Sugar produced on large estates of the Zambezi River Valley was one of Mozambique’s major exports in the colonial period but production declined radically in the course of the post-independence war. Now, with the entry of multinational sugar conglomerates, cane is growing again, beginning somewhat improbably in the water-starved Incomati Valley. Using a case generally regarded as a success, the Tongaat Hulett mill–plantation complex at Xinavane, this paper focuses on the consequences of the organisation of plantation work on the health of workers, their families and surrounding communities. It shows that the profitability of investment in the technological modernisation of milling, drainage and irrigation remains dependent on enduring forms of labour recruitment, modes of payment and organisation of work that are debilitating for individual and public health.

Introduction: Work, Health and Large-Scale Sugar Production

The expansion of sugar cane production has been one of the central concerns of the land-grabbing literature on Mozambique, but little attention has yet been given to what happens once companies have secured the land and begun to produce. Following Li, who has suggested that labour should play a more central role in land-grab debates, this paper deals with the relation between labour and capital in sugar cane production. It focuses particularly on the consequences for rural health of the organisation of agricultural work, including recruitment and housing of workers, forms of payment and labour process, in one of the most successful and discussed large-scale land occupiers in Mozambique, the agro-industrial complex Açucareira de Xinavane (Xinavane Sugar Estate, hereafter AdX), operated and largely owned by the South African sugar conglomerate Tongaat Hulett.

In the colonial period, the most important sugar-producing areas were in central Mozambique. Southern Mozambique was a protected labour reserve for South Africa, but there were two plantations in the Incomati Valley. Tongaat Hulett had acquired a financial stake in one of these, Incomati Estates, a small and derelict but still working sugar complex in Xinavane in Manhiça District of Maputo Province. In 1990 a new joint venture company, AdX, was formed with

1 R. Hall, ‘The Next Great Trek? South African Commercial Farmers Move North’, Journal of Peasant Studies, 39, 3–4 (2012), pp. 823–43; J. Hanlon, ‘Understanding Land Investment Deals in Africa, Country Report: Mozambique’ (Oakland, CA, The Oakland Institute, 2011).
2 T.M. Li, ‘Centering Labor in the Land Grab Debate’, The Journal of Peasant Studies, 38, 2 (2011), pp. 281–98.
3 See also A. Lazzarini ‘Gendered Labour, Migratory Labour: Reforming Sugar Regimes in Xinavane, Mozambique’, Journal of Southern African Studies, 43, 3 (2017), pp. 605–23 (this issue).
4 L. Buur, C. Mondlane and O. Baloi, ‘Strategic Privatisation: Rehabilitating the Mozambican Sugar Industry’, Review of African Political Economy, 38, 128 (2011), pp. 235–56.
51 per cent government ownership and 49 per cent Tongaat Hulett ownership to invest in the rehabilitation of the mill, cane plantations, and irrigation and drainage system.\(^5\) With subsequent investment in the expansion and modernisation of the mill, Tongaat Hulett’s ownership share was increased to 88 per cent and the company was given long-term leases on new areas formerly held as state-owned citrus estates in Magude.\(^6\) Though it is still operating below capacity, the AdX mill now crushes cane produced by its own plantations, contract growers and smallholder associations along an extensive swathe of the Incomati Valley. Adjoining AdX estate is another rehabilitated mill–plantation complex, Maragra, operated by the Illovo group, which holds less land and is thus more reliant on outgrowers than is AdX.

This case study draws on research funded and carried out in 2011–2012 by IESE (the Institute of Economic and Social Studies), an independent research institute in Maputo, as part of its training programme for rural research. Its focus was the impact of the expansion of sugar cane production in the localities of Xinavane and Magude on the well-being of agricultural workers, their families and surrounding communities.\(^7\) The study included a review of secondary historical, ethnographic and public health sources, comparative quantitative analysis of census and AdX payroll data. Primary data was collected from preliminary interviews and site visits and a one-month field study carried out in the districts of Manhiça and Magude, mainly within the area of operations of AdX. The research included 100 semi-structured interviews with agricultural workers employed by AdX or its largest outgrower, Vamagogo. A range of jobs was covered: cane-cutter, weeder, irrigator, pump guard, field boss, hauler, warehouse controller, mechanic, assistant to topographer, gardener and hostel security staff. Individual or focus-group open-ended interviews, some repeated, were conducted with 64 local authorities: management staff at AdX, Vamagogo and Inácio de Sousa companies, the boards of AdX smallholder sugar grower associations, government officials in Manhiça and Magude Districts, health researchers at an epidemiological research centre, local shop managers, officials of the SINTIA (the national union of sugar industry workers), FRELIMO party officials, religious leaders in Xinavane, representatives of UNAC, the national peasants’ association, and Kulima, a non-governmental organisation (NGO) involved in forming the outgrower associations, and representatives of community radio groups in Xinavane. The study also included complementary semi-structured interviews with household heads focused on jobs, farming, diet and illness carried out in localities where AdX has holdings and in two where it does not. Though we did not have access to the AdX hostels, we interviewed workers in a small private hostel at Vamagogo, and AdX workers employed in smallholder associations, living or visiting in communities adjoining the plantations, at drinking spots, at bus stops or along public roads and canals. The focus of the research was change in social well-being associated with the expansion of cane production, not health per se, so we were authorised by district officials to visit health facilities and talk with district health officials, but not to collect primary health data.

The IESE study concluded that the renewal of cane production at AdX and Maragra has reinvigorated the local economy in Manhiça and Magude. Cane trucks barrel down newly graded or surfaced roads that are full of vehicles and cyclists, men and women, wearing the fluorescent-banded colour-coded overalls of the sugar companies. Waves of migrants come in search of seasonal jobs in the cane fields. Wages from work at the sugar estates have fuelled demand for small-scale construction; brick-firing ovens dot the rural landscape. When wages are paid at the end of the month, shops are full and streets are jammed with itinerant traders. Moreover, the scale and technical quality of operations have been radically transformed. Behind

\(^5\) Ibid.
\(^6\) Ibid.
\(^7\) B. O’Laughlin and Y. Ibraimo, ‘The Expansion of Sugar Production and the Well-Being of Agricultural Workers and Rural Communities in Xinavane and Magude’ (Maputo, IESE [Institute for Social and Economic Studies], 2013). The field researchers were Yasfir Ibraimo, Bridget O’Laughlin, Sonia Bila, Aldino Jovo and Salvador Ngove.
the familiar old walls of company headquarters in Xinavane now sit an enormous modern mill, huge pumping stations, new staff housing, mammoth earth-moving equipment, aerial sprayers for insecticide and herbicides and a computerised irrigation system. The old hostel for migrant cane-cutters in the town has been converted into a commercial guesthouse.

Yet as this paper will show, when one moves closer to the plantations to observe conditions of work and residence, the appearance of modernity and cutting-edge technology blurs. The cane fields are torched before harvesting, cane is cut manually, some weeding and field preparation are done with hand-hoes, and migrant cane-cutters are still housed near the cane fields in large walled hostel compounds with security guards at the gate. Wages are calculated on the basis of a daily task and most of the agricultural labour force is made up of low-wage casual workers. Moreover, workers and their families confront a host of health issues that emerge from the ways that recruitment, housing, wages and routines of work are organised. These include exhaustion, dehydration, work injuries, respiratory and eye infections, malnutrition, sexual aggression and sexually transmitted diseases. To explore the reasons for the link between ill health, class and the technical unevenness of sugar production at AdX the paper returns to some of the central questions raised by Marxist analysis of the specificities of class relations and technique in capitalist agriculture. It first uses this framework to summarise the relation between work and health on sugar plantations in the colonial period.

**Forms of Labour and States of Health in Large-Scale Capitalist Agriculture in the Colonial Period**

In his critical reading of classical political economy, Marx reflected in various places on the uneven development of capitalist agriculture in relation to industry. He drew attention to three sources of unevenness: first, the capitalisation of agricultural land could be resisted by different forms of pre-capitalist landed property; second, agricultural production was seasonal and thus restricted the rapid turnover of capital; third, there were material limits on the use of machinery and thus a tendency to depend on the production of absolute surplus value – the extension or intensification of the working day. The outcomes of each of these tensions in capitalist agriculture have implications for the health of rural working people.

**Land Occupation, Livelihood and Nutrition**

For agricultural capital, the challenge is to make both land and labour a commodity. Displacement of labour from land affects health through the destruction of livelihoods and increasing dependence on the vagaries of markets for labour and food, and hence movements of the subsistence wage.

In colonial Mozambique, sugar capital resolved the question of land both by conquest and purchase of prazos (semi-feudal land grants), and through explicit use of force to remove peasant producers from areas regarded as having prime sugar cane potential: fertile valleys with riverine access to ports. The families of workers were not allowed to live on nor cultivate plots on plantation land. The occupation of land was thus tied both to the development of commercial food markets to provide rations for workers and to the development of migrant wage labour.

---

8 *Inter alia*, K. Marx, *Capital*, Vol. 2, Ch. 26–33; Vol 3, Ch. 37–47 (New York, International Publishers, 1967); K. Marx, ‘Theories of Surplus Value’ Part 1, Ch. 2, Ch. 4; Part III, Ch. 23, Part 4, Ch. 8 (Moscow, Progress Publishers, 1963); K. Marx, *Grundrisse*, Notebook 5, ‘The Chapter on Capital (continuation)’ (Harmondsworth, Penguin Books, 1973).

9 See R. Brenner, ‘The Origins of Capitalist Development: A Critique of Neo-Smithian Marxism’, *New Left Review*, 104, 1 (1977), pp. 25–92.

10 M. Mackintosh, ‘Agricultural Marketing and Socialist Accumulation: A Case Study of Maize Marketing in Mozambique’, *Journal of Peasant Studies*, 14, 2 (1987), pp. 243–67.
Large companies such as Sena Sugar estates initially acquired scattered *prazos* where peasant production was maintained and from where it recruited forced labour. With later expansion of commercial agriculture, the colonial state continually renegotiated the boundary between commercial land and native reserves, displacing but not destroying peasant production. But, by the 1960s the state was intervening in grain marketing to hold down food prices in both cities and plantation areas.

**Creation of Labour Reserves to Cover Seasonal Demand for Wage Labour**

As Sidney Mintz showed in his writing on the Caribbean, given the seasonality of agricultural production all agrarian capital confronts the problem of having labour when needed and not having it (or not having to pay for it) when not needed. As long as it gets good exposure to the sun, high temperature and abundant water throughout the growing cycle, sugar cane allows for continual harvesting across at least half the year in southern Africa but cannot entirely avoid seasonal variation. The links between health and capital’s recourse to casual and migrant labour in agriculture have to do with the irregularity of income and restricted access to social protections such as paid sick leave, the conditions of residence in migrant life and the relations migrants maintain to their families and sexual partners.

To resolve the problem of seasonal demand for labour without increasing labour costs, Mozambican sugar plantations in the colonial period used a combination of forced and contracted migrant labour, usually on a six-month basis. Pass-laws and residential zoning restricted the movement of black workers. The crowded and unsanitary conditions of hostel life bred infection. Short-term contracts assured that diseases such as tuberculosis, amoebic dysentery or sexually transmitted infections contracted in hostel life or in the fields returned home with workers and vice versa.

**The Intensification of Work to Compensate for Limits to Mechanisation**

Marx recognised that capital could appropriate greater surplus value either by forcing workers to work a longer and harder day (absolute surplus value) or by increasing the productivity of workers through technical innovation, particularly mechanisation (relative surplus value). Machines not only substitute for less efficient human labour, their rhythms also improve productivity by disciplining the pace of work. But agriculture poses natural limits to mechanisation because of seasonality, the alternation of day and night and the characteristics of particular crops.

Sugar production is, as Mintz insisted, an agro-industry, a synthesis of factory and field. This gives rise to tensions since profitable use of machinery depends on a constant regular supply of cane to steadily feed the mill. Mills can work all night and all year, but material constraints mean this is not matched in the cane fields. The crop cannot be harvested at times of high rainfall or at night, and machinery is as yet less efficient than labour in maximising sucrose content of the harvested cane. For best sucrose yield, cane should be chopped at the base where sugar content is highest but without destroying the roots, since new cane ratoons sprout from the chopped plant. The leaves are stripped and the stalk topped to leave behind everything above the first node, which has little sucrose. This process is done more carefully, though also more slowly, when done manually rather than by mechanical harvesting.

---

11 J. Head, ‘State, Capital and Migrant Labour in Zambezia, Mozambique: A Study of the Labour Force of Sena Sugar Estates Limited’ (PhD thesis, University of Durham, 1980).
12 M. Mackintosh, ‘Agricultural Marketing and Socialist Accumulation’.
13 S.W. Mintz, *Caribbean Transformations* (Chicago, Aldine, 1974).
14 J. Head, ‘State, Capital and Migrant Labour’, pp. 279 ff.
15 S.W. Mintz, *Sweetness and Power: The Place of Sugar in Modern History* (New York, Elisabeth Sifton Books, Viking Penguin, 1985).
16 Although, as Holt Norris and Worby describe, mechanical cutting on a Tanzanian plantation is carried out through the night: A. Holt Norris and E. Worby, ‘The Sexual Economy of a Sugar Plantation: Privatization and Social Welfare in Northern Tanzania’, *American Ethnologist*, 39, 2 (2012), pp. 354–70.
Colonial plantations in Mozambique thus relied on intensification of labour, accelerating the rhythm of work, for a large number of tasks. At Sena Sugar land preparation, ploughing and transport of cane from field to factory were mechanised before the 1930s, but seed preparation, planting, weeding, covering new shoots, insect control, fertilisation, cutting and loading were done manually until the late 1950s. The cane was burned to improve coordination with the mill by speeding up both maturation of cane and the cutting process. Pay was based on task rates with time limits. Breaks were tightly controlled and physical punishment by supervisors used to speed work. The racialised structure of management combined with the intensification of work construed manual field labour as a kind of mindless drudgery, prefiguring the kind of alienated industrial labour processes analysed by Braverman.

The intensification of the working day brought with it dangers to health: exhaustion and dehydration from hard physical labour under bright sun and heat, injuries from errant swings of the cutlass, burns from still-smoking cane, tick-bite fever, bilharzia, eye infections and respiratory difficulties resulting from exposure to ash and dust. Some of these had long-term consequences not recognised by workers at the time – such as respiratory conditions associated with cane burning, and chronic kidney disease associated with dehydration. Plantation managers realised that extreme exhaustion and malnutrition compromised the productivity of field workers. They provided a ration to workers and adjusted its composition according to the results they observed in yields.

Consuming Bodies
The eating away at the health of workers in the process of the organisation of recruitment, housing, pay and labour processes is entirely consistent with Marx’s view of the inherent tendencies of capitalist production; wages and conditions of work need not assure the reproduction of workers as long as a continuing flow of new workers can be found or wages complemented by the contributions of others producing and sharing outside the wage relationship. This insight was applied to the analysis of labour reserves in southern Africa in the 1970s Marxist literature on conservation of pre-capitalist modes of production. Kapp, an institutionalist, somewhat similarly thought that the social costs of private enterprise extended to environmental and human health.

Feierman creatively drew on institutionalist thought in his classic essay on ‘the social costs of production’, an influential review of historical studies that traced struggles over health and work in colonial Africa. He began by declaring that ‘The political and economic forces which shaped the continent’s history also established the framework within which patterns of diagnosis and treatment, health and disease, emerged’. Among the social costs of production, Feierman included making working conditions healthy, feeding workers and their families, maintaining retired workers and dealing with the environmental effects of production processes.

17 J. Head, ‘State, Capital and Migrant Labour’, p. 154.
18 M. Burawoy, ‘Toward a Marxist Theory of the Labor Process: Braverman and Beyond’, Politics & Society, 8, 3–4 (1978), pp. 247–312.
19 N. Raines, M. González, C. Wyatt, M. Kurzrok, C. Pool, T. Lemna, C. Marín, V. Prado, E. Marcas and K. Mayorga, ‘Risk Factors for Reduced Glomerular Filtration Rate in a Nicaraguan Community Affected by Mesoamerican Nephropathy’, MEDICC Review, 16, 2 (2014), pp. 16–22.
20 J. Head, ‘State, Capital and Migrant Labour’, pp. 214 ff.
21 S.H. Coontz, Population Theories and the Economic Interpretation (London, Routledge & Kegan Paul, 1998).
22 H. Wolpe, ‘Capitalism and Cheap Labour Power in South Africa: From Segregation to Apartheid’, Economy and Society, 1, 4 (1972), pp. 425–54.
23 K.W. Kapp, ‘On the Nature and Significance of Social Costs’, Kyklos, 22, 2 (1969), pp. 334–47.
24 S. Feierman, ‘Struggles for Control: The Social Roots of Health and Healing in Modern Africa’, African Studies Review, 28, 2–3 (1985), pp. 73–147.
25 S. Feierman, Ibid., p. 73.
He recognised that the way the social costs of production are variously distributed between capitalist enterprises, states, workers’ families or the entire population is not historically fixed, but the outcome of political struggle.26

Feierman’s corrective is useful in thinking about the politics of cane production and health in Mozambique today. In some versions of Marxist analysis the concept of dialectical class contradictions was displaced by teleological and functionalist modes of reasoning in analysis of labour processes: capital or even technology appear to dictate social outcomes, while concern with historically contextual politics of class struggle was laid aside or appropriated by postmodernist identity politics.27 Similarly, the implications of Marx’s observation on capitalism’s abstraction from the conditions of reproduction of its labour force have been interpreted to mean that non-commodified work, much of it gendered, lies outside processes of capital accumulation and class struggle. Neither proposition constitutes an adequate basis for understanding how or why the organisation of agricultural wage labour affects health.

Sugar Cane Production and Health at AdX

The Context of Change

The operations of the Incomati Estates, the forerunner of AdX, and Maragra, the adjoining sugar estate, in the Incomati Valley were of smaller scale than those of the big producers (e.g. Sena Sugar) of central Mozambique. Rural Maputo Province was principally a labour catchment area for South Africa, and migrant cane-cutters were contracted from Gaza and Inhambane Provinces, to the north, while local women were recruited for other seasonal tasks and, by the 1970s, sometimes as cutters.28 Incomati Estates was not nationalised at Mozambican independence in 1975, though its hospital became part of the new national health system. Production councils and later a trade union were set up. Their function was defined as protecting workers while assisting management to promote production, hindered by shortages of spare parts and agricultural inputs. After the Mozambican civil war began to affect Manhiça in 1984, Incomati Estates limped along, its operations restricted by attacks on the roads29 and railway that prevented moving sugar out.30 The company provided a certain security of employment for militia, factory, technical, supervisory and administrative workers, although their accumulated wage arrears became a component of company debt.

After the end of the civil war, rural Maputo Province was slow to recover. Refugees delayed returning to Magude from South Africa,31 banditry continued on the roads and Xinavane’s overgrown cane fields bordering the main national highway were a green desert of reproach. As Buur et al. have described,32 the formation of joint ventures to recuperate the sugar estates of the Incomati Valley was the result of high-level negotiations between two big regional sugar companies, Illovo and Tongaat Hulett, and officials of the FRELIMO government, including

---

26 S. Feierman, Ibid., p. 94.
27 See M. Burawoy, ‘Toward a Marxist Theory of the Labor Process’ for a recent discussion of what has happened to analysis of labour process. For an appreciative critique of Braverman, see C. Smith, ‘Continuity and Change in Labor Process Analysis Forty Years after Labor and Monopoly Capital’, Labor Studies Journal, 40, 3 (2015), pp. 222–42.
28 M.L. Bowen, The State against the Peasantry: Rural Struggles in Colonial and Postcolonial Mozambique (Charlottesville and London, University of Virginia Press, 2000), p. 224.
29 A bend in the road near Xinavane was called the corridor of death.
30 F.J. Cardoso’s doctoral thesis, based in part on his experience as director of Maragra during the war, includes descriptions of Incomati Estates operations in this period: F.J. Cardoso, ‘Estratégias, economias locais e empresas agrárias: o desenvolvimento rural em Moçambique ’ (PhD thesis, Universidade Técnica de Lisboa, 1991).
31 H. Gengenbach, “‘I’ll Bury you in the Border!’: Women’s Land Struggles in Post-War Facazisse (Magude District), Mozambique’, Journal of Southern African Studies, 24, 1 (1998), pp. 7–36.
32 L. Buur, C. Mondlane and O. Baloi, ‘Strategic Privatisation’; L. Buur, C. Mondlane Tembe and O. Baloi, ‘The White Gold: The Role of Government and State in Rehabilitating the Sugar Industry in Mozambique’, Journal of Development Studies, 48, 3 (2012), pp. 349–62.
the head of the Mozambican Sugar Institute, who later became the director of Tongaat Hulett’s holdings in Mozambique.

The jobs promised by recovery of sugar production were particularly important politically because economic recession in Manhiça and Magude was not simply a result of war and the collapse of sugar production but also due to wider changes in the regional labour market. Migration to the South African mines had continued during the war. Moreover, the reduction of the size of the labour force on the mines, casualisation of many jobs and preferential recruitment of South Africans has not stopped the flow of Mozambicans to South Africa. However, few now find steady jobs on the mines. Thus, although the number of women-headed households remains high, remittances come less regularly. In 2007 the ratio of men to women was 82 to 100 in Magude and 85 to 100 in Manhiça. The proportion of women-headed households in areas around the estate ranged from 38 per cent, in Xinavane Town, to 58 per cent. However, these households would once have had combined income flows, using remittances to buy cattle, build houses and buy implements and hire labour. This is crucial because rain-fed cultivation is highly risky in this semi-arid area. Now, however, most households have no cattle or ploughs and lack sufficient resident household labour to work irrigated land even when they have claims to it. For them, having access to off-farm income, including casual wage labour, is a critical complement to small-scale farming in everyday subsistence.

**Land Occupation and Changes in Livelihood and Health**

The expansion of AdX up the Incomati Valley in Magude represented a massive increase in its scale of production, but it did not involve a mass displacement of people from cultivation or residence. In Magude AdX took over citrus plantations that had been part of a state farm. It consolidated its holdings both there and in Xinavane by paying compensation to interspersed smallholders to move out of irrigable areas or by forming associations of small-scale outgrowers based in neighbouring localities. The associations lease their land back to AdX, retaining only a small plot for irrigated food production, sometimes let to local women. AdX designed and paid for the initial infrastructural investment, provides inputs and technical advice and determines the calendar for all field operations and for delivery of cane to the factory. The company deducts its costs and pays the associations for sugar produced from cane delivered. Most of the associations were formed by local elites, including the more prosperous farmers, but not necessarily integrating land they previously owned. Gangs of cane-cutters are directly recruited through AdX, but in order to recruit other workers they need, the associations are allowed to use ties of patronage. This provides a limited number of permanent jobs usually held by officials of the associations, stable contract jobs (guards and irrigation workers) and short-term contracted workers for weeding and cleaning. All workers recruited by the association must go through the induction and contracting process of AdX, are paid by the company and receive equipment and uniforms from it.

Some of those who took compensation now wish they had held out for more money, but only a few complain about the loss of land for their own cultivation. In one area, Ilha Josina, peasants declined to cede their land to the company. Now, impressed by the income obtained, some want to become outgrowers too. Irrigated land is difficult to work so it was more often used

---

33 R. First, *Black Gold, the Mozambican Miner, Proletarian and Peasant* (Sussex, The Harvester Press, 1983); R. Davies and J. Head, ‘The Future of Mine Migrancy in the Context of Broader Trends in Migration in Southern Africa’, *Journal of Southern African Studies* (1995), pp. 439–50.

34 Calculated from Instituto Nacional de Estatística (INE), 2007, *III Recenseamento Geral da População e Habitação de 2007*, Maputo, CD-ROM, Quadro [Chart] 3, ‘População por Idade, Segundo Distrito, Área De Residência e Sexo, Districts Of Manhiça and Magude’; Quadro 7, ‘Agregados Familiares por Tamanho, Segundo Área De Residência e Distrito, Manhica and Administrative Post of Magude’. Localities of Xinavane Town, Magude Town, 3 de Fevereiro.

35 I. Jelsma, A. Bolding and M. Slingerland, ‘Smallholder Sugarcane Production Systems in Xinavane, Mozambique: Report from the Field’ (Wageningen, Plant Production Systems, Plant Sciences Group, Wageningen University, 2010).
by specialised commercial producers than for subsistence production of staples. Some excluded household heads complain about unfair distribution of income and jobs by the associations, given that land occupied was often subject to competing claims from within the community. All feel the impact of price increases in staples, but do not associate this with increased demand from plantation workers. In this area people generally eat imported maize flour from South Africa and rice from Thailand, so prices vary with the exchange rate of the metical. In Magude some cattle owners complained of restricted access to watering points along the river, and there are occasional suspicious night-time intrusions of herds in the cane, but the decimation of herds in the war and recent floods has been so great that this is a problem of the prosperous.

The more serious health consequences of the appropriation of land for cane production are environmental. Carmo Vaz and Van der Zaag36 drew attention to the unsustainable use of Incomati water for cane production upstream in Swaziland and South Africa even before the AdX expansion. Urban water users also draw on the Incomati Basin. When the water question was raised during field research with some local officials, however, they drew attention to the flooding of the previous year and claimed that the district’s problem was too much water, not too little. In fact AdX’s expansion of the drainage system limits the possibility of managing flood plains to break the recurrent pattern of destructive flooding, and the dikes that protect the estates divert water to small farms.37

Seasonality, Precarity and Health

AdX has indeed created jobs in Xinavane and Magude. Payroll data furnished by AdX for the agricultural year 2011–12 show that AdX regularly employed over 8,000 workers in its fields, offices and factory, with some seasonal peaking in November through to January.38 The labour force was about two-thirds men, and divided between permanent and seasonal employees. Those working in agriculture varied between 5,000 and 6,500 across the year, with almost 3,000 in permanent jobs. Transport of cane from fields to the mill has been subcontracted to a company that also services the adjoining Illovo plantation; these job are not counted here.

Yet many of the jobs created, including some of those classified as permanent, are in fact precarious. AdX follows Mozambican labour law, which does not permit casual labour in large enterprises. Everyone must have a formal contract. Yet AdX has nonetheless found legal ways to hire flexible casual labour, both migrant and local, to respond to the vagaries of crop growth and climate. At AdX contracts for unskilled field labour are three months and those of cane-cutters are six months, covering the high months of the harvest. All are paid at the end of the month and all are subject to deductions for union membership and social security. The labour law stipulates that after three successive contracts a worker must be given a permanent contract. In practice, many unskilled agricultural workers do not manage to get permanent contracts; leaving gaps between contracts allows counting to begin anew each time the worker signs on. Most of the full-time permanent agriculture workers are technicians, security guards or operators of specialised machinery.

Payroll data on the number of workers hired each month showed relatively steady employment for workers on fixed contracts and men on seasonal contracts across the agricultural year (there was more monthly variation in the number of seasonal women employed).39 But individual pay slips we saw when interviewing cane-cutters and field workers showed there was variation both between workers and across the agricultural year in the number of days worked per month.

36 A. Carmo Vaz and P. van der Zaag, *Sharing the Incomati Waters: Cooperation and Competition in the Balance* (UNESCO, International Hydrological Programme/World Water Assessment Programme, 2003).
37 F.F. Ogtrop, A.Y. Hoekstra and F. Meulen, ‘Flood Management in the Lower Incomati River Basin, Mozambique: Two Alternatives’, *JAWRA Journal of the American Water Resources Association*, 41, 3 (2005), pp. 607–19.
38 See B. O’Laughlin and Y. Ibraimo, ‘The Expansion of Sugar Production’, Graph 2, p. 23.
39 B. O’Laughlin and Y. Ibraimo, *Ibid.*, Graph 2, p. 23.
Sometimes workers had only been given a half-task to do and thus a half-wage; sometimes they had missed work and sometimes they were not assigned a task.

Cane-cutters are assigned to a particular hostel; each day certain teams of workers are trucked to a particular section that is ready for harvesting. When there is not enough work available for all, the cane-cutters argue among themselves, cutlasses in hand, for places on the transport to the field. Here friendship and shared regional origin matter in establishing networks of support. But if cane-cutters are vulnerable to the irregularities of recruitment, they are also the group of workers most able to threaten the delicate balance between harvesting and cane-crushing upon which profit depends. If they burn a stand of cane and then refuse to cut it or block the passage of the loaded lorries, the cane will lose sucrose. If the scale of a wildcat strike is large enough, they can bring the mill to a halt.

Weeders, cleaners, ratoon extractors and planters, most of them women, report to a particular section chief, who decides how many should work where each day and who should go home at the end of the day not having worked at all. Maintaining relations of patronage with field supervisors is thus crucial for recruitment. It can also be important for managers. A Mozambican block chief said that he sometimes had conflicts with his Zimbabwean supervisor because he reduced the size of tasks in slow periods to provide more jobs to those who came from his own village and regularly provided him with labour when needed. But locally recruited women hoping to work as weeders and cleaners in a block close to home may also be shipped off to another distant block where there is a work to be done or may end up just waiting for transport home. Given that work is paid on a task basis, this waiting time goes unpaid. They must nonetheless appear every day for recruitment because those who do not will be refused a contract renewal.

Having a contract thus provides no certainty of having a fixed number of days of work each month; rather the contract assures the company that it has workers available for recruitment when needed. In short, AdX has used the contract system to provide an internal labour reserve for which it does not pay. The burden of having labour when one needs it and not when one doesn’t falls on the worker who waits rather than on the company. This precarity of employment means that manual field workers and their families must maintain some complementary way of assuring a livelihood.

Most of these casual workers, despite their contracts, have no insurance coverage for illness. The cane-cutters do not formally reside in the district, while the women do not manage to work the 20 days per month required for coverage. The two groups of casual workers and their families also confront distinctive health problems related to the relation of work and residence. Locally hired manual workers, mainly women who are Shangaan speakers, are assigned to a particular block of the estate. They rise early in the morning, while their children are still sleeping, and walk directly to the fields or to a collection point where AdX transport will pass or, if they live near a road, take a combi-taxi part way. They cannot bring their children because there is no crèche. The snakes and pests make the cane field a bad place to play and the sharp leaves of the cane would cut an infant carried on a mother’s back.

Field workers carry drinking water and perhaps some prepared food. They are in the fields by 5.30 am in the hot season or by 6 am in winter. The section chief decides how many workers he needs for each task, and may send some to another section if it has a shortage of labour. When they have finished their tasks, women wait for transport back to the pick-up point or for friends and neighbours to accompany them home. The fields of tall cane are a dangerous place for women to walk on their own. Even access to sanitation is problematic since there are no

---

40 Abuse of women, including rape, is often reported in the areas surrounding the Xinavane and Maragra estates: see V. Iva, ‘Distrito de Manhiça regista mais de mil casos de violação de mulheres e crianças’ (‘District of Manhica registers more than 1,000 cases of rape of women and children’), Jornal Notícias, 19 November 2012, available at http://noticias.mmo.co.mz/2012/11/distrito-de-manhica-regista-mais-de-mil.html, retrieved 11 May 2016.
toilet facilities in the fields. Male AdX supervisory workers emphasised that there is no more private toilet than a cane field, but that privacy can be dangerous for a woman.

When they arrive home, women workers usually bathe, fetch water, prepare a family meal, wash clothes or work in their own food gardens. During part of the year they may have stocks of maize or cassava from their own fields, but they often buy the imported Thai rice sold along the roads, which is quick to prepare. At the end of the day they are exhausted; not just by their arduous work in the fields but by how early they must wake to get to work, by walking to and from work, by waiting to find out whether they will be given a task, by waiting to take advantage of group transport home, by the need to combine wage labour on the plantation with many other activities necessary for family life and by worries about how children’s school expenses will be paid. The organisation of women’s working days affects not only their own health but that of their children. The director of health in Manhiça indicated that the nutritional status of children had improved so much that they were thinking of cutting the school feeding programme. But teachers in Magude, a new area for jobs in the cane fields, said that many children were now coming to school unfed because their mothers left home so early in the morning.

The cane-cutters, most of whom are male long-distance migrants, are housed in hostels. As noted above, in the past cutters were recruited from Inhambane and Gaza Provinces in the South or by the 1970s among local women.41 Today, however, there are large contingents of cane-cutters coming from central Mozambique – Zambezia, Tete and Sofala or even Malawi. When Tongaat Hulett first took over AdX, recruitment of cane-cutters and management of the hostels were outsourced. Advertisements were placed in the Beira newspapers and workers were bussed south, but that is no longer necessary. Many more show up at the gates of AdX asking for work than can be hired. The Vamagogo estate used to transport workers from Inhambane, but they can now depend on the overflow from AdX.

A new hostel sitting on high ground was built with the expansion of AdX in Magude, but the other hostels of AdX and Vamagogo date from the colonial period and nestle among the cane fields. They are surrounded by walls; security staff control both exits and entries. There are built-in bunks for six workers in each room, but the cane-cutters told us that rooms often sleep eight or more, particularly in the months of peak harvesting. Workers try to share rooms with friends or people from the same region. They form eating groups, buying a month’s staples at shops in town after they are paid and taking turns cooking. Occasionally they buy vegetables or meat locally or scavenge cassava leaves or wild greens in abandoned fields.

Trucks pick up the cane-cutters at the hostel early in the morning to take them to a section that has been freshly burning during the night. There are usually more cutters available than are needed; they push and jostle to get their friends on to the lorry. They are back at the hostel around 2 pm, when they clean the hostel, wash clothes, bathe, cook and eat. They might go to drink or flirt at a local beer-stand or stay in the hostel to smoke marijuana, listen to boom-box music or talk by cellphone to friends and family at home. At the end of the month when they are paid they emerge from the hostels to socialise with local women and to go to town.

The sanitary conditions of hostel life raise many immediate health problems such as diarrhoea, bed bugs, skin infections and flu, but there are also long-term public health issues arising from dependence on long-distance migrant male labour for cane-cutting. First is the problem of controlling malaria. Mayor et al.42 found that in Manhiça the cumulative prevalence of adult parasite carriers over the year is probably close to 100 per cent, due either to the

41 Bowen, The State against the Peasantry, p. 224.
42 A. Mayor, J. Aponte, C. Fogg, F. Saute, B. Greenwood, M. Dgedge, C. Menendez and P. Alonso, ‘The Epidemiology of Malaria in Adults in a Rural Area of Southern Mozambique’, Malaria Journal, 6, 1 (2007), p. 5.
chronic nature of malaria infections or frequent reinfections. There are active programmes of house spraying and bed net distribution, but new cohorts of carriers re-enter each year, such as the cane-cutters recruited from central Mozambique.\footnote{On how recurrent migration to Swazi sugar plantations led to the resurgence of malaria, see R. Packard, ‘Agricultural Development, Migrant Labor and the Resurgence of Malaria in Swaziland’, \textit{Social Science & Medicine}, 22, 8 (1986), pp. 861–67.} The study also found that many of the infected adults did not present symptomatic high fevers; accumulated adult immunity restricts malaria to a sub-clinical course – including the headaches hostel residents complained of – but overall health is still compromised.

A second health issue related to the conditions of migration is HIV/AIDS and other sexually transmitted infections. A study done in an area adjoining the Xinavane estate found overall HIV prevalence to be 39.9 per cent,\footnote{R. González, K. Munguambe, J. Aponte, C. Bavo, D. Nhalungo, E. Macete, P. Alonso, C. Menéndez and D. Naniche, ‘High HIV Prevalence in a Southern Semi-Rural Area of Mozambique: A Community-Based Survey’, \textit{HIV Medicine} (2012), p. 584.} higher among women than among men. Migration does not in itself determine the prevalence of HIV/AIDS, but patterns of sexuality and family life associated with different forms of migration affect it.\footnote{M.N. Lurie, ‘The Epidemiology of Migration and HIV/AIDS in South Africa’, \textit{Journal of Ethnic and Migration Studies}, 32, 4 (2006), pp. 649–66; M. Hunter, ‘Beyond the Male-Migrant: South Africa’s Long History of Health Geography and the Contemporary AIDS Pandemic’, \textit{Health & Place}, 16, 1 (2010), pp. 25–33; B. O’Laughlin, ‘Trapped in the Prison of the Proximate: Structural HIV/AIDS Prevention in Southern Africa’, \textit{Review of African Political Economy}, 42, 145 (2015), pp. 342–61.} The organisation of the Xinavane hostel system assures that there will be casual sexual encounters, that there will be some unprotected encounters, and that there will be transmission from migrants to partners in home areas that currently have lower HIV prevalence than does Xinavane.

\textit{Manual Labour, Drudgery and the Intensification of the Working Day}

The modernisation of irrigation systems and aerial spraying displaced many of the semi-skilled jobs of the production process at AdX, but there are still many operations that are carried out manually: weeding, cane burning before harvest, cane-cutting, cane loading in waterlogged fields, cleaning fields and planting. Machines can substitute for these tasks, but at present people do them better and more profitably.

Tall cane does not allow for aerial spraying. Locally recruited workers weed or use backpack sprayers to get at weeds or pests. Top dressing of fertilisers is done by hand when plant growth and soil tests show that it is needed. Cane is burnt because it makes the cane easier to cut by driving snakes and pests out of the field and getting rid of some of the sharp leafage. It also reduces the volume of the cane transported to the mill and the leaves that clog machines. Skilled cane-cutters manually top the cane, strip the burnt leaves and chop the stalk close to the ground to maximise the sucrose yield of the milled cane without damaging the roots of the plant. Manual loaders are needed when the ground is marshy and machines cannot enter. Manual sweepers carefully rake and stack the bagasse that will be used to power the mill and the electricity grid without injuring the ratoons from which the new plants will grow. Manual planters fill in areas where ratoons have failed rather than uprooting the entire area for machine planting.

All of these manual tasks require care, and cane-cutting demands both strength and skill, but the levels and forms of payment turn them into drudgery, sharply differentiated from skilled jobs. AdX employs the Paterson job grading system, used to set wage bands in mining and agricultural enterprises in South Africa. The main criterion used to distinguish different grades is decision-making responsibility,\footnote{For a description of the different grades and a discussion of how Paterson figured in 2014 strikes at Illovo and Tongaat Hulett in Swaziland, see IUF Sugar Workers Network, ‘Swaziland: SAPWU strikes at Illovo and Tongaat’, 21 June 2014. Available at \url{http://www.iuf.org/sugarworkers/swaziland-sapwu-strikes-illovo-tongaat/}, retrieved 11 May 2016.} a classification reflecting very hierarchical management and sharp differentiation of wages. Table 1 compares the accords Tongaat Hulett signed in 2012 with the respective unions of the Xinavane company in Mozambique and the Maidstone estate.
in South Africa. It shows the divergence between wages of agricultural workers in Mozambique and South Africa. The ratio of wages of the highest-paid to lowest-paid agricultural workers is also higher at AdX than at Maidstone. Mozambique has an extra low grade A1A, which includes most of the locally hired women working as weeders and field cleaners. The mechanisation and computerisation of middle-level skilled jobs has increased the polarisation between casual manual and permanent technical and supervisory workers.

### Table 1. Comparison of sugar workers’ wages, Tongaat Hulett, Maidstone, South Africa and AdX Mozambique, 2012

| Band          | Maidstone hourly wage (rand) | Maidstone hourly wage (US$) | Maidstone monthly wage (US$) | AdX monthly wage (MT) | AdX monthly wage (US$) |
|---------------|------------------------------|-----------------------------|-----------------------------|-----------------------|------------------------|
| A1A Average:  | 26.67                        | 3.50                        | 438.11                      | 2,554.00              | 89.61                  |
| Bands A1–A3   |                              |                             |                             |                       |                        |
| Average:      | 36.31                        | 4.44                        | 554.86                      | 4,747.00              | 166.56                 |
| Bands B1–B2   | 47.93                        | 5.86                        | 732.43                      | 6,532.67              | 229.22                 |
| Average:      | 70.36                        | 8.60                        | 1,075.18                    | 9,521.33              | 334.08                 |
| Bands B3–C1   |                              |                             |                             |                       |                        |

Source: IUF Sugar Workers Network, 2012, ‘South Africa: Wage Rates for 2012–2013 in the Sugar Sector’. Available at http://www.iuf.org/sugarworkers/south-africa-wage-rates-for-2012-2013-in-the-sugar-sector-2/, retrieved 11 May 2016; and ‘Tabela Salarial 2012’ (Wage Table 2012) document furnished by AdX branch of SINTIA, the Mozambican national union of sugar industry workers, to IESE researchers at Xinavane, 2012.

in South Africa. It shows the divergence between wages of agricultural workers in Mozambique and South Africa. The ratio of wages of the highest-paid to lowest-paid agricultural workers is also higher at AdX than at Maidstone. Mozambique has an extra low grade A1A, which includes most of the locally hired women working as weeders and field cleaners. The mechanisation and computerisation of middle-level skilled jobs has increased the polarisation between casual manual and permanent technical and supervisory workers.

**The Task Wage, Intensification of Work and Consuming Bodies**

Supervisory and technical agricultural workers, like mill workers, receive an hourly or monthly wage, and work a fixed number of hours a week. They can thus be paid overtime and docked for absences. All casual field workers are paid on the basis of a task rate rather than an hourly wage. Tasks are variable, defined by field managers in relation to company norms and seasonal crop conditions: a certain number of lines of mature cane to be cut, a certain number of rows to be weeded, a certain area to be cleaned. From a management point of view task wages minimise differences in productivity among workers by forcing some workers to extend their working day and others, particularly the cane-cutters, to intensify their labour to finish tasks. Those who cannot do so either learn or lose their jobs.

At Xinavane, cane-cutters work in competing teams, sometimes with a group from one region pitted against those from another, to finish their targets. They trade insults as they go, working as fast as they can. Some smoke marijuana to help them keep going. They are supposed to carry safe water from the hostel but sometimes drink from the irrigation ditches. They are issued protective equipment, but many avoid using anything but boots to protect themselves from snakes and the heat of the smouldering ground and gloves to protect their hands from cutlasses and knife-like leaves. The stiff uniforms make their cutting swing awkward, protective goggles blur their vision and masks inhibit breathing, all of which are dangerous when working so rapidly. The immediate health problems the intense pace of work creates for the cane-cutters in Xinavane are similar to those described particularly well in the Brazilian literature: exhaustion, dehydration, deep cuts, cramps, back pain, conjunctivitis, skin irritations, diarrhoea, headaches, coughs and respiratory difficulties from inhaling dust and ash.

47 See *inter alia* F. Alves, ‘Por que morrem os cortadores de cana’, *Saúde e Sociedade*, 15, 3 (2006), pp. 90–8; R.A. Scopinho, F. Eid, C.E. de Freitas Vian and P.R.C. da Silva, ‘Novas tecnologias e saúde do trabalhador: a mecanização do corte da cana-de-açúcar’, *Cadernos Saúde Pública*, 15, 1 (1999), pp. 147–61.
Those, mainly women, who do field cleaning, planting and weeding work together in a particular section of a field but have individual tasks. All experience exhaustion and occasional dehydration; the field cleaners suffer from exposure to dust and ash, and the weeders from chemicals and pests. They work quickly, reluctant to take the obligatory break, since they can leave when they have finished their tasks. Those with less expertise are allowed to extend their hours to finish tasks, but they hurry to avoid walking home alone.

Atmospheric pollution is a problem for both workers and surrounding communities. Aerial spraying of insecticides and herbicides on the cane fields that abut residential areas sometimes misses its mark, kills chickens and makes the old and children cough. The clouds of ash and dust raised by burning cane for harvesting endanger the health of those living in surrounding communities as well as those working in the cane. The wind drives clouds of smoke from burning cane fields across the sky and drops ash and blackened bits of trash everywhere, including on the freshly washed hospital laundry extended on drying lines. The people of the town as well as the workers in the cane are used to attacks of coughing and itchy eyes, particularly during the dry season. Public health research from Brazil suggests that the ash and soot residues of burning lifted by winds contain silicates and various organic compounds that pollute the air and compromise the long-term respiratory health of cane-workers and of children and the elderly in nearby urban areas.48

The Politics of Work and Health

AdX has, in Kapp’s49 terms, negotiated a particularly narrow responsibility for the social costs of production, both individual and environmental public health. Its concern with workers’ health is mainly directed towards that which compromises labour productivity in direct production, externalising accountability for long-term health to public health services or to individuals themselves. Buur et al.50 are somewhat ingenuous in claiming that the sugar industry has provided social services on a continuous basis. What has been done in the case of AdX is to build health posts that are subsequently staffed and operated by the public health system, thus assuring that there are health facilities available near AdX plantations. It has also provided occasional logistical support to the Xinavane hospital, but no permanent loan of an ambulance. There is a small clinic at AdX headquarters and there are workers trained in first aid at block level, but the company sends all serious cases to the public hospitals in Xinavane and Magude. AdX workers told us that when they were ill, including from workplace injuries, they preferred their local health posts to the AdX clinic. AdX also works together with health authorities in mosquito-control spraying within the plantation and has set up an HIV/AIDS prevention programme, but these activities are voluntary, provided as examples of corporate social responsibility.

Workers are made individually responsible for health safety. The HIV prevention programme focuses on persuading individuals to change their sexual behaviour, somewhat difficult to do given the location and organisation of the hostel system. If the toilets are filthy, it is the responsibility of workers to clean them. When AdX lorries ran over pedestrians and cyclists, new uniforms were issued with florescent strips on the sleeves but the verges of the road remain too narrow for both lorries and cyclists to circulate safely. At induction all are introduced to safety procedures; reminders using a cartoon figure, Huley, are blazoned on the exterior walls of the AdX compound in English and Portuguese and tacked on the walls in offices and the factory.

48 J.E.D. Cançado, P.H.N. Saldiva, L.A.A. Pereira, L.B.L.S. Lara, P. Artaxo, L.A. Martinelli, M.A. Arbex, A. Zanobetti and A.L.F. Braga, ‘The Impact of Sugar Cane-Burning Emissions on the Respiratory System of Children and the Elderly’, Environmental Health Perspectives, 114, 5 (2006), pp. 725–9; M.A. Arbex, L.C. Martins, R.C. De Oliveira, L.A.A. Pereira, F.F. Arbex, J.E.D. Cançado, P.H.N. Saldiva and A.L.F. Braga, ‘Air Pollution from Biomass Burning and Asthma Hospital Admissions in a Sugar Cane Plantation Area in Brazil’, Journal of Epidemiology and Community Health, 61, 5 (2007), pp. 395–400.

49 K.W. Kapp, ‘On the Nature and Significance’.

50 L. Buur, C. Mondlane and O. Baloi, ‘Strategic Privatisation’, p. 252.
The rules emphasise workers’ responsibility to recognise dangers built into the organisation of work and taken as given: confined spaces, working at heights, open energy circuits, movement of vehicles and manual lifting and handling.

AdX management is rational and businesslike; it shows no trace of the paternalistic culture of belonging that characterises more enduring histories of commercial farming elsewhere in the region. The company tried to outsource recruitment of cane-cutters and management of the hostels, but was obliged to take them over and refurbish hostels after a cholera epidemic exposed dangerously unhealthy living conditions. AdX pays what management calls ‘clean wages’; i.e. the company makes no extra deductions and provides no payments in kind. They do not deduct for tools and protective equipment or the plastic jug for drinking water. There is a mandatory tea break, but the company provides no food or beverage other than tanks of drinking water placed in the fields during the hottest months. Vamagogo on the surface maintains some of the paternalist aspects of the colonial plantation, but these are intended to cut direct costs or enhance short-term productivity: deductions for equipment provided by the company from the workers’ monthly pay, to be reimbursed after three months if they are still employed; a small shop that extends credit to workers on the estate – to be deducted from wages at the end of the month; a food supplement given only to cane-cutters in the fields to maintain stamina.

What then of contradictions, class struggle, and pressure on the distribution of the social costs of production? Why is there so little recognition of the questions of health that sugar cane production raises in southern Mozambique? Clearly exhaustion and the likelihood of long-term deterioration of health are not affecting the recruitment of workers for the plantation. Women in Xinavane said that their sons were trying their luck in South Africa, rather than becoming cane-cutters, but there are young men from central Mozambique with secondary school diplomas clamouring for work at AdX. Rural unemployment is more effective than forced labour was in providing casual labour. SINTIA, the sugar workers’ union representing full-time workers, has been principally concerned with stabilising jobs and increasing wages. As Buur et al. have emphasised, the success of AdX has given political legitimacy to the government as well as itself. Underlying this success in economic and political terms are three important patterns of class relations: the strength of AdX’s competitive position, the weak regulatory accountability of the state and divisions between workers.

Through its ownership by Tongaat Hulett, AdX is affiliated with the research institutions of the southern African sugar industry. They share a common sense of industry norms and labour process. The South African Sugarcane Research Institute (SASRI) and the Sugar Milling Research Institute (SMRI) address technical improvement in the sugar industry, taking from their corporate funders a focus on profitability of different production techniques. At AdX, middle-level technicians and managers are often from other English-speaking countries in the region where Tongaat Hulett operates. The big cane-producers confront minimal local competition. AdX coordinates many management decisions with its one large outgrower (Vamagogo) and Maragra, the neighbouring Illovo-owned estate. Most of AdX’s smallholder associations are rentiers; the company decides how their land should be cultivated and harvested using workers employed by the company. Disputes focus on income earned: calculations of costs and quality of their cane.

Cooperation within the industry makes it difficult for workers to negotiate better wages and working conditions, except through work stoppages. The director of Vamagogo explained, for example, that he paid a bit more than AdX for some jobs, but all three estates agreed to

---

51 A. Du Toit and J. Ewert, ‘Myths of Globalisation: Private Regulation and Farm Worker Livelihoods on Western Cape Farms’, *Transformation: Critical Perspectives on Southern Africa*, 50 (2002), pp. 77–104; B. Rutherford, ‘Organization and (De)Mobilization of Farmworkers in Zimbabwe: Reflections on Trade Unions, NGOs and Political Parties’, *Journal of Agrarian Change*, 14, 2 (2014), pp. 214–39.
52 L. Buur, C. Mondlane Tembe and O. Baloi, ‘The White Gold’. 
pay the same wage to cane-cutters to minimise strikes.\textsuperscript{53} Mechanisation is used as a threat by management, particularly in relation to cane-cutting. All recognise that the automation of irrigation displaced the skilled, better-paid permanent jobs of those who used to move the pivot irrigation equipment and control water flows, while aerial spraying reduced the number of full-time backpack sprayers.

Explaining why he did not want IESE researchers to visit the hostels, AdX’s director of personnel referred to the cane-cutters’ strike of the previous season and suggested that our questions might be inflammatory.\textsuperscript{54} He suggested that another strike might make the company mechanise the harvest and jobs would be lost. This argument has been used by other growers in southern Mozambique. The director of ProCana, a now bankrupt biofuel scheme in Gaza Province, told researchers that if the government were to ban burning of cane and impose strict labour standards, then ProCana felt it could opt for a mechanised plantation set-up.\textsuperscript{55}

Workers’ capacity to organise sustained protest around working conditions is disrupted by the divisions between workers embedded in labour processes (factory vs field), different contractual statuses (permanent vs contracted), wage bands in the Paterson system and forms of payment (salary, hourly wage or target). At induction AdX provides every worker with a uniform colour-coded by the type of work done. Uniforms are worn almost everywhere (not always by the person to whom they were issued), except by the cane-cutters who are given white overalls that are easily soiled by charred cane. They are recognised by the cutlasses they habitually carry around, by the way they wash their clothes in the irrigation canals and their somewhat misleading swagger.\textsuperscript{56} The one concern that cuts across these occupational differences whatever wage band or job category they belong to, whatever the colour of the uniform they wear, is the size of their monthly payslip, particularly the calculation of days worked and deductions. Yet even here the casual workers are pitted against the full-time permanent supervisory workers who apportion, enforce and register targets, and whose higher wages in the Paterson system are defined by their decision-making power.

Workers are also divided as much by the gendered socially separate lives they lead outside the cane fields as they are by occupational differences and labour process.\textsuperscript{57} English is the language of upper levels of management at AdX; many of the trained agronomists have been transferred from other Tongaat Hulett estates in Zimbabwe or Swaziland. Higher level supervisory and technical workers, particularly expatriates, have personal vehicles and company housing on the estate. Lower-level skilled workers, field supervisors, technicians, machine operators and security staff, like mill workers, live in Xinavane Town or nearby villages. They are mainly male. They speak Portuguese and a variety of different Mozambican languages, reflecting their areas of origin and the paths they took on their way to Xinavane. They often cycle between home and work.

Locally hired manual workers, mainly women and Shangaan speakers, may put the needs of their children or farms ahead of their assiduity at work. The migrant cane-cutters, now mainly Sena and Portuguese speakers, never feel at home. Local evangelical pastors, often permanent staff at AdX, come to the hostels to preach and counsel. One, who like many cane-cutters came from Zambezia, said he advised them to think of their family at home and to avoid drink, drugs and casual sex and not to get involved in strikes, but they do. The cane-cutters have organised wildcat strikes without either leadership or participation by the union, usually at the height of the harvest.

\textsuperscript{53} IESE interviews, Vamagogo, July 2012.
\textsuperscript{54} IESE interview, AdX, July 2012.
\textsuperscript{55} S.M. Borras Jr, D. Fig and S. A.M. Suarez, ‘The Politics of Agrofuels and Mega-Land and Water Deals: Insights from the ProCana Case, Mozambique’, \textit{Review of African Political Economy}, 38, 128 (2011), p. 224.
\textsuperscript{56} When we talked to cutters returning to the hostel after a day of work, they insisted on washing and changing into clean clothes. When they told us their stories and smiled for the phone-photos they wanted to send home, they appeared as the vulnerable young men most were.
\textsuperscript{57} See Lazzarini, ‘Gendered Labour, Migratory Labour’ (in this issue), for a close study of gendered labour at AdX.
These groups have disparate visions of their relation to the company and aspirations for the future. The cane-cutters see their lives not in the indignities of hostel life or exhaustion of work, but in their dreams for investments at home or of the better jobs they will move on to. Wages at AdX are much lower than those in South Africa (Table 1), but they are high in the context of Mozambique. Cane-cutters at Vamagogo mentioned targets such as investing in a small fishing boat, building a cistern, getting a driver’s licence or a passport to go to South Africa. The local women on seasonal contracts are concerned with being able to feed their families better, to buy clothes, medicines and schoolbooks or even to get a job in the mill. Only the skilled workers with regular monthly salaries in both mill and fields envision a secure permanent job at AdX (many also have a side business or farms). Politically they are the base of SINTIA, the trade union, though all workers pay dues. Although SINTIA has signed accords with AdX and Maragra on behalf of all workers, the 2011 militant strike at AdX was informally organised with cane-cutters playing the leading role. AdX workers are so clearly demarcated by contractual status, gender, separate work processes, residence and even by their colour-coded uniforms, that it is not surprising that demands for more jobs and better wages are almost the only thing that unites them.

The regulatory power of government over health and labour at the local level is also very weak. Tongaat Hulett’s financing of the modernisation and expansion of the mill reduced Mozambican government equity to 12 per cent. The dissolution of the Mozambican National Sugar Institute further limited government regulatory power over the company; although, as Whitfield and Buur point out, company and government policies are largely in alignment as far as cane production is concerned. Labour inspectors intervene in disputes over dismissal and sick leave, but focus on permanent workers. Local health workers, who played an important role in uncovering the cholera crisis at a hostel, carry out occasional inspections and enlist the company in spraying campaigns but the weight of their responsibility for curative care is so great that they have little time for issues of public health.

Conclusion: Growing Sugar in Different Ways?

When Tongaat Hulett took over in Xinavane, it refurbished the offices of the colonial plantation and painted its new name in curlicued Gothic script on the sign above the entry. At its gate Vamagogo boasts a small wooden sign with its name painted by hand in crooked letters. These signs are a sentimental masquerade since behind their gates lie a new enormous mill, huge turbines and pumps and fleets of vehicles and agricultural machinery unlike anything known in the past. The continuities lie in technical and labour practices injurious for both individual and public health now reproduced at an expanded scale: the mill that spews smoke into the air, the floating residues of burning cane, forms of recruitment and hostel residence that foster the transmission of new diseases like HIV/AIDS, the insecurity, unequal pay and exclusion from social protection of casual work, forms of payment and rhythms of manual labour that grind up rural workers and spit them out.

The ills of large-scale sugar cane production described in this paper tempt one to blame the crop; when looking back at the history of sugar cane in southern Africa and its decline in many other parts of the world one is tempted to despair of finding a better way to produce it. But in capitalist agriculture good jobs have never been given; they have been fought for. The selectivity of AdX’s recognition of the effects of forms of recruitment, work and payment on individual and social health reflects forms of labour struggle (including successful wildcat strikes) that have narrowly focused on the number of people with permanent contracts and on wage demands. The company answers deterministically, arguing that the only alternative is mechanisation.

58 L. Whitfield and L. Buur, ‘The Politics of Industrial Policy: Ruling Elites and their Alliances’, Third World Quarterly, 35, 1 (2014), pp. 126–44.
and thus job loss in a rural area where livelihoods are dependent on the availability of wage work as well as farming. In this exchange there is no discussion of the interrelated practices that enforce the intensification of labour, or extend the working day or make the cane fields a dangerous place to be. Nor do labour struggles challenge the immediate and long-term effects of environmentally destructive agricultural practices (cane burning, aerial spraying, wetland drainage) or the organisation of recruitment and housing. These are practices that affect all workers, surrounding communities and beyond.

There is a tendency in Mozambique (as elsewhere in the region) to dismiss agricultural workers’ trade unions such as SINTIA as economistic or co-opted by capital and the governing party. This moral critique does nothing to address the structural reasons why this is so: the sharp divisions between industrial and agricultural work, between full-time and casual work, between regular salaries and target wages, between female and male workers, all of which are also open to challenge. To become agents rather than clients in the negotiation of social contracts, trade unions must find ways to address the quality of work and health as well as wages and job status. Some outrageously utopian thought by labour scholars might inform this struggle, not to make a world without work but a world where work is both productive and satisfying, where leisure is not subordinated to the rhythms of capital accumulation, where there are no unpaid labour reserves, where non-commodified work is recognised as productive regardless of who does it, where sexual violence is not embedded in the routines and spaces of work and residence, where young bodies do not become detritus in the daily activities of life.

Acknowledgements

This paper was originally prepared for a workshop of the Southern Africa Sugar Research Network held in Johannesburg, 24–25 November 2014, funded by the UK Economic and Social Research Council (ESRC) and UK Department for International Development (DFID) joint programme on poverty alleviation, grant no. ES/1034242/1. I would like to thank IESE (The Institute of Social and Economic Studies) for sponsoring the research on which this paper is based, my co-researchers – Y. Ibraimo, S. Bila, A. Jovo and S. Ngove – and discussants, editors and referees for comments on earlier drafts of this paper.

BRIDGET O’LAUGHLIN

*International Institute of Social Studies, Erasmus University (retired), PO Box 29776, 2502LT, The Hague, The Netherlands. E-mail: broLaughlin@iss.nl*