, affects low-achieving students’ confidence. My data shows that students are not necessarily opposed to being placed in lower pathways, but they also did not seem encouraged to improve their results, in order to move up. In addition, students from lower streams tended to be evasive when asked about their pathway and gave responses such as “a chue mi nah study inno [It’s because I don’t study hard]” or “when mi reach ninth grade mi aggo settle down [I will settle down in ninth grade], ”

[30] see Fiedler et al. 2002
[31] see Ansalone, 2003

suggesting an awareness of their inferior positioning.

The ministry's APSE program uses the results of primary school exit tests to determine a student's aptitude and corresponding "pathway." The ministry notes that "as …[students] progress, they are advanced to the suitable pathway based on their achievements[32]". The primary method of evaluating these "achievements", however, is also by way of standardized testing, which I found to be a major headache for low-achieving students, as shown below.

I was given an opportunity to co-invigilate an end-of-term English exam for one of the lower stream classes in the eighth-grade. Several minutes after the test began, a group of boys came to the door and asked if they could enter. Ms. Norris, the main invigilator, asked them to present their IDs, but only one student had his ID. The others claimed to have left their IDs at home. The student with his ID was let in, and the others sent to get an *exam slip*, which cost 100 Jamaican dollars per student per day. The students complained that they did not have any money, before adding that the school only implemented this rule to "mek money [profit off students]". However, it is widely known that IDs are required for sitting exams and students were reminded multiple times prior to the start of the exam period, so it is likely that the students intentionally left their IDs at home as a way to be legitimately excused from sitting the exams, at least temporarily. I refer to this strategy as *extraction* (removing oneself from an uncomfortable situation), which I have seen many times over.

As the test went on, students became rowdy, and several students began yelling "Sir" and "Miss", indicating that they needed assistance. Their calls for help were shrouded in frustration. They sighed heavily, banged on the desks, and dragged the metal chairs squeakily along the floor. Most of the queries were basic but loaded with symptoms of irritation and humiliation. For example, "Sir, wha da word yah mean? [What is the meaning of this word, Sir?]", "Wha mi fi do ere soh? [What am I expected to do in this section of the paper?]", "Sir, minno understand da part ere [Sir, I don't understand this part]". Some students asked me to read questions aloud for them, as they shamefully admitted to their inability to read. Others, including Dean, explicitly asked me for answers to questions. One boy only wrote his name and the date on his test paper and sat staring blankly at the chalkboard. I asked him why he was not writing anything else, and he told me that he did not know what to write.

As the exam wore on, students began to talk openly with their neighbors, complaining aloud, hissing, standing up, throwing objects across the room, and asking to be let out for restroom breaks. Some students even began hitting others with rolled up papers, missiles and other objects. The test was on the brink of chaos, and even Ms. Norris' threats to "rip up" the papers of misbehaving students,

[32] Ministry of Education, Youth and Information, 2017

which would essentially equate to a failing grade, fell on deaf ears. I occasionally asked rowdy students to settle down, but when they did oblige, it was short-lived. I call this tactic *distraction* - creating chaos to diffuse the intensity of an unpleasant situation.

> Joseph, who was sitting at the back of the room, had nothing written on his test paper. He looked quite perplexed, so I engaged him.
> *KW: What's the matter?*
> *Joseph: Nuttin [Nothing]*
> *KW: So why aren't you doing the test?*
> *Joseph: Minno feel like do no test today [I'm not in the mood for a test today]*

His response reminded me of another student's reply, a few weeks earlier, to his teacher asking why he had not done his homework. He said "Man a badman. Mi no do homework" [I am a *badman*[33]. I don't do homework].

After 40 minutes into the test (of the allotted 90 minutes), the students began to ask the time repeatedly. "Sir, hummuch time leff? [Sir, how much time do we have left?"], "Sir, wha time yuh have? [What time is it now, Sir?]", they asked. I told them to worry less about the time and try to focus on completing their papers. However, they grew increasingly irritated.

These narratives show student frustration at testing and other obligations like homework, which from their perspectives, highlight their weaknesses and humiliate them. In response, they use tactics of *extraction* and *distraction* as tools to escape from these unpleasant situations. Another tactic is *deflection*, which involves diverting the blame. For instance, for Joseph (mentioned above), it was not that he *could not* do the test; it was that he *did not want to* do it. After all, admitting that he could not do the test would be admitting to incompetence; an image of himself that he would prefer not to portray.

Ranking is another school practice that hurts low-achieving students. Students are ranked among their classmates based primarily on their performance in tests. As the ministry promised, a high rank gives a student a chance to move up to a higher-level pathway. Therefore, being ranked first, second and third place in a class is considered outstanding and praiseworthy. However, as one's rank moves further away from the coveted top spots, praise gradually turns into condemnation. Interestingly, this condemnation often comes from parents, who bemoan the sacrifices they make to afford students an education. This explains why some students feel anxiety on "report day" when parents come in to collect report cards and consult with teachers about their children's performance. Leo told me "Mi doah even waa si mi report [I don't even want to see my report]", while Dean (with the help of Keith)

[33] This term is used by students and describes a particular deviant profile that they want to convey. It will be discussed later in this paper.

devised an elaborate scheme, wherein I would collect his report in lieu of his father, from whom he wanted to hide his results.

Nonetheless, it is undeniable that streaming, testing and ranking are fundamental components of modern schooling and help schools to fulfil their mandate. Standardized testing, in particular, is deeply intertwined with the Jamaican education system and begins as early as the primary school level. At the secondary level, the Caribbean Examinations Council (CXC) administers simultaneous standardized testing in 16 Caribbean territories and prescribes qualifications based on test scores[34]. The benchmark of academic success at the secondary level is, accordingly, passes in five CXC subjects including Mathematics and English Language. Unsurprisingly, this is relatively easy to achieve for the majority of students at Jamaica's top-performing high schools. However, at low-performing schools, it is no easy feat. In fact, there is a sizeable gap in performance between high-performing and low-performing schools. Results from 2013 show that Jamaica's top-performing secondary school achieved 100% benchmark CXC passes, while the worst-performing school failed to achieve even a single benchmark pass[35]. This leads us to question the purpose of the APSE program, considering that despite the ministry's claims that students learn differently, and some require specialized support towards achieving their "potential", low-achieving students are ultimately judged by the same measuring stick as their higher-performing counterparts.

It is arguable, then, that the ministry's idea of "full potential" is skewed against low-achieving students who typically do poorly on standardized tests. As my data shows, streaming, testing, and ranking, while good-intentioned, hurt low-achieving students, exclude them, and disregard their "ministry-accorded right" to achieve their potential. In light of this, I believe there is cause for consideration of the extent to which the practices of streaming, standardized testing, and ranking are necessary or even appropriate, in low-performing secondary schools.

3.3 Importance of 'The Look'

Not only do students' academic performance and intellectual capacities conflict with the mandate of the education system, their cultural habits and methods of self-expression are also cause for concern. These conflicts are usually centered on differences in standards of dress, particularly regarding school uniforms.

School uniforms are worn by most high school students in Jamaica. The education ministry has created guidelines, which are intended to, among others, help schools create rules that promote

[34] Caribbean Examinations Council, 2019
[35] Educate Jamaica, 2014

positive values and attitudes while respecting students' rights. The ministry maintains that rules should not be discriminatory or arbitrary, and should be based on consensus and reasonableness. According to the ministry:

> *A school uniform represents the outward identity of the institution within the wider community. Students in uniform are ambassadors for their schools. Institutions are therefore entitled in their own right to insist upon standards of dress and grooming that preserve the dignity of the uniform and the ethos of the institution*[36]

Many schools in Jamaica, including West Hill High, prohibit the wearing of tight pants (males), males growing/braiding their hair (except for religious reasons), the wearing of jewelry or non-school related insignia, and skin bleaching. These rules are intended to ensure a safe school environment that is conducive to learning excellence[37].

However, this limits students' ability for cultural expression through their style of dress and personal appearance. Male students, in particular, feel the need to maintain a specific look. One student told me that "when yuh look clean and neat, yuh get all the girls [Looking clean and neat gets you all the girls]". This clean and neat look involves the wearing of skin-tight pants, well-groomed hair, shaved eyebrows, and evenly toned skin. This image corresponds to the imagery emanating from the Jamaican dancehall, which is the contemporary face of Jamaican culture and is keenly adhered to by young people, especially those from marginalized backgrounds[38].

Another reason to preserve a particular look is that it is synonymous with the badman image. This image is used by students in a variety of ways, including as a tool for preserving physical safety and emotional security. For some students, this badman image emanates from their social environments, while for others, they use it, cosmetically, to blend in at school. For badman students, headgear, handkerchiefs hanging from the back pocket, rolled-up pants feet, and spotlessly clean shoes are common trends. These behaviors often conflict with school policies and students are regularly punished, including being denied entry into the school building.

I found that dress code-related policies, in contradiction to the ministry's own standards, were not reasonable nor consensus-based, and did not adequately recognize and reflect students' diverse cultural backgrounds and forms of self-expression. Moreover, by not recognizing the importance that image plays in safeguarding low-achieving students' emotional security, the system unfairly penalizes

[36] Ministry of Education, Youth and Information, 2018, 11
[37] Ibid
[38] see Cooper 2004; Bolton 2015

students who are often flouting the rules to blend in at school. This is not advocacy for lawlessness, but being a "badman" is an integral part of many students' defense mechanism and not being able to dress the part (as is expected) can leave them feeling vulnerable.

3.4 The Allure of Non-conformity

From the students' perspectives, defying school rules can offer various benefits. Firstly, by being locked out of school, they have a legitimate reason to circumvent class obligations, which for low-achieving students, can sometimes be a relief, as the following narrative illustrates.

> I arrived at school at 9 am one morning, about an hour after the school day had begun, and saw Dean sitting under a tree with a group of higher grade boys.
>
> *KW: What are you doing out here, Dean?*
> *Dean: Sir, dem nah let wi een. [Sir, they are not letting us into the school building]*
> *KW: Why?*
> *Dean: Wi pants too tight. [Our pants are too tight]*
> *KW: So look how yuh aggo miss out pon class because you woah stop wear di tight pants dem [See how your insistence on wearing tight pants will cause you to miss out on your classes]*
> *Dean: Mi nah wear no big pants. Afta mi noh nerd. And, mi no care, cah minno haffi go a Ms. Taylor class. [I am not going to wear loose pants. I am no nerd. And, in any event, I don't care because staying out here means I don't have to go to Ms. Taylor's class.*
> *KW: Whaapen. Yuh no like Ms. Taylor? [Why would you say that? Do you dislike Ms. Taylor?]*
> *Dean: Har class too boring. She cyaa teach. Soi betta mi stay out yasso wid mi niggaz. [Her class is too boring. She doesn't teach well. So, I'm better off staying out here with my close friends].*

In addition to escaping class obligations, breaking the rules seems to stoke ingenuity among the boys. I noticed that rule-breakers were always concocting ways of manipulating or circumventing rules. For example, one day, Billy was locked out of the school building for not wearing appropriate pants to school. Later that day, I saw him on the compound and asked him how he got in. Billy told me that his friend got a pair of appropriate pants to him, but he refused to tell me how this was done, despite my prodding. I asked Billy why he bothered with the hassle of wearing inappropriate pants to school, to which he replied, "I have suitable pants that I can wear, but I refuse to wear them". "Why?" I asked. "Because I am a badman," he replied. Perhaps, Billy used a similar method to get his pants as Orane uses to get his goods for sale into the school building. Orane is an undercover vendor who sells chocolate bars on campus. Since students are searched by security guards at the entrance of the school

building, he needed a way to get his stock into the building. He told me that every morning he arranges with a junior student to collect his boxes of chocolate through crevices near the back gate of the school building or through bathroom windows, thereby allowing him to clear the security inspection without issue. Once he gets inside, he collects the goods from his junior. He also admitted to using junior students because he can instill fear in them and force them to do as he instructs, even against their will.

The foregoing has shown how the strict enforcement of rules incentivizes non-conformity and pushes students towards deviance. My argument, therefore, is that the school's mandate of imparting dominant values necessitates a no-tolerance approach to non-conformity, but in so doing, indirectly facilitates dissent and the honing of delinquent skills.

In sum, Section 3 has shown that low-achieving students are often frustrated and humiliated by dominant school practices. Students are mandated to speak in standard English, which is often difficult and uncomfortable for them. Moreover, even when students do not mean to be disrespectful, their responses are continuously being molded, refined, and contested, forcing them down a path of normalization wherein refusal to conform leads to reprimand. Students are also traumatized by the system's reliance on streaming, standardized testing and ranking, which exposes their weaknesses and bruises their egos. In response, students use various tactics, which I call extraction, distraction, and deflection, and sometimes openly violate rules and willingly accept the consequences, some of which induce ingenuity and provide them with reprieve. I argue that this tension between the orthodoxy of schooling and the abilities and tendencies of low-achieving students has the effect of driving students away from normative social values and towards deeper involvement in deviance, which highlights a paradox, given that the mandate of school revolves around the instilling of normative values.

4. Discussion

The findings of this research show that low-achieving students in Jamaica are humiliated by their schooling experiences, which are based on standards and practices that are not well-suited to their needs, interests and abilities. Based on these findings, I argue that delinquency is more likely to be a protective cover that students use to buffer their humiliating schooling experiences than an expressed opposition to capitalist schooling, as previous literature has suggested.

I arrive at this conclusion based on the fact that most students did not denounce the usefulness of tests, nor overtly protest the education system. To the contrary, many students tried to find ways to improve the appearance of their positive standing within the system, be it by cheating in tests or explicitly asking an invigilator for answers to questions, as Dean asked of me. Such actions are a

testament to an understanding that doing well on tests holds significance within the system. Promising to improve their academic performance when they get to higher grades is more evidence of their subscription to the existing system.

In addition, although many students wear tight pants to school (in violation of school rules), some also bring a pair of "appropriate pants" in their school bags in case they get sanctioned. Such acknowledgement of the rules suggests that students are not as fundamentally opposed to rules as some may argue. A more reasonable explanation of their defiance of rules is an eagerness to maintain an image that earns them the respect of their peers and protects their dignity, or perhaps, simply to maintain solidarity with their cultural backgrounds and identities. Therefore, while the West Hill boys demonstrate stereotypically delinquent behavior, I argue that their delinquency cannot be essentialized to an objection to capitalist education as Willis found. For the West Hill boys, delinquency is unlikely to be the result of a knowledge, outright or subliminal, that schooling is repressive and socially reproductive. Rather, I argue that it is a means of tempering humiliating schooling experiences brought on by dominant schooling policies and practices.

As shown in Table 1, the background characteristics of the West Hill boys were varied, with the exception of socioeconomic status and academic performance. In light of the study's focus on the school environment, poor academic performance emerged as a notable characteristic shared by the boys. Therefore, academic performance is a plausible explanation for the differences between the delinquency of Willis' lads and that of the West Hill boys. Willis believed that the lads did not have lower academic abilities compared to their well-behaved counterparts, which led him to conclude that the lads' actions were intentionally orchestrated to flout the system. On the contrary, the academic performance of the West Hill boys is considerably low, as not only is West Hill High among the lowest-performing schools nationally, but many of the boys in my study came from lower-stream classes. Moreover, I found that the worst behaving students of the cohort I studied corresponded to the lowest streams within the grade. The cohort's top performer, Keith, who was among the best behaved, has since been promoted to the highest stream in the grade. He told me that since moving up levels, he seldom communicates with the other boys. This suggests that delinquency might be a function of low academic performance as the dominant school system rewards high academic performance, regardless of ability, in a similar fashion to Bowles and Gintis' thesis. Accordingly, students who do not meet the academic mark are offered few options to earn a good status within the school system, and delinquency seems to offer them protection and a means of escape.

While I agree with the ministry's goal of helping every child to realize his/her "potential", I argue that the rubric by which this potential is evaluated, at least in low-performing schools, is too heavily

reliant on dominant practices such as standardized testing, thereby causing it to be skewed against low-achieving students. Additionally, cultural elements, such as language and codes of dress that obtain in the students' milieux are often contested in their schooling where rules impose "unnatural" customs on many of them. Students, in turn, piggyback on the enforcement of these practices as a way to renege on their school-related obligations (when it suits them) and use these academic policies as a backdrop for honing deviant creative skills that they concoct to circumvent the official system. These actions, in particular, tip the scale in favor of deviance and is a central part of my assertion that school policies can have the effect of facilitating delinquency.

Irrespective of the differences in the substantive meaning of delinquency for Willis' lads and the West Hill boys, there are real-life consequences in both instances. In the case of the lads, resistance led to entanglement in low-wage manual labor. However, in the Jamaican context, juvenile delinquency is likely to lead to involvement in criminal gangs later in life. The differences in trajectories can be attributed to the variations in the levels of industrialization, employment opportunities and criminal activity in the respective country contexts. Juvenile delinquency in Jamaica is, therefore, intricately tied to the issue of human security at multiple levels. At the individual level, humiliating schooling experiences threaten low-achieving boys' dignity creating an emotional security crisis for them, while at the broader societal level, crime and young people's sustained attraction to criminality continue to undermine the safety and security of Jamaicans.

On a positive note, the absence of an underlying objection to the capitalist system among the West Hill boys infers that low-achieving students who dabble in delinquent conduct are reachable, given changes in the approach to their schooling and evaluation. Limiting the element of hurt that the mainstream school system subjects them to seems pre-eminent. To achieve this, greater investment in and use of project-based learning (PBL) is perhaps one strategy that might be worth exploring. This strategy is widely used in jurisdictions such as the United States and offers students opportunities to experience learning based on their interests, talents, and abilities. Moreover, evidence shows that PBL is effective among students with special learning needs. As part of my study, I also conducted a project with the West Hill boys, which was well-received and seemed to have captured their interests. Even if sustaining their interests would have proved futile, seeing low-achieving students become excited about learning and experimentation within the school environment was an encouraging sign, which may offer some hints on how to build more inclusive curricula and evaluation techniques.

5. Conclusion

The purpose of this paper was to describe the humiliating schooling experiences of low-achieving students in Jamaica, and show how such experiences are entangled with delinquent behavior, which can have the effect of driving students away from normative social values. The study is based on ethnographic data collected from low-achieving students in a monoethnic developing country context and helps to fill a gap in the existing literature, which is heavily based on European and North American studies. A fundamental perspective within the existing literature is that schooling is a tool of capitalism that works to maintain class relations, and delinquency is a subtle resistance to that system of oppression.

My study found delinquency to be more of a cosmetic cover used by low-achieving students to buffer the impact of humiliating schooling policies and practices than resistance to capitalist schooling. The study found that the system's insistence on the use of the dominant language; the long-standing practices of streaming, ranking and testing; as well as strict codes of dress and personal image tarnish low-achieving students' schooling experiences and pushes them toward protecting their pride, which often becomes intertwined with delinquent behavior. This interpretation is a more nuanced account of delinquency that is better suited to developing country contexts, such as Jamaica, compared to the existing literature.

The importance of these findings transcends the discovery of clues that can help us improve the schooling experiences of low-achieving students, and has further implications for national security as studies and crime trends show clear linkages between juvenile delinquency and criminal trajectories later in life. Our ability to limit the human security threats posed by juvenile delinquency in the long-term is, therefore, a function of how well we are able to understand and mitigate the negative impacts of schooling on low-achieving youth.

Finally, it is irrefutable that juvenile delinquency cannot be fully explained or justified based solely on this paper's arguments, especially given the strong influence of students' milieux on their behavior, which was not explicitly investigated in this study. Nonetheless, this paper offers an account of delinquency that is based on the lived experiences of low-achieving students and offers a new perspective which can enrich our understanding of delinquency in a developing country context.

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Risk and Vulnerability in an Untamed Landscape: The Zimbabwean Tonga in the aftermath of the Kariba Dam Induced Displacements, 1956-1980s

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Abstract

This article explores the Zimbabwean Tonga`s daily experiences after their displacement from the well-watered and ecologically rich Zambezi River plains due to the construction of the hydroelectric power generating Kariba Dam in the late 1950s. The Southern Rhodesian government displaced the Tonga to the adjoining infertile, arid, wildlife infested, and tsetse fly ridden uplands of Binga District where some of their new villages and fields were nestled adjacent to national game sanctuaries. These unplanned dislocations exposed the Tonga to poor harvests, crop marauding animals and the tsetse induced livestock disease, trypanosomiasis or *nagana*. The Department of Wildlife and National Parks' game wardens enforced a stringent wildlife conservation system within these game sanctuaries and even outside. Such regulations foreclosed the Tonga`s rights to harvest firewood, herbs, and vegetables from these ecologically diverse conservation zones. Some of the uplands` well watered and fertile areas with rich dark soils, *chidhaka,* were found within the game sanctuaries. Therefore, I argue, the Tonga`s displacement to this untamed landscape coupled with exposure to an unfamiliar regime of state centered ownership and control of wildlife compromised their livelihoods and undermined their access to natural resources. What they understood to be ordinary gathering and hunting while living under the colonial state`s minimal gaze in the pre-displacement era by the Zambezi River became poaching punishable by state violence and fines in the uplands. This study is informed by archival records, newspaper reports, policy documents and oral sources with diversely situated Tonga men and women.

Keywords: Kariba Dam; Tonga people, Displacement, Trypanosomiasis, Wildlife, Zambezi River.

1. Introduction

The Zimbabwean Tonga's haphazard displacements from the well-watered and ecologically rich Zambezi River plains to the adjoining uplands of Binga District due to the construction of the hydroelectric power generating Kariba Dam between 1956 and 1959 exposed them to a long lasting entanglement of human security threats. Such threats are taken here to mean socio-economic and environmental factors that aggravate people's vulnerabilities to hunger, disease and structural

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marginalisation (Barnet and Adger 2007). Exposure to these risks undermines the vital core of human lives because daily life becomes disrupted and uncertain, people cease to have the capacity to survive with freedom and dignity (UNDP 1994). From this perspective, Adger, *et al*, (2014, 759) observe that "the vital core of human lives includes the universal and culturally specific, material and non-material elements necessary for people to act on behalf of their interests. Many phenomena influence human security, notably the operation of markets, the state, and civil society. Poverty, discrimination of many kinds, and extreme natural and technological disasters undermine human security." People outside the protective and re-assuring confines of human security regulatory frameworks do not have the capacity to avoid threats and to mitigate their effects when they do occur.

In the case of the Zimbabwean Tonga, their Kariba Dam induced displacements to the adjacent uplands, where their villages were located between or adjacent to the recently established state owned wild animal sanctuaries made them vulnerable to incessant low crop yields, crop marauding animals and the tsetse induced livestock disease, trypanosomiasis or *nagana*. Within these game sanctuaries and outside the Department of Game`s[2] wardens enforced a stringent wildlife conservation system. They denied the newly resettled people opportunities to exploit wild animals for subsistence. Forestry management regulations restricted Tonga men and women`s rights to harvest firewood, plants, herbs, and wild vegetables from some of the rich game sanctuary environments. Some of the upland's few well watered and fertile areas with rich dark soils, *chidhaka,* were found within the game sanctuaries and forest reserves. Therefore, I argue, displacement to this untamed landscape and exposure to an unfamiliar regime of state centered ownership and control simultaneously compromised Tonga livelihoods and negatively reconfigured their relationships and access to natural resources. What they understood to be ordinary gathering and hunting while living under the colonial state`s minimal gaze in the Zambezi River plains prior to the construction of the Kariba Dams became poaching punishable by state violence and fines in their new upland areas.

Paradoxically, contemporary European colonial officials and journalists obsessed with the exigent need for cheap and secure electricity supplies to boost economic development in the foundering Central African Federation[3] viewed the forgoing Tonga's displacements through the benign optics of high modernism. According to Scott (1998, 87-102) the ideology of high modernism leads to an overriding belief in the power of scientific knowledge to improve the human condition through the development of state sanctioned technical and social engineering projects such as dams,

[2] The Department of Game later transformed into the Department of National Parks and Wildlife Management.
[3] The Central African Federation which lasted from 1953 to 1963) was an amalgam of Northern Rhodesia (now Zambia), Southern Rhodesia (now Zimbabwe) and Nyasaland (Now Malawi).

the spatial reconfiguration of cities, the reorganization of forests and resettlement schemes. In essence, high modernism implies a radical disjuncture with history and tradition. Its temporal focus is almost exclusively on a scientifically transformed and better future (Ibid, 95).

Upon completion, Southern Rhodesian[4] leaders viewed the emergent Kariba Dam as a colossal and unprecedented technological feat, a monument to the "know-how of western capital, a concrete symbol of the transformative power of capitalism and technology in the pursuit of national development" (*Newsweek*, 30 May 1960). The high modernist inspired Federal Minister of Power also argued that:

> Kariba will make a substantial contribution to our objective which is to raise the standard of living of our population of some 8 million people. It is for them that Kariba has been built, so that we should provide employment through industrial expansion and rising living standards. Kariba is a visible demonstration to all those interested in the Federation that our objectives are sound and that we are capable of carrying them out (Quoted in *Anon*, 17 May 1960).

The Governor General of the Federation, The Earl of Dalhousie (1960, 5), did not just concur with the Minister of Power on the dam`s potential as an engine for economic growth in the Federation but he also thought it would cement the tension ridden relations between the two Rhodesias:

> The Kariba Project has been a very great achievement. It has been great from its initial conception, from its planning, from its structural beginnings and from the point of view of the magnificent completed dam and hydro-electric machinery. It has often been said that it is a symbol. So it is. It joins Northern and Southern Rhodesia; the fact of Federation gave the confidence which was necessary for the large generous loans to be forthcoming; it is a monument to international and inter-racial cooperation; it is a lasting expression of great Federal beginnings.

These same European colonial officials administrators assumed that although the Zimbabwean Tonga were mainly a riverine people the swift flowing waters of the Zambezi River had not encouraged them to make use of the river for either fishing or transport (Mashingaidze 2019, 4-8). They had underutilized the river`s limitless possibilities as an economic highway (Howarth 1960; Reynolds and Crawford 1993). Thus relocation to the adjoining uplands of Binga district was going to extricate these so-called 'lethargic' Tonga out of isolation in the remote Zambezi Valley by increasing their contacts with the relatively 'enlightened' mainstream indigenous Shona and Ndebele

[4] British led Zimbabwe was called Southern Rhodesia before attaining independence in 1980.

groups. Most importantly relocation would facilitate their access to 'civilizing' social apparatus of schools, stores, hospitals, churches and agricultural extension services. Apparently, from the onset of colonial rule in 1890 to the beginning of the construction of the Kariba Dam in 1956 agents and facilitators of Western education and Christianity such as missionaries and colonial administrators had avoided the Zambezi Valley because of its rugged terrain, inhospitable climate and lack of minerals and sizeable swathes of good soils for commercial farming.

When the Tonga had just settled in the dry uplands the areas' European Native Commissioner, Ivor G Cockcroft (1960,27) , observed that "stores were soon opened throughout the new district and all the varied civilized goods displayed to an awed population, thus the new era of cash economy was soon brought to the once isolated people." He went on to say that "the once primitive Tonga woman who, prior to the movement, was more than happy if her man supplied her with a handful of beads and occasional blanket, now demanded cash to enable her to keep up with the Jones next door." All these high modernist discourses of associating the Tonga's displacement with 'civilization' and 'socio-economic empowerment' overlooked the actual negative dimensions of relocations as exposed below.

The following parts of the article unpack and elaborate on the Zimbabwean Tonga' underexplored experiences of displacement and settlement in the livelihoods threating and forbidding environs of Binga District. This exposure is critical because much of our preceding understanding of the Zimbabwean Tonga`s post-relocation experiences is largely through refractions from the detailed longitudinal and anthropological studies done on the Zambian side (Colson 1971; Scudder 1962, 1981, 1993, 1995; 2009). Therefore, in the subsequent section I define the article's theoretical underpinnings. The third section focuses on the immediate effects of the Tonga`s delinking from the fertile Zambezi River plains by exploring their early perspectives of relocation and experiential linkages to their new dry and infertile upland localities. In the fourth section, the article explores the Tonga`s everyday threats of living in and around wildlife sanctuaries. In the last two sections the article explores the effects of the Tonga`s increased exposure to the *nagana* causing tsetse-fly that decimated their cattle herds. The prevalence of tsetse prompted the colonial and post-colonial governments into saturating the Zambezi Valley with life threatening organochlorophine insecticides such as DDT.

2. Theoretical Framework: The Impoverishment, Risk and Reconstruction (IRR) Model

In exploring the human security threats that compromised the Tonga's post-relocation livelihoods in the uplands of Binga district, this article invokes Michael Cernea`s (2000) Impoverishment, Risk

and Reconstruction (IRR) Model. The model is one of the foremost theories used by scholars to analyse involuntary resettlement processes induced by development projects such as dams and conservation or wildlife parks (Mehta 2009). It shows that physical displacement triggers concomitant social and economic exclusion of the affected groups. This results in eight impoverishment risks of landlessness, joblessness, homelessness, marginalization, increased morbidity, food insecurity, loss of access to common property and social disarticulation. These risks are inescapable because displacement entails land expropriation and asset dispossession. In fact, resettlement "de-capitalizes the affected population, imposing opportunity costs in the forms of lost natural capital, lost man-made physical capital and lost social capital" (Cernea 2008,5). Cernea (2000,10) further emphasizes the importance of factoring risk analysis in resettlement or development projects because it is a magnifying lens that renders visible "trends and trade-offs, and contradictions in development, and it focuses attention on actors, both as risk-generators or risk-bearers, and on their social behaviors."

The logic in the IRR Model is that if those who plan relocation processes take cognizance of or anticipate the aforesaid risks the relocatees' impoverishment can be minimized. Though synergistic these risks do not manifest in equal intensity, they are context specific. For example, among the Tonga, risk components such as homelessness and landlessness did not apply. In fact, the Tonga had more land after displacement than before but much of the uplands was arid and infertile.[5] The Tonga also suffered an additional livelihood risk, which is not captured in Cernea`s IRR model, of exposure to crop marauding wildlife. In addition, most scholars who use the model to assess health impacts of dams, focus on waterborne diseases such as malaria and bilharzias (Obeng 1993; Braga *et al* 1998; Scudder and Leyer 1999; Brown and Deon 1973; Kedia and van Willigen). This study shifts attention to the Tonga as an example of a community that was displaced to dry upland ecologies where they got exposed to trypanosomiasis (*nagana*) which infected their cattle**.** Successive colonial and post-colonial governments` use of dangerous chemicals like DDT as an antidote to tsetse fly added another health risk to the Tonga. In methodological terms, the IRR Model overlooks the agency of the displaced communities in reconstituting and building up their livelihoods after displacement. This shortfall in the IRR Model explains this article's overreliance on oral evidence in order to capture the Tonga relocatees` everyday experiences in the uplands.

Deploying the IRR model to appreciate the risks associated with the Zimbabwean Tonga's post-relocation livelihoods partially recasts earlier approaches to the studying of dam induced displacements in Africa. Pioneer scholarship in the field of dam induced displacements produced from

[5] Personal interviews with Jabulani Mumpande and Mariah Munsaka, Samende, Binga, 24 June 2009.

the late 1960s to the 1970s was dominated by social anthropologists who analyzed the negative spiritual and material impacts of dam constructions such as loss of fields, homes, grazing lands and other private and communal resources. This scholarship was largely attentive to the evolution of key social aspects of displacees` lives such as kinship, rituals and marriage systems (Scudder 1968; Chambers 1970; Colson 1971; Fahim 1983). For example, Elizabeth Colson`s seminal book, *The Social Consequences of Resettlement: The Impact of the Kariba Resettlement Upon the Gwembe Tonga* explores "the impacts of a major technical enterprise on neighborhood communities, the members of the family and kinship groups, the incumbents of office and the political communities they served, and on members of religious communities" (2-3).

These social anthropologists began to theorise resettlements in the 1980s by formulating models on physiological, psychological and socio-cultural adjustment mechanisms and coping strategies adopted by the displaced communities. The best known of these models is Thayer Scudder and Elizabeth Colson`s "multi-dimensional stress model" which distinguishes four stages of post-relocation adjustment which are recruitment, transition, adaptation and potential development, and incorporation (Scudder and Colson 1982; Scudder 1981; 1983; 2009). In line with this time bound model Colson (1971, 1) earlier observed that the immediate result of displacement "is a period of upheaval in economic and social routines which can be expected to last for approximately five years, before people are sufficiently re-established in their new areas to see themselves as settled communities."

From the late 1970s to the 1980s there was an increasing realisation of the fact that most of the people forcibly displaced from their homelands by dams in the interest of national economic development became even poorer as a result. This impelled the emerging anti-dam and indigenous people`s rights movements that opposed displacements and the opaque nature of dam building planning by governments and funding institutions such as the World Bank (Mitchell 1990; Thurkral 1992; Ryder 1993, McCully 2001, Mashingaidze 2013). This anti-dam activism coupled with the overwhelming evidence of the negative impacts of displacements on many people`s lives pushed scholars into exploring dams` multiple effects on health, livelihoods and gender relations within families and communities. The analysis of dam impacts by researchers ranging from biology, geography, agriculture and historians has increased the complexity of the scholarship on dams which had been dominated by social anthropologists who initially narrowly focused on the social and cultural effects of displacements. Vulnerability and impoverishment induced by displacements have been a major theme of research in the past few years. In the following sections the article examines the diverse and intersecting climatic, environmental and state policies that compromised the Tonga's human

security in the uplands of Binga district.

3. The Tonga`s Survival in an Arid Landscape

Soon after relocation in 1958, Native Commissioner (NC) Ivor G. Cockcroft observed that the Tonga struggled to adjust to dry land farming and in selecting the right portions for planting. Many of the resettled people, "with nothing but knowledge of water edge cultivation in the fertile Zambezi Valley, made mistakes in their choice of inland fields. Some lands were quite water logged, while others were unsuitable for the type of crops planted."[6] The NC concluded his report by musing that "they are soon learning by experience and where necessary have moved to more suitable land."[7]

As a way of promoting food self-sufficiency and alleviating the Tonga`s plight in finding suitable crops for their new areas, the government provided them with fast yielding crop varieties ideal for the uplands` dry nature and short rain seasons. Thus in 1959, the same Native Commissioner noted that:

> Quick maturing maize, Kaffir Corn and *inyauti* seed was issued and every effort made to induce natives to plant at least a part of their lands to these crops. Some heeded the advice and reaped fair crops, the majority were unwilling to brave the wrath of the spirits by planting "unblessed" seed.[8]

By "unblessed" seed the Native Commissioner was referring to the Tonga`s cropping cycle rituals of blessing seeds before first planting by prophets, *basangu* and local rainmakers, *mpande*. Other associated cropping rituals were *maluma*, the first fruits ceremony and *luindi*, harvest or thanksgiving ceremonies (Scudder 1962, 113; Alexander and Ranger 1998, 22-24).

Besides providing drought resistant seeds by 1961, the Department of Native Affairs had established four "modest" agricultural demonstration plots "in efforts to show by example that selected quick maturing grain brought better crop prospects in erratic season."[9] They complemented these efforts by introducing the Tonga to the drought resistant cassava crop which was ideal for the arid and infertile uplands. Cassava is easy to plant and does not require much labor compared to crops like maize and millet. In spite of these apparent advantages, the crop was unpopular with the Tonga because the cassava meals, particularly *sadza*,[10] have a poor taste. Women complained that cassava required

[6] National Archives of Zimbabwe (Hereafter NAZ) S2827/2/2/6/3, NC Annual Report 1958.
[7] *Ibid*.
[8] NAZ S2827/2/2/7, Volume 1, Report for the NC Binga, For the Year Ended 31st December 1959.
[9] National Archives of Zimbabwe, here after NAZ. NAZ S2827/2/2/8/1, District Annual Reports, 1961.
[10] Sadza is a thick porridge popular with people in Southern Africa that is usually made out of corn meal.

much time and effort in preparing for meals compared to other grain crops such as maize, sorghum, millet and rapoko.[11]

In the main, the colonial government`s efforts of promoting Tonga food self-sufficiency through the introduction of drought resistant crops ideal for the uplands were not successful because of poor rains and infertile and sodic *inzuka* soils. The Tonga`s subsequent exposures to *nzala*, food shortages, intensified from 1961 when the government simultaneously terminated its two year tax payment moratorium on men and ceased its milk, maize, salt and beans rations. The Tonga could not feed themselves because of the meager harvests they had in the uplands. This inability to sustain themselves aggrieved many of them because before displacement no one fed them, they were generally self-reliant by the Zambezi River where they practiced flood recession agriculture.[12]

The Tonga`s post-relocation hardships were magnified by the fact that some of the uplands` most fertile spots, with dark soils, *chidhaka*, ideal for cotton and maize production, perennial springs, and small but well watered river deltas, were found in the game parks and forest reserves. Such well watered spots include forest areas of Mzola, Sijarira and Kavura and the Chizarira Game Reserve`s Busi River flood plains and the Manzituba Vlei. Mzola Forest is located in the southern part of Binga District, along the watershed between Mlibizi-Nagapande River system to the north and the Gwai—Shangani system to the south. Although the government designated these spaces as forest areas in order to preserve the natural vegetation for biodiversity purposes, their high numbers of wildlife makes them more like wildlife reserves rather than forest areas (Zambezi Valley Consultants 1999, 26). Chizarira Game Park was equally attractive to the Tonga because it had numerous perennial springs such as Chiwachambere (Pitman 1983, 133; Tredger 2009, 48).

The Department of National Parks and Wildlife Management`s (DNPWLM) evacuation of some Tonga families under Chief Sinamagonde from the fertile and well watered Busi River flood plains in the Chizarira National Park in the late 1960s affirmed Tonga`s perceptions that the Southern Rhodesian government seemed to care more for wildlife than people. Although this area was a good rhino habitat, Native Commissioner Latham opposed these relocations because they would cause additional social and economic pain to the Tonga:

> Wildlife Management are anxious to annex a portion of the area, where there is said to be good rhino habitat. From a wildlife point of view this has merit. However, it does not appear that the idea will be accepted due to the fact that it would mean removing some land from

[11] Personal interview with Jindas Munkuli, Samende, Binga, 29 July 2009 and Mariah Mumpande, Siachilaba, Binga, 17 July 2009.
[12] Personal interview with Majita Mudenda and Solomon Munkuli, Samende, Binga, 2 August 2009.

Tribal Trust Land. Furthermore, the area is very remote and only the hardest (and wealthiest) tourist would venture into the Busi (NAZ S2929/7/3, Binga Delineation Reports).

In the same report Latham registered his misgivings about the social implications of the displacements of the Sinamagonde people by highlighting that, "if wildlife does obtain an annexation, it could split the Sinamagonde area in two sections" (Ibid). As a solution, he suggested that the Department of Wildlife Management could establish game viewing sites within the area without displacing the people. Such an approach could have generated employment and revenue opportunities for the community but the DNPWLM disregarded these suggestions and proceeded to displace the Tonga from the Busi flood plains in 1968 (Pitman 1980, 122). It is important to note that at the moment of relocation the Native Affairs Department officials had promised to settle the Siachilaba and Sinakatenge people in these same Busi River flood plains.[13] Nevertheless, the families displaced for the second time in 1968 settled in the dry marginal lands outside the Chizarira`s confines. They felt isolated and powerless to resist these second forced removals. They could not network and publicize their suffering to the outside world due to low literacy levels.

The Tonga`s forced displacement to the arid and tsetse infested uplands was worsened by exposure to wild animals. They strayed from the neighboring game sanctuaries to prey on their livestock and destroyed crops in the fields. In the following section I explore the role of wildlife as an impoverishment risk or livelihood threat for the Tonga.

4. Threatened by Nature`s Bounty: Wildlife and Food Insecurity in the Uplands

When the Tonga relocated to the uplands the area was still full of wildlife that attacked livestock, threatened human life and invaded fields. This fact was acknowledged by the Native Commissioner in his annual report of 1958 when he observed that the resettled areas were still the home of elephants, rhino, lion and buffalo. He noted that "the evil tempered and senseless rhino can be a problem in the settled areas. A number of casualties have occurred during the year. The hard fact remains that dangerous game and humans cannot exist together" (NAZ S2827/2/2/6/3, Annual Reports NC 1958). Two years later, in 1961, Cockcroft alluded to the difficulties the newly relocated Tonga were experiencing in their new areas by noting that, "an unsettling factor is the damage caused by crop raiding elephant. A number are shot each year but the fact remains that the elephant population will

[13] Personal interviews with Finos Mudimba, Sinamagonde: Binga, 19 June, 2009 and Paul Mudimba, Sinamagonde, Binga, 12 August 2009.

have to be moved from the Native Areas" (NAZ S2827/2/2/6/3, NC Binga Annual Reports 1961). Although the Native Commissioner made this suggestion of moving game from settlement areas, the Department of Game did not implement the plan. In addition, since some of the game reserves were not fenced animals continued straying out into the Tonga's residential areas.

The Tonga`s difficulties in restraining the wild animals from their fields and homes were compounded by the fact that some of the new settlements sandwiched between unfenced game reserves and safari areas were established in the animals` pathways. Wild animals have traditional migration patterns influenced by seasonal availability of water and verdant vegetation. Lands outside parks were important to the fugitive wild animals since they served as dispersal areas. People under chiefs Simuchembu, Sikalenge, Sinampande, Siabuwa and Tyunga suffered most because they got exposed to crop eating wildlife that regularly migrated between Chete Safari Area and Chizarira National Park. Mariah Mutale recalled that:

> The animals, particularly elephants, came into our maize fields when the cobs started appearing. They would 'harvest' our crops before us and because of this at times harvesting anything from one`s fields became a big achievement here in the uplands. Our meager harvests hardly lasted to the next season.[14]

These animals not only preyed on crops but livestock such as goats and cattle which are important sources of wealth and protein in peasant communities.

When faced with these crop eating and livestock threatening animals, the Tonga sought the intervention of the Game Department`s Problem Animal Control (PAC) unit or the District Administrators` armed assistants, whom they called *Bafana beNkosi,*[15] who would come to shoot the animals. Besides shooting the crop raiding animals, the PAC unit tried to alleviate the wildlife menace by hunting, capturing or poisoning[16] livestock and crop predators like lions, baboons, and leopards. Stringent anti-hunting laws in these new areas prevented the Tonga men from protecting their crops by trapping, snaring and shooting the crop raiding animals. Only people with hunting permits could hunt or more precisely kill game but such permits were too expensive for most of the Tonga.[17] The seizure of the Tonga`s guns and the criminalization of African hunting in the uplands made them

[14] Personal interviews with Mariah Mutale.
[15] This phrase means "The King`s Boys."
[16] The PAC used poisons such as thallium sulfate to kill baboons and hyenas. See NAZ SRG/3, "Report of the Director of National Parks and Wildlife Management, Rhodesia, 1964"; NAZ SRG/3, "Report of the Director of National Parks and Wildlife Management, Rhodesia, 1965."
[17] Personal interviews with Finos Mudimba, Sinamagonde Binga, 19 June, 2009; Siakuba Muzamba, Sinamatelele, Binga, 23 July 2009 and Million Munenge and Stephen Ncube, Sinamatelele, Binga, 23 July 2009.

almost incapable of protecting their crops.[18]

In most cases the PAC Unit did not respond fast enough to the Tonga farmers` pleas for help. They would turn up in the villages when people`s livestock and crops had already been destroyed. The Tonga`s incapacity to protect their crops had a profound psychological impact because "to know one is helpless to protect one`s crops and must await the pleasure of men in official uniforms is hard to swallow" (Reynolds 1991, 27). Some of the PAC wardens were not empathetic enough to the Tonga farmers` requests for help against crop eating wildlife because they often accused people that complained against crop damage by wildlife of exaggerating the damages. In spite of the threats of prosecution for poaching some Tonga men continued exploiting game for defensive reasons by trapping animals that invaded their fields to destroy crops. It was difficult for them to always wait for the non-committal PAC Unit to come and shoot or scare away the crop eating wild animals.

Besides crop attacks by wild animals the uplands were also prone to the red-billed Quelea, a small bird species that thrives in semi-arid regions and breeds in huge colonies (Mundy 1989). The quelea bird can survive in savanna grasslands by eating grain producing grasses but much of the time they are a menace to African farmers because they like small grains such as the Tonga`s favorite dry land crops of millet, sorghum and rapoko, as well as commercial crops like wheat and barley. D.V Rockingham-Gill, the former Director of the Ornithological Association of Zimbabwe, noted that when these birds "settle on a man`s cereal crops to feed, there is no doubt that they have the potential to do a great deal of damage and a problem arises-who is going to reap the crop first? Man or bird?" (Rockingham-Gill, 1989). John Osborne (2005, 49), who once worked as a game ranger in Rhodesia, described quelea birds` capacity to destroy harvests by labeling them "feathered little tyrants."

In 1957, the Catholic priest at the newly established Kariyangwe Mission wrote to the Commission on Social Service and Development of the Roman Catholic Bishops` Conference in Salisbury implying that these birds were responsible for food shortages in some parts of Binga:

> …The two areas in which starvation is worst are 120 miles north-east of Kariyangwe mission. There are no cattle in this area because of tsetse fly and many people have neither sheep nor goats. The people use their hands for ploughing. In some cases they just clear trees and grass without digging the soil. As a result of this poor method of farming the people get very little every year. The villagers themselves told me that they usually get enough millet, the main crop in the area, to last the whole year but this year their crops were destroyed by mice and birds (Weinrich, 26).

[18]The Native Commissioner and the Department of Wildlife`s game guards compelled Tonga men to surrender their guns after relocation.

Living in the uplands infested with these Quelea birds and wild animals was particularly difficult for the Tonga during harvest periods which became times of immense strain for them. They had to spent sleepless nights keeping vigil in the fields against wild animals that raided their crops. Harvest loss due to wildlife could amount to fifteen percent of the crops grown in some parts of the Zambezi Valley (Reynolds, 27). Some Tonga people even called their village *mulimachale* which means "the place where we grow crops although we know that the elephant will eat them" (Ibid). Siakuba Muzamba recalls that "by the Zambezi River we did not face many problems with wildlife. Crop eating animals such as elephants, buffaloes and warthogs lived here in the uplands, in most cases they flocked down to the river vicinity when upland water sources dried up. Our only major problem along the river was the hippopotamus. Essentially, relocation meant being forced to live with wild animals which are a menace and a nuisance at harvest times. Everyone in the families had to scare away the wild animals and birds."

As a means of coping with the wild life menace to crops, people temporarily relocated from their villages to live close to their fields. They built shelters on raised platforms in the fields where they would rest as they maintained guard on their crops both during the day and at night. People disliked the strain and anxiety of living in isolation besides their fields protecting them against elephants, buffalo, baboons and other nocturnal crop eaters such as warthogs and porcupines. People devised numerous strategies of keeping the wild animals out of their fields. Men used catapults or slingshots which they used to hurl stones at the animals. Women and children would rattle tins, knock wooded pieces together or even light fires as animal scaring strategies at night. They also used scarecrows to chase away grain eating birds. In some instances sensitive animals such as elephant cows with dependent calves would easily get agitated by the noise made by people trying to scare them away. They often attacked people trying to scare them out of the fields.[19]

The need for families to defend their crops against wild life throughout the growing season forced families with scarce labor resources to withdraw their children from schools so that they could guard family fields. This led to a substantial drop in school attendance.[20] These threats of crop marauding animals also compelled people to harvest their crops in a rush, especially melons which the elephants liked most. Harvesting crops like maize and sorghum before they had fully ripened meant that they could easily rot because the grain`s hull, or outer skin would not be strong enough. Weevils and other pests could easily bore through the hull, thus compromising the quality of the stored grain which would

[19] Personal interviews with Million Munenge and Stephen Ncube.

[20] Shepherd Mutamba, "The Land of Naked Youths, Rat Food and Underdevelopment," *Parade*, December 1986.

not last until the next harvest.[21]

In addition to the foregoing resentment towards animals that strayed into their villages to destroy crops and attack domestic stock such as cattle and goats, the Tonga complained against their exclusion from the good and well watered areas in the wildlife sanctuaries. Within these sanctuaries people required resources critical for everyday survival such as building material, special clay for making pots and plant creepers whose fiber women used to weave mats, baskets and brooms. Vitamin and nutrient rich wild vegetables such as wild okra, and fruits such as *umnyi*/red ivory berries, *amakhomo*/the baobab and marula were also commonly found in the wildlife sanctuaries. Marula fruits are eaten fresh or the juice is extracted and fermented to make beer. People can also extract oil from the dry marula seeds.

Besides these foregoing problems crop and livestock attacks by wild animals and state imposed exclusions from prime land, the Tonga endured the additional impoverishment risk of exposure to *muzimbwa*, tsetse fly (Glosina Morsitans) in the uplands (Ford 1971; Giblin 1990). Before relocation, the Tonga had not occupied the uplands as a way of reducing exposure to the tsetse fly. When they settled in the uplands the Fly was still endemic.

5. Tsetse Fly, Tonga Cattle Deaths and Poisoned Environments

The Rhodesian Native Affairs Department resettled the Tonga before they had fully controlled the dangerous tsetse fly to make the bushy uplands conducive for human habitation and livestock rearing. Tsetse fly or simply the Fly is dangerous to both human and animal life. Among human beings it causes sleeping sickness. This is a condition in which the victim suffers from a cerebro-spinal infection that causes lethargy and finally a semi-comatose condition leading to death. In domestic animals it causes trypanosomiasis, *nagana*, which can result in death within weeks (Mugadza 1986, 5). Domestic animals, particularly cattle, can hardly survive in areas where the Fly is prevalent. This is the reason why the Rhodesian game ranger, Nick Tredger (49), termed it the "scourge of Africa, the last barrier to domestic stock," particularly cattle. Small stock like, goats, can survive the Fly because they browse deep into the bush where they get into limited but regular contact with Fly habitats. This partial exposure enables them to build immunity to the Fly bite and it is for this reason that goats were the Tonga`s favorite stock before relocation (Shetler 2007, 37).

The Fly thrives in bushy, hot and dry low lying areas such as the uplands and much of the Zambezi

[21] Personal interviews with Majita Mudenda and Solomon Munkuli.

and Shashe-Limpopo river basins because it cannot survive higher altitude, humid and cool environments (Tabler 1955, 80; Schapera 1960, 65). Areas where the Fly is prevalent also coincide with dense populations of wild angulates such as elephants, buffaloes, kudu and warthogs. These angulates are the normal hosts in the *nagana* transmission cycle. They are immune to the Fly and they can harbor the tsetse trypanosomes without any harm to themselves. The Fly transmits the protozoan parasites, trypanosomes, as it feeds from the infected animals and moves to the uninfected ones (Warnes, 1971, 1).

Areas conducive for the Fly are called "Fly belts," a term coined by European hunters in Southern Africa in the nineteenth century. These Fly belts are not sharply defined, but their limits are definite enough in any one season to be depended upon for guidance in seeking cattle pastures. In winter the insect withdraws to the warmer parts of the habitat, or to the bushes that hold their leaves, and the Fly belts contract as a result (Tabler, 78). Within these Fly belts tsetse are concentrated at discreet sites known as "foci" where they retreat and expand from depending on weather conditions and game movements and concentrations. In the uplands such areas included Manzituba Vlei, Matobolo Flats, near the Busi River and the Zambezi-Sengwa confluence (Hemans, 160). One of the most tsetse prone areas was the Lusulu area where Chief Sinamagonde and his people settled. The largest tsetse control unit in the Zambezi Valley is based at Lusulu Shopping Center.

The immediate Zambezi River confines where the Tonga resided before relocation were relatively free of the Fly because they were humid and had scant vegetation due to constant clearance for agricultural purposes. The area would temporarily get exposed in the dry season because that is when the bush held its verdant freshness. The permanent greenery along the river attracted all sorts of game like buffalos, elephants, zebra, kudu, impala and even lions. The Fly would perch on these animals as they moved to the riparian zone, thus getting to areas where people resided. Once the first rains fell, the Fly would retreat to upland areas together with the wild animals. This also explains the seasonal expansion and shrinkage of the Fly Belt. People could develop partial immunity to the Fly's bite through these seasonal contacts with the fly in the dry winter season or through controlled and limited contact with the Fly while hunting, collecting firewood, or travelling. Tonga elders indicated through oral interviews, that although they did not have any therapies against the Fly bite, sleeping sickness related deaths were rare in the Zambezi riparian.[22]

The Tonga experienced the Fly`s ravages soon after relocation when their livestock perished of

[22] Personal interviews with Majita Mudenda; Siazabana Jacala Mwiinde, Siabuwa, Binga, Zimbabwe, 17 July 2009; Joseph Tshuma, Chinonge, Binga, 22 November 2008; Siampiza Munsaka, Samende, Binga, 16 July 2009.

trypanosomiasis.[23] Although Veterinary Department`s officers based at Kariyangwe inoculated some of the Tonga`s cattle with anti-trypanosomiasis drugs[24] these efforts were not successful. Chief Mujimba Siachilaba claimed that their family suffered from tsetse induced impoverishment because the Fly almost wiped out his family`s livestock soon after resettlement in the uplands. In 1957, the Catholic priest at the newly established Kariyangwe Mission raised alarm over starvation in the mission`s vicinity as tsetse had even killed goats. The desperate people resorted to eating the bitter fruits of the *musika* tree, which they mixed with water and ash to make more palatable (Weinrich, 26). Other bush fruits and leaves that people relied on during the drought included *nsolokokoto*, *mutili*, *sonzwe*, *mbonga*, *lusale*, *nsikili* and *kabombwe*.

Two years later in 1959 Native Commissioner Cockcroft, acknowledged the Tonga`s plight when he stated that "in areas of light Fly density small stock are well established and are showing an increase. In areas of heavy challenge small stock has practically disappeared. This fact will no doubt result in dietary problems amongst the natives."[25] These observations show that at times even small Tonga stock like goats could not withstand the Fly. According to Jingamulonga Mugande her family lost all their ten goats due to trypanosomiasis soon after resettlement. (Quoted in Tremmel, 43). These losses of livestock exposed people to severe food shortages because they could not supplement their meager harvests with meat and milk from their domestic stock. But how did the colonial and post-colonial governments alleviate the Tonga`s exposure to the scourge of the Fly after relocation?

The Rhodesian Veterinary Services Department employed a variety of tsetse clearance measures. Soon after the relocations, the Department embarked on a massive game destruction campaign, particularly in Kariyangwe, along the Busi River between 1957 and 1961. Most of the animals destroyed were angulates such as buffalos, kudus and warthogs that are considered to be the main tsetse vectors. This game destruction was also part of the famous Nagupande Experiment that ran from June 1958 and October 1960 in the Sebungwe Operations Area (Lovemore 1961, 232-234). According to J W Hargrove (2003, 7):

> In this experiment/operation a game fence was erected, running east-west on the edge of the dense tsetse infestations on the headwaters of the Nagupande, Busi, Sengwa and Lutope Rivers. A further east-west fence was erected to the south, on the edge of the settled areas around the Kana and Shangani rivers, to prevent cattle moving into the hunting area from the south. The distance between fences varied between 16 and 30 kilometers and the area

[23] Personal interviews with Majita Mudenda, Siampiza Munsaka, and Siaziko Nyoni.
[24] NAZ S2827/2/2/2/6/3, Binga Native Commissioners` Annual Reports, 1958.
[25] S2827/2/2/7, Volume 1. Report for the NC Binga, For the Year Ended 31st December 1959.

between them was around 31 000 square kilometers. All mammals in the area, with the exception of leopard, cheetah, vervet monkeys and small nocturnal mammals, were shot.

The aim of these killings was to create game free corridors between game parks, tsetse foci and human settlements. The slaughter of game to combat the Fly had been used in Southern Rhodesia since the 1920s. Within Southern Rhodesia the link between game availability and tsetse fly incidence became apparent in the 1896 to 1898 rinderpest epizootic when many angulates perished followed by a veritable decline in tsetse incidence.

5.1 Tsetse Control Measures and impacts in the uplands

In some cases, tsetse control entailed the blending of different forms of knowledge, Tonga experiential knowledge and European scientific data. For example, the other method used by the Veterinary Department`s Tsetse Control Unit, whose resident entomologist and experimental station were based at Kariyangwe, was to physically identify and destroy tsetse and their eggs in the bushes (Teesdale 1940).[26] In colonial parlance, people that were employed to do this "hand catching" of tsetse were known as "Fly Boys" (White 1995). Through this "hand catching" the European entomologists relied on the Tonga`s intimate understanding of the uplands` ecology to identify the Fly and locate their breading places.

The Native Commissioner`s department also employed "unorthodox" strategies of eliminating the Fly that even violated environmental conservation laws. They encouraged the Tonga to clear bush and establish fields very close to rivers and streams in contravention of the country`s soil conservation laws such as the 1927 Water Act that prohibited tree felling one hundred meters from the waters` edge or river banks and stream banks. The Native Commissioner and his officers considered this practice effective in destroying the *sinanga* bushes which they assumed to be the ideal breeding habitat for tsetse. The Native Commissioner confirmed this in his annual report for 1959 when he observed that the "taming" of the land by dense human occupation "with drastic bush clearing so far appears to be getting encouraging results. The Fly population at Manjolo Springs has practically disappeared since the valley was cleared of bush."[27] In light of this observation the Native Commissioner and his officers deliberately encouraged the Tonga to settle in densely forested tsetse habitats on the edges of streams and rivers:

[26]NAZ S2827/2/2/6/3, NC Binga Annual Reports 1958.

[27] NAZ S2827/2/2/7, Volume 1, Report for the NC Binga, For the Year Ended 31st December 1959.

> Every effort is being made to induce the resettled natives to clear all bush, down to the very edge of all streams. It has been proven that the favorite breeding grounds are in the thick *sinanga* bush on the edge of streams. Such drastic measures are not favored by the conservationists who seem unable to accept the position that we must remove the Fly in order to establish human habitation. Continued human habitation in the densely Fly infested area may result in a most serious outbreak of human trypanosomiasis. Should bush clearing result in Fly elimination, then soil conservation measures can be adopted to protect the land.[28]

The abovementioned measures of Fly elimination were not very effective. The use of "Fly Boys" and odor baited traps were prohibitively expensive and logistically impossible to manage. The destruction of the river bank *sinanga* bushes, on the other hand, was not long lasting because vegetation easily regenerated. These difficulties compelled the Veterinary Department`s Tsetse Control Unit to resort to the wide use of organochlorophine insecticides such as endosulfan (Hargrove 1984; Vale 1968). The application of endosulfan entailed the spraying, using either low flying small airplanes or "tsetse gangs" with backpack sprayers of the insecticides in tsetse resting places (Weinrich, 24). The aerial spraying was so effective to the extent that the Native Commissioner concluded his report for 1959 by stating that "the Lubu Valley, the home of the Fly, responded well to the aerial spraying campaign" and some areas were practically free of the Fly.[29]

In the 1970s the Rhodesian government switched from endosulfan to the wide use of the dangerous chemical, DDT, which was considered to be the most potent chemical in destroying mosquitos and tsetse fly. This wholesale use of DDT was illogical because it coincided with the chemical`s banning in the Western World. The United States proscribed DDT in 1972 (McGregor and Ranger 2000). Zimbabwe`s colonial and post-colonial governments ignored emerging anti-DDT arguments in the scientific world. They used the chemical for both public health and agricultural purposes. It became their chemical of choice in controlling parasites and vectors such as mosquitos, tsetse fly and crop pests. In some cases DDT`s equally toxic metabolite DDE was used. In 1982 the Zimbabwean government recanted a bit from its use of DDT by restricting its use to the control of malaria and tsetse fly only (Berg, et al, 1992; Mpofu 1987; Berg 1985). Parallel to these developments were vocal objections by several Zimbabwean scientists to the use of DDT.

The country`s senior ornithologist, Ron Thomas, who became the leading campaigner against the continued use of the DDT, raised alarm about the potential health effects of the chemical`s continued

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[28] NAZ S2827/2/2/6/3, NC Annual Reports NC 1958.

[29] NAZ S2827/2/2/7, Volume 1, Report for the NC Binga, For the Year Ended 31st December 1959.

usage. In 1982 he told a Bulawayo audience his conclusions on the effects of insecticide spraying against malaria (Quoted in McGregor and Ranger, 210):

> Every day of our lives Zimbabweans area taking in DDT at between 52 times and 1216 times the limit considered to be safe by the WHO…Doctors did not look for DDT poisoning as a cause of death where a person had contracted malaria…but the presence of DDT poison could well have enhanced the severity of their illness and could have contributed to their deaths.

Further researches done by scientists based at the University of Zimbabwe`s Kariba Research Station in the late 1980s and early 1990s revealed that DDT levels were high in the waters of the Kariba Dam. The chemical was washed into the dam through erosion and seepage from the uplands and it was a threat to both people and animal health because it penetrated the food chain. As aquatic life such as the Kariba Dam`s popular *kapenta fish* ingested DDT residue from the surrounding water or food, people who ate such contaminated fish got infected as well.

The widespread usage of DDT had some negative effects on the health of the Tonga. Mudowenyu and Murray noted that experiments on the quality of lactating Tonga women`s milk revealed high concentrations of DDT (Munowenyu 1990, 20; Berg, et al, 1992, 444). Christopher Magadza, a professor of biological sciences and the director of the University of Zimbabwe`s Lake Kariba Research Station, confirmed that "DDT use has resulted in a very high rate of human infant deaths in the area. This is because the mothers contain high rates of DDT in their milk" (Quoted in Chenje *et al* 2001, 200). In spite of this overwhelming evidence against DDT and opposition to its continued usage by organizations such as Environment 2000, the Zambezi Society and the Tobacco Research Board, the post-colonial Zimbabwean government continued using DDT because it was a cheap and effective solution to the country`s varied insect problems (Tredger 2009, 129). One of the country`s post-colonial health ministers and child welfare, Dr. Timothy Stamps, justified this continued usage of DDT by arguing that "the alternative to DDT is pyrethroid which is twenty times more expensive and beyond the reach of the ministry."

6. Conclusion

This study employed Michael Cernea`s Impoverishment, Risk and Reconstruction (IRR) Model to examine the diverse human security threats encountered by the Zimbabwean Tonga upon their Kariba Dam induced displacements from the Zambezi River plains to the ecologically hostile uplands

of Binga District. The IRR Model shows that development induced displacement due to the construction of dams, mines and game parks triggers concomitant social and economic exclusion of the affected groups. This results in eight impoverishment risks or human threats of landlessness, joblessness, homelessness, marginalization, increased morbidity, food insecurity, loss of access to common property and social disarticulation. These risks are inescapable because displacement entails land expropriation and asset dispossession. The Zimbabwean Tonga's displacement to an untamed and arid landscape where their villages were located between or adjacent to the recently established state owned wild animal sanctuaries made them vulnerable to incessant low crop yields, crop marauding animals and the tsetse induced livestock disease, trypanosomiasis or *nagana*. These synergistic human security threats were compounded by the state's wildlife management policies that seemed to favor animal conservation at the expense of human life. Due to this rigid game conservation regime the Tonga could not effectively protect themselves against carnivores that threatened their lives in the uplands. Only licensed hunters and the DNPWLM`s Problem Animal Protection Unit could hunt the animals that invaded the Tonga`s fields and attacked their domestic stock. As custodians of wildlife, the DNPWLM exclusively granted European hunters permits to exploit wildlife that strayed into the Tonga's backyards. The DNPWLM did not compensate the Tonga for the destruction of their crops by animals that strayed out of the game sanctuaries which they managed and controlled. Besides these exposures to crop eating animals, wildlife authorities violently excluded the Tonga from accessing basic domestic requirements such as grass for thatching houses, hard wood, herbs, wild fruits, vegetable and mushrooms from the ecologically rich game parks. As a result of these exclusions, the exposed Tonga viewed the game sanctuaries and wild animals as resources for the government and the privileged white hunters.

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