

FUELLING GLOBAL PRODUCTION NETWORKS WITH *SLAVE LABOUR*?:

MIGRANT SUGAR CANE WORKERS IN THE BRAZILIAN ETHANOL GPN

Siobhán McGrath, PhD

ABSTRACT

This article presents an analysis of *slave labour* (as it is known in Brazil) among sugar cane workers within a globalising production network. It employs the Global Production Network (GPN) framework to argue that the dynamics of production networks are fundamental to the reproduction of unfree and degrading labour in this case. First, the power exercised by buyers is a key aspect of processes resulting in slave labour. Conversely, efforts to combat slave labour have been strengthened by acknowledging and working through this power. Second, the state exercises governance within the production network rather than only providing its institutional context. Beyond these dynamics, however, wider processes are involved in making labour available on particular terms and conditions. Third, then, processes of racialisation facilitate the imposition of restrictions on workers' mobility, degrading conditions and intensification of work. Labour is, in other words, devalued. This implies that the ways in which competing judgments over value are resolved merit as much attention in GPN analysis as is currently given to the creation, enhancement and capture of value.

KEYWORDS

Global Production Networks, forced labour, contemporary slavery, unfree labour, degrading work, bio-fuels

1. INTRODUCTION

This article presents an analysis of *slave labour* among sugar cane workers within a (globalising) production network. By slave labour, I refer to cases in which labour inspectors in Brazil judged conditions to be degrading and employment relations to involve a significant element of unfreedom. Subjecting these judgments to scrutiny for a number of cases, I find that these were in fact characterised by unfree labour relations.

With an estimated 12.3 million workers in some form of forced labour worldwide (ILO 2005), many consider efforts to combat slave labour in Brazil as a model for other countries seeking to tackle the problem (Costa 2009). In recent years, those liberated from slave labour (i.e., removed from their places of employment as a result of labour inspections) have increasingly been sugar cane workers. In 2007, there were 2,947 sugar cane workers liberated from slave labour in Brazil (and 2,553 in 2008). This represented about half of the total number of workers liberated (Thenório 2008; Reimberg 2009).

During this period, there was healthy growth in what has been termed the Sugar Cane Agro-Industrial Complex or CAC (Alves 2007). This was driven largely by ethanol, as discussed in Section 5.1. I therefore focus on the ethanol production network within the broader CAC. The existence of slave labour in this scenario of growth is problematic. To understand why slave labour exists, the relations among actors involved in production must be examined. This article thus employs the Global Production Network (GPN) framework to argue that the dynamics of production networks are fundamental to the reproduction of slave labour in this case.

First, the power exercised by buyers is a key aspect of processes resulting in slave labour. Conversely, efforts to combat slave labour have been strengthened by acknowledging and working through this power. Second, the state is a central actor within this production network rather than just providing an institutional context for it (Bridge 2008; Rutherford and Holmes 2008) through policy setting. The dynamics among firms, the state and other non-state actors, however, does not explain the wider processes through which labour is made available on particular terms and conditions. Third, then, processes of racialisation facilitate the imposition of restrictions on workers' mobility, degrading conditions and intensification of work. Labour is, in other words, de-valued.

Section 2 offers a brief review of approaches to analysing unfree labour, particularly in relation to capitalism. Some comments on how the GPN approach can contribute to better understanding the role of slave labour within contemporary forms of capitalist production follow. Section 3 then outlines the case study methodology. Section 4 analyses the concept of slave labour in the Brazilian context and how it relates to the concept of 'unfree labour.' It also explains the place of this labour within the CAC and the ethanol production network. Section 5 analyses the governance dynamics within this network, considering the centrality of the state as an actor within it. This section also considers the processes through which labour is devalued within

this production network. Finally, it explores how efforts to combat slave labour in Brazil have been strengthened through their impact on production network dynamics. Section 6 offers concluding thoughts.

2. UNFREE LABOUR AND CAPITAL

The task of analysing unfree labour is necessarily entangled with its definition. Debates over whether and how to draw a line between free and unfree labour are thus longstanding. Here I comment on how the topic has been treated in different schools of thought, emphasising Marxian analysis, and then link this to GPNs.

Some of the most recent work on this topic comes from the wave of literature on 'new slavery,' marked by the 1999 publication of *Disposable People* by Bales. Bales' work has brought attention to the issue and influenced subsequent academic and policy work. It has therefore generated substantial criticism, for: avoiding fundamental questions about capitalism; failing to adequately acknowledge the role of the state in constraining the mobility and agency of workers; and denying the agency of migrant and other workers (Anderson 2008; O'Connell Davidson 2010). An aspect of Bales' work which I wish to challenge more forcefully in this article is the assertion that 'in the new slavery race means little' (1999:10) and workers' 'caste or religion simply reflects their vulnerability; it doesn't cause it ... the key difference is not racial, but economic' (1999:11).

Quantitative analytical tools have been used in some studies of forced labour (e.g., Busse and Braun 2002; Belser 2005; ILO 2009). But wider calls to 'bring in the economists and business analysts' (Bales 2005:108) may be misguided. Economic theory is ill equipped to deal with unfree labour due to its epistemological foundations (Brass 1999:146-147; Hart 1986:186). Some of the few serious attempts to address the persistence of unfree labour within neoclassical economics come from the New Institutional Economics school (e.g., Genicot 2002; Basu 2005). These, however, tend to view unfree labour as indicating abnormality or complexity in the labour market which differentiates it from 'normal' markets. The concept of a normal market as characterised by free choice rather than power asymmetry and exploitation is thus preserved.

The central problematic within Marxian approaches is how to reconcile the apparent persistence of unfree labour in a world increasingly governed by the rules of capitalism - when the latter is understood as largely defined by free labour. Marxian political economy has therefore, in contrast to mainstream economics, analysed contemporary forms of unfree labour more substantially (DaCorta 2008). While labour geography has

been critiqued for a lack of attention to unfree labour (Strauss 2012) there is some important work by geographers on contemporary forms of unfree labour, often overlapping with and drawing upon Marxian political economy (e.g., Manzo 2005; Rogaly 2008).

Marx's concept of free labour involves a double freedom. The first, forceful separation from the means of production, is not a freedom at all but actually a compulsion. The second is the freedom to choose among potential buyers of one's labour power. So the choice is always a partial freedom, structured by compulsion. This apparent freedom serves to mask the underlying compulsion, a compulsion resulting from being 'freed' from – losing access to – the means of production.

Drawing on Marxian work, I characterise unfree labour relations as those where compulsion goes beyond separation from the means of production to significantly restrict either workers' choice about whether to work (e.g., if they are legally compelled to work) or their economic mobility (e.g., if they cannot change employers). This is in line with Brass' definition of unfree labour which centres on the inability of workers to personally commodify their labour power (1999:28). Applying such a category is always debatable (see O'Connell Davidson 2010; Lerche 2007; Rogaly 2008; Guérin et al 2009). I explore the conceptualisation of slave labour (and its relation to forced¹ or unfree labour) in this regard more fully elsewhere (Author, forthcoming). Below, I show that the cases of slave labour in sugar cane, as defined by labour inspectors, do involve unfree labour relations as well as degrading conditions.

Perhaps the most prevalent way within Marxian thought to resolve the contradiction of unfree labour's persistence has been through the notion of primitive accumulation. Marx saw the 'pre-history' of capitalism involving the emancipation of 'slaves, serfs and bondsmen' along with their expropriation from the means of production (i.e., double freedom). Analysed by Marx in a particular historical circumstance (1996: 704-707), many see this as an ongoing process in which capitalism continues to expand by subjecting new population groups to expropriation and unfree labour as an initial stage of proletarianisation (see, for example: Blackburn 1997).

Extended primitive accumulation has been applied to explaining slave labour in the Brazilian context. De Souza Martins (2002), for example, addresses the history of the agrarian question (from the 1850 land bill through

¹ Forced labour has been defined in ILO Convention No. 29 (1930), subject to further interpretation. (Belser 2005:2-3). Both in the UN Protocol on the issue and in the Brazilian context, *trafficking* often highlights the abuse of migrants' vulnerability but also (somewhat problematically) emphasises sexual exploitation.

the 'opening and closing' of the Amazonian frontier) as a series of measures meant to 'stimulate a process of primitive accumulation.' This is associated with diverse systems of unfree labour (e.g., the *colonato* system, labour-rent, and debt bondage) differing by region, time period, and product. Sakamoto, following Luxemburg and De Souza Martins, makes a case for understanding slave labour as extended primitive accumulation due to its association with capitalist expansion into the Amazon (2007a).² Finally, de Moraes Silva (1999) and Alves (2007:47-48) argue that migrant sugar cane workers in Brazil have been 'expelled' from the land in processes of primitive accumulation.

The prevailing understanding of extended primitive accumulation is nonetheless that non-capitalist relations are eradicated in the process of their use by capital. As most powerfully pointed out by Brass (1999), however, there are numerous instances in which unfree labour relations appear to be reproduced through being linked to capital, and in ways that are productive for the latter. Brass' elaboration of deproletarianisation was set against the semi-feudalist thesis which (seemed to) suggest that semi-feudalism would inevitably give way to capitalism and thus to free wage labour. By contrast, Brass demonstrates that capitalist class struggle may result in 'workforce restructuring by means of introducing or reintroducing unfree relations' (1997:71). In this process of deproletarianisation, workers face a 'double dispossession.' They are not only 'freed' from the means of production, but further freed of the 'means of commodifying labour power itself' (1997:61) so that this labour is either 'decommodified' (in the case of wage workers) or (in the case of peasants) 'recommodified by someone other than its owner' (1999:4). In addition to being introduced as part of class struggle (or eradicated by capitalism), existing forms of unfree labour may instead be transformed by the expansion of capitalist relations, as shown by the literature on 'neo-bondage' (e.g., Breman 1996; De Neve 1999; Guérin et al. 2009).

According to Miles (1987), primitive accumulation is only one instance of an Articulation of Modes of Production (AMP). In other instances, different modes of production may interact without either one being destroyed.³ He therefore approaches the question of unfree labour's role in capitalism through the AMP framework. Miles offers concrete analyses of how interactions between changing forms of labour relations and

² Further, capitalism might expand to new 'situations' as well as new regions.

³ While Brass (2011) sees deproletarianisation as incompatible with these frameworks, De Souza Martins (1997) shows that the concepts of deproletarianisation and primitive accumulation (and therefore AMP more generally) can be viewed as equally valid and indeed complementary.

economic, political and social developments have led to or reproduced different forms of unfree labour (see also Cohen 1987). Hart (1986) similarly highlights the diverse forms of power and social control – with the state playing a central role – as critical to understanding the presence of labour tying (e.g., sharecropping) in ‘capitalist settings.’ Particularly relevant here is Miles’ focus on racism as a relation of production, enabling unfree labour in diverse contexts. I argue that this is key to the de-valuing of labour in the case examined here. If we are to understand unfree labour within contemporary capitalism, however, we need to take account of the fragmented production processes emphasised in the Global Commodity Chain (GCC; Gereffi 1994; 1995), Global Value Chain (GVC; Kaplinsky and Morris 2000) and GPN (Henderson et. al. 2002) literature. Contemporary forms of capitalist production are characterised by increasing complexity in forms and geographies of production. These frameworks therefore all incorporate inter-firm relationships into the analysis of production and distribution (and consumption and disposal) of goods and services. The concepts of governance, rent, and upgrading are common themes in these bodies of literature. (For recent reviews, see: Bair 2009; Coe et. al. 2008 and Coe 2011.) While institutional *context* was initially posed as one of the key features of GCCs, GPN analysis assigns greater significance to the role of non-firm actors including states and civil society. Concepts which are particularly emphasised in the GPN framework are value (specifically, its creation, enhancement and capture), power and embeddedness. Through a case study, this article seeks to bring this focus on the relations among firms and – as particularly emphasised in the GPN framework - non-firm actors into the analysis of slave labour. These relations are critical to understanding labour outcomes (even if production is not ‘global’).

Until recently, though, labour has been strangely under-represented in GPN analysis – or rather, labour relations and struggles have been (Smith et. al. 2002; Cumbers et. al. 2008). Through offering a case study of slave labour in Brazil, this article contributes to making labour more centrally visible within this literature, with an emphasis on how labour may be devalued within production networks. It also illustrates a case in which, conversely, strategies to improve labour conditions have been strengthened by taking account of the power dynamics among actors within production networks. Another accusation against GPN analysis has been that it presents the dominance of lead firms in the North as a norm from which all other forms of governance deviate (Murphy and Schindler 2009). This is not entirely fair as the GCC and GVC literatures have elaborated variety and complexity in governance structures (e.g., Gereffi 1994; Gibbon 2001; Gereffi, Humphrey and Sturgeon

2005; Levy 2009:944; Bair 2009:99; Nadvi 2008) and GPN analysis has sought to go beyond governance to include notions such as embeddedness. Nonetheless, 'developing countries' have been seen principally as 'important sites' of production in the 'global division of labour' (Gibbon et. al. 2008:317). Viewing labour in the South from the perspective of capital in the North renders certain aspects of global production more visible than others. The article therefore endeavours to foreground the dynamics within Brazil.

3. METHODS

This article draws on qualitative data, principally semi-structured interviews and archival materials, gathered over six months of fieldwork conducted in 2008. (Pseudonyms are used for all participants.) The analysis began from the point of production where slave labour had been identified in the CAC, in agricultural work. I then sought to move 'outwards' from this employment relationship to consider other actors in the ethanol production network who might directly or indirectly exert influence over these labour relations.

Interviews were conducted with:

- five 'travel agents' who sell bus tickets to migrant workers (increasingly the means through which disguised, informal recruitment is carried out);
- staff at four ethanol distilleries (employers) which had been inspected on suspicion of slave labour⁴ (with two of the visits involving overnight stays, allowing for observation and informal conversations in addition to formal interviews);
- two landowners leasing land to distilleries;
- one representative of independent growers (who in some cases are the direct employers of sugar cane workers);
- a staff member (via telephone) at a firm which buys consumable sugar from mills;
- and staff members at four fuel distributors (firms which buy sugar-cane based ethanol from distilleries and bring the product to market at fuel stations) all of which were signatories to the National Pact to Eradicate Slave Labour.

I interviewed workers *vulnerable to* slave labour in Brazil, that is migrant sugar cane workers from the poorest regions of the country. This included but was not limited to those who had experienced slave labour. In order

⁴ Note that not all of these inspections resulted in a judgment of slave labour.

to access workers vulnerable to slave labour, I conducted worker interviews in the *região dos cocais* (babassu region) in the state of Maranhão, in three different municipalities, because it is a home region for migrant cane workers, including those experiencing slave labour conditions.⁵ Timbiras, for example, was one of the most common 'municipalities of reference' contained on the unemployment registration forms of the workers liberated from PAGRISA (55 out of 957).

The archival research included reports of slave labour inspections, accessed during a visit to the Ministry of Labour and Employment (MTE). The MTE coordinates the Special Mobile Inspection Group (*Grupo Móvel*) which responds to complaints or suspicions of slave labour. These reports indicated that between the 1st January 2005 and 31 August 2008 there were twenty-four cases in which sugar cane workers were liberated (and thus that inspectors classified as slave labour).⁶ The analysis was supplemented by news articles about these cases. I analysed the case of PAGRISA (Pará Pastoreil e Agrícola - a producer of sugar cane ethanol) in greater depth given the significance of that labour inspection in 2007 (described below). I also conducted an interview with a labour inspector in São Paulo state and accompanied a routine labour inspection (i.e., not specifically organised due to suspicion of slave labour) in the sugar cane sector. Background interviews were also conducted with experts on slave labour (not limited to sugar cane work) from government agencies, non-profit organisations and academia.

4. SLAVE LABOUR IN BRAZIL

4.1 DEFINING SLAVE LABOUR IN BRAZIL

In Brazil, systems of forced labour resulting from debt bondage and internal (and more recently cross-border) trafficking have been described as slave labour. The term has been used by civil society groups such as the *Comissão Pastoral da Terra* (CPT) since the 1970s and has come to be more widely adopted over time (Rezende Figueira 2004:33-48). The federal government reports liberating over 30,000 workers from slave labour between 1995 and 2008.

The term slave labour in Brazil does not directly refer to legally sanctioned ownership of a person, as in chattel slavery. Rather, it is in many ways akin to the concepts of forced and unfree labour. The difference is that slave

⁵ The analysis is therefore skewed towards workers in Maranhão who migrate for work, typically to the Southeast and Centre-West, at the expense of workers in the coastal Northeast and of indigenous workers in the Centre-West.

⁶ Data was not available for one of these but was gathered on the remaining twenty-three.

labour refers not just to restrictions on workers' freedoms but also to degrading conditions experienced by the workers. Since 2003, slave labour may legally be indicated by degrading conditions or an exhaustive workday. (For more on the use of the term, see: Esterci 2008; Sakamoto 2007a:38, citing Castilho; and De Brito Filho 2006.)

In slave labour cases involving sugar cane workers, degrading conditions are constituted principally by health and safety issues both at the worksite and in tied accommodation. They include inadequate sanitary conditions and a lack of protective gear, leading to injuries, illnesses and deaths. I found that in all of the twenty-three cases I examined in which workers *were liberated* from slave labour in sugar cane there had also been restrictions on their freedom – to the extent that the labour relations could be classified as unfree. (This is not to say that *all* migrant sugar cane workers in Brazil are in 'slave' or unfree labour, an elision which occurs not infrequently.)

In the PAGRISA case, for example, in which 1,064 workers were liberated from slave labour, there were instances of: unrecorded working hours, non-payment of time spent in transit, failure to adjust wages for weekend and holiday work, threats of wage deductions for taking sick leave, failure to inform workers of their daily production levels; deductions for over-priced medicines; and failure to pay according to the piece-rate unless workers achieved a quota. This, along with other deductions (e.g., for meals), led to workers being paid far below the monthly minimum wage (almost 50 instances in May 2007) or not at all (over 30 instances for April 2007). Some workers actually started the following month with a debit to be deducted from their future earnings. This practice was justified by the firm as accounting for salary advances, but the inspection report stated that no documentation of these advances was provided. These practices were confirmed by *Felipe*, who left PAGRISA after a month instead of complaining because he did not want his name to appear on the 'blacklist,' stated that the deductions from his wages ate up most of his pay. For some, non-payment and underpayment combine with recruitment via a labour market intermediary and tied housing in a physically isolated locale to constitute a system of debt bondage.

4.2 LOCATING SLAVE LABOUR

Chase (1999) has shown that modernization of Brazilian agriculture in the CAC has relied on, rather than doing away with, what she terms 'labour entrapment.' This trend has continued as slave labour was reproduced

during the investment boom in the ethanol sector. In the Brazilian CAC, unfree labour appears to be at least compatible with capitalism (Brass 1997).

Those liberated from slave labour in sugar cane are generally agricultural workers, most commonly employed as seasonal workers in manual cane cutting. Most are internal migrants; while local workers experience violations of labour and employment law, these are typically less severe among workers who are able to return home at the end of the day (or at least the end of the week). The origin of these migrant workers has changed over the years as the labour frontier (Skeldon 1997 cited in Skeldon 2011) has shifted. Maranhão and Piauí are now prominent states of origin (Novaes and Alves 2007:11; Sampaio Carneiro and De Almeida Moura 2008:10).

The twenty-three slave labour cases occurred in: the coastal Northeast (where sugar has been grown since the colonial era); in areas where there were few producers in the region (e.g., North / Northeast but not part of the coastal regions); and in areas of expansion (e.g., Centre-West). (See map.) There were also some 'liberations' in São Paulo state, the heartland of the CAC. These represent proportionately fewer liberations (although De Moraes Silva notes the increasing number of complaints from this region [2007:60]). This under-representation is matched by over-representation in areas with a small number of producers. Biondi et. al. find a concentration of slave labour cases in recent areas of expansion. (2009:13)

Workers may be employed directly by *usinas* (mills or distilleries) on land owned or leased by the latter. Or they may be employed by growers who supply the *usinas* with cut cane - produced on the growers' own land or leased land. There may also be illegal subcontracting arrangements in which the growers are listed as employers but the *usinas* are in fact the ones supervising production and paying for the labour (as opposed to the product of this labour). Regardless of who owns the land, there may also be (illegal) labour subcontracting. As discussed above, informal recruitment is also prevalent. In some cases recruiters – known as '*gatos*' – may also act as the employer on paper, work as foremen, and / or arrange housing for migrant workers. (See Figure 1.) In the cases I analysed, slave labour was more common where workers were *not* employed directly by the *usinas* on their own land, where *gatos* were used, or where the *usinas* were smaller and more financially fragile. These were not hard and fast rules but appeared to be contributing factors. This leads to the issue of how the CAC and the ethanol GPN within it are structured and how this came to be.

[Map 1 about here]

5. SLAVE LABOUR AND THE ETHANOL GPN

[Figure 1 about here]

5.1 DEVELOPMENT OF THE CAC

The historical development of the CAC shows that the role of the state has been central, albeit changing. Since the colonial period in which slaves laboured in the fields, sugar has frequently dominated the Brazilian economy (Baer 2001:13). In turn, the CAC's evolution and that of the economic relations within it have been strongly shaped by state policy. The Brazilian state 'has historically loomed large in Brazil's economy' (Martinez-Diaz and Brainard 2009:5), and for this sector in particular self-regulation has been 'historically ... problematic' with the mediating role of the state therefore 'fundamental to the elaboration of a common project' (Vian and Belik 2003:158). This is in a sector which has long been characterised by degrading conditions for agricultural workers.

The Pro-Álcool programmes were instituted (under the military dictatorship) in the wake of the 1970s oil shocks, purportedly to make Brazil more independent from petroleum. A vast range of measures were implemented including subsidies, price controls, mandatory fuel blends, support for the launch of an ethanol-only fuelled car, and regulations requiring *usinas* to purchase a percentage of their cane from independent growers (Da Costa Alves 2002:331; Nunberg 1986:60-61). The industry grew rapidly through 'extensive' growth strategies (Guedes et. al. 2002:312). PAGRISA is an example, moving into ethanol production explicitly because of Pro-Álcool. The geographic concentration of firms in São Paulo (generally more productive than the traditional sugar region of the coastal Northeast) intensified; production also expanded outwards into Paraná, Mato Grosso do Sul and Minas Gerais (Nunberg 1986:79-80).

The sector faced a 'crisis' as growth slowed in the 1990s (Alves and Szmrecsányi 2008:92-93). Global markets, an overvalued currency and restructuring of the auto industry coincided with deregulation of the CAC (Da Costa Alves 2002:329; Alves and Szmrecsányi 2008:93-95; Vian and Belik 2003:163). Ethanol (and gasoline) prices were liberalized, production quotas and sectoral-specific subsidies abolished. The distribution monopoly of the parastatal firm Petrobras ended. This led to restructuring. Economic concentration increased as did heterogeneity (see Vian and Belik 2003:158-159). What gains labour had made in the 1980s (Alves 2007:39) began to erode. De-regulated relations between independent growers and industrial producers were re-regulated through the CONSECANA system, in which representatives from the main growers' association

(ORPLANA) and the main industrial producers' association (UNICA) agreed on a formula for remunerating cane suppliers. (Burnquist et. al.:195-196)

In this period, many observers were worried about prospects for the ethanol sector (e.g., De Moraes and Shikida 2002) in spite of identifiable opportunities (Tetti 2002; de Souza 2002). A New York Times article likened the scenario to 'watching a Greek tragedy unfold' (Romero 2000). But in 2003, the timely introduction of the flex-fuel vehicle to the Brazilian market triggered a revival. Domestic ethanol consumption increased dramatically (Alves and Szmrecsányi 2008:111; De Oliveira 2008). In 2007, Brazil was the world's largest sugar producer and second-largest producer of ethanol and the largest exporter of both products (UNICA 2007:36; Revista Petrobras 2007) even though only 15% of ethanol was exported. (UNICA 2009)

Given the increased global interest in biofuels (agrofuels) due to concerns around climate change, ethanol exports have been seen as a growth area (along with sale of bioelectricity, although starting from a lower level). This led to an influx of (domestic and foreign) investment in the mid-2000s. The ethanol sector was dynamic in this period: firms from other sectors such as Cargill and Bunge decided to enter ethanol production; foreign firms planned to undertake production at a larger scale; mechanisation increased; processes of intensification in the South-East and expansion in the Centre-West were underway.

Concentration at the distillery level accelerated (Torquato 2006) due to the new entrants and the scale of their production as well as mergers and acquisitions of numerous family controlled firms.⁷

As logistics infrastructure had been widely seen as a key barrier to expansion of ethanol exports (e.g., the likely cause of PAGRISA's failure to export to Switzerland [José Pinto 2004]), firms such as BRENCO (Brazilian Renewable Energy Company) and COSAN (along with Crystalsev and Copersucar) led initiatives to construct ethanol pipelines. These firms had recently signed export contracts, justifying the investments of hundreds of millions of dollars (Carolo 2008b; Riveras 2009). The degree to which ethanol has been seen as a potential growth engine was apparent in President Lula's (controversial) labelling of Brazil's ethanol producers as national 'heroes' in March 2007 (Associated Press 2007). The legacy of the Pro-Álcool programmes has combined with the current interest in biofuels to create a strategic advantage for Brazilian producers.

⁷ Some firms avoided this through participating in commercialization and trading firms such as Copersucar and/or securing investment (Vian and Belik 2003:167 and Alves and Szmrecsányi 2008:111).

While the actual market for and production of ethanol was largely domestic, the move towards future exports was not the only way in which globalisation processes affected the sector. Deregulation of the 1990s, accompanied by trade and investment liberalisation, reflected global neoliberalising processes. More importantly, Brazilian ethanol producers were internationalising in the 2000s, not just seeking export contracts abroad but also attracting increased foreign investment. Production was also beginning to internationalise - because free trade agreements 'provide(d) a loophole through which Brazil (could) export ethanol to the US avoiding the import tax' (Wilkinson and Herrera 2010:756).

Since exports were seen as a key avenue of potential growth, the fact that the *Grupo Móvel* increasingly targeted the sector and liberated thousands of workers (Oliveira 2008)⁸ in this period might even be seen as an attempt to clean up the image of the CAC for potential consumers abroad. Towards the end of the decade, industry association UNICA opened offices in Brussels and Washington, DC. This was not, then, 'insertion into' a GPN, not *only* a case of 'workers in the South and consumers in the North' (Klein quoted in Levy 2009:956), but rather the construction of a GPN from Brazil. To the extent that the workers producing ethanol in Brazil are part of an international division of labour which serves global capital, the process is nonetheless being initiated largely by actors within Brazil.

5.2 GOVERNANCE

As discussed above, disintegration of production, often transnational in nature, has raised the question of governance – that is, of which actors gain the authority to influence or impose decisions within production networks. The ethanol production network is shaped by the priorities of the distilleries but also by those of the state.

There are over 400 *usinas* in Brazil, the vast majority of which produce ethanol. They sell this mainly to a handful of fuel distributors. The sector remains an oligopoly dominated by Petrobras Distribuidora, a Petrobras subsidiary. As expected, fuel distributors exercise a high degree of power in governing the production network⁹. *Marcos*, a manager at one of the distilleries I visited, stated that 70% of their sales were to Petrobras and an additional 20% to Chevron / Texaco. *Roberto*, an interview participant from the same firm,

⁸ The report of the inspection of Cosan noted that the CAC was given 'special attention' in the annual plan of the MTE office which coordinates the work of the *Grupo Móvel*, the *Secretaria de Inspeção do Trabalho* (SIT).

⁹ The structure and governance of the production network is dynamic, e.g.: Cosan's 2008 purchase (from ExxonMobil) of Esso in Brazil (Carolo 2008c).

described the power dynamics by stating that they 'don't negotiate' with Petrobras; they 'swallow it.'¹⁰

Independent growers have been losing significance in the new scenario, as *usinas* tend towards leasing land.

For example, growers complained that the CONSECANA system had not been adjusted to account for increasing profits from commercialisation of electrical energy, leaving them with a smaller share of the gains relative to the *usinas*. This is in many ways a 'buyer-driven' commodity chain.

But the state has also been central within these dynamics. First, the oligopoly of fuel distributors results from the role assigned to parastatal Petrobras during the Pro-Álcool era. The Brazilian government remains the controlling shareholder. Second, while mechanisation is undertaken to increase profitability (Shikida et. al. 2002:126) it has been reinforced by state-level mandates to end manual cutting of cane (responding to concerns from local communities about the associated practice of burning cane). Third, Petrobras formed a company with Japanese firm Mitsui and Brazilian firm Camargo Correa to build a R\$3 billion pipeline. The partnership was expected to open up opportunities to export anhydrous ethanol to Japan (Carolo 2008a:34; McCleary 2009; Domingos 2008). Fourth, the federal government has engaged in what has aptly been described as 'ethanol diplomacy' in pushing Brazilian exports (Paiva and Wolde-Georgis 2010). Finally, the state provides support to the CAC through research and development conducted at EMBRAPA, the Brazilian Agricultural Research Corporation (Barros 2009:97) and through official financing. In the first half of 2008, over 5% of all disbursements (R\$2.68 billion of R\$47.53 billion) from BNDES, the Brazilian National Development Bank, went to the sugar and ethanol industry. (70% of these disbursements are indirect, with banks sharing risk.) Disbursements went largely to ethanol producers: R\$1.6 billion in 2007, 27 times higher than in 2004. Other BNDES contracts in the industry, not yet at the disbursement stage, represented a further commitment of over R\$9 billion (Milanez et. al. 2008, pp 8-11).¹¹

Governance dynamics in this GPN are thus not simply buyer driven but also state-driven. While the nature of state involvement has been transformed through deregulation and neoliberalisation processes (Peck and Tickell 2002), its role is still fundamental. The state provides not only 'an external, regulatory environment for the firms to operate in' (Hess 2009:29). It also stimulates and is involved in production. It not only provides an

¹⁰ All translations are mine.

¹¹ The industry has also been among the beneficiaries of BNDES' targeted measures to address the recent financial and economic crisis. In a departure from its traditional mission, BNDES has expanded into providing working capital and in April 2009 announced a programme to lend \$R1.3 billion to the industries to cover the cost of raising fuel inventories (Shirai 2009:28).

institutional context through policy setting, but exercises governance within the network. The employment practices of distilleries and independent growers must be understood within the context of their relations with fuel distributors and with the state. Firms unable to keep up with the prevalent trends of mechanisation and expansion appear to have resorted to slave labour in response – to increase productivity through intensification of labour (Sakamoto 2007a:179). I now turn to the means by which they have been able to do so.

5.3 DEVALUED LABOUR

Value creation, enhancement and capture are central to GPN analysis. Yet the degree to which prices represent value is an epistemological issue largely evaded in GPN analysis. Henderson et. al., for example, claim that ‘Marxian notions of surplus value and more orthodox ones associated with economic rent’ can co-exist, but they do not explain how the different notions are to be reconciled. (2002:448). Negotiations over prices revolve in part around resolving competing judgments over the value of what is being bought and sold. As labour is always embodied, race, gender and other socially constructed identities may influence judgments about its value. Particular types of workers may therefore be more or less successful in negotiating over the value of their labour. The reproduction of slave labour relies on a process of de-valuing labour which works through ideologies of race (and gender). In this way, racism can be understood as a relation of production (Miles 1987:186-195). This section analyses the reproduction of slave labour within the CAC and the mechanisms by which this labour is devalued.

On the job, intensification is enforced through the piece rate system. The system is structured through an initial trial period, unpaid suspension (*gancho*) for failing to meet ongoing quotas, a lack of transparency with regards to the amount cut and the consequent wage calculation, and reference to previous production levels in annual re-hiring decisions (see Gidwani 2001 on piece rates). Workers able to meet these demands have maintained or improved their wage income but this takes a severe toll. Alves (2006:92) finds that deaths of cane cutters are directly related to the piece rate system. Numerous participants stated that workers can cut cane for no more than ten years, if that long.

Intensification through the piece rate system has been a gendered process. The vast majority of workers liberated from slave labour have been men, typically young men. In the 1980s women gained individual contracts (rather than contributing to male family members’ production levels) but the percentage of women

working in these jobs subsequently decreased. *Clara*, a former cane cutter turned union official in São Paulo, stated that half her co-workers were women in the 1980s but now the union struggled to ensure a minimum of 10%. *Lucas*, a Human Resources manager, told me that his firm had a policy of hiring 'no women or children.' The piece rate system appears to reward workers for their physical efforts or, as cane cutter *Felipe* put it, their *coragem*. This term is a deeply gendered one as it signifies not just effort, but bravery and strength. Male workers' *coragem* thereby serves as an ideological element in the exploitation of these men (see also Alves 2007:35; De Menezes and Saturnino 2007:251; Costa 2008; Jackson 1999:90-91).

In addition to gender, migrant workers are explicitly recruited for this work, and their status is a racialised one. As stated above, slave labour was more common where *gatos* were used. (E.g., the liberations of workers from COSAN's Junqueira unit in March 2009 and from BRENCO a year earlier involved only the groups of workers hired through *gatos*, while those hired directly were not found to be in slave labour.) Migrant workers are sought out *per se* rather than filling absolute labour shortages. *Sebastião*, a Human Resources manager, stated that he could recruit 400 or 500 workers in less than two weeks in Pernambuco or Alagoas while locally it had taken twenty days to recruit 80 suitable workers. Another manager, *Dimas*, denigrated local workers in the region where he was working, stating, 'I know almost all of Brazil, and the worst labour that I have known in my whole life is here in (this state).' They described not an absence of local workers, but a perception of migrant workers as higher quality and more productive (see also Breman 1996:20).

These migrant workers are seen as apt for the hard work of cane cutting. As one participant, *Sergio*, stated, 'There are regions with greater availability of labour, because it's not everybody who wants to cut cane ... Cutting cane is a vocation. It's not everywhere that you find people available to cut cane, no. So, you have to bring them from outside. There is a vocation for everything. You don't accomplish anything if it's a person who doesn't have a vocation to cut cane, they don't earn ... So they have to select people for cane cutting.'

The conditions in the tied accommodation, too, are sometimes dismissed through designating them as suitable for migrants. *Paulo*, a manager, complained about inspectors identifying violations related to these conditions. According to him, inspectors said that:

'... the employees didn't have beds to sleep in and had to sleep in hammocks. And we know that in the North and Northeast the custom is to sleep in hammocks ... Even if you gave a bed to these people, they wouldn't sleep in it. They would put up their hammock and sleep in the hammock.'

This is reminiscent of Mitchell's description of the attitudes which sustained deplorable housing conditions for migrant agricultural workers in post-World War II California. He states that, 'many growers took it as common sense that Mexican workers did not like sheets, and were developed racially in such a way that they never needed more than one thin blanket.' Race is an historically contingent mechanism of signification (Miles 1987) in these cases.

The notion that migrant workers are particularly suitable for the hard work of cane cutting and for lower housing standards exemplifies the social construction of migrants as 'others.' Rezende Figueira notes that rural migrant workers are referred to as *peões* and are 'stigmatized,' revealing widely held stereotypes (2004:142, 145, 313, 345). While Rezende Figueira (2004:145) and the ILO (OIT 2005:34, table 4), following Bales (1999:11), take race to be only reflective of, or a proxy for, poverty and vulnerability, others see migrants as racialised groups. De Souza Martins shows that the stereotypes noted by Rezende Figueira may have an underlying racial code, reflecting 'the same attitudes in fact as those which structured the perceptions of black slaves in Brazil until the 19th century' (De Souza Martins 1997:301).

One term noted by both Rezende Figueira and Chase, *marginal*, was also highlighted by *Luís* in an interview: 'You hear *usineiros* speaking about workers as *marginal*. This is disgraceful.' Similarly, Vettorassi affirms that when local inhabitants describe migrant cane workers as '*os de fora*' – literally, the outsiders – a key part of what is meant is that the workers are black or *pardo* (mixed-race; 2007:123). *Luís* went on to explain that he viewed this as a legacy of the 'culture of dependence' constructed through slavery and post-abolition labour relations in sugar cane production in the Northeast. Of his own firm, he suggested that workers were treated inhumanely due to this racialised legacy. He stated,

'... they had wooden housing before (the labour inspection). It was a disaster. The water fountains are new too. Now the housing complies with the law. And how much did it cost? It's simple. Why don't they want to build more?'

Indeed, according to unemployment registration forms annexed to the report of the PAGRISA labour inspection, whites were under-represented and blacks over-represented among the liberated workers (with the number of '*pardo*' workers roughly equivalent to expected demographics).¹² The more revealing statistic

¹² Two cases of *slave labour* in the Centre-West are also notable in that the hundreds of workers liberated were indigenous.

was that only 247 of the forms had a response to this question, compared to over 900 for the questions about 'state of reference', age, sex and marital status. Given that labour inspectors assist in filling out these forms, what is more clearly revealed here is a constructed silence around issues of race *vis-a-vis* slave labour. This denial of racial issues or silence on them with regards to slave labour in Brazil has been questioned by Marinalva Dantas (IOS 2004:47) and by Nunes (2009). The silence is deeply problematic because in Brazil, race, regional origin, poverty and inequality are inextricably linked (Gacitúa Marió and Woolcock, eds. 2008). In this case, racialised histories are used and transformed to create a migrant workforce not only in search of regular employment income, but socially constructed as an 'other' suitable for difficult, and even degrading, labour. These workers are seen as deserving of lower standards of living, as reflected in the costs incurred in obtaining their labour. In this way, their labour is devalued. The process of value creation, enhancement and capture therefore also depends on the ideological process of how value is determined and by whom (see Levy 2008) and here workers' labour is devalued through racialisation (see also Mezzadri 2008).

5.4 INTERVENING TO COMBAT SLAVE LABOUR IN THE ETHANOL GPN

While the state has stimulated production in a sector long known for degrading work, it has also been central in efforts to combat slave labour. These efforts have had positive impacts for workers. What I wish to show here is that the state has acted through GPN dynamics to strengthen these efforts.

The Catholic Church, and in particular the CPT, have raised the issue of slave labour since the 1970s (OIT 2007:22) Official programmes to 'combat forced labour' were set up in 1995, creating the *Grupo Móvel*. Efforts accelerated from 2002 on under the Lula administration. The number of workers liberated has steadily increased from 84 workers in 1995, rising to 1,305 in 2001 and 5,016 in 2008 (MTE 20009a and MTE 2009b). Changes in labour legislation, the provision of social protection and an increasing focus on obtaining back wages and damages are among many factors responsible for this increase. There is also coordination with state-level initiatives through regional labour inspection teams (since 2003), training on inspections (Pyl 2009), and state-level Plans to Eradicate Slave Labour. Both resistance to and limits of this model should also be noted. Inspectors have faced threats and violence (Rochas 2003:48; Estudos Avançados 2000:29) and in the wake of the PAGRISA inspection, there was a concerted attempt to call into question the legitimacy of

combatting 'slave labour'¹³ (Camargo 2007a; Camargo 2007b; Sakamoto 2007b). Issues around impunity, prevention and reinsertion, and land reform have not been adequately addressed. Some workers have been liberated more than once (Sharma 2006:5).

In spite of these limitations, the impact of slave labour inspections in improving conditions for migrant cane cutters emerged from a number of interviews. When *Miguel* was asked if his employer in São Paulo state provided potable drinking water on the site, for example, he stated that they began to do so after a labour inspection. One interview participant *Enrique*, while he rejected the term slave labour, saw a labour inspection by the *Grupo Móvel* as the event which triggered improvement in the occupational health and safety practices at his firm – practices which he was responsible for. Asked further about this, he described the inspection as a 'wake-up call.'

Beyond specific inspections, some participants described a changed climate. *Estevan*, for example, said that conditions in cane cutting had changed '100%' from his first experience in 1989, and that today work cards are signed and medical assistance is available. *Rodrigo* stated that hours had become shorter and the workday more regular with routine rest periods. Both stated that they believed one of the main reasons for this change has been stronger and more frequent inspections.

Sugar cane workers have utilized the threat of labour inspections as one tool in their own struggles to improve conditions and pay (Author, forthcoming). As *Estevan* said, these days if firms 'do not follow the rules, the worker brings them to the Labour Ministry, who obliges them to do everything within the rules, nothing outside of the rules.' This offers some evidence that inspections are changing state-capital-labour relations in favour of agricultural workers (Selwyn 2009).

Much of the literature on slave labour in Brazil has focused on the *gato* and some see eliminating their role as crucial to addressing the issue. Providing a flexible labour force, *gatos* have frequently been the ones to elicit compliance and productivity by drawing on a shared 'web of social relations' (De Souza Martins 1997:298), an example of what Barrientos terms 'labour chains' (2011). But workers are sometimes able to turn this 'web' to their advantage. *Gatos* are at a minimum held responsible for ensuring that promised work materialises. If not, it is the *gato* who risks shame and damage to social relations (Author, forthcoming). As Picherit (2009) finds in

¹³ Leaders in efforts to combat forced labour in Brazil – including *Maria Elena*, a representative of a firm which is signatory to the National Pact - told me that they felt the end result of these upheavals was a strengthening of support for their efforts.

India, middlemen can be caught between demands from employers and workers. While they are a key element in making workers available, the power they wield is limited.

The 'Dirty List' and the National Pact to Eradicate Slave Labour have been more important tools in combating forced labour – and they work through GPN dynamics. The Dirty List is a registry of firms and / or individuals using slave labour, which the federal government began publishing in 2003. These represent cases in which the courts have upheld labour inspectors' judgements of slave labour as defined by Article 149 of the Brazilian Penal Code. Names of firms or individuals are removed if there are no serious violations identified during a two-year compliance period.¹⁴ Those on the list become ineligible for official finance, such as subsidized credit. The 'Dirty List' is also used as a reference by signatories to the National Pact, created in 2005 as a result of work by *Repórter Brasil* and other non-governmental organizations (NGO's). Signatories to the National Pact, 'the majority of which are businesses and business associations' (IOS 2008:9), pledge to eliminate forced labour from their supply chains. Private banks have also signed, pledging not to extend credit to those found to use forced labour.

This represents an articulation of initiatives by government actors, civil society groups and corporate actors in efforts to combat slave labour in Brazil. When the Instituto Observatório Social (IOS) conducted interviews with 56 signatories to the National Pact, 75% reported implementing commercial restrictions on firms where slave labour conditions had been identified (IOS 2008).¹⁵ In 2008, the first firm definitively excluded from the Pact was ethanol and sugar producer Grupo José Pessoa, after labour inspectors identified slave labour conditions at one production site in 2007 and another in 2008 (*Repórter Brasil* 2008).

According to my interviews with staff at fuel distributors who are signatories to the National Pact, however, many rely *exclusively* on the Dirty List. Those who rely on the Dirty List feel that they can defend this as a fair and objective way of complying with their obligations as signatories to the pact, and they claim that there is no other way to monitor conditions at suppliers. *Flávio*, a purchaser at a fuel distribution firm which is a signatory to the National Pact, told me that after slave labour conditions were uncovered at PAGRISA, the firm

¹⁴ However, many firms have had their names removed through other means. These include legal injunctions which may be based on questions about the legality / constitutionality of the list itself (see OIT 2007).

¹⁵ The majority of those responding to the IOS survey were not, however, publicizing their adherence to the National Pact and related actions nor were the majority implementing their commitments in seven of the eleven categories (IOS 2008).

temporarily suspended its purchases. But when PAGRISA's name failed to be published on the list after some time, 'everyone' started purchasing from PAGRISA again, including *Flávio's* firm.

The COSAN case is a good example of both how the Dirty List and National Pact work and the limits to the model. When the firm appeared on the list in early 2010 stemming from the liberation of 42 workers at the Junqueira unit in 2007, BNDES announced that they would temporarily suspend financing. Wal-Mart, an active signatory to the National Pact, announced it would suspend purchases from the firm, which now owned the *União* sugar brand. The company's stock price went down dramatically before it was able to obtain an injunction removing the firm's name from the list, after which the value of the stock recovered (Kassai 2010; Marinho and Kassai 2010). The effectiveness of these efforts to combat slave labour can be seen as tied to the degree to which they are able to impact production network dynamics.

To the extent it has an impact, it is because the National Pact has worked through the actors which exercise power - i.e., governance - within the ethanol production network. It begins to make this influence more positive and less negative for workers. When workers threaten to call labour inspectors, it is no longer just a bureaucratic hassle or a matter of fines. Rather, sales and credit are potentially at risk, thus amplifying the threat. Pressure is exerted principally through fuel distributors, the firms whose business is most critical to the employers, and is also exerted through BNDES and other creditors. The impacts that inspections have on production network dynamics is therefore a key source of the relative success of efforts to combat slave labour in Brazil, at least for sugar cane workers.

6. CONCLUSION

6.1 SUMMARY

GPN analysis has been used here to examine how slave labour has been both reproduced and challenged within a particular production network. Slave labour is found at a labour-intensive stage of production in a production network that is partially buyer-driven. Devaluing these workers' labour enables value created at this stage of production to be captured by buyers. This process is one in which migrant workers from some of the poorest regions of Brazil are constructed as a racialised group, enabling their labour to be made available on particular terms and conditions - often unfree and degrading. Subjected to an exploitative process of intensification, even those physically able to undertake this labour are likely to suffer negative consequences

soon enough. Processes of primitive accumulation and deproletarianisation, along with racism as a relation of production, are integral aspects of the globalising Brazilian ethanol production network.

Efforts to combat slave labour have been strengthened by harnessing the power of buyers within the production network in order to improve labour conditions and provide workers with a tool in their struggles over the terms of employment. The state has been central in these efforts. But the state is also deeply embedded in this production network, with a role that goes well beyond providing a regulatory function or an institutional context. Along with buyers, it exercises governance within this production network. The multi-scalar and multi-faceted state thus has complex and contradictory effects: it is implicated in the reproduction of slave labour even as it is part of efforts to combat the problem.

6.2 FUTURE DIRECTIONS

Finally, I do not wish to leave the impression that no migrant sugar cane workers benefit from their labour migration. While there has been a long-term process of expulsion from the land, workers are also actively seeking opportunities to participate in wage labour. In the region of origin, options include unemployment, underemployment (casual labour) and, critically, sharecropping. Many workers explained their labour migration as a means to achieve particular objectives, formulating strategies in which labour migration played one part. This is in contrast to workers in slave labour on Brazilian cattle ranches for whom, according to Philips and Sakamoto, 'under conditions of chronic need, any job is seen as better than no job' (2011:28). Risk is inherent in these strategies; as pointed out by de Souza Martins, the success of some workers is crucial in inspiring others to undertake journeys which may end in slave labour (1997:300).

Migrant workers' social reproduction strategies therefore consist of diverse forms of economic and social relations. This supports recent suggestions by Biles (2011), Hess (2009), Hudson (2008), and Taylor (2007) that further GPN research may need to focus more on social reproduction and livelihood strategies – exemplified in Kelly's 2009 study of social reproduction networks. While these issues cannot be fully explored here, it is an important aspect for GPN work to consider. Anthropological approaches to slave labour in Brazil (e.g., Esterci [2008] and Rezende Figueira [2004]) further explore these issues and can perhaps be viewed as uncovering articulations among diverse modes of production. Such a focus appears to be particularly important if we are to fully understand the role of unfree labour and degrading work in contemporary forms of capitalist production.

REFERENCES

- Alves, F. 2007. "Migração de Trabalhadores Rurais do Maranhão e Piauí Para o Corte de Cana em São Paulo," in *Migrantes: Trabalho e Trabalhadores no Complexo Agroindustrial Canavieiro (Os Heróis do Agronegócio Brasileiro)*, eds. Novaes, J.R. and Alves, F., 21-54. São Carlos: Editora da Universidade Federal de São Carlos.
- Alves, F. 2006. "Por que Morrem os Cortadores de Cana?" *Saúde e Sociedade*, 15(3), 90-98.
- Alves, F., Szmrecsányi, T. 2008. "Produção e suas Alternativas," in *Certificação Socioambiental para a Agricultura: Desafios para o Setor Sucroalcooleiro*, eds. Alves, F., Ferraz, J.M.G., Pinto, L.F.G., and Szmrecsányi, T., 90-121. Piracicaba, SP and São Carlos, SP: Imaflora (O Instituto de Manejo e Certificação Florestal e Agrícola) and EdUFSCar (Editora da Universidade Federal de São Carlos).
- Anderson, Bridget. 2008. "Sex, slaves and stereotypes" *Global Networks* 8(3): 367–371.
- Associated Press. 2007. "Leftist Brazilian President Silva Slammed for Calling Ethanol Producers 'Heroes.'" *International Herald Tribune*: Neuilly Cedex, France.
- Baer, W. 2001. *The Brazilian Economy: Growth and Development* (5th Edition). Westport, CT: Praeger.
- Bair, J. 2009. "Global Commodity Chains: Genealogy and Review," in *Frontiers of Commodity Chain Research*, ed. Bair, J., 1-34. Stanford, CA: Stanford University Press.
- Bales, K. 2005. *Understanding Global Slavery: A Reader*. Berkeley, Los Angeles and London: University of California Press.
- Bales, K. 1999. *Disposable People: New Slavery in the Global Economy*. Berkeley, Los Angeles and London: University of California Press.
- Barrientos, S. 2011. "'Labour Chains': Analysing the Role of Contract Workers in Global Production Networks." BWPI Working Paper 153. Brooks World Poverty Institute: Manchester.
- Barros, G. 2009. "Brazil: The Challenges in Becoming an Agricultural Superpower." in *Brazil as an Economic Superpower? Understanding Brazil's Changing Role in the Global Economy*, eds. Brainard, L. and Martinez-Diaz, L., 81-112. Washington, DC: Brookings Institution Press.
- Basu, K. 2005. *Global Labor Standards and Local Freedoms*, in UNU-WIDER (ed.), *WIDER Perspectives on Global Development*, Palgrave Macmillan.
- Batstone, D. 2007. *Not for Sale: The Return of the Global Slave Trade--and How We Can Fight It*. New York: Harper Collins.
- Belser, P. 2005. "Forced Labour and Human Trafficking: Estimating the Profits." International Labour Office: Geneva. http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---declaration/documents/publication/wcms_081971.pdf. (accessed 20 April 2010).
- Biles, J.J. 2011. *Rural Development Policy in Yucatán, Mexico: Prerogatives and Possibilities*. Paper presented at the Association of American Geographers' conference, New York, NY.
- Biondi, A., Monteiro, M., Glass, V. 2009. "O Brasil dos Agrocombustíveis: Impactos das Lavouras sobre a Terra, o Meio e a Sociedade - Cana-de-açúcar." *O Brasil dos Agrocombustíveis Vol. 6*. ONG Repórter Brasil: São Paulo.
- Blackburn, R. 1997. *The Making of New World Slavery: From the Baroque to the Modern 1492 - 1800*. London and New York: Verso.
- Brass, T. 1999. *Towards a Comparative Political Economy of Unfree Labour: Case Studies and Debates*. London: Frank Cass.
- Brass, T. 1997. "Some Observations on Unfree Labour, Capitalist Restructuring and Deproletarianization," in *Free and Unfree Labor: The Debate Continues*, eds. Tom Brass and Marcel van der Linden, 57-75. Bern: Peter Lang.
- Breman, J. 1996. *Footloose Labour: Working in India's Informal Economy*. Cambridge: Cambridge University Press.
- Bridge, G. 2008. "Global Production Networks and the Extractive Sector: Governing Resource-Based Development" *Journal of Economic Geography*, 8(3), 389-419
- Burnquist, H.L., Bacchi, M.R.P., Marjotta-Maistro, M.C.. 2002. "Análise da Comercialização dos Produtos do Setor Sucroalcooleiro Brasileiro: Evolução, Contexto Institucional e Desempenho," in *Agroindústria Canavieira No Brasil*, eds. Shikida, P.F.A. de Moraes, M.A.F.D., 182-98. São Paulo: Editora Atlas.
- Busse, M., Braun, S. 2002. "Trade and Investment Effects of Forced Labour: An Empirical Assessment." *HWWA Discussion Papers*. Hamburgisches Welt-Wirtschafts-Archiv (HWWA) / Hamburg Institute of International

- Economics: Hamburg. <http://cosmic.rrz.uni-hamburg.de/webcat/hwwa/edok02/f10012g/DP200.pdf>. (accessed 20 April 2010).
- Camargo, B. 2007a. "Apesar de Pressão, Pagamentos na Pagrisa Continuam." *Repórter Brasil*: São Paulo. <http://www.reporterbrasil.com.br/exibe.php?id=1112>. (Accessed 6 July 2007).
- Camargo, B. 2007b. "Senadores Ouvem Membros do Grupo Móvel e Diretor da Pagrisa." *Repórter Brasil*: São Paulo. www.reporterbrasil.org.br/exibe.php?id=1198. (Accessed 3 October 2007).
- Carolo, A. 2008a. "Para os Portos, Via Dutos." *JornalCana*. ProCana: Ribeirão Preto, SP.
- Carolo, A. 2008b. "Grupos Mantêm Planos de Novas Usinas em MT." *Jornal Cana*, 179.
- Carolo, A. 2008c. "Cosan Adquire Eosso no Brasil por US\$ 826 milhões." *JornalCana*. 173, 10.
- Chase, J. 1999. "Trapped Workers, Urban Freedoms and Labor Control in Brazilian Agriculture: Evidence From Southwest Goiás" *Journal of Rural Studies* 15(2), 201-220.
- Coe, N. 2011. Geographies of Production II: A Global Production Network A-Z." *Progress in Human Geography*. Published online 20 April 2011. DOI: 10.1177/0309132511402784.
- Coe, N.M., Dicken, P., Hess, M. 2008. "Global Production Networks: Realizing the Potential." *Journal of Economic Geography*, 8(3), 271-95.
- Cohen, R. 1987. *The New Helots: Migrants in the International Division of Labour*. Aldershot, England: Gower Publishing.
- Costa, P.T.M. 2009. "Fighting Forced Labour: The Example of Brazil." ILO (International Labour Organization): Geneva. http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---declaration/documents/publication/wcms_111297.pdf. (Accessed 20 April 2010).
- Costa, P.T.M. 2008. "A Construção da Masculinidade e a Banalidade do Mal: Outros Aspectos do Trabalho Escravo Contemporâneo." *Cadernos Pagu*, 31, 173-98.
- Cumbers, A., Nativel, C., Routledge, P. 2008. "Labour Agency and Union Positionalities in Global Production Networks." *Journal of Economic Geography*, 8(3), 369-87.
- Da Corta, L. 2008. "The Political Economy of Agrarian Change: Dinosaur or Phoenix?" *QEH Working Paper Number 174*. Queen Elizabeth House, Oxford University: Oxford. <http://www3.qeh.ox.ac.uk/pdf/qehwp/qehwps174.pdf>. (accessed 20 April 2010).
- Da Costa Alves, J.F. 2002. "Diagnóstico e Propostas Públicas para o Complexo Agroindustrial Canavieiro na Macroregião de Ribeirão Preto," in *Agroindústria Canavieira No Brasil*, eds. Shikida, P.F.A. de Moraes, M.A.F.D., 327-53. São Paulo: Editora Atlas.
- De Brito Filho, J.C.M. 2006. "Trabalho com Redução do Homem à Condição Análoga à de Escravo e Dignidade da Pessoa Humana." OIT (Organização Internacional do Trabalho). http://www.oitbrasil.org.br/trabalho_forcado/brasil/documentos/dignidadetrabalhoescravo.pdf. (accessed 20 April 2010).
- De Menezes, M.A., Saturnino, M. 2007. "As Migrações Sazonais do Sertão Paraibano Para as Usinas Canavieiras de São Paulo," in *Migrantes: Trabalho e Trabalhadores no Complexo Agroindustrial Canavieiro (Os Heróis do Agronegócio Brasileiro)*, eds. Novaes, J.R. and Alves, F., 233-56. São Carlos: Editora da Universidade Federal de São Carlos.
- Shikida, P.F.A. de Moraes, M.A.F.D., eds. 2002. *Agroindústria Canavieira No Brasil*, São Paulo: Editora Atlas.
- De Moraes Silva, MA. 2007. "Trabalho e Trabalhadores na Região do "Mar de Cana e do Rio do Álcool"," in *Migrantes: Trabalho e Trabalhadores no Complexo Agroindustrial Canavieiro (Os Heróis do Agronegócio Brasileiro)*, eds. Novaes, J.R. and Alves, F., 55-86. São Carlos: Editora da Universidade Federal de São Carlos.
- De Moraes Silva, M.A. 1999. *Errantes do Fim do Século*. São Paulo Editora UNESP: Universidade Estadual Paulista.
- De Souza, Z.J. 2002. "Evolução e Considerações Sobre a Co-Geração de Energia no Setor Sucroalcooleiro," in *Agroindústria Canavieira No Brasil*, eds. Shikida, P.F.A. de Moraes, M.A.F.D., 214-40. São Paulo: Editora Atlas.
- De Souza Martins, J. 2002. "Representing the Peasantry? Struggles for/about Land in Brazil " *Latin American Peasants*, 300-35.
- De Neve, G. 1999. "Asking for and Giving Baki: Neo-bondage, or the Interplay of Bondage and Resistance in the Tamilnadu Power-loom Industry" *Contributions to Indian Sociology* 33 (1-2), 379-406.
- De Oliveira, N. 2008. "Ethanol Consumption Overtakes Gasoline in Brazil ", Agência Brasil: Brasília. <http://www.brazzilmag.com/content/view/9631/>. (accessed 25 July 2008).

- De Souza Martins, J. 1997. "The Reappearance of Slavery and the Reproduction of Capital on the Brazilian Frontier," in *Free and Unfree Labour: The Debate Continues*, eds. Tom Brass and Marcel Van Der Linden, 281-302. New York: Peter Lang.
- Domingos, J. 2008. "Petrobrás Ousa com Etanol." *Estadão de São Paulo*: São Paulo. http://www.estadao.com.br/estadaodehoje/20080914/not_imp241385,0.php (accessed 19 April 2010).
- Esterci, N. 2008. *Escravos de Desigualdade: Um Estudo Sobre o Uso Repressivo da Força de Trabalho Hoje*. 2nd ed. Rio de Janeiro: Centro Edelstein de Pesquisas Sociais.
- Estudos Avançados. 2000. "Trabalho Escravo no Brasil." *Estudos Avançados*, 14(38), 7-29.
- Gacitúa Marió, E. and Woolcock, M., eds. 2008. *Social Exclusion and Mobility in Brazil*. Washington, DC: The World Bank.
- Genicot, G. 2002. "Bonded Labor and Serfdom: a Paradox of Voluntary Choice." *Journal of Development Economics*, 67(1), 101-27.
- Gereffi, G. 1995. "Global Production Systems and Third World Development." Pp. 100-142 In ed. Stallings, B., *Global Change, Regional Response: The New International Context of Development*, New York, Cambridge University Press.
- Gereffi, G. 1994. "Capitalism, Development, and Global Commodity Chains," in *Capitalism and Development*, ed. L. Sklair, 211-31. London and New York: Routledge.
- Gereffi, G, Humphrey, J., Sturgeon, T. 2005. "The Governance of Global Value Chains." *Review of International Political Economy*, 12(1), 78-104.
- Gibbon, P. 2001 "Upgrading Primary Production: A Global Commodity Chain Approach." *World Development*. 29(2), 345-363
- Gibbon, P, Bair, J., Ponte, S. 2008. "Governing Global Value Chains: an Introduction." *Economy and Society* 37(3), 315-338.
- Gidwani, V. 2001. "The Cultural Logic of Work: Explaining Labour Deployment and Piece-Rate Contracts in Matar Taluka, Gujarat - Parts 1 and 2" *Journal of Development Studies* 38(2), 57-108.
- Guedes, S.N.R., Gallo, Z., de Toledo Piza Martins, L.A.. 2002. "Passado, Presente e Futuro da Agroindústria Canaveira do Brasil: Uma Reflexão a Partir da Perspectiva do Desenvolvimento Sustentável," in *Agroindústria Canaveira No Brasil*, eds. Shikida, P.F.A. de Moraes, M.A.F.D., 308-26. São Paulo: Editora Atlas.
- Guérin, I., Bhuhut, A., Marius-Gnanou, K. and Venkatasubramanian, G. 2009. "Neo-bondage, Seasonal Migration, and Job Brokers: Cane Cutters in Tamil Nadu," in *India's Unfree Workforce: Of Bondage Old and New*, eds. Breman, J. Guérin, I. and Prakash, A., 232-258. New Delhi: Oxford University Press.
- Hart, G. 1986. "Interlocking Transactions: Obstacles, Precursors or Instruments of Agrarian Capitalism." *Journal of Development Economics*, 23(1), 177-203.
- Henderson, J., Dicken, P., Hess, M. Coe, N.M. and Yeung, H.W.. 2002. "Global Production Networks and the Analysis of Economic Development." *Review of International Political Economy*, 9, 436-64.
- Hess, M. 2009. "Investigating the Archipelago Economy: Chains, Networks and the Study of Uneven Development." *Journal fuer Entwicklungspolitik* 2, 20-37
- Hudson, R. 2008. "Cultural Political Economy Meets Global Production Networks: A Productive Meeting?" *Journal of Economic Geography* 8(3), 421-440.
- ILO (International Labour Organization). 2009. "The Cost of Coercion." International Labour Conference: Geneva. http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---declaration/documents/publication/wcms_081882.pdf (accessed 20 April 2010).
- ILO (International Labour Organization). 2005. "A Global Alliance Against Forced Labour." International Labour Organization: Geneva. http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---declaration/documents/publication/wcms_081882.pdf. (accessed 20 April 2010).
- IOS (Instituto Observatório Social). 2004. "Trabalho Escravo No Brasil." *Observatório Social Em Revista*: São Paulo.
- IOS (Instituto Observatório Social). 2008. "Programa de Ação para o Monitoramento das Empresas Signatárias do Pacto Nacional para Erradicação do Trabalho Escravo: Relatório Final." São Paulo.
- Jackson, C. 1999. "Men's Work, Masculinities and Gender Divisions of Labour." *The Journal of Development Studies*, 36(1), 89-108.
- Jesse, S. and Kasten, L., eds. 2008. *Enslaved: True Stories of Modern Day Slavery* New York: Palgrave Macmillan
- José Pinto, R. 2004. "Suiça Quer o Álcool do Pará." *Gazeta Mercantil*. <http://infoener.iee.usp.br/infoener/hemeroteca/imagens/80714.htm>. (accessed 19 April 2010).

- Kaplinsky, R., Morris, M. 2001. "A Handbook for Value Chain Research." Institute for Development Studies: Brighton, UK. www.ids.ac.uk/ids/global/pdfs/VchNov01.pdf. (accessed August 21, 2006).
- Kassai, L., 2010. "Cosan Loses BNDES Financing After Named on Ministry 'Blacklist'." *Bloomberg.com*, 2nd update ed., Bloomberg. <http://www.bloomberg.com/apps/news?pid=20601086&sid=azrdoXortY14>. (Accessed 2 February 2010).
- Kelly, P.F. 2009. "From Global Production Networks to Global Reproduction Networks: Households, Migration, and Regional Development in Cavite, the Philippines." *Regional Studies*, 43(3), 449- 461.
- King, G. 2004. *Woman, Child for Sale: The New Slave Trade in the 21st Century*. New York: Chamberlain Brothers.
- Lerche, J. 2007. "A Global Alliance Against Forced Labour? Unfree Labour, Neo-Liberal Globalization and the International Labour Organization." *Journal of Agrarian Change*, 7(4), 424-25.
- Levy, D.L. 2008. "Political Contestation in Global Production Networks." *Academy of Management Review*. 33(4), 943-963.
- McCleary, D. 2009. "Brazil Energy Investments Increasingly Mix Oil, Biofuels." *Wall Street Journal: New York*. <http://online.wsj.com/article/BT-CO-20090609-709772.html>. (accessed 24 July 2009).
- Malarek, V. 2005. *The Natashas: Inside the New Global Sex Trade*. New York: Arcade Publishing.
- Manzo, K. 2005. "Modern Slavery, Global Capitalism & Deproletarianisation in West Africa." *Review of African Political Economy* (106), 521-34.
- Marinho, H. and Kassai, L. 2010. "Walmart Won't Buy Cosan Sugar Amid Slavery Blacklist." *Business Week*, 2nd update ed., Bloomberg. <http://www.businessweek.com/news/2010-01-08/wal-mart-brazil-unit-suspends-contract-to-buy-from-cosan.html>. (Accessed 2 February 2010).
- Martinez-Diaz, L., Brainard, L. 2009. "Brazil: The 'B' Belongs in the BRICs" in *Brazil as an Economic Superpower? Understanding Brazil's Changing Role in the Global Economy*, eds. Lael Brainard and Leonardo Martinez-Diaz, 1-13. Washington, DC: Brookings Institution Press.
- Marx, Karl. 1996. *Capital: Volume 1*. New York: International Publishers.
- Milanez, A.Y., Barros, N.R., de Sá Campello Faveret Filho, P. 2008. "O Perfil do Apoio do BNDES ao Setor Sucroalcooleiro." *BNDES Setorial* (28), 3-36.
- Miles, R. 1987. *Capitalism and Unfree Labour: Anomaly or Necessity*. London: Tavistock.
- Ministério do Trabalho e Emprego (MTE). 2009a. "Fiscalização do MTE Liberta 2.269 Trabalhadores no Primeiro Semestre do Ano": Brasília. <http://www.mte.gov.br/sgcnoticia.asp?IdConteudoNoticia=3590>. (Accessed).
- Ministério do Trabalho e Emprego (MTE). 2009b. "Quadro Geral Das Operações de Fiscalização para Erradicação do Trabalho Escravo - SIT/SRTE 1995 a 2009." Brasília. http://www.mte.gov.br/fisca_trab/quadro_resumo_1995_2009.pdf.
- Murphy, J.T., Schindler, S. "Globalizing Development in Bolivia? Alternative Networks and Value-Capture Challenges in the Wood Products Industry." *Journal of Economic Geography*. 11(1), 61-85.
- Nadvi, K. 2008. "Global Standards, Global Governance and the Organization of Global Value Chains." *Journal of Economic Geography*. 8(3), 323-343.
- Novaes, J.R. and Alves, F., eds. 2007. *Migrantes: Trabalho e Trabalhadores no Complexo Agroindustrial Canavieiro (Os Heróis do Agronegócio Brasileiro)*. São Carlos: Editora da Universidade Federal de São Carlos.
- Novaes, J.R. and Alves, F. 2007. "Introdução," in *Migrantes: Trabalho e Trabalhadores no Complexo Agroindustrial Canavieiro (Os Heróis do Agronegócio Brasileiro)*, eds. Novaes, J.R. and Alves, F., 11-17. São Carlos: Editora da Universidade Federal de São Carlos.
- Nunberg, B. 1986. "Structural Change and State Policy: The Politics of Sugar in Brazil Since 1964." *Latin American Research Review*, 21(2), 53-92.
- Nunes, A.G. 2009. "O Trabalho Escravo Contemporâneo no Brasil e a Permanência da Questão Racial." *Pambazuka News*. <http://www.pambazuka.org/pt/category/features/53957>. (Accessed 20 April 2010).
- O'Connell Davidson, J. 2010 "New slavery, old binaries: Human trafficking and the borders of 'freedom'" *Global Networks* 10(2):244-261.
- OIT (Organização Internacional do Trabalho). 2007. "Possibilidades Jurídicas de Combate ao Trabalho Escravo." OIT (Organização Internacional do Trabalho): Brasília.
- OIT (Organização Internacional do Trabalho) Escritório no Brasil. 2005. "Trabalho Escravo no Brasil do Século XXI." International Labour Office: Brasília.
- Oliveira, N. 2008. "Grupo Móvel do Ministério do Trabalho e Emprego Intensifica Ações Contra Trabalho Escravo." *Valor Econômico*.

- Paiva, M., Wolde-Georgis, T. 2010. Brazil's "Biofuels Diplomacy" in Africa: A Model for South-South Collaboration? <http://ssrn.com/abstract=1593658> Accessed 12 May 2011.
- Peck J., Tickell, A. 2002. "Neoliberalizing Space." *Antipode* 34(3), 380–404
- Picherit, D. 2009. "'Workers, Trust Us!' Labour Middlemen and the Rise of the Lower Castes in Andhra Pradesh," in *India's Unfree Workforce: Of Bondage Old and New*, eds. Breman, J. Guérin, I. and Prakash, A. 259-283. New Delhi: Oxford University Press.
- Phillips, N and Sakamoto, L. 2011. "The Dynamics of Adverse Incorporation in Global Production Networks: Poverty, Vulnerability and 'Slave Labour' in Brazil." *CPRC Working Paper No. 175*. Chronic Poverty Research Centre: Manchester, UK.
- Pyl, B. 2009. "Em Ano Recorde em Operações, Mais de 4,6 Mil são Libertados." *Repórter Brasil: São Paulo*. <http://www.reporterbrasil.org.br/exibe.php?id=1483>. (Accessed 6 January 2009).
- Reimberg, M. 2009. "Denúncias Sobre Trabalho Escravo Atingem Recorde em 2008." *Repórter Brasil*. <http://reporterbrasil.org.br/exibe.php?id=1567>. (Accessed 1 May 2009).
- Repórter Brasil. 2008. "Empresas do Grupo José Pessoa São Excluídas do Pacto." São Paulo. <http://www.reporterbrasil.org.br/pacto/noticias/view/71>. (Accessed 11 July 2008).
- Revista Petrobras. 2007. "Ethanol: From Brazil to the World." *Revista Petrobras*: Rio de Janeiro.
- Rezende Figueira, R. 2004. *Pisando Fora da Própria Sombra: A Escravidão por Dívida no Brasil Contemporâneo* Rio de Janeiro: Civilização Brasileira.
- Riveras, I. 2009. "Brazil's COSAN, Mitsubishi Sign Ethanol Deal." Reuters. http://www.reuters.com/article/reutersComService_3_MOLT/idUSTRE56C5O420090713. (accessed 4 August 2009).
- Rochas, J. 2003. "Report on a Supplementary Study of the Magnitude of Slave Labour in Brazil." Unpublished.
- Rogaly, B. 2008. "Migrant Workers in the ILO's Global Alliance Against Forced Labour Report: a Critical Appraisal." *Third World Quarterly*, 29(7), 1431-47.
- Romero, S. 2000. "Spoonfuls of Hope, Tons of Pain; In Brazil's Sugar Empire, Workers Struggle With Mechanization " *The New York Times*: New York.
- Rutherford, T. and Holmes, J. 2008. "'The flea on the tail of the dog': Power in Global Production Networks and the Restructuring of Canadian Automotive Clusters." *Journal of Economic Geography*, 8(4), 519-544
- Sakamoto, L.M. 2007a. "Os Acionistas da Casa-grande: A Reinvenção Capitalista do Trabalho Escravo no Brasil Contemporâneo." PhD dissertation: Universidade de São Paulo: São Paulo.
- Sakamoto, L. 2007b. "Comissão Divulga Nota de Apoio à Fiscalização do Trabalho Escravo." *Repórter Brasil: São Paulo*. <http://www.reporterbrasil.com.br/exibe.php?id=1136>. (Accessed 1 August 2007).
- Sampaio Carneiro, M and De Almeida Moura, F. "Migrações no Maranhão Contemporâneo." Universidade Federal do Maranhão and Comissão Pastoral da Terra, Maranhão: São Luis, Maranhão.
- Scolese, E. and Iglesias, S. 2009. "Usinas Assinam Acordo Sobre Corte de Cana." *Folha de São Paulo*.
- Selwyn, B. 2009. "Disciplining Capital: Export Grape Production, the State and Class Dynamics in Northeast Brazil" *Third World Quarterly*, 30(3), 519–534.
- Sharma, B. 2006. "Contemporary Forms of Slavery in Brazil." Anti-Slavery International: London.
- Shikida, P.F.A., Neves, M.F. and Rezende, R.A. 2002. "Notas Sobre Dinâmica Tecnológica e Agroindústria Canavieira no Brasil " in *Agroindústria Canavieira No Brasil*, eds. Shikida, P.F.A. de Moraes, M.A.F.D., 120-38. São Paulo: Editora Atlas.
- Shirai, D. 2009. "BNDES: Market Savior or Inhibitor?" *Latin American Finance*: 26-29.
- Skeldon, R. 2011. "Unfree Labour, Migration and Mobility: Contested Outcomes." *Manchester Papers in Political Economy Working Paper No. 8*. Centre for The Study of Political Economy: Manchester, UK.
- Skeldon, R. 1997. *Migration and Development: A Global Interpretation* London: Longman.
- Skinner, E.B. 2009. *A Crime So Monstrous: Face-to-Face with Modern-Day Slavery*. New York: Free Press.
- Smith, A, Rainnie, A., Dunford, M. Hardy, J., Hudson, R. and Sadler, D. 2002. "Networks of Value, Commodities and Regions: Reworking Divisions of Labour in Macro-regional Economies." *Progress in Human Geography*, 26(1), 41-63.
- Strauss, K. Forthcoming. "Coerced, forced and unfree labour: Geographies of exploitation in contemporary labour markets" *Geography Compass*.
- Taylor, M. 2007. 'Rethinking the Global Production of Uneven Development', *Globalizations*. 4(4): 529– 542
- Tetti, L.M.R. 2002. "Protocolo de Kyoto: Oportunidades para o Brasil com Base em seu Setor Sucroalcooleiro: Um Pouco da História da Questão "Mudanças Climáticas e Efeito Estufa'," in *Agroindústria Canavieira No Brasil*, eds. Shikida, P.F.A. de Moraes, M.A.F.D., 199-213. São Paulo: Editora Atlas.

- Thenório, I. 2008. "Grandes Libertações de Trabalhadores em Canaviais Dominam 2007." *Repórter Brasil*. <http://www.reporterbrasil.com.br/exibe.php?id=1280>. (Accessed 31 January 2008).
- Torquato, S.A. 2006. "Cana-de-Açúcar para Indústria: O Quanto Vai Precisar Crescer." *Análises e Indicadores do Agronegócio*, 1(10).
- UNICA (União da Indústria da Cana-de-Açúcar). 2007. "Production and Use of Fuel Ethanol in Brazil: Answers to the Most Frequently Asked Questions." São Paulo.
- UNICA (União da Indústria da Cana-de-Açúcar). 2009. "FAQs: Qual a Dimensão da Cana-de-Açúcar no Brasil e no Mundo?" <http://www.unica.com.br/FAQ/>. (accessed 16 October 2009).
- Van Den Anker, C., ed. 2004. *The Political Economy of New Slavery*. Basingstoke, Hampshire and New York: Palgrave Macmillan.
- Vian, C.E.F. and Belik, W. 2003. "Os Desafios para a Reestruturação do Complexo Agroindustrial Canavieiro do Centro-Sul." *Economia*, 4(1), 153-94.
- Vettorassi, A. 2007. "Partindo para a Cidade Garantida e Proibida," in *Migrantes: Trabalho e Trabalhadores no Complexo Agroindustrial Canavieiro (Os Heróis do Agronegócio Brasileiro)*, eds. Novaes, J.R. and Alves, F. 119-56. São Carlos Editora da Universidade Federal de São Carlos.
- Wilkinson, J. and Herrera, S. 2010. "Biofuels in Brazil: debates and impacts" *Journal of Peasant Studies* 37(4): 749-768.

CAPTIONS

Map 1: 'Slave Labour' Inspections in Sugar Cane Fields from 1 January 2005 through 31 August 2008

Figure 1: Ethanol Production Network