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Special Issue
Ecology of Work

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In 1960s and 70s university academics still harboured ideas of academic freedom and autonomy. That was the time of 1968 youth movement in Europe, cultural revolution in China and emerging revolutionary movements in Afro- Asia and Latin America. Since then a great academic transition has changed the universities from intellectual places to business places where students have become investor consumers asking themselves 'what should we study that will sell'. In a landmark book 'The Toxic University' Professor Richard Smyth describes this great transition.

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Editorial

Ecology of Work and the Work of Nature

This issue of the Lahore Journal of Policy Studies seeks to interrogate the emerging ecology of work in the globalized economy; its nature, history and contribution to social wellbeing. The call for papers invited contributors to examine the link between work and its social outcomes particularly exploitation of wage labour and the appropriation of unpaid work, and the more recent ways of extracting value with the extended power of digital technologies.

The work of human beings is only a small part of the wealth of nature. The work of nature still receives scant attention in social discourse and ideas of human exemptionalism[1] (Foster 2012) prevail despite aggravating environmental crisis. The work of bees in producing honey has long been recognized but their work in enabling the pollination of crops has received much attention only recently because of the threat this process experiences due to the use of pesticides. The work of earthworms in sustaining soil fertility was highlighted by Darwin. However, artificial fertilizers enable the decline of soil fertility to be kept hidden from view and enable synthetic fertilizers to be presented instead as contributors to increasing fertility. Trees grow and produce fruit and timber, oxygen and also absorb CO_2. Water supports life on land as well as within the oceans of humans, animals, and plant species. Water has also carved the earth's landscape and transported material at huge scales producing, for example, the fertile plains of Indus Basin and the Nile Delta. Fossil fuels are the products of dead ecologies and are increasingly recognized as the basis of capitalist productivity. And so is underground water, a lifeline that is being recklessly exploited to subsidize the consumer economy, causing permanent damage and pollution to this accumulated work of nature.

The work of nature introduces us to the concept of unpaid work. The work of women in the household as well as in agriculture and livestock, is a clear example. Women in agriculture and as keepers of domestic animals like buffaloes, goats, and chicken take an equal part in agricultural productive labour. They bring up children and run a full food processing set-up, and look after the home, vegetable garden, collect water, haul fire wood, and take care of the sick and the elderly. This work is absent in most economic calculations.

History of work in the global south is directly linked to colonialism. In Pakistan the establishment of railways, the laying of the canal network in the Indus Basin, the management of forests and the replacement of communal property rights with private property rights by the colonial regime contributed to the switch from subsistence production to commodity production. Today, the once colonized countries of the Third World (TW) have been greatly integrated into the world production system through trade, investment and outsourcing production, their dependency has increased and consumption secured. Lately the technological advancement especially in digital communication has transformed work. It has helped introduce zero-hour

contracts, the ultimate type of temporary work (the gig economy) concentrating employers and freeing them from all responsibility, including means of production, risk and pension.

There is a marked but easily hidden deterioration in the conditions of work in the new economy. The use of internet communication and computers has left workers with less and less control at work and unsure of their responsibilities. Work is planned and scheduled remotely and workers are just herded through it, making them extremely alienated. Prevalence of musculoskeletal and mental health issues is rampant in advanced economies in addition to the other NCDs (non-communicable diseases) such as diabetes, hypertension, coronary disease and cancer. Asia is not far behind and obesity, the gateway to many NCDs, is rising fast. A few top global companies have tried to ameliorate the symptoms through food options and break-time exercise. However, even they find themselves helpless to do anything about the underlying causes which link the quest of productivity and profit. Socially disruptive, and physically stressful routines remain the norm in low paid and irregular work in the gig economies.

This issue carries four articles and two reviews which contribute to debates on the above issues. First is a case study about how work has changed in post-disaster Balakot, second is story of work by women of a deprived class, the third is about how the imagination of work is changing among the rural youth in Cameroon, and the fourth is about how the cleanup work of waste has become a source of accumulation. Of the books reviewed the first, James Bloodsworth's 'Hired…' is an ethnography of work in the gig-economy, the second, 'The Toxic University' is about how universities are changing from brotherhoods of scholars to extremely competitive business places.

Rabia Nadir, Fizza Batool, Ayesha Ijaz Cheema and Munir Ghazanfar report on social change in the aftermath of the earthquake that struck the small town of Balakot and environ in 2005 which not only resulted in massive loss of life and infrastructure but socially too it was cataclysmic. The people of Balakot see it as a rupture separating two vastly different social worlds pre-and post-earthquake. Detailed interviews with many segments of society in Balakot and its surrounding villages indeed reveal a deep and fundamental infrastructural change from a largely subsistence economy to market economy in a very short span of time leading to sea change in social practices and relationships.

Earlier researcher Halvorson and Hamilton[2] and Loureiro[3] point out that this change was the same that other areas of Pakistan had passed through, and Balakot or the adjacent Azad Kashmir were preparing to do so and that this change was not connected to the specific event of the earthquake. People of Balakot, however, consider the earthquake a watershed, between two vastly different social environments. They look at the earthquake as a time line juxtaposing two different historical periods. Like the physical fault line passing through Balakot they see the earthquake as a major social fault line cutting out the expected transitional historical period. To appreciate the people's point of view one needs to look through their lens

of lived experience. The researchers had only heard about the past but the people had lived it. For them the contrast is too vivid and palpable, sudden, and tied to the time line of the earthquake of 8th October 2005. The authors posit that the earthquake jolted and displaced the previous social order based mainly on subsistence agriculture but it was the 'Help' that followed as cash injection and NGOs that introduced a new order based on cash requirement and the imagination of education-for-jobs even for girls, affecting the role of women in agriculture. The disappearance of social relations and introduction of market relations has left a deep nostalgia in the society.

Farhat Naz writes the story of a deprived class seen through the lens of gender in the Mathnaa village of Gujarat. The women are under three systems of chains, chains of class, chains of caste and chains of gender. The class chain is the most fundamental and based in this rural society on primitive accumulation of the means of production creating dependency for the deprived classes. The caste chain provides a protective social base to class privilege making it acceptable to the victim through religious persuasion. Finally, the gender chain represents a traditional division of labour based on primitive social division of labour which might not have been necessarily unequal[4] to a modern system of paid labour where as unpaid labour they become unequal shadow workers.

That Dalit and Adivasi woman work on land and on water without owning either is determined by the deprivation of their class from the means of production and their resulting dependency. On a secondary level their families are dependent for drinking water and for help on marriages and festivals so they readily accept to do the upper class women's share of work. The state has tried to promote social justice by putting Dalit and Adivasi women on the watershed committees for the management of the publicly constructed check dams for water storage but legal authority must filter though unjust social structures based on private property. Women representation on the watershed committees gives them hope and an impression of authority but without real involvement and power.

Ngyah-Etchutambe reports a lack of interest and abandonment of agriculture by the youth in Cameroon. He examines the case of a training project to promote farming as a livelihood choice among young males in Cameroon which has not registered a positive outcome. His specific focus is on the success of using knowledge construction as a training approach to develop employable skills. His statistical results and qualitative interviews with the trainers reveal that it was not the training approach but other factors such as trainees' lack of interest, insufficient resources and lack of follow up which were by far the bigger barriers for youth entering farming. In fact, looking deeper, the low returns from agriculture and its hard and dirty nature has no appeal for the youth living in the new ecology of globalized economy. Farming in the past was a culture and it was learnt organically in the family and community and there was no pressure to generate cash for industrial inputs such as fertilizer, pesticides and machines. In the old subsistence ecology its value lay in providing a stable culture, home produced organic food and social relations. The demands of new market ecology include cash, competition and urbanisation in search of jobs. The educated

would rather be unemployed than work on the land, a work that is now considered fit only for the uneducated.

Larry Lohmann addresses the problems of advanced capitalism which is forever creating more waste, 'maxing out' ecological capacities and breaching planetary boundaries[5]. The most challenging, degrading and widespread form of work under modern capitalist production is the work of waste. Historically too humans spent more time in maintaining, clearing and cleaning the resulting products and spaces, and instruments of production. But today the work of waste, free or low-cost waste-handling, accommodation of dumped waste leave humans and nonhuman ecologies more fatigued and diseased than ever before. 'Pollution havens' in the peripheries conceal the extractive processes that draw surplus from unpaid labour and nature's bounty. The crisis of capitalist waste handling is the maxing out of the capacity for unpaid work of humans and nature which has always subsidized to allow the creation of surplus value.[6]

Samina Choonara in her review of the book 'Hired' by James Bloodsworth notes the significance of an ethnography of work which takes us to the heartland of the erstwhile empire Britain, in times of the super exploitative 'gig economy'. The new work of the gig economy is piecemeal self employment with its 'zero hour contracts' work is only clocked when you are directly engaged, which is the practice of even giant platforms such as Amazon and Uber. It is a harrowing account of homelessness, uncertain work, drug addiction and unhealthy living in towns like Blackpool once a bustling seaside resort, former collieries like Cym, Afan and Ebbw Vale and in London's digs. Choonara, however, berates the author for his opinions expressed elsewhere and excesses of ethnographic accounts that lack a vision to place the local within the larger picture of global capitalism.

Munir Ghazanfar reviews the 2017 book by John Smyth on the changing role of universities in the neoliberal era. Smyth points out the current phase of capitalism is no longer just confined to the economy; it is now neoliberalism, a governing socio-political rationality that submits all aspects of human existence to market principles. The toxic university is the new university of the neoliberal period where teaching and research are now considered economic goods needing to be measured counted and audited like in business. The academics likewise are being guided by the whips of efficiency, productivity, quality. The new industrial requirements have taken the joy out of the job and added a lot of burden and pressure on the academics. Universities are social institutions which have evolved over the years to serve the social system of the time. With the changes in social system since 1980 universities are undergoing a major transition in objectives. Universities are one of the most important institutions of the society. They happen to be the last remaining place where social critique and criticism is incubated and fostered. They are now transforming from places of intellect to places of business.

Rabia Nadir

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[5] Rockström, J., et al 2009. Planetary boundaries: exploring the safe operating space for humanity. *Ecology and Society*.

[6] Ecosystem services are a new ploy which treats waste as an abstract entity and make its management the work of professionals, working in the same capitalist paradigm that continues to create more waste.

RABIA NADIR, FIZZA BATOOL, AYESHA IJAZ CHEEMA &
MUNIR GHAZANFAR

DISASTER AND 'HELP' IN BALAKOT: BIRTH OF A NEW ECOLOGY

Abstract

The 2005 earthquake in Balakot resulted in massive loss of life and infrastructure, socially too, it was cataclysmic. The people of Balakot describe it as a rupture separating two vastly different social environments, the pre-and post-earthquake. This paper attempts to unpack this narrative of drastic social change and loss shared by respondents using the lens of ecological change. We posit that there has been a compressed social change due to a sudden shift in the mode of production as a result of the destruction and subsequent rebuilding process. The pre-earthquake society was based on small scale agricultural production, transhumance, crafts, petty commerce and a limited service sector. The chaos and relief which followed brought cash and market procured industrially produced goods to cash-poor, displaced peasants and introduced a new ecology based on large scale production. The seeds of this change had been in place for some decades. However, the jolt of the earthquake literally threw people and livestock that had cohabited with them off the land and social change took a quantum jump as cash compensation as well as aid greatly expanded the market. There is now diversification in ways of earning a living, labour has become more mobile and migration has increased. For the youth the universal model of education is the path to new livelihoods, it reshapes social routines and imagination across gender and class divides and also drains family resources. There is a stark transformation of women's work from active participation in agricultural production, rearing of livestock and everyday crafts, which in addition to their domestic role of social reproduction of labour and as primary care givers now includes marginal actual participation but high acceptance of low paid employment outside the house.

Keywords: disaster and social change, education and agriculture, women and livestock, transhumance.

Balakot is a tehsil[1] and town of Mansehra district, Khyber Pukhtnkhawa province in northern Pakistan. It is a rural small town, and comprises of market for hillside and riverside villages along the valley of the Kunhar River. Balakot's economy before the 2005 earthquake was largely underwritten by small scale agriculture, artisanal production, transhumance, and a small market. Arable land in mountains typically provides very small holdings in kanals, (one kanal is one-eighth of an acre), about 80 percent of farms in Mansehra district are less than 5 acres (Agriculture Census 2010). A large group of pastoralists lived in villages around Balakot and moved with community herds to Upper Kaghan's grassy pastures (*mahlis*) in summer. Given the location of Balakot at the mouth of the Kaghan Valley people of Balakot were

engaged in transporting tourists, materials, shepherds etc. to and fro between Kaghan Valley and Balakot. The town had many workshops and a base for four-wheel drive jeeps and other vehicles. Many small entrepreneurs from Balakot town had also set up seasonal or semi-permanent hotels in Upper Kaghan Valley.

On October 8th 2005 a 7.6 magnitude earthquake struck the region of Kashmir – Hazara. The fault line along which the earth jolted passed right through the town of Balakot where maximum damage was experienced. Overall the earthquake caused some 80,000 deaths and extensive infrastructure damage in the region. This devastation elicited a tremendous relief response from across Pakistan, other regional countries and international agencies. A dedicated institution, namely, Earthquake Reconstruction and Rehabilitation Authority (ERRA) was set up to address the calamitous situation. However, major share of the relief work was carried out by international non-government organizations (INGOs) and local non-government organizations (NGOs). As will be shown the role of these non-government organizations was significant along with the policy of cash as compensation[2].

Once people's homes and livelihoods were destroyed by the earthquake they were housed in shelters and provided food and clothes for over a year. A programme of Livelihoods Support Cash Grants (LSCG) was initiated. According to this programme those whose homes were entirely destroyed were allotted PKR 175,000 (USD 2,917 according to 2006 dollar price), to be given in four installments. Those whose homes were damaged were allocated PKR 75,000 (USD 1,250) in two installments, and those whose homes sustained only minor damage were to be given PKR 25,000 (USD 417) in one payment. In addition, families whose land was destroyed were allocated PKR 75,000 (USD 1,250) to buy new land, those who had lost a family member were given PKR 1,00,000 (USD 1,667) and injured were given PKR 15,000-50,000 (USD 250-833) (Zaidi 2010, ADB 2007)[3].

The vastly damaged city of Balakot was declared a seismic 'red zone' and reconstruction in the city was banned. A project for a New Balakot City was initiated in Bakariyal 15kms from old Balakot. However, despite huge investment in land acquisition and infrastructure development the project work is largely unfinished and has been officially suspended since 2016. A large number of households, schools and government tehsil offices and continue to be housed in temporary fibre glass shelters. The fate of the city remains uncertain and many including some government offices have built new structures in violation of the ban.

The Cash Injection of AID – people's narrative

Between 2013-2018 we undertook a series of visits to Balakot city and adjoining villages to inquire about the social change engendered in the aftermath of the earthquake. This was based on a broad hypothesis that a calamity of this scale would have important socio-ecological outcomes. While the material damage was accessible through the many post earthquake assessment reports of ERRA and international research, the social was not recorded with a holistic ecological

perspective. During these visits in-depth, semi-structured interviews were conducted with individuals and focus groups. Interviews were conducted both in the town and suburban villages of Balakot. We visited homes, government schools, degree college, tehsil hospital, shops, hotels, local government offices and met elected representatives of the area. Our earlier visits 2013-2015 concentrated on the city of Balakot. The significance of agricultural livelihoods and livestock rearing in the local environment and its abandonment post earthquake shifted our focus to the villages in the area. The villages visited present diversity in terms of distance from Balakot town, size and ethnic mix. The villages visited include Sangar, Showal Najaf, Tarrana, Batkarrar, Baissian, Hassa, Patsairi, Talhatta on the left bank of the river; Hangrai, Mang, Khet Sarash, Pambara, Manu Jabra, Mittikot, Khanda, and Kohistani Mor on the right bank of the river. We found the people were easy, forthcoming but extremely sensitive. Their wounds were still fresh and tears swelled up each time their thoughts turned to that fateful day.

Our questions focused on the more concrete and manifest aspects of daily life and work. The respondents were asked about their livelihood, income, work routines, livestock, gender participation, food, health, education, migration, remittances, transport, water and fuel consumption. The recurring refrains in people's interviews were; depeasantisation, migration to big cities and abroad, loss of natural food including milk and *lassi* (buttermilk), the craze for and the cost of education, the new traits of individualism, selfishness and greed. There was depression and continued trauma in the area and in the city of Balakot due to the failure of the state to build the promised New Balakot City and restriction on rebuilding in the old city.

The locals dwelt at length and persistently about change from a pre-earthquake to the post –earthquake society. This perception of a rupture and nostalgia for the old social life has not merited much attention in the available research on the post earthquake social transformation. Studies of the 2005 earthquake are primarily focused on policy and organization of relief effort, risk and disaster preparedness, perceptions and attitudes towards the earthquake, gender vulnerabilities, psychological outcomes etc. (Kaleem et al 2016; Asad etal 2014; Alam & Haider 2013, Ziadi et al 2010; Halverson and Hamilton 2010; Wilder, 2008; Hicks and Pappas, 2006; Ghazanfar 2007, Hamilton and Halvorson 2007; Shirkatgah Women's Resource Centre 2006). There is no available publication that examines the perception of social change as widely reported by the locals and post earthquake studies.

However, in the adjoining Azad Kashmir an anthropological study by Loureiro (Loureiro 2012) dwells on the discourses of change which similarly characterize narratives of the rural inhabitants of the area. Azad Kashmir has a different socio-political history especially the disputed status of the territory since 1947. However, there are similarities in the practices of small scale agriculture and presence of pastoralism in the region. The differences are the more equitable landownership and a higher rate of emigration from Azad Kashmir. Loureiro argues that the earthquake was an event in the continued march of modernization in the region, which had started long ago unlike the 'confabulated' narratives of villagers that present the

earthquake as a point of rupture between two orders (Loureiro 2012: 20). He considers the earthquake a disaster, which accelerated the processes of change already underway (Loureiro 2012: 7) and highlights the continuities between pre– and post–earthquake social life. Geographers, Halvorson and Hamilton (2010) also highlight in their study of the aftermath of the earthquake that post-earthquake changes were an extension of the ongoing developmental processes exacerbated by the disaster.

'Disaster capitalism' (Klein 2007) theorization demonstrates how disasters in recent times have provided opportunity for extension and expansion of neoliberal capitalist development. While the views of Loureiro and Halvorson and Hamilton are in sympathy with this perspective they differ in their focus. Klein's perspective brings forward both the disruptive power of an extreme event and also the well developed global rehabilitation machine that operates in the interest of a hegemonic neoliberal capitalist regime. Saltman (2015: 60) explaining the expansion of private education in post Katrina time says"[N]ow that the storm has done the clear-cutting, the dream of the field of economic competition can be built". Swamy (2009) studying the post tsunami rehabilitation in south India found the 'national' economies firmly ensconced in global capitalism and their policies shaped by this hegemonic socio-economic order.

The case of Balakot can be seen as a case of extension of neoliberal market capitalism. However, we take the case of Balakot not to reiterate the disaster capitalism thesis but to filter it through the lens of ecology[4] (Commoner 1971, Merchant 1987). We argue that the case of Balakot offers a case of compressed social change, a stark material and social transformation from a subsistence based rural society into a capitalist market based one. While these changes in Balakot are part of the long ongoing processes of capitalist modernization the 2005 earthquake acted as a catalyst for a decisive transformation. Cash transaction had existed even earlier in the small market town. The arrival of agrochemicals, hybrid seeds and limited mechanization, has resulted in the gradual erosion of subsistence. Its impact was, however, not as widespread and substantial, as was the impact of the sudden cash injection as compensation and arrival of industrial goods given as relief. This altered the equation; whereas the society was monetized pre-earthquake, the earthquake was a defining moment for the penetration of capitalist production from outside Balakot.

The pre-earthquake production was largely in a closed loop cycle. Small fields, forests and pastures along with livestock provided needs of food, fuel, transport and shelter using the skills of both male and female able bodied members of the community. The post-earthquake ecology experienced a classic metabolic rift,[5] with decline of rural population and livestock, which Karl Marx had attributed to the rise of capitalist urbanization (Foster 1999). A largely autonomous population suddenly became dependent. A fundamental aspect of the new mode of production is the change in scale, ownership and access of the means of production. The introduction of cash in pre-existing semi-autonomous mode of production engenders

incorporation in a world market (Wallerstein 1977). Now everyday needs of food, shelter, fuel, medicine, transport, and furnishing are almost entirely industrially produced in distant centres and only available through cash payment. While money had been there for a long time, shelter, food, healthcare and education were dominantly procured not through cash but subsistence labour. Importantly changes in production from small scale agriculture to monetized industrial production has had immense impact on the work of females. Historically, it has implied double burden of wage labour and housework for the working class and increased consumption for middle class females as more industrial commodities and market based services are accessed.

As we look at the interactions of various components of local production, land, livestock, forests and above all the mode of production we can see the role of earthquake and cash relief in disrupting the ecology for a new world of social relations.

Breakdown of Peasant Farming and Transhumance

'*Khet mein say dalda aur patti kay dabbay nahain nikaltey'.* (The fields cannot produce tins of vegetable oil and tea). A woman in village Khet Sarash.

Balakot was not a 'rich' community even before the 2005 earthquake. On the dollar-based World Bank measure of poverty Balakot and its environs were poor, based on subsistence agriculture, crafts, small scale businesses and little cash. Apart from home grown grain, milk and some vegetables, other essential non-food food items and goods were obtained from supplementary incomes, the avenues for which were limited. Vegetable oil, tea, sugar and spices were used but sparingly. Fuel was locally gathered wood and dung cakes, houses were built using local materials and labor, education was in government schools, there were no mobile phones and motorized transport was minimal and for intercity.

The Syed family of a local tourism official owned 200 kanals (25 acres) of land on the left bank of the river in Balakot city. His family did not depend on agriculture, they were educated and in well placed jobs. However, their land was farmed and they had their own grain and kept many animals. Their land was cultivated by tenants on share cropping basis who had built houses for themselves on the land. After the earthquake it was very hard to find tenants to work as they demanded high wages. '*People have now seen money, they are more greedy and do not want to go back to farming*.' (owner of the land)

He had set up a stone ballast crushing plant on his land and employed wage labour on it as farming alone was not sustainable. Most workers on the crushing plant were farmers from distant mountain villages who had moved to Balakot looking for cash. He had also planted an apple and an apricot orchard on part of the land taking advantage of USAID earthquake assistance project to promote cash generating production.

In the village of Patsairi a local Swati school teacher and landowner told us that people were no longer interested in agriculture. In his words '*log tan asaan ho gai hain'* (people have become comfort seeking). The abandonment of agriculture was attributed time and again to the physically demanding nature of the work in addition to the low cash returns.

In the rural Garlaat neighborhood of Balakot which was severely damaged by landsliding an elderly woman described how her terraced field had crumbled away and her livestock perished in front of her eyes. While she was nostalgic about the fields and buffaloes her husband and son were not available to put in the effort of rebuilding terraces and the animal shed. They were migrant workers in big cities and had no time or inclination to put in the hard labour of rehabilitating the land for farming and keeping animals.

Field Assistants interviewed in Bamphora government agriculture office considered the high cost of inputs and low cash returns as primary reasons for abandonment of agriculture. Another reason was the loss of land due to construction of new houses. The older settlements were more compact but the per household compensation policy and new bye-laws for detached construction had created a sprawl into fields.

Transhumance has been the way of life of the nomad Gujjars locally known as Bakarwals or keepers of the goats. There nomads moved north to the green pastures (*mahlis*) in Upper Kaghan and moved south with the herds to their winter destination in Haripur, Bheer, Talagung, Fatejang etc in Kala Chitta Hills and Potwar and stayed there with them until next summer. Most Gujjars from the Balakot area were not full time nomads but lived in villages while engaging in small scale agriculture. They kept animals goats, sheep, cows, and buffaloes, which they took to the pastures in Kaghan valley. In summer many or all of their family members moved to the pastures and then returned to the villages in winter. Many of the local Gujjar herder families lived on the slopes of Kund Ridge and Jalora Katha etc leading up to the high peak of Musa da Masalla. A small percentage had settled in Balakot. Apart from the land in their villages they have also acquired lands in Kaghan Valley or in Upper Kaghan in pastures owned by the feudal Syed family of Kaghan where they graze their animals. Some also rent land in Kaghan to grow vegetables like potatoes, peas and cabbage. While the vegetable business is lucrative, pastoral transhumance is difficult and clashes with the newly available facilities in the Balakot area such as electrification, piped water and the demands of education. No wonder transhumance is declining.

The Gujjar Bakerwals were described as the most backward community by the Syed and Swati middle classes. They had lived largely without recourse to modern amenities in the higher elevation remote villages. After the earthquake they were displaced. They lost their herds and were exposed to modern goods such as packaged milk, detergents, gas cylinders and polyester blankets etc. They were persuaded to invest in the education of their children as the path to earning through

jobs. The children were increasingly not taken to pastures now as parents feared they would lose in the competitive school environment.

A professor at the Government Post-Graduate College at Hassa outside Balakot described how his family was actively involved with taking animals to the pastures in summer and waxed nostalgic about the healthy animals, humans and plentiful milk and butter they enjoyed. He claimed that even males in the family who were studying were expected to contribute to the family labour in summers. However, according to him this had greatly decreased and even members of his own family are more invested in competitive education. Parents do not burden children with the labour of looking after family livestock if they have managed to retain some after the earthquake.

The nomadic families were given Rs. 25,000 as shelter payment, but were considered ineligible for receiving the Rs. 150,000 housing reconstruction compensation on account of the fact that they could not produce evidence of residence, much less ownership or tenancy. The nomads suffered huge loss of livestock and in the post-earthquake rehabilitation as they were marginalized in the compensation (SDPI 2010), as well as by the new scale of road development and motorization which has made nomadic movement increasingly restricted. Development projects such as the recent Billion Tree Tsunami[6] plantation in Khyber Pakhtunkhwa in some areas has greatly restricted the reach and freedom of Bakarwal movement through forest (Ashraf 2018). Movement of herds was also banned on the Kaghan Valley road, but shepherds successfully struggled to get it restored. However, their victory is limited by the fact that heavy traffic and lay of the Kaghan highway makes transportation by trucks more feasible. Due to the above attractions of settled life, demands of children's education as the well as the now encroaching tourism infrastructure on to pastures in Upper Kaghan[7], transhumance as an age-old way of life is declining.

Commons Lost to Market

Our guide to village Hangrai, a government employee in Balakot was a middle aged person. As he took us a group of six university students and professors, he was excited like a young boy showing off his play yard and candy pots. '*Here, grab some amloks (*Persimmon Black)*, see the walnuts they are just lying on the ground, touch the cold water, see this plant it makes for a special delight at harvest time, everything is free*.' When we settled to interview in his very spacious post –earthquake built traditional village house with a long verandah and courtyard and admired his house he wanted to talk about his old family home. It was a mud and stone wall structure with a mud roof on a reed mat supported by wooden beams. The inner walls were deep wooden cabinets, it was very comfortable in winter and summer alike he said. Now they had used all the wood to make the structure for the new house. '*This house cost money although it was all built with locally collected materials. Now, nothing comes without money.'*

The poor had great advantage in the pre-earthquake, less monetized and less commodified economy. Before the earthquake people ate simple food based on

locally grown corn, some rice and many people grew their own vegetables, without artificial inputs, outside their homes. Local milk was available especially in the peripheral villages and *Lassi* (butter milk) was common. It was freely available to the neighbours even if they did not keep animals. There was a constant refrain about disappearance of *Lassi* from the diet. Most trips used to be pedestrian and thus free. People reported better health and local herbal medicine in many cases was considered enough.

Likewise, there were the harvesting and sowing commons in which the neighbours helped each other harvest and sow the crops. Then there were the construction commons in which the community helped to construct a house, a yard or shelter for the animals (*bandi*) especially in villages over a few days with local material free of charge. The upbringing commons too was an important function of the social set-up in which the joint family and the community together shared security, care and chores of the children.

In the words of Tehsil Nazim "*when urea [artificial fertilizer] was introduced and we switched to market …. our education, our agriculture, our traditions, our living, everything changed*". In the pre-urea fertilizer era animal dung provided the manure for the fields. The subsistence of the animals came free from the grass that grows naturally on the slopes and was cut and stored mostly by females. The farmers did not have the cash to use urea on a large scale but now it is not possible to get animal fertilizer. The death of a large number of animals and the abandonment by women of the task of gathering grass and looking after the animals has hastened the loss of agricultural production and associated culture.

Even education was by and large free before the earthquake. One type of education was family apprenticeship in agriculture, livestock or commerce, construction and crafts which prepared a young person for livelihood. The other comprised madrassah and public schools. Although the role of madrassah and apprenticeship has declined, public schools are still the main mode of contemporary education. However, private schools are now coming up and growing in numbers. People are attracted to them because of access, attractive uniforms, willingness to accept the child before the age of five and perhaps most important, the promise of English. This last advantage, however, has decreased in importance as the public schools have also started to move towards the English medium of instruction. The state had made a huge push to expand public schools in the areas in the 1980's during the time of the Afghan Jihad. Many madressahs were also opened in the area at the same time. The schools had mostly locals as school teachers and the huge demand in the 1980's was met with even matric qualified persons (school graduates) finding teaching job in the schools (interview with govt. school teachers in Balakot, 2018).

In Balakot's surrounding villages many homes which were vernacular pre-earthquake buildings have been rebuilt using industrial materials after the earthquake (SDPI 2010). It is partly motivated by the desire and government advice to 'build back better' stronger homes. Hasan (2007) had warned that the new standards for

earthquake proof structures are not taking into consideration the mass change in the vernacular tradition. The use of concrete and steel made the construction more expensive and there was not enough research and planning to revive any low cost traditional method which could use local materials and skills.

"Now we are status conscious, the bathroom should be like this the kitchen must be like that". There was also the change in culture and the new concepts of cleanliness and in-house toilets with flush system. It is also a function of the market, new building materials and remittance money. In the traditional society everyone lived simply and similarly, now you choose the setting of your kitchen and your bathroom. Images and status are guiding, especially the educated women.

Ethnicity and Class

There are four main ethnicities in Balakot Gujjars, Swatis, Syeds and Pathans. The largest ethnicity are the Gujjars. Syeds, Swatis and Pathans did not historically belong to Hazara, they came as conquerors from Afghanistan and nearer home from Swat (Gazeteer 1883). The landowners – referred to locally as 'khans' – are generally Syeds, Swatis and Khankhels, while the tenants and landless wage labourers are generally Gujjars. Although Swati tenants can be found, Gujjar 'khans' are not common (SDPI 2010).

The area has a long history of struggle by the Gujjar peasantry to gain and protect their rights to the land especially since the colonial land settlement which favoured the Syeds and Pathans. The struggle of the peasants resulted in the promulgation of the Tenancy Law of 1939 and 1957 which assured greater protection to the tillers. Gujjars supported the Peoples Party in 1970s but they were disappointed when the party did not carry out land reforms as promised or even support them in their struggle against the local feudals in 1974. Many left the country for wage labour in the Middle East when such an opportunity opened in 1970's. Syeds and the Swatis did not migrate as they found wage labour below their prestige. The Gujjars started to buy farming lands back home with cash earned from labour abroad and also built political clout that they now assert despite their low economic status[8]. Landowner-tenant conflict has defined the politics of the area since before partition (Popalzai 2016). It raised its head as well in the aftermath of the earthquake, particularly with respect to the distribution of compensation (SDPI 2010).

A Swati headmaster's daughter in Batkarar village summed the social division thus, "*Swati karobar mein set hein (Swati are set in business). Gujjars Saudia mein set hein* (Gujjars are set in Saudia, *Syed syasat mein set hein* (Syeds are set in politics). She continued, "*The Gujjars' landholdings are very small. Most are not educated, they do manual labour in Saudia but with their wages they buy land here in Pakistan."*

A female in village Mittikot lamented, "*our elders had a much harder life but they managed to feed themselves, now it is impossible to manage the household needs. There is no peace now. Only the powerful can get duty [jobs] we poor struggle to get daily wage work.*"

There has been some social mobility among the Gujjars because of remittances from Saudia, but the overall lack of access to land, low cultural capital of education and low share in state jobs has aggravated life for most of the tenant farmers and pastoralist Gujjars.

Changing Role of Women

In Khetsarash village two three kilometers from Balakot women were actively engaged in harvesting at the time of our visit. Next day we gave lift to some women of Pembara who had gone to another village to help in harvesting. But when we asked a school teacher with a middle-class background in nearby Mang whether women participated in agricultural labour she emphatically denied it. She said even a woman who did a job before marriage generally left it afterwards. Such an emphatic denial by a young girl who had remained involved in studies showed how middle class women even in a place like Mang could become so removed from the ground reality around them.

In the West, there is a lot of criticism on traditional society like Pakistan for not letting women take part in productive labour; '*wherein lies their emancipation'*. But the women in Balakot were fully involved apart from household work in productive labour. They helped their men in agriculture, harvesting of crop and storing of grain. One of their special tasks was to take care of cows and buffaloes, goats and chickens. They were the main keepers of domestic animals. Women are now moving out of this in the aftermath of the earthquake. For the young girls the main reason is education. They spend the best part of the day in school and more as they move up the education ladder and start considering agricultural labour and livestock dirty and unhygienic.

Another of their special task was to participate in the cutting of grass from the mountain slopes in October to be stored as hay for animal fodder during the winters. Again it is now considered dirty and laborious and by and large they have moved out of it. The animals have greatly decreased since the earthquake and Balakot imports hay bundles from Sindh and Punjab which are sold locally at haystock shops, a 21st century phenomenon for Balakot. As one college teacher told us in the nearby village of Shohal Najaf Khan, *"We had six buffaloes before the earthquake, gradually we sold five because my sisters and brothers refused to look after them while I teach at a distant college. We kept one, it was looked after by my old mother and father. It was hardwork for them but they wanted to continue with it; we decided they needed rest and we sold that last one, too. We had thought they would be relieved but it had kept them fit and they had an occupation. Now their decline is faster".*

Women have traditionally been responsible for all the household chores including cooking, cleaning, washing, entertaining the guests, looking after the sick and the elderly and bringing up the children. These multifarious duties at once made the woman an unpaid production worker, a domestic worker, a house manager, a mother and a wife. Commentators in the nineteenth century had noticed *'much value is attached*

to women. The loss of a wife is the greatest misfortune….the women of the people assist equally with men in all possible operations of husbandary.' (Hunter 1885). For hundreds of years this tradition was recognized by the society, accepted by the women themselves and was believed to be intended by nature. While the older generation is nostalgic about the lost agricultural role of women the younger generation is largely accepting.

A young local college professor shared his vision of an ideal wife. He wanted someone who would share his literary taste and be comfortable attending literary gatherings in cafés such as Pak Tea House in Lahore. He lived in a village outside Balakot and definitely did not want his wife to do the hard and dirty work of keeping buffaloes. Visions are changing!

Girls are generally more serious about their studies but this has so far not created a noticeable compatibility problem for matches with less educated boys within the community. It creates a much bigger problem in the alien environment of big cities and especially when combined with job and salary differences. Then there are the concepts of tradition and sharia which still exist and make the girls less ambitious. Where do girls get employed after they complete their education?; mostly as school teachers?. Teachers in private school are paid abysmally low salaries–between Rs.2500 and 7000 per month ($16-$43 at the 2017 rate of exchange), depending upon their qualification and the level of the private school. Men may be paid two three thousand more.

Migration to Diaspora

In Talhatta we met a family who were formerly herdsmen. Finding it difficult to make a living they sold their herd, bought land to build a house for themselves and the sons gradually migrated to Saudia. Now 6 out of 7 sons do manual jobs in Saudi Arabia, the seventh one was disabled during the earthquake. It shows how strong is the urge to migrate especially among the landless in Balakot area. To the question why don't they start a business back home, the mother replied our consumption has increased and we have no savings. So far their main capital is the joint family, all the seven sons and their wives live together in that big house which they made when they sold their herd.

It is interesting to note that increase in cash has brought prosperity in terms of gadgets, transport, lifestyle and education but at a cost. Money has not brought them health and stability. Disease in the family especially children has greatly increased. They built their house outside the village, there was minimal socializing limited to occasions of death or weddings, with other households in the vicinity. There was no common activity such as gathering grass, tending animals and working in fields. Now this Gujjar family women manage their joint home full of gadgets and new wares.

Muhammad Javed is president of Balakot Market Traders. He discussed the impact of current Middle Eastern crisis, especially that in Saudi Arabia. *'Many migrants are*

returning", he said the consumer market now is at best stagnant or declining. Balakot shopkeepers considered the rural people their best clients, now the Saudi crisis has affected the rural people finally. In the rural areas many had owned mobiles worth Rs.30000 to 40000 ($300 to 400 at 2017 exchange rates), now they are finding it difficult". To buy new ones or keep the old ones!!

"Many returnees are now looking to set up a business in Pakistan but these are difficult times", Javed said, "I personally was affluent before now I am struggling to pay for my monthly expense of Rs.25000 to 30000 ($ 250 to 300 at 2017 exchange rates)".

Though migration to big cities for cash income started during colonial times, now almost all families have sent someone out abroad, mainly to the Middle East or to a big city like Karachi, Lahore, and Islamabad. This trend picked up strongly after the earthquake especially after compensation payments for loss of life and house had been delivered.

Migration out of Balakot in quest of cash generating jobs is a major engine changing society in a big way. Even migration requires initiative, confidence, money and education so it accentuates social segregation and inequality. And where is the remittance money being spent. In the peripheral village, where there is no restriction as in Balakot's Red Zone on construction, it has been spent on building and decorating homes or marrying siblings and daughters. Everywhere it has increased consumption in terms of education, transport, utilities, living expenses and medicine. Lifestyle changes lead to long term commitment to jobs abroad. The dispersive forces of migration and diaspora are paradoxically also helping to keep the joint family together. The migrant contributes to the joint family and the joint family protects and socially supports the family and children of the migrant. However, a dismemberment of family and society hollows out the social network and is tragic but is celebrated by the family as lifeline and by the state as a source to bridge the ever increasing deficit in the balance of payments.

Impoverishment

Most people describe their life before the earthquake as *'khushhal'* (affluent). However, the connotations of the Urdu word are more complex. It is also an emotional state of well being and satisfaction. According to them after the earthquake some 70 per cent have descended into poverty. According to Dr. Zia ul Haq, the medical officer of Balakot, who was there when the earthquake struck, people were well off also because then they didn't have to pay for telephone, transport, education, healthcare and so much for electricity. Earthquake proved a regressive economic transition into consumption, individualism and privatization. However, for a small minority it proved a great opportunity. "*A person who kept donkeys for carriage today owns 10 wheeler trucks*", Sabir, who retired as Patwari, said, *"Soon after the Earthquake we had wondered whether life would ever return to Balakot. It has returned now 12 years after but it is not the same life. Before the earthquake I had created a livestock business with 9 buffaloes and two Australian cows. My animals died, I was buried for a day".*

Sabir continued, *"Before the earthquake, milk, yogurt, lassi were common in Balakot. Livestock decreased after the earthquake. Many animals died and are expensive to replace but more important women have moved out of livestock care, it is now considered hard and dirty work that lowers your status. How can you keep domestic animals if there is no one to look after them"*. Interestingly in Balakot, no one ever said animals were too expensive to feed, they always said there is no one to look after them.

A Lady Health Visitor in Garlat neighborhood of Balakot city said, *"Here in Garlat housing density was low and there were many open spaces, people kept domestic animals who in many cases grazed by themselves"*. Many people in the city now use chemical milk formulations like *Tarang* and *Everyday* in tea, ignoring the fact that this is not real milk, and could be carcinogenic.

Meat was scarce even when Balakot had a share in the pastoral economy though, broiler chicken had been introduced from the nearby chicken farms of Mansehra. Many also kept local indigenous (desi) chicken to be cooked especially for the guests. Before the earthquake most food was grown with local animal dung manure and without the use of chemical fertilizer and pesticide though agrochemicals had been introduced on a minor scale.

According to Javed, the market president, "*Other than labour, business and services are the main occupation in Balakot and agriculture these days contributes only 10 to 15 per cent of people's income"*. But as a preoccupation its role is bigger than the income it generates. Balakot is no longer a place for the rich to live. Since the earthquake it's been a dangerous place with uncertain future and no extensive lands or business. It's predominantly poor. Many are hawkers and wage labourers or dependents of such workers in other cities. They live a life of hunger, malnutrition and disease.

Surriyya's family moved to Rawalpindi after the earthquake. Her husband started a *daal chawal* food cart but finding Pindi too expensive they returned to Balakot where they got a shelter. With the Rs.100000 they received as compensation they bought a 5 marla plot and put a roof on it. Surriyya's children started education in a government school. One studied upto matric another son dropped out in class five and a daughter in class 8th.

Abida was educated to class ten. Her father died earlier in the earthquake. Her mother stitches clothes but there is very little work and unbelievably low rates. However, the daughter has been lucky to find work as teacher in her uncle's school at Rs.1500 (US $12 at 2017 exchange rates) per month. She gets up very early in the morning sweeps the whole house makes something as breakfast, then escorts younger siblings to school. After school she cooks food for the family and helps her siblings with their homework. She has missed on her own education but is determined not to let that happen to her siblings. There is little food, however, in the bare house.

The poor live on a miserable diet of white ata, palm oil, daal and Tarang (chemical milk) tea, no fruit, no milk or lassi, no bran, no meat. There is no regular work available, no regular job or even regular wage labour for most, nor any work for home based labour. It is difficult to find even a maid's work. According to Surriyya bibi [in 2017] *"they give a salary of Rs.300 to 400 [$ 3 to 4 for part time domestic work]". She says, "Joint family was a big support, 'now they don't live jointly. Each one is for himself".*

The Swati headmaster's middle class landed family in Batkarar kept maids. They said they had brought them from Paras and Kawai in Lower Kaghan Valley. They live on their land in Batkarar and their women work as maids in the house.

In the Sangar village 10 km from Balakot into Kaghan Valley the headmaster of the local middle school Muhammad Sharif said, *"Although I still keep cows and have home milk and butter but livestock has halved and so has milk production. It is because children, even girls are into education and there is no one to look after the livestock".* He said, *"It is not just that the children are deprived of local food and milk products, even more important, tastes are changing children are no longer ready to drink lassi or take food cooked in desi ghee. Changes in food have resulted in widespread diabetes, perhaps, every fourth adult has it. Hepatitis has increased fast and cancer is coming up. We could add the factors of physical work and life style*. He said, *"cars have increased after the new Kaghan highway was completed. In our home in the village we have 3 cars now. Fifty years ago all were engaged in agriculture now it contributes only 10 to 15 per cent of people's income".*

The realization that disease has exploded and that much of it is related to changes in food is universal. The family in Batkarar said, *"Chicken has become very popular. Young people don't like vegetables. Diabetes is widespread joint pains are common, sometimes ago Chicken Gonia, joint swelling with fever, spread like an epidemic in Mansehra, even gall bladder stones are very frequently reported".*

Springs in the vicinity are the main source of drinking water. Some are now contaminated at source and some water is contaminated during open or piped transport. Now that tourism has grown the use of bottled water is on the increase for the visitors. The use of fizzy beverages as drinks has greatly increased. Guests are now routinely served with fizzy drinks. These are less expensive than tea and require much less hassle to present.

The burden of infectious diseases like tuberculosis continues but the end of home grown food and nutritional commons malnutrition has greatly increased and with it vitality and immunity has lowered. Now an additional burden of non communicable disease like diabetes and hypertension, heart disease and stroke has been added. These used to be lifestyle diseases of the rich and are very difficult to treat or prevent by the poor.

Interestingly even though before the earthquake there was no proper hospital in Balakot but the people were much healthier. As the locals describe, in the past hospitals in Mansehra and Abbottabad were fairly empty because everyone engaged in physical labour but now they are mobbed by the sick. Disease primarily is not a function of treatment but of nutrition, lifestyle and environment.

Healthcare now is a major expense. The physical injuries of the earthquake have visibly burdened families for lives. Many families had moved to larger cities for the treatment of their family members who had sustained serious orthopaedic injuries. There is now a permanent dependence on distant medical services as the local services are non-existent or inadequate in comparison.

Red Zone and the New Balakot City

Apart from the poor construction of the universally collapsed government buildings the designation of the old Balakot city area as a Red Zone, the creation and then lack of progress on the project of New Balakot City and the technocratic vision of the government and its foreign financial backers are examples of the bureaucratic and uncaring role of the state after the earthquake.

Post-disaster uncertainty has become a major feature of Balakot as a large part has been declared "Red Zone" in terms of seismic risk and thus unfit for habitation. Out of the international loans and grants Pakistan contracted and received, people were promised housing at Bakriyal, a nearby safe place. Fourteen years in the making the infrastructural development has not been even half completed while the acquisition of land itself has become disputed. This place was a lush green pine forest with wildlife before 2005; which was cleared for development. Now with development work stalled for some years locals are cultivating the land in patches. Meanwhile in the old Balakot the rich have provided for themselves, many migrating to Mansehra and Abbottabad but the majority poor are still waiting while they have long spent whatever little compensation they were paid in lieu of their destroyed homes. People are unsure where they are ultimately going to live and work. Some 50 per cent continue to live in small hazard prone climatically unsuitable fibre-glass shelters which were meant to house them just temporarily.

The government departments have to obey rules so they continue to be housed in temporary accommodation. Local government high schools for boys and girls too, continue to be housed in the shelters set up by the relief agencies. However, even the government departments having waited too long are themselves now violating the rules and built the new boys college at nearby Hassa and a hospital at Talhatta within the Red Zone. The local tehsil administrator voiced utter bewilderment at the lack of any clear directive from the higher authorities about the status of the 'red zone'. He said it was a farce as his office was tasked with declaring all new construction as violation while the government itself was doing construction in the city. There was flagrant violation of building rules as the municipality had no system for enforcement of the ban and the locals had no alternative as the New Balakot City project has remained stalled for years.

Since one fiberglass shelter was to be was provided to each family unit the joint families registered themselves as separate nuclear units, creating a new social structure eroding responsibility towards dependents and encouraging selfishness and greed. Haider and Alam (2013) in their anthropological study have discussed at

length the extreme misery of life in these hazard-prone claustrophobic structures vulnerable to extremes of both low and high temperatures and being inflammable. There have been many instances of fire. They have also discussed how these synthetic structures have altered the family interaction, entertainment of guests and privacy between gender and married people. People miss their big houses before the earthquake with 'beautiful' drawing rooms for the guests and the life on rooftops with winter sun and view of green hills.

We have visited the New Balakot City site every year since 2013. While some ongoing construction activity was visible on earlier visits, in 2016 the site engineer informed us that all work had been stopped. The reason was issues of land acquisition as the locals of village Bakryaal were demanding higher prices than the originally agreed amount. One local had reportedly died in clashes with the authorities. On a subsequent visit in 2018 we found the contractor's field office was demobilised and only a police post was present at the site. According to a news report (Tribune 15th June 2019) the Prime Minister had summoned a meeting to address the issue of the stalled New Balakot City project. No work has been initiated on the site to date.

Uncertainty has become a permanent characteristic of Balakot and damaged its future prospects. To the uncertainty of another earthquake was added the uncertainty of eventual residence, the uncertainty of a dismembered nuclear family, the uncertainty of food and the uncertainty of a future. The protracted and indefinite uncertainty is responsible for the migration of the well-to-do to more stable places and many who after the earthquake, initially commuted from Mansehra or Abbottabad have finally decided to shift their business out of Balakot. Gradually the temporary commuters have put down social and financial roots in the bigger cities and with their children now studying there are no more interested in returning to Balakot.

Even probabilities are difficult to calculate without a proper study but the last major earthquake recorded on this fault zone occurred some 80 km east of Balakot at Kangra in 1905 so the probability of another major earthquake in Balakot might be low for quite some time. Ghazanfar (2007) queried, '*how justified was the prohibition of construction or living in the Red Zone, the high seismic risk area. San Francisco is similarly located on the San Andreas fault. It has suffered periodic jolts even disasters, but life goes on. Balakot is much smaller and relocation easier yet people have a great affinity with a place where they have lived historically and especially when it is as strategically located as Balakot by the River Kunhar at the mouth of the scenic Kaghan Valley.*' The state cynically refused to deliberate the question as a social issue and chose a technical evaluation only.

The Race for Education

"*Education is a ladder which can help you climb up*", said Danish, the Caretaker at Adventure Foundation, Mangal.

One college teacher narrated us an incident. *'I was standing in a bookshop, another person in a relatively poor attire had purchased a set of books for an English medium private school and wanted the shopkeeper to give him a discount. I asked why had he admitted his children to a private school when government schools in Balakot offered good quality education with free text books from the state. He said "I cannot afford it but it's my wife, she insists her children must go to private schools where everyone else is sending their children.*" The race for status is on.

Saeeduz Zaman runs a local NGO funded by foreign donors. He said, *"We try to train people in livelihood skills like computer skills and repair, planting fruit trees, set up makeup parlours, learn stitching and tailoring, revive milk and lassi, keep goats, keep chickens, honey bees and help put all children into school. Our success has been limited partially because many people migrated and others have moved away from the hard work they engaged in before the earthquake. Their visions have changed".*

Modern education and its demands are at least partially responsible for the historic movement away from agriculture. Modern education prepares the young for jobs and not for the self employment of small scale agriculture or crafts. For the young girls the main reason for moving out of agriculture is education. They spend the best part of the day at school and don't want do the dirty work of tending the animals and cleaning their stockyard and collecting dung as fuel or manure. There is also a perception now that it is unhygienic.

The need for cash and the demand for jobs are guiding both education and migration and are determining the direction of social change in the society. The requirements of agriculture and craftsmanship and the requirements of modern education are mutually exclusive. Small scale agriculture requires family labour which is inconsistent with the requirements of modern education and migration to other cities or abroad. Likewise craftsmanship and small scale manufacturing require apprenticeship which again is inconsistent with the demands of a regular school and indeed maligned as child labour. Today's competitive modern education needs time and quest for excellence because only the best few will get jobs. In agriculture and crafts there were jobs without formal education. Today its education without jobs. Children must stay away with their books at school and after school at tuition centres. Furthermore, modern education is universal and abstract and not connected to the local and especially rural conditions. Such demands of education are at least partially responsible for the historic movement away from agriculture. Modern education prepares the young for jobs and not for the self employment of small scale agriculture or crafts or even commerce. Jobs are in the large scale not in the small scale and so education eventually takes you to big cities or abroad. Cash returns from jobs in big cities or abroad impose their own demands including loss of local production, increased consumption and need for internationally compatible education for high paid jobs abroad. For some years education has been expanding and household expenditure on it constantly increasing. More recently it is possible to discern some disillusionment with the returns on education. Some migrant families who went out of the way to spend on the education of their children said they were disappointed to see their children do manual labour in the end.

The medium of instruction in schools in Khyber Pakhtunkhwa is now English. Teachers admit cognition has greatly dropped and comprehension is low but they are hoping with the passage of years comprehension will pick up and children will become proficient. But as one teacher put it *"education is a triangle comprised of teachers, students, parents. You cannot achieve your objective if you miss one angle. In these hilly tracts poor parents cannot contribute much"*. In other words, it is the family culture; without an appropriate family culture English medium of instruction can become a big hurdle in the educational process. But there is a race for status and desire for upward mobility.

Tourism, Speculation and Waste

Given its location at the mouth of the Naran valley many people from Balakot were engaged in transporting tourists, materials, shepherds etc. to and fro from Balakot, which had small workshops and was a base for the four wheel drive jeeps and other vehicles needed on the then precarious Kaghan road. The small stone-walled low roofed canvass topped hotel spaces in Upper Kaghan were owned by worker entrepreneurs, some from Balakot.

There has been a mushroom growth of tourist business in the greater northern region since the earthquake. It is the result of a combination of factors including new highway infrastructure, a tsunami of cars in the big cities, a necessity in expanded cities, breakdown of public transport and facilitation by bank loan policies. The middle class experienced a freedom of travel as never before. The highway through the picturesque Kaghan Valley connects to Hunza and China border via the Karakoram Highway. For most tourists from the plains in the south the real destination is Naran some 100 km into Kaghan Valley or now the much more distant Gilgit-Hunza. Balakot gets a transit business but some like the riverside environment and extend their stay in Balakot.

Many middle class locals are pinning great hope on the recent spurt in tourism. Between Bissian and Balakot the road from Mansehra follows the right bank of River Kunhar. Here both below this small stretch, as well as above it more than two dozen new hotels have come up. We talked to the Swati owners of the biggest of these, Hotel Pine Track. Its three storeys have some 50 rooms which in season are rented upto Rs.7000 ($ 55 at the 2018 rate of exchange) per room but off season the rent is negotiable between Rs.1000 and 3000. They are now adding a new wing to the building.

The quick and high returns generated by tourism have caught the fancy of local political leaders and the government[9] leaders, who enthusiastically dream of new roads to lush green forests and pastures as the way of moving out of unemployment and poverty.

The hotel owners interviewed said that there is extreme competition among the hotels. Those with contacts and businesses in the larger cities reap the real profits. Many of the workers, especially cooks and bearers come from down country for the season. Tourism is a volatile business, in any case limited to a short season. It may

hold some promise for the investors but it is socially and ecologically disruptive and for the ordinary workers the wages are very low.

The story of Ghaziabad township near Mansehra is another case of speculative investments and associated boom and bust cycles now shaping the material and social life in Balakot. Ghaziabad is a housing development which became the site of investment by the locals after the earthquake. The innumerable international aid organizations, consultants and relief bureaucracy paid high rents unimagined in the small economy of the area. Many people had rented their homes and hastily new structures had gone up in this locality. The exit of these agencies brought the rental market crashing down. Many people have now themselves moved into these homes and now live urbanized with a big jump in their cost of living.

The generation of waste has risen exponentially. Along with the solid waste of wrappings, plastic bags, diapers and PET bottles there is the concern of water pollution due to sewage seepage. At Pine Track the owners said the hotel's sewage is collected in septic tanks and is not just thrown into the river. However, it is known the septic tanks which are supposed to process the human waste can themselves become a big source of pollution. The water based sanitation in hotels and large townships like Ghaziabad are part of the intractable story of pollution of ground water and rivers of more developed areas (Batool et al 2016, Raza et al. 2017).

Resilience, Stability and the Joint Family

One cannot help but notice a striking contrast between the Balakot city and its immediate rural hinterland. In the rural hinterland homes destroyed in the earthquake have already been rebuilt *pucca,* most with electrification and septic tank based flush system toilets. These homes are lived in by joint families with each nuclear unit allotted a separate bedsitter with a common kitchen, toilet and a shared verandah.

Given the Red Zone status of Balakot city, on the other hand, a vast number of people whose homes were destroyed continue to live in dingy fiberglass shelters. In an anthropological study of post-disaster Balakot Haider and Alam (2013) described the life therein as follow:

"Extreme tragedy, deteriorations of living conditions, deterioration of food, reduced physical activity has led to a big increase in disease, depression, hypertension, diabetes, tuberculosis and hepatitis have all greatly increased. The only government hospital was destroyed by the earthquake, another set-up was washed away by floods in 2010. A sort of dispensary has been set up in a rented building where a male and a female doctor sit without any indoor patients. With such widespread disease and fast increasing price of medicines and private medical care the tragedy of Balakot continues."

Now a new government hospital has been constructed at Talhatta, but it is yet to be seen what it has to offer.

In the rural areas we did not find that deep pall of tragedy that we found in the poor households of Balakot. Life had returned to a degree of normal. Almost every household had one or more men working in the Middle East especially Saudi Arabia. Now many are returning with the new austerity in the Kingdom. It is obviously a big disruption and loss of cash flow but this was never voiced as a big issue in the rural interviews northwest of Balakot. The only explanation is joint family, in which all contributions are only fractions of the total income coming into the family and so loss of one fraction is not so catastrophic. The system gets a set back but continues even without that particular fraction of the returnee. Secondly those who return join ongoing business or work in Pakistan; for example, if some family members are in shuttering business the returnees will just join them. The joint family and community are big support and help absorb personal socio-economic shocks.

In many villages north of Balakot that we visited shuttering for reinforced concrete construction is a common vocation/business. It is a relatively new vocation, acquired only when labour from Pakistan started to go into construction labour in the Middle East. But a spread of the vocation in Balakot only occurred after the earthquake and shows how a strong community offers its members support to enter businesses or vocations established by some members earlier in time. People often refer to Ghulam Hassan of Mang who having established himself in Saudi Arabia called over hundreds of workers from his own community to jobs in Saudi Arabia.

There is a basic underlying stability in these villages, which even the earthquake has not been able to break. This stability is based on three factors, land, large family size and joint family. Land has been the most stable livelihood generating that basic need, food, over generations. Only very recently we hear some people selling small portions of land mainly for housing around Balakot.

Large family size is a big asset in a peasant household. It represents working hands and their most important requirement as peasants was food. Joint family is the continuation of the large family after marriages and represents continuing stability and strength against outsiders. A large family can afford to have multiple occupations and sources of income, two brothers can be abroad, two in agriculture, one in shuttering. Multiple sources of livelihood and income are a source of stability. Land, large family and joint family can only continue in a deeply embedded tradition in which social rules have been assimilated and hierarchy is followed. Of course, with the men absent women play a pivotal role in keeping the family together and the tradition alive.

However, we cannot expect this stability to continue for long into future as the role and share of land in family income is decreasing, sources of cash are being sought after and the family is scattering to far off places in search of livelihoods generating cash. Jobs in big cities within the country have greater potential to break the joint family than jobs in the Middle East. After a few years stay in Karachi one does start thinking in terms of bringing over the remaining nuclear family. Once you move to an urban area, rented home and schooling both the break and the ensuing instability

are near permanent. Work by women outside the family used to be looked down upon. Now they say, *"We want the educated girls to do jobs but there are no jobs."*

Conclusion: Sharp Boundary Between Two Social Orders

The earthquake was a sharp boundary between two social orders. Of course, the Pakistani society had been undergoing social change since partition in 1947. But there has been an uneven development. While the larger set changed around, the subset of Balakot was held back by tradition for a longer time. The 7.6 magnitude jolt on October 8, 2005, broke the barrier. The earthquake has become a watershed in the imagination of the Balakot people. They relate change to that cataclysm be it migration, participation of women in work, abandonment of agriculture, changes in food and milk production, women moving out of livestock care, decline of health and increase in greed, to that fateful day. People in rest of Pakistan have undergone similar change but cannot put a time line on it. One, however, might argue the rapid transition that followed the earthquake was less because of the cataclysm, and more because of the help that followed. Once people's homes and livelihoods were destroyed by the earthquake they were housed in shelters and provided food and clothes for over a year. A largely autonomous people gradually moved to cash and market dependence. The introduction of cash and market induced a change in the mode of production. People started to move out of agriculture. Agriculture is no longer the principal source of people's income in Balakot and its peripheral villages.

Small scale agriculture had engendered an ecology comprising outdoor work, socialization, sharing, organic food, health, traditional education and apprenticeship of the older generation, was built mainly around small scale production and subsistence farming as the traditional work practices. There was a relationship between women, livestock and land in the farming households in the rainfed agrarian economy (Carpenter 1991). Care of animals by women made possible milk based food, cash and manure production that was essential to agriculture. The massive loss of livestock in the earthquake as well as of human lives disrupted this symbiosis. Once the old regime of work was destroyed and the animals lost, females moved to other activities. Concentration of a large number of NGOs also generated an urban imagination. The young women are now focused on acquiring education for jobs.

Balakot was monetized even before the earthquake. One common source of monetization was the gradual penetration of the Green Revolution, i.e. the introduction of technology in agriculture, especially cash inputs for limited mechanization, agrochemicals and hybrid seed resulting in the breakdown of subsistence. Migrant remittances were another significant source of cash in the villages. Then, there were the petty services, and cash transactions in transport, commerce and transit tourism in the city of Balakot. Most villagers were too poor to migrate abroad and worked in larger urban areas down south. They retained their families in the village and the family worked on the land and kept livestock.

Cash and consumptions have now built another ecological structure in which one cannot survive without cell phones, motorized transport, competitive education, quick acting modern medicine, diaspora and dispersal of the family. Agriculture is hard labour, low paying, volatile in price and with no regular cash yield. A monthly salary looks far more attractive. But jobs are increasingly competitive on the basis of education. Education also promises social mobility, migration and higher earnings. With end to subsistence eventually cash is required for everything including food, transport, health and even education.

The same change has taken place elsewhere and everywhere in Pakistan imperceptibly over a longer period of time and has been called progress. The people of Balakot on the other hand, in a time of great tragedy, had the rare vantage point of looking at two historical periods marking two ecologies so closely juxtaposed against each other. All the resulting modernization in agriculture, in technology, in education, in the role of women, in the export of vegetables, in the growth of tourism looks regressive to them. They are nostalgic about the old homes, lost agriculture, role of women, lost joint family and lost relationship and lost health. They had never seen material and social change so closely connected.

There was a clear divide in the perceptions of the different classes with respect to the nature of changes they emphasized. Those educated and from a higher class may have more facts and generalizations but the poor had a deeper connection with the place, processes of production, experience of loss and the role of community. They have a socio-centric vision. But capitalist development is about investment, competition and consumption, it is not sociocentric; it is technocentric.

Small scale agriculture as an occupation had created a cultural landscape which had deep historicity. Both men and women and local community participated actively in ensuring production and managing the land and its resources. The symbiotic relationship between women, livestock and land was thrown into disarray by a massive loss of livestock and displacement from the land. Agriculture is now virtually side-lined, livestock even more so. Migration has increased, and young girls are increasingly looking towards jobs. Once a trend has been set in, many other factors come into play to further enhance it and the new ecology snowballs. Now everyone must adapt to the new ecology. Like the amount of CO_2 in the atmosphere, once it crosses a certain threshold global warming takes on a life of its own and cannot be reversed. The new ecology may be hostile to environment, to social structures, to health, livestock and the land but no amount of nostalgia can bring back the old.

Rehabilitation is generally the most important period in a disaster area during which many opportunities can be found or lost. "*In the aftermath of earthquake in the reconstruction period, involving people at all levels like damage assessment, need assessment, formulation of a building code, selection of design options, choice and purveyance of materials and construction itself was a unique opportunity to organize, educate, provide skills even employment and raise the cultural level of people*" (Ghazanfar 2007). Many cheap ways could have been found for the revival of the

economy and to avert loss of life and property in future. However, for that we needed to be sociocentric rather than technocentric. A sociocentric approach could have culturally uplifted the people, trained them in hazard management and made them autonomous and self reliant. The state on the other hand, chose a technocentric and monetarist approach intended to promote consumption not culture.

Notes

[1] Tehsil is the lowest administrative tier of the provincial government.

[2] According to Zaidi (2010**:** 381) the Earthquake Reconstruction and Rehabilitation Authority (ERRA), with the support of the World Bank (WB) loan provided cash assistance targeted at 250,000 families after identifying needy families according to a vulnerability criteria developed by ERRA and the WB. The cost of the scheme, funded via a WB loan, was estimated at USD 85 million—actual disbursement was later revised to USD 86.95 million for the whole earthquake affected area.

[3] The rupee has been consistently depreciating with reference to the dollar. The price of the dollar in 2006 was Rs.60.64 and stood at Rs. 139 in December 2018.

[4] Since the late twentieth century heightened concerns and perception of a global environmental crisis has produced a plethora of scholarship and theorization that builds on the concept of ecological change. Especially influential has been the work of Barry Commoner. Commoner (2014) explicated four laws of ecology in 1971 1. Everything is connected to everything else. 2. Everything must go somewhere. 3. Nature knows best. 4. There is no such thing as a free lunch (Commoner 2014). These laws have been regularly cited and repeated in scholarly discourse in environmental studies. An ecological perspective takes into account the interactions between all the components of any stable environmental condition. Environmental historian Carolyn Merchant analysed major transformations in human relations and non-human nature as ecological revolutions. In her view these arise from changes, tensions, and contradictions that develop between a society's mode of production and its ecology and between its modes of production and reproduction (Merchant 1987: 265). She based her theory on the ideas of Thomas Kuhn's The structure of scientific revolutions (1962) and Karl Marx and Friedrich Engels theory of historical change.

[5] The metabolic rift perspective was given by Karl Marx through his theory of socio-ecological contradictions internal to the development of capitalism (Foster 1999).

[6] Billion Tree Tsunami was a green initiative of the Khyber Pukhtunkhawa government to plant tree saplings on hillsides and non-agricultural land as part of the Bonn Initiative to counter Climate Change impacts.

[7] Upper Kaghan, the region between Naran and Babusar Top.

[8] A local Gujjar Sardar Yousaf was elected member of the National Assembly in 2013 and relied heavily on the unity of the Gujjar voting along ethnic lines. The source of Gujjar wealth unlike the established elites came from migrant remittances. Interview with Mr. Humayun Manager TDCP motel Balakot in 2016.

[9] Tourism has been a cornerstone of the development strategy and vision of the government of Khyber Pukhtunkhawa. http://kp.gov.pk/uploads/2015/09/Reclaiming _Prosperity_ in_Khyber-Pakhtunkhwa_ (Economic-Growth-Strategy).pdf

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FARHAT NAZ

GENDER DIVISION OF LABOUR IN RURAL GUJARAT: HIERARCHY, UNTOUCHABLE WOMEN AND THE CASE OF WATER

Abstract

This paper makes a case that water management regimes affect and are affected by women and men quite differently along the variables of gender and caste. The data for this paper is derived from longitudinal primary research undertaken between 2008-9, 2011-14 and 2017 in rural north-east Gujarat, India. The research methodology comprises a mix of participatory rural appraisal (PRA) tools, interviews of key informants, focus groups discussions, direct observation, thick description and household survey. The predominant focus on women as a unified category in policy frameworks does little to advance our understanding of how policies impact on tribal (Adivasi) and lower caste (Dalit) women. This paper illustrates the structure and practice of the gender division of labour within the caste-organised village society; understood here as the allocation of persons to different forms of work based on gender and caste, and the cultural values and meanings attached to that work. The longitudinal data emphatically supports the claim that low status Dalit and Adivasi women are controlled by patriarchal norms and by caste-based practices operating at the informal level.

Keywords: Adivasi, check dams, Dalit, gender, Gujarat, intersectionality

Gender is regarded as one of the significant social constructs that mediates relations between individuals and can thus heavily determine an individual's access to resources and its management (Meinzen-Dick et al 2014). Culturally specific views of gender reinforce the idea that certain physical or social spaces are explicitly for men and women, thus giving rise to the concept of the maculinisation of public spaces (Cornwall 2001; Meinzen-Dick et al 2014). Such masculinisation determines access to and control over resources of various kind: material, sociocultural, political and ideological (Chowdhry 2014). All over the world, patriarchy exist in different shades and magnitude, with some commonalities like men legitimising control over women's production, reproduction and sexuality. It is also the men of a community who define gender roles and interactions based on power and inequality (Gupte 2017). In this study, gender is defined as the socially constructed identity, roles and responsibilities of women and men and the relationship between them (Ahmed 2008).

Most of the earlier writing on collective action and natural resource conservation has neglected gender as a variable to be studied by considering households and communities to be un-gendered units (Agarwal 2000). The concept of gender is generally conflated into the concept of community (Meinzen-Dick and Zwarteveen

2001), both of them being broad analytical categories that incorporate dissimilar groups with differing or conflicting interests. But some scholars hold that gender cuts across households and other dimensions of intra-community differentiation and hierarchy such as caste, class and ethnicity (Ibid: 66). Recent Community Based Natural Resource Management (CBNRM) studies have begun to examine the heterogeneity of communities and how resource management decentralisation has affected different community groups such as castes (Sangameswaran 2008) and women (Meinzen-Dick and Zwarteveen 2001; Kulkarni 2011).

Gender has also become an important feature in the effective management of water resources and is strongly integrated in development policy, project documents with more recent donor-funded irrigation projects having gender components (Cleaver, 2000; Zwarteveen, 2011). There is also growing recognition in gender and water literature regarding the intersection of caste and class in the gendered local water realities (see Ahmed 2005; Bruns and Meinzen-Dick 2000; Coles and Wallace 2005; Cleaver and Elson 1995; Crow and Sultana 2002; Sultana 2009; Zwarteveen et al 2012; Joshi 2011, 2013; Kulkarni 2011, 2013; Lahiri-Dutt 2006; Mehta 2005; Narain 2014; O'Reilly 2006, 2011). It is now proven that gender intersects with other relations of power to "form and re-form our water world" (Zwarteveen et al 2012:3). Therefore, water management is all about the contestation of power and practices that prompt a concern for a range of interaction patterns in water management, including negotiation, struggle and also strategies (Mollinga 2008). The questions regarding who manages water and how it is done are central to gender water relations, although they are often overlooked in policies and discourses on water and equity (O'Reilly et al 2009).

It has been noted that women's participation in formal decision making structures is highly constrained, despite the efforts made to improve their position in CBNRM (Agrawal 1997; Cleaver and Elson 1995; Mosse 1994; Zwarteveen et al 2012). A form of participatory exclusion in the case of women exists in community based organisations, wherein women are excluded or relegated to the role of silent participants, leading to the process of rejection from apparently participatory institutions (Agarwal 2001). In the academic and policy-making discourse, gender equality is seen as a way of achieving more effective water policy and programme outcomes and is considered an important part of the agenda of integrated water resource management (Kulkarni 2013). Gender relations and social structures determine at what levels and which women can participate in decision-making and what that mechanism will be (UNESCO 2012; Kulkarni 2011). It has also been noted that the distinct roles and responsibilities of women shape their relation with environment quite differently from men, which in turn governs women's interaction with natural resources management (UNICEF, FAO and SaciWATERs 2013; Choudhury et al. 2018; Useche 2016; Cairns et al. 2017). Repeatedly, gender is used as a symbol to mark the distance between social groups to make it more visible and apparent (Mehta 2005; Unnithan 1994). Factors of class, caste, religion, wealth and other symbolic and structural systems that have a strong binding force on gender, have been well documented, which is again context specific (Harding 1996; Mehta

2007; Mohanty 1991; Ahmed 2001; Joshi 2005, 2011; Krishnaraj 2011; UNICEF, FAO and SaciWaters 2013).

Further, the predominant focus of rural women as a unified category by development practitioners does little to advance our understanding of Adivasi and Dalit women, or to our understanding of the similarities and differences in the hierarchies of gender and caste (Cameron 1995). At times, gender, labour and caste remain fuzzy concepts in our understanding of water management, and it has been observed that increasing the numbers of women in local water management organisations is not affectively challenging the caste dynamics wherein negotiations take place for water management in Asian and African societies (Kulkarni 2011; UNESCO 2012). Hence throughout this paper, I make a case for carefully assessing how caste and gender mark the hierarchy in water management. Since the social identities of men and women are multiple and overlapping, they cannot be treated as a homogeneous group and are subject to differences on the bases of caste and gender in water resource management, particularly in the case of check dams.[1]

Caste is the single, most powerful symbol of the Indian social world.[2] Indeed, caste has a religious element that has been defined and legitimised in Hindu scripture; it is also a socio-economic system that shapes local economies, social and cultural entitlements and political regimes (Jodhka and Shah 2010). This is more prominent in rural India where caste is an identity, a form of social organisation and the basis of staking claims in resource build up. Caste networks not only reinforce socio-economic hierarchies but also generate various forms of exclusions (Vijayabaskar and Kalaiyarasan 2014). Thus at the local level, power is embodied in caste to a great extent (Zwarteveen et al 2012). Considering that, in the Indian context, gender and caste intersect in many ways that are often overlooked by the development network, I have used the intersectionality framework to understand the concurrence of multiple identities with gender. These marginalised identities tend to push women out of the decision making process, leaving them vulnerable to discrimination in accessing resources and opportunities. (Symington 2004). Intersectionality helps record the multifaceted, diverse and paradoxical effects that develop "when multiple axes of differentiation —economic, political, cultural, psychic, subjective and experiential—intersect in historically specific contexts" (Brah and Phoenix 2004:76).

In this paper, the structure and practice of the gender division of labour within the caste-organised village society is understood as the allocation of persons to different forms of work based on gender and caste, and the cultural values and meanings attached to that work.[3] Due to their low status in the two hierarchies of caste and gender, Dalit and Adivasi women are influenced by patriarchal norms, caste-based differentiations and practices operating at the informal level in the study area. The paper is organised as follows. Section two discusses the methods used for ethnographic data collection. Section three portrays the social, economic, caste, gendered and water space in everyday life in the study area. Section four makes a study of check dams as the space for negotiating gender and caste. Finally, section

five concludes with a study of the maintenance and management of check dams and how it influences caste and gender roles as understood in the case study.

Methodology

Fieldwork for the research presented in this paper was carried out in a village located in the state of Gujarat, India. I chose Mathnaa because the village had a good mix of Hindu castes and tribes. This made it appropriate to study social differences between communities in relation to the resource management of water. Secondly, it was one of the villages where a major new watershed project was completed, thus making it suitable for studying the sustainability of institutions of water management after a project ends.

The data for this paper is derived from longitudinal primary research implemented between 2008-9; 2012-14 and 2017. During the period 2008-09, I lived in the village for ten months at a stretch and for the next rounds of field work, I regularly visited the village for brief periods.[4] The research methodology used for the analysis presented in this paper can be categorised as ethnographic, and as a case study (Yin 2003). It collates participatory rural appraisal (PRA) tools, interviews of key informants, focus groups discussions, direct observation, thick description and household survey. I chose pseudonyms for the village and for participants, because villagers did not want the name of the village and their identity to be disclosed. In total, 121 semi-structured interviews and sixteen focus group discussions were conducted to get a broad understanding of the water management problem in the region and to identify the actors' strategies to manage water through a gendered lens. A household survey, covering 200 households, was made to generate quantitative evidence of the characteristics of rural households in terms of caste and tribe ratio, kinship lineage, gender control and access to natural resources and level and scope of knowledge about the watershed project.

Mathnaa's Caste, Gender and Water Edifices

Social relations in contemporary India are underpinned by the prevailing caste system, the boundaries and hierarchies of which are exhibited in /through factors like wealth, gender, access to resources etc. Gender operates at the level of structures such as kinship, property, labour divisions, identities and symbols (Harding 1986). According to Ambedkar (2013) the marginal status that women and Dalit hold in a Brahmanical society is exemplified by the denial of Hindu rituals like Upanayana (sacred thread ceremony), thereby legitimising the restraint on lower castes from owning properties.[5] Ambedkar (1916) also emphasised that caste rules are implemented through gender norms by maintaining strict rules of endogamy, marriage within the community to maintain the purity of caste. Other writers have held that this is a form of control to maintain the boundaries between castes and to enable the patriarchal system to reproduce caste privileges. (Chakravarti 2003; Natrajan 2012). It has also been observed by Kapoor (2007), how Dalit women are burdened both by their sexuality and by caste; and how sexual atrocities of upper

caste Hindu men is an act of caste dominance over Dalit women. Thus gender experiences of inequity are the outcome of the same principle of discrimination and segregation of the caste system (Guru 2009). Caste as a form of inequality based on hierarchy helps in understanding the tenacity of caste in contemporary India (Ambedkar 2011).

Mathnaa is a small village located in the east of the Sabarkantha district, Gujarat, India. The climate of Mathnaa is semi-arid and the topography is mountainous and rough; the soil is sandy in character. Average temperatures rise to 45.5 ºC in summer and fall to 7.7ºC in winter. Rainfall is erratic and varies from 700-1000 millimetres. The total number of households in Mathnaa was 200 when the study was conducted, and Mathnaa's total area is 503 hectares. The chief source of livelihood here is agriculture, which is mainly rainfed. Two main crops are sown throughout the year, Kharif and Rabi, are affected due to erratic rainfall patterns and the scarcity of groundwater. It is therefore not possible to plant major crops in the summer months, except fodder or seasonal vegetables for subsistence.[6] In Mathnaa, agriculture is both irrigated and non-irrigated, and wells are the main source of irrigation.

Mathnaa is characterised by strong social differentiations along the lines of caste, tribe, gender and wealth. Mathnaa is a multi-caste village with a tribal population. Caste determines living space and is the basis of social interaction in terms of water. The village has several clusters of settlements along the lines of caste or *was* (residential abodes in Gujarati language). There are eight *Jadeja (Rajput)* households here who consider themselves superior to all other castes because they trace their origin back to Sambha, son of Lord Krishna, and believe to have ruled Sabarkantha and driven away tribes to the forest (Mukherjee 2003). Rajput clans include the Jadeja, Solanki, Parmar Chauhan, etc., but it is claimed that in the local Rajput caste hierarchy, Jadeja Rajput occupy the highest position. They come under the category of Kshatriya under the *varna* system. In Mathnaa, these eight Jadeja households own around 113 hectares of land legally, not including their encroachments on village *gauchar* land (pasture land), for their own cultivation. Their social standing is visible through their large houses of concrete, ownership of tractors and motorcycles, and the use of big brass utensils (because brass is a symbol of social status) in comparison to other households who use earthen pots for storing water.

Next in the caste hierarchy come the Thakore, and they constitute about 100 households. They claim their descendants come from the Rajput. They also claim to be Kshatriya and are traditionally associated with agriculture. In Mathnaa, around 137 hectares of land belongs to these 100 households. There are 56 *Dungri Garasia* households. They are the Adivasi (first people), meaning indigenous people. Dungri Garasia literally means *jagirdar* or *inamdar* of the hilly areas (Gazetteer of India 1974). Dungri means hills and Garasia means grass, hence people who have cleared the forests and prepared it for cultivation are the Dungri Garasia. They migrated from the Mewar region of Rajasthan, India three centuries ago and live on their fields/farms, with agricultural land being their main sources of livelihood. In total, 122 hectares of land belongsto these 56 households. The Dungri Garasia tribe is

patrilineal in character. In Mathnaa, there are 36 Dalit households, owning 48 hectares of land in total. They are at the bottom of the caste system. Formerly known as Harijans (Children of God, this term was given by Mahatma Gandhi to the untouchable caste) or untouchables, even though untouchability has formally been abolished in India, they are still discriminated against in the village.[7]

Caste not only determines the living space in Mathnaa but also landholdings and access to water. In Mathnaa, no one is landless; people of every caste own land in some form or another, although access is based on inheritance, caste and claims grounded in local history. According to the village elders, the Jadeja and the Thakore community owned large chunks of land. Reforms introduced in 1960 and The Gujarat Agricultural Lands Ceiling Act enforced in 1961, provided ceilings for existing landholding and for the future acquisition of land. As a result, it afforded some relief to marginalised communities like the Dalit and the Adivasi through land redistribution. Realistically though, the two major groups of Jadeja and Thakore own more than 250 hectares of land in Mathnaa. Moreover, 69 per cent of the large farmers belong to these castes.[8] Encroachment is a common phenomenon in Mathnaa, whether it is the main *gauchar* land, i.e., land for grazing cattle, or a small piece of land between private fields, or the village pond. The main *gauchar* land allocated for cattle grazing in Mathnaa has been encroached upon by the Jadeja families, and there is no common land left for other villagers to graze their cattle.

The commonality running across all the women in every caste and tribe in Mathnaa is their subordinate position to men in all affairs, whether religious or economic.[9] They cannot perform any religious sacrifice or participate in any ceremony, and they do not own any land. In discussion, a Thakore woman shared her plight with me:

> *Having no male child means no salvation from the cycle of birth and death, because a son is needed to light and lead the funeral pyre. A woman who bears no male child is considered worthless by her in-laws and her husband. The son is the light of the family because he can carry forward the honour and the lineage of the family and give a rightful name to the family offspring.*

In focus group discussions held separately with women from the Thakore, Dalit and Adivasi castes, the role of men in land ownership and in *panchayat raj* institutions[10]:

> *In our community, men dominate land ownership and its sale. It is they who exercise the final word on how a piece of land will be utilised for different types of work. This power is reflected in the gram panchayat and also in negotiations with the land revenue officials. This sense of entitlement gives men in the Thakore household as well as in the Dalit home and in the homes of the Adivasi, the right to decide on private matters and also on public issues related to panchayat elections. Although women from Dalit and Adivasi groups do participate in these institutions, this is at the behest of the men. Actual decision making power lies with the men of the respective communities.[11]*

This is a general view of all women in the village. All women in Mathnaa share a common gender-based restriction of *ghunghat* (veiling) in front of strangers such as elders and strangers, but married women have coped up with the veiling tradition by deciding on the length of the veil depending on their relationship and interaction with the male space, because veiling has to be observed even in the agricultural fields. In a group discussions held separately with women from the Thakore, Dalit and Adivasi castes, it unanimously came out, that the social norms played a key role in interaction and physical mobility.

> *Since we are restricted and regulated by the societal norms of veiling, it acts as a handicap in not putting across women's opinion to the male elders. Even within this restriction, it is elderly women (mother in-laws) who have the power of decision making within the household. It is the mother in-law and often paternal grandmothers who are powerful within the family because of access to the elders. They command respect within the household and play favourites between younger women in the family in proportion to the quantity of dowry and material possessions brought by marriage into the family. This factor is an informal manner of influence and control over the men of the family.*

Jadeja women do not work in the fields, like women from the Thakore, Dalit and Adivasi communities. Those who do work have no decision-making power or bargaining capacity when it comes to the pricing of water for sale in Mathnaa's informal groundwater market. In my interactions with women from across the caste groups, it was revealed in the group discussion with women from Dalit and Adivasi households revealed:

> *Water is a male concern, where the price of water for irrigation in each season, is decided by men. It is an important commodity and only men have the decision-making power as they have more knowledge about the dynamics of the market. Although many women from Dalit and Adivasi groups bear the burden of generating family income, it is the men from these groups who eventually decide on their behalf.*

In a group discussion with Jadeja and Thakore women, it was also emphasized the role of men as main decision makers in water matters.

> *Traditionally, men are the decision makers since they are more knowledgeable and shrewd about money matters relating to water. We (the women) stay at home. We do not know how things work in the outside world. Our intelligence is doubted in making a decision about a valuable commodity like water, which is so scarce in the village and has a tremendous economic value attached to it.* [12]

The responsibility of managing household water rests with the women. There is preference and a prevalent norm among mothers to marry their daughters into families that own a bore well or wells, so that young wives do not have to bear the agony of walking for miles to fetch water. Women of all the groups in Mathnaa share this view. Sakaben, a Thakore by caste, states:

> *If a girl is really lucky and is born with good fate, she gets to marry a man who owns a bore well. Also in the marriage market, grooms who own a bore well or two get to choose a much sought after woman who has just reached puberty and is beautiful. Such a household can demand heavy dowry from the bride's parents at the time of marriage.[13] But everyone is not so lucky. For many mothers, it remains a dream to give their daughters an easier life.*

Although this view was shared by women from all the groups in Mathnaa, it is mostly the Dalit and Adivasi who face the worst kind of water scarcity because of their low social and economic standing. To them, possessing a bore well is a symbol of status and luxury. Consequently, material and social inequalities are manifested in property relations, inequalities of income, state provisions, rules of access to common social property and social status, which all influence and determine the access to water (Crow and Sultana 2002). Binsa, a Dalit woman, shares her story:

> *We are treated as inferior within the village social hierarchy. Economically, we have never been better off but whenever there is water scarcity, we are the worst off because then we have to travel far, sometimes as far as another village, by foot or by paying for transport to procure water for our family and for those to whom we owe our labour services, i.e. to the upper caste households. Our low varna, along with poverty, reduces our chances to improve our economic standing and this translates into deep (social) inequality which cannot be easily overcome. Even though we have been given the right to vote, it is our social standing which keeps us from a sense of empowerment and ownership. We are excluded at multiple levels: jati, economic standing, property/land, and bore well ownership.*

But at times, belonging to a lower caste gives these women more social mobility than women of the upper casts. For instance, becoming a member of a watershed committee at the village level is easier for women from Dalit and Adivasi castes who like to participate for the sake of it, while women from upper castes are highly unlikely to participate in public events dominated by males.[14] According to Meenaben, a Thakore:

> *It is a matter of shame and dishonour for women from good families to participate in and sit with strange men in these committees. It is considered disgraceful for her family and for her husband. If a man allows his wife to sit with male strangers in the meetings of watershed committees or any public events like these, it seriously affects the caste honour and family prestige. Dalit and Adivasi women participate in these male gatherings because they are from lower castes and do not have any legacy of family izzat (honour) to maintain. They are in subordination to our control and decision.*

Married Jadeja and Thakore women do not go out to fetch water from the common hand pumps; it is generally the children who do it for them, while women from other caste groups are seen actively participating in getting water from the common hand pumps or grazing their animals in the commons. Meanwhile, despite having a token presence with no real authority to influence the working of the watershed

committee, women from the Dalit and Adivasi community felt a sense of pride in being members: According to Mayaben, a Adivasi woman:

> *We are better than the upper caste women because we can participate in these committees, even if it is for the sake of it. We feel empowered, as our thumb-impression(s) is required to facilitate the functioning of the committee. We know that it is a small beginning, but imagine women of our jati getting this honour and position to sit with men in decision-making. It makes us feel proud, at least for the time being. If we did not give our thumb impressions, the project would have stalled. A time will come when we will gain strength and assert our rights openly. There is rising political awareness and we have our leaders too, who are thinking about our welfare and making provisions in the government for us to have a say (in what affects our lives).*

According to Juhiben, a Dalit woman:

> *Young Dalit leaders at the state level are campaigning for our rights, challenging the authorities of the traditional upper caste; we are making our presence felt. That day is not far when we stop being taken for granted. We can bring a lot of difference with a strong leadership from within our samaj (community).*

This is contested by upper caste women who feel that they have family honour to protect and maintain, so why would they want to sit with strange men in a male-centric committee and interfere with male work? In a group discussion, Jadeja women shared

> *These Dalit and Adivasi women feel that they have empowered themselves by being in the committee as members. But in reality, even their men have no decision-making power in front of our men in the committee. This is just a foolish sense of pride. They still work in our fields as agricultural labour and to maintain our check dams, so what do they think they have they gained by being members in the committees? Our ancestors have ruled Mathnaa, and women are the honour of the family and they should not be sitting with strange outsider men.*

Active participants in the meetings are upper caste males and local political leaders, also male, who are present in the meetings even though they are not members. In Mathnaa, the resource-rich are those who own water in terms of bore wells are the upper caste. The agents of change in Mathnaa were also the upper castes, who were the first to introduce motor technology to the dug wells, and out of 32 bore wells own 21 of them (see table 1). Mathnaa has only one village pond, which generally dries up in summer. The village used to have one *sarkari* (government) open dug well with a depth of 60-75 feet, but it has been dry for almost a decade now. In the past, the main source of irrigation in Mathnaa were open wells, operated and owned individually by households that ran them on diesel and electric motors. There were

around 50 open dug wells with a depth of 60-75 feet before 1999, but all of them have now dried up.

Bore well ownership by caste

Caste	No. of borewell
Jadeja	6
Thakore	15
Dalit	3
Adivasi	8

Source: Author

Around the year 2000, bore wells started to increase in Mathnaa and, as a consequence, public wells in the village started drying up. The bore wells were collectively owned by a group of relatives, but they cannot be classified as "tubewell companies" that exist in the Mehsana and Banaskantha districts of northern Gujarat among rich farmers.[15] Farmers in Mathnaa have small and fragmented landholdings which lead to kinship-based collective ownership of bore wells/tube wells on a small scale, which is qualitatively different from tube well companies. When I started field research, all the dug wells of Mathnaa had dried up and were no longer in use. For drinking water, Mathnaa has a total of 22 government-run hand pumps under village *panchayat* supervision, located in each caste quarter in the village. Of these, only ten were in good working order and in summer the supply was low.

Not only is there is a clear inequality in landholdings but also in access to irrigation facilities and wells. The bore wells have intensified this social inequality. Only those who have access to irrigation through ownership of a bore well are assured of a constant supply of water and a good harvest. People with bore wells are the wealthiest and most powerful actors in Mathnaa. This group comprises people from several castes, mainly Jadeja and Thakore, with a small cross-section of other groups.

Check Dams: The Space for Negotiating Gender and Caste

The watershed development project in Mathnaa was started under the Integrated Wastelands Development Programme (IWDP) in 1999 by a local NGO, under the Common Guidelines of 1994.[16] Initially, drought-like conditions prevailed in the entire Sabarkantha district with annual rainfall of less than 440 millimetres. Mathnaa has no irrigation facility supplied by the government, although groundwater irrigation does take place through privately owned groundwater markets.[17] The seasonal Rak river flows in the *taluka* where Mathnaa is located, but the village is outside the river's command area. The watershed project was seen as a viable option to reduce water scarcity, which is apparent from the statements of government officials of the *taluka* :[18]

> *The authorities decided the best option for Mathnaa was to have a watershed project, keeping in mind its topographical features, soil condition, rainfall*

> *scenario and population structure. Rainwater conservation is necessary, as groundwater is used for all major needs - such as drinking and irrigation - through open bore wells; although rain-fed agriculture is practiced by the villagers. (Author's field notes)*

As a part of the watershed project in Mathnaa, user groups were formed around the nine check dams (water retaining structure) to monitor dam construction and its maintenance.[19] These nine user groups comprised only men since membership was based on land ownership, and women in Mathnaa have no land rights. Check dams were constructed on rivulets in Mathnaa to check the flow of water, reduce land degradation and increase the percolation rate in upstream areas for wells, recharging the bore wells and ultimately increasing water for irrigation. The check dams were built on common property such as wastelands, unused pastureland and the traverse land of rivulets and drains. This pattern was seconded by a Dalit woman and by Adivasi households.

> *User groups were created to further the interest the higher caste and those close to the dominant castes. Although the dams were supposed to be constructed for the larger welfare of the villagers, in reality this was just talk and it created a group that would control the water storage and supply. The presence of men, and that too of a certain caste, created a hierarchy where land ownership determined who became a member of this user group.*

The lands on which check dams were built were grabbed by farmers who had their fields adjacent to the common property resources (common land, in this case). Consequently, no private land was submerged. The check dams worked on the lines of a common property regime.[20] Residential patterns in Mathnaa are demarcated by caste and tribe, so the agricultural land of each caste is adjacent to each residential caste quarters. The user groups were organised on the basis of landholdings near the check dams. Each check dam user group had its own leader, someone chosen by its members; moreover, each user group consisted of four to five members. The users group members consisted of people from the same caste, related by kinship ties, and were from the same *kutumb* (extended families). There were only a few exceptional cases where the members of the user group came from different castes. The composition of the nine user groups along the nine check dams were as i) the first user group was named Jadeja eik (I), as all its four members came from the Jadejas clan; ii) the second user group was named Jadeja bae (II), as two of its members were Jadeja and one was Thakore; iii) the third user group was named Thakore eik (I), as all four members came from the Thakore clan; iv) the fourth user group was named Thakore bae (II), as three members were Thakore and one was Jadeja; v) the fifth user group was named Chamar eik (I), as all three members were Dalit; vi) the sixth user group was named Chamar bae (II), as all four members were Dalits; vii) the seventh user group was named Chamar trind (III), as three members were Dalit and one was Adivasi; vii) the eighth user group was named Tindoli eik (I), as all three members were Adivasi; ix) ninth user group was named Tindoli bae (II), as all four members were Adivasi.

Members in the user groups around the check dams had activity-specific participation. Additionally, private bore wells were also owned by family members who happened to be members in the user group due to landholding patterns. Moreover, being related through kinship, the degree of conflict was less over the maintenance of check dams. This was elaborated by Jashubhai, a Dalit:

> *Our bore wells are collectively owned, and we acknowledge that this check dam-structure will benefit our bore well too. We had happily provided water from our bore wells when the construction of check dams was underway since it was for our own collective good in the long run. We could foresee that, in the near future, all of us will gather the fruits of this cooperation and collaboration over the construction of check dams.*

Further, privately owned bore wells in Mathnaa operate on the lines of common property regime since the ownership is shared and they are operated jointly by the family kinship network. During my field visits to Mathnaa, I did not see a single structure in a dilapidated state; in fact, all of them were in good condition and fully operational. Technical designs were provided by government engineers and there was no compromise in the quality of the materials used for their construction to ensure they can stand heavy rainfall. Moreover, maintenance work for the check dams was distributed among the user group families on a yearly rotation basis, and the structures were maintained by cutting the shrubs and desilting the path through which the water flowed.

Focus Group Discussions (FGDs) revealed that villagers were ready to carry out repairs if any damage was to occur to the check dams, but they were not in a position to make monetary contribution. This was government property and members said that they would complain to the *panchayat* (local village elected council) if a large sum of money was required for maintenance. When asked what they would contribute in this situation, they were clear that they could provide free labour and, if needed, water from their bore wells.

In Mathnaa, women have neither land rights nor water rights, even though they are largely responsible for water-related tasks. Further, their participation in decisions regarding water management is minimal. Irrespective of caste and whether or not they were formal members of a user group, it was men who were in charge. However, the roles of women are quite significant in maintaining the water-retaining structure (check dams), especially the lower caste Dalit and Adivasi women who were made responsible for the maintenance of check dams. This is because upper castes refrain from doing menial work such as cleaning the check dams. Among women, especially, the upper caste Jadeja and Thakore women do not participate in the water management issues. During field work, I noted that it is a status symbol for the upper caste women that menial work is done for them by the lower castes. Meanwhile, lower caste women provide their services in the hope of getting benefits like free drinking water in return. The reasons for providing this service by the lower caste are many, as illustrated by Gauriben, a Adivasi:

Our ancestors have been serving the Jadeja and Thakore for years and we are just maintaining this legacy traditionally as a mark of respect to our ancestors. Secondly, in summers most of the hand pumps go dry and it is these people who give us free drinking water that saves us from walking miles to other villages to fetch water from the government hand pumps made for our people. We are saved from the agony of standing in rows for hours to fetch water, and our time is also saved. Other than that, the upper caste women also make generous donations when a marriage takes place in our family, and also during festivals we are compensated with clothes and gifts.

Kundiben, a Dalit states:

The Jadeja and some Thakore are wealthy families and we have been working on their lands for years. We have developed a good rapport with them to carry out the cleaning work on the check dams. In return, whenever there is a severe crisis of water, we can look to them for help, even if it is only for drinking water which is given free. It also enhance one's status and say within one's own caste, as well. These are powerful people of our village and hold considerable authority in the village matters, also political authority because of their better education levels and control.

The workload of cleaning the check dams each year, before the monsoon sets in, is decided collectively by the Dalit and Adivasi households who have membership in the user group. These meeting are called by the elderly woman of the household, usually the mother-in-law, and her decision is taken seriously by all the other young women in the household. The reason for this meeting was explained in a group discussion with women, which was attended by the author:

It is the elderly woman of the kutumb, which generally happens to be the mother-in-law, who allocates the workload between her daughters-in-laws and other young girls or women in the household. In Mathnaa, there are mostly joint families with separate kitchens, but the mother-in-law is always in a commanding position, a great authority over the younger women of the household. There are fewer chances of conflict between the young women if the mother-in-law allocates the workload of the cleaning of the check dams.

Dalit and Adivasi women clean the check dams that belong to the upper caste households and also their own check dams. There is a clear absence of upper caste women and lower caste men from dam maintenance labour. This point has been averred and grumbled about by Meenal, a Dalit girl in her twenties and Kusum, an Adivasi and her friend, who shared their concerns:

We have to shoulder the burden of maintaining and cleaning the check dams under the supervision of other user groups. This is compounded by the absence of men from our households and social groups who shirk from sharing this responsibility (due to caste). Our labour is multiplied because we have several other responsibilities like managing our

homes and the children. This often leads to severe nutrition deficiency among lower caste women with higher rates of infant and maternal mortality. Most women suffer from malnutrition and so do the children they bear who are often extremely frail and emaciated at the time of birth and there are cases of wasting and stunting amongst them.

As argued by Deshpande (2011) the caste system determines the social division of labour and endogamy is a way of controlling the sexuality and labour of women. Therefore, it is too early to celebrate the so called successes in gender parity in villages when it comes to water management. What needs to be examined closely is who has benefited and who has lost from the water project (Baviskar 2004; Chhotray 2007; Clement and Chandrappagari, 2014). Since caste and class identities dominate the gendered pattern of labour (Gorringe 2018), the framework of intersectionality helps in understanding the currencies of power that is exchanged due to multiple identities (Banerjee and Ghosh 2018). As a theoretical parameter, it elucidates how different women in Mathnaa experience water management through the registers of caste, age, ethnic and class background.

Discussion and Conclusion

This research shows how and why in a community managed and operated project initiated by the state the actual burden of doing unpaid labour is shouldered by the most marginalized group in the social hierarchy. Dalit and Adivasi women in village Mathnaa do all the physical labour of maintaining check dams built to help conserve water while they neither formally own any land nor enjoy water rights. In the watershed project implemented in Mathnaa in 1999, the nine user groups constituted around the nine water harvesting structures (check dams) comprised only of men. While women were present in the panchayats or watershed committees to fulfill the criteria of various government guidelines, decision-making power and authority remained with the men. The lens of intersectionality was revealing of gender, caste and class dynamics determining the division of labour for managing and operating the check dams in rural Gujarat.

Women's social identities are multiple and overlapping and they cannot be treated as a homogeneous social group. Gendered power relations operating in the watershed committee and user group had serious implications for women's participation in watershed interventions. There was gendered exclusion in the formal user groups, with inclusion in the informal, unpaid labour groups cleaning and maintaining the check dam structures. Women were not accepted as formal members in the user groups, they were tasked with the hard labour of cleaning and maintenance of the check dams as fetching water for domestic use was traditionally female work in the village household context. Further caste-based differences, existed within the female domain, Dalit and Adivasi laboured while the upper caste Jadeja and Thakore women were free from such demands. Gender-based hierarchy on the lines of caste stratification was apparent from the task allocation of women of different groups as men irrespective of caste hierarchy did not do the dirty and hard labour of maintaining the check dams.

The study showed how gender and caste relations interact with material and social inequalities in Mathnaa. Ownership of land and financial resources was the major source of power in the village society. Access to water was highest among the rich upper caste landlords who owned majority of the bore wells and were able to directly pump water further depleting groundwater availability for the larger community. The upper caste women were socially restrained from participation in public meetings and movement outside the homes given their gender role but class position allowed them freedom also from the hard work of maintaining check dams.

The study also shone light on the limits of legal frameworks designed for community based projects in face of social realities especially entrenched inequality. In Mathnaa the state inadvertently exacerbated the burden of work for the already marginalized females. While the state recognized gender inequality and mandated female presence on the watershed committees it could not override the dynamics of caste and class hierarchies in the village. An intersectional approach in policy making may help to avoid simplistic categorization and be more attentive to the complex structuring of identity and social position.

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Notes

[1] Check dams are low, cemented or earthen barriers made to catch monsoon run-off in empty streambeds, creating a series of small reservoirs that percolates to nearby wells and recharge the groundwater aquifers (Wood 2007). Check dams were constructed in the village under study as a part of watershed management project. Watershed management is the integrated use and/or management of land, vegetation, and water in a geographically discrete drainage area for the benefit of its local communities, with the objective of protecting or conserving the hydrologic services that the watershed provides and of reducing or avoiding negative downstream or groundwater impacts. The Government of India (GOI) has adopted programmes based on traditional water management approaches since the late 1980s. However, the Guidelines for Watershed Development Projects, which set the benchmark became operational in 1995. There has been a considerable countrywide increase in the number and financing for community-based projects for micro-watershed development in India since then. For more detail see: World Bank 2014.

[2] Caste is a pan-Indian phenomenon. Castes are endogamous and segmented since all castes are divided into sub-castes. The social hierarchy of the caste system in Hindu society allegedly originated from the four-fold class system (Das 1982; Fuller 2003; Murray 1994). The word caste is sometimes used to translate *varna* denoting the four classes of Hindu society into Brahmin, the priestly class; Kshatriya, the warrior class; Vaishya, the merchant class; Sudra, the service class; and finally, the untouchables (also known as Harijan, Dalit or the Scheduled Caste, their official designation) at the bottom who are outside the four-class system and subject to extreme stigmatisation. The Rig-Veda hymn the *Purusha Sukta* describes how from the Purusha (primeval man) body the four varna originated, i.e., from his mouth came the Brahmins, his arms the Kshatriyas, his thighs the Vaishya and from his feet the Sudras (Fuller 2003).

[3] The intersection of caste and gender helps in understanding the social realities in an Indian context, which was recognised by Ambedkar many decades ago (1916), when he advocated that caste and gender identities were not only parallel in Indian society, but are also intersectional in nature in many forms.

[4] I chose to give anonymity to the village and the participants due to research ethics and also for the safety of the participants. Anonymity is necessary in ethnographic research and it is the researcher's responsibility to keep the identity of the participants confidential so that they are not identifiable in the research output produced by the researcher and do not face any repercussion once the research ends. (Scheyvens and Storey 2003).

[5] Upanayana is a Hindu ritual of initiation that is restricted to the three upper *varna*. This ritual marks the entry of the male child into student life and his acceptance as a full member into his Hindu religious community.

[6] *Kharif* or rainfed crops are sown in June and July and are harvested in September-October. In Mathnaa, they consist of maize, millet, pulses, castor and cotton. *Rabi* or irrigated crops are sown in October-November and harvested in February-March. Rabi crops grown in Mathnaa are wheat, mustard, gram, potatoes and turmeric.

[7] Dalit constitute about 7 per cent of the population of Gujarat, of which a majority of 56 per cent lives in the countryside (Shah 2017). Dalit generally live on the periphery of the villages and only a handful of villages in Gujarat have more than a 10 per cent Dalit population (Ibid). They are dependent on the landed caste for their livelihood and subjected to practices of untouchability. For more details to understand the scale of the practice of physical untouchability in public, market and private spheres in rural Gujarat over a period of time, see: Desai 1976; Navsarjan 2006.

[8] Large farmers are those whose landholding is two hectares and above; small farmers are those whose landholding is between one to two hectares; marginal farmers are those who own less than one hectare of land. Please note there exists a discrepancy between landholding records given to the author by the talati (village revenue officer) and the records available at the local revenue office of tehsildar at the block level.

[9] The data available in the 2011 census shows that the participation of women in the social and economic production system of Gujarat remains limited. Further, the census data reveals the gender balance in Gujarat to be volatile and glaring across different population sub-groups and districts; and the gender balance remains unfavourable to women in the literate population, despite efforts by the Gujarat government to reduce gender disparity in education (For more detail see: Chaurasia and Kumar 2017).

[10] Panchayati Raj refers to the system of local self-government in India, introduced by a constitutional amendment in 1992.

[11] Respective communities here is used in context of Thakore, Dalit and Adivasi men.

[12] Bore well is a well consisting of pipe placed in hole bored into the ground to tap groundwater supplies from one or more aquifers.

[13] Dowry is the property or money brought by a bride to her husband through marriage. The practice of dowry is an expected part of marriage in cultures where arranged marriages are the norm. Disagreements over dowry often lead to physical violence towards women. For more details on dowry in India see, Banerjee (2014), Sheel (1999), Sharma (1993).

[14] A watershed committee is formed as part of the watershed project guideline, to monitor the work and progress of the project in a village. It consists of elected 11-12 members from the village, representing all castes and gender.

[15] Tubewells are organised as "companies" where farmers own shares, contribute capital, get water, bear profit and loss all in proportion to the land they have in command. For more details see Dubash 2002.

[16] For detail see endnote 1; Naz 2014; World Bank 2014.

[17] Groundwater markets – most of which are monopolies (Anderson 2005; Sekhri 2012) have emerged across rural India in the past few decades (See, Aggarwal 1999; Dubash 2002; Janakarajan 1993, 1994; Mukherji 2007; Naz 2014, 2015; Pant 1992; Prakash 2005; Shah 1993; Tiwary 2010; Wood 1995), becoming a critical water source for irrigation and operating under a private property regime.

[18] Taluka is also known as a block, it is the political administrative unit between the village and the district level.

[19] User group consists of members whose lands are adjacent to the sites where the check dams were constructed.

[20] In a commons, an identified group controls the rights for the use of resources and there exist rules concerning who may use the resource, who is excluded from the resource and how the resource should be used (Berkes and Farvar 1989).

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CAN TRAINING MOTIVATE THE DEMOTIVATED: YOUTH AND AGRICULTURE IN CAMEROON

Abstract

Despite the high revenue (over 60%) Cameroon obtains from agriculture; it has been abandoned to the old and very few people in the community. Given the alarming rate of unemployment among youths in Cameroon, agriculture is perceived as a promising sector to improve on the situation by policy makers. However, despite government's and AFOP's (Apui à la Formation Professionelle dans les secteurs de L'agriculture de l'élévage et des Pêche, in English: training programme for agro- pastoral training entrepreneurs) effort to train and fund farming projects for youths in rural communities, over 30% of graduates from these programmes have remained unemployed. The training seems to be too theoretical and distant from what constitute work (the eco-farming realities) of the trainees in their rural communities. This study broadly aims at examining the extent to which knowledge construction as an AFOP training approach influences the development of employable skills among agro pastoral trainees. Specifically, the study aims at assessing whether active learner involvement and adapting knowledge to the contextual realities of the people influences employable skill development in the trainees. It employed a cross-sectional descriptive survey with the entire population of 250 participants (250 trainees from the 10 agro-pastoral vocational training centres in the North West and South West Regions of Cameroon) and a sample of 8 trainers drawn through purposive and snow ball sampling for interview. Likert scale questionnaires and an interview guide were used to collect data from the participants. The chi- square test was used to test the hypothesis. The results revealed that there is a significant relationship between the training approach used and the development of employable skills. Trainers engaged trainees in the learning process and adapted knowledge content to the agricultural activities of the people and this influenced the development of employable skills in trainees though to a limited extent. However, other factors such as the trainees' lack of interest, insufficient resources and lack of effective follow up also hindered the development of employable skills. To improve on this, trainers should fully engage trainees in learning and create opportunities to adapt knowledge content to the practical activities on the ground. Also, strategies to make agriculture more attractive to youths should be sought for and implemented.

Keywords: vocational training approach, knowledge construction, employable skills, youth and agriculture.

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Introduction

In today's increasingly complex life and world of work, youth need to develop more employable skills such as problem solving, initiative and task shifting. These skills will enable them adapt more suitably to changing situational demands in the world of work. To enhance the development of such skills, instruction or training strategies in vocational training centers need to ensure that the trainees learn skills that allow them to acquire and build their knowledge rather than relying on received packaged information.

Vocational education is a type of training concerned with the acquisition of knowledge and skills for the world of work. Abubakar (1996) noted that vocational education aims at producing individuals who have the ability to apply acquired knowledge to new situations, the competency to get things done, the curiosity to discover and understand the world. Development in a country is enhanced when material and human resources are developed to ensure the effective utilization of the physical environment for the benefit of all its citizens. Agriculture is central to the development of most African states thus vocational training that enhances the development of knowledge transfer skills in the agriculture sector is pertinent with implications to the Sustainable Development Goals: especially 1- to end poverty in all its forms everywhere; 2- to end hunger, achieve food security and improved nutrition, and promote sustainable agriculture; 8- to promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all; 9- to build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation; and 12- to ensure sustainable consumption and production patterns.

Knowledge construction as an instructional principle in vocational training emphasizes the need for active learner involvement in knowledge acquisition, accompanied by opportunistic guidance by expert mentors. Knowledge construction means joining defined pieces of knowledge together (Hershkowitz et.al. 2007) or the process of restructuring and rearrangement by making known structures subject to partial changes and building new meanings (Bikner-Ahsbahs 2004). Bruner (1971) advocates for an approach to learning that allows the learner not only to learn the material that is presented in a school setting, but to learn it in such a way that he/she can use the information in problem solving. For Bruner (1961) education should facilitate a child's thinking and problem-solving skills which can then be transferred to a range of situations. Trainees are more likely to develop employable skills when learning is situated that is when learners actively participate in the learning process or learning takes place as a function of the activity, context and culture in which it occurs (Lave and Wenger 1990). Rugoff (1990) reiterates the issue of learners constructing new solutions from apprenticeship learning which is essential in developing employable skills.

Dasen (2011) in his work on culture, cognition and learning held "Learning in school is likely to be facilitated if teachers draw upon knowledge acquired out of school"**.** The settings or physical and social contexts in which a person lives are very

significant in enhancing learning (Super and Harkness, 1997 as sighted in Dasen, 2011). Furthermore, Fomba (2009a) in his work on the community role/engagement in vocational competence development among the Bali Nyongas held that "learning through community engagement involves the practices of *du;ti fa'* (work learning), *du'ti nwa'ni* (book learning) and *n'sih* (peer work) as a competence-based model for the analysis and development of vocational competence in school life". This strategy of Fomba (2011) is capable of "generating indigenous knowledge values at local level, with inherent opportunities for innovation and use in the global community". Youths are thus encouraged to invest in agriculture. When what is learned is being applied in practical life and links are created with primary producers, communities and all the stakeholders in agriculture, trainees develop employable skills (Muir-Leresche 2013).

Employable skills are skills that enable one to easily reconstruct, transfer or adapt knowledge to new and varied situations. These skills include problem solving, multitasking and initiative. These skills according to Woodcock (2013) are among the top skills recruiters want from graduates. Most job adverts simply ask for candidates who "can take the initiative" or "have the ability to resolve problems" (Woodcock 2013). Problem solving is a uniform process of identifying potential problems, defining and representing the problem through thinking about it and sorting out the relevant information, exploring possible strategies through looking at alternatives, brainstorming, and checking out different points of view, acting on those strategies, and looking back and evaluating the effects of those activities (Bransford & Stein, 1984). Multitasking, another employability skill is about training the brain to channel energy in an efficient and effective manner so as to accomplish more in less time (Goodman 2013). Most jobs in our world of work today require employees to balance competing demands for their time and energy, and employers expect employees to be able to handle multiple priorities. Initiative just like creativity moves the world. It fosters the realization of innovative ideas in various industries and contributes to constant development. Murphy (2014) further states that when one shows initiative, he/she does things without being told; finds out what needs to be known; keeps going when things get tough; and spots and takes advantage of opportunities that others pass by. The application of knowledge construction as an instructional principle can enhance the development of such skills in trainees of agricultural vocational training centers in rural areas. Youths in rural areas in the African context however rarely develop interest in agriculture.

IFAD (2012) established that young people account for a large percentage of the rural population, and are often unemployed or underemployed despite the need for labour force in agriculture. Rural youth do not perceive agriculture as a remunerative or prestigious profession and until they find meaningful economic opportunities and attractive environments in rural areas, they will continue migrating to the cities (Anania & Kimaro 2016). Very few youths participate in land-based sectors in most African countries. The main rational behind this is that the activities in the primary production sector such as agriculture are seen to be characterized by drudgery, minimal financial returns and thus meant for the least educated in society. .Add to

this perception is the dirty manual labour associated with agriculture. Moreover, the fact that the turnover rate is slow with investments in the natural resources sector coupled with the long periods it requires to yield benefits demotivates youth engagement. This state of affairs does not augur well for the involvement of the African youth in natural resource-based activities. (Bojang 2013). The agricultural sector rarely offers attractive jobs to youth. According to Gallup data from 2010, 47 percent of rural youth work in agriculture. These young people represent the poorest group of working rural youth, in comparison with rural youth engaged in non-agricultural economic activities (AfDB, OECD, UNDP & UNECA 2012). In other words, many rural young people remain in poverty, despite working, predominantly due to the vulnerable working conditions and low remuneration of agricultural jobs (Van der Geest, 2010). In addition, due to the seasonal dimensions of agriculture, most rural youth also endure long periods of under–and unemployment (ILO 2012a). As a result, they have to survive on average monthly or annual incomes which are significantly lower than the common poverty threshold equivalent to $1.25 per day (ILO 2012b).

Vocational training in Cameroon before colonialism was focused on agriculture. It was one of the earliest subjects taught in indigenous education from generation to generation. Children were taught different food crops, suitable and unsuitable soils, when to clear the bushes when to till, plant and harvest different kinds of crops in different seasons (MacOjong 2008). This pedagogy from Fomba's (2011) point of view "is wrapped up in the community practice since the transmission of work values to children has long been considered as the primordial responsibility of the family and the community". This was common through sustainable livelihood activities such as farming, carpentry, craft, fishing, animal rearing, blacksmithing and petty business such as trading (Fomba 2011). This strategy generated indigenous knowledge values at local levels with inherent opportunities for innovation and use in the global economy (Fomba 2011). With the traditional apprenticeship system, the issue of unemployment was unheard-of. Tchombe (2011) holds that Bamileke children at a very early age are trained to farm, nurture animals and trade. An adolescent in the Bamileke culture, as Tchombe (2011) posits, is already an owner of a farm or a petty business. Children in this way actively participate and construct knowledge for themselves in the learning process which is significant to the development of employable skills.

With unemployment as one of the most alarming crises in developed countries, TVET has been identified as an effective means of empowering young people to engage in productive and sustainable livelihoods in their communities (Fomba 2011). A survey conducted by the AU on the state of TVET in 18 African countries point agriculture as the highest priority area, for vocational training in Africa (African Union 2007).

Statement of the Problem

Despite the high rate of literacy (75%) in Cameroon, youth unemployment (8.86%) (World Bank, 2017) is still on the rise. Worst still, most graduates from agricultural vocational training centers are unemployed despite the training. However, the training programmes are still perceived as domains of priority to enhance development and reduce unemployment by policy makers in Cameroon. Graduates lack employable skills. Most of them, including the few who get ready-made jobs still lack initiative. They hardly take advantage of opportunities that others pass by or do the right thing without being told.

Also, very few graduates from such schools can transfer knowledge they obtained from school to different environmental and situational demands. Most of them find it difficult to identify problems, generate possible solutions, select the most suitable of them and implement it. Furthermore, multitasking, a 21st century skill employers long to have in their employees is lacking in most of these graduates. Many of them have difficulty in successfully engaging in two or more activities or to successfully shift from one activity to another. Most of them even lack the motivation and self-esteem to start up their own farms or agric business.

The lack of such vital employable skills in the graduates, we suspect is caused by the absence of training approaches that would encourage creative or innovative skill development in learners. The training in these schools is more theoretical and distant from the contextual realities. The extent to which trainers encourage trainees' active involvement and participation in the learning process is an empirical question. This study thus aims to find out whether there is a relationship between the use of knowledge construction as an instructional principle and the development of employable skills in trainees of agro pastoral centers. It also aims at identifying some of the factors that hinders the development of such employable skills in trainees.

Method

A cross-sectional descriptive survey research design was used to obtain information from the trainees of agricultural vocational training centers in the North-West and South-West regions of Cameroon. The respondents were asked to state the degree to which their trainers applied knowledge construction in the training and the degree to which trainees developed employable skills in the course of the training. A 4 point likert scale questionnaire was used to obtain the data. Also, an interview guide was used to conduct in depth interviews with trainers who had at least four years of training experience to get their opinions about the factors that hindered employable skill development in trainees. The participants involved trainers and trainees of agro-pastoral vocational training centers in the Northwest and Southwest Regions of Cameroon. An entire population of 250 trainees from the 10 centers (5 in the North West and 5 in the South West) were recruited for the study. Also, through purposive and snow ball sampling 8 trainers were recruited for the interview.

The North-West and South-West regions of Cameroon are the two English speaking regions of the country. The South-West region is located on the Atlantic coast along the region's western frontier. It is divided into six administrative divisions, namely Fako, Meme Ndian, Lebialem, Manyu and Koupe Manengouba. The South-West region covers a surface area of 25,410 km (9,811 sq. m). the Northwest Region is made up of seven administrative divisions, namely Bui, Donga-Mantung, Menchum, Mezam, Boyo, Ngoketunjia and Momo. The climate in these areas is characterized by two seasons; the rainy season (from mid-March to mid-November) and the dry season (from mid-November to mid-March). The North West region has an average annual rainfall of 2288 mm and an annual average temperature of 19.70 degree centigrade.

The economy of the North West and South West regions of Cameroon includes the primary, secondary and tertiary sectors of production. One of the major activities in the primary sector is farming which involves the exploitation of timber from eucalyptus trees and other crops such as cassava, cocoyam, corn, beans, plantain, yams, potatoes, groundnuts and livestock production. In addition, gardening of vegetables such as huckleberry, pepper, carrots, tomatoes, cabbage, garden eggs is very common. Poultry is raised for table birds and eggs, pigs for meat. Organic waste from poultries and piggeries is an organic asset as it is highly demanded as manure for gardening (MINEDU, 2017). In terms of cash crops, there is also the production of cocoa, coffee, rubber, palm oil.

In the secondary sector, the economic activities are mostly informal and scattered through different neighbourhoods. These activities revolve around small scale processing of cassava into garri and "water fufu", transformation of milk into yogurt, food stuffs into animal feed, wood and metal works, embroidery, carving and crafts (MINEDU, 2017).

The agricultural vocational training centers in the North West and South West regions train agro- pastoral farmers. There are a total of 10 such centres located in some divisions in the North-West and South-West Regions as shown on the maps in figures 1, 2, & 3.

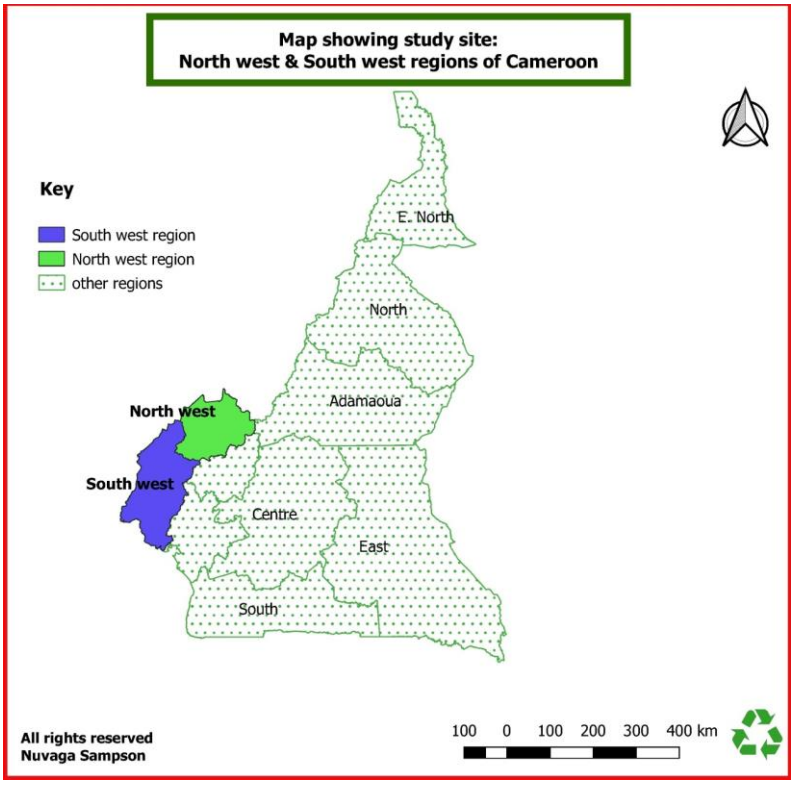

Figure 1: Map showing the two regions of the study site (Source: Nuvaga Sampson (2018))

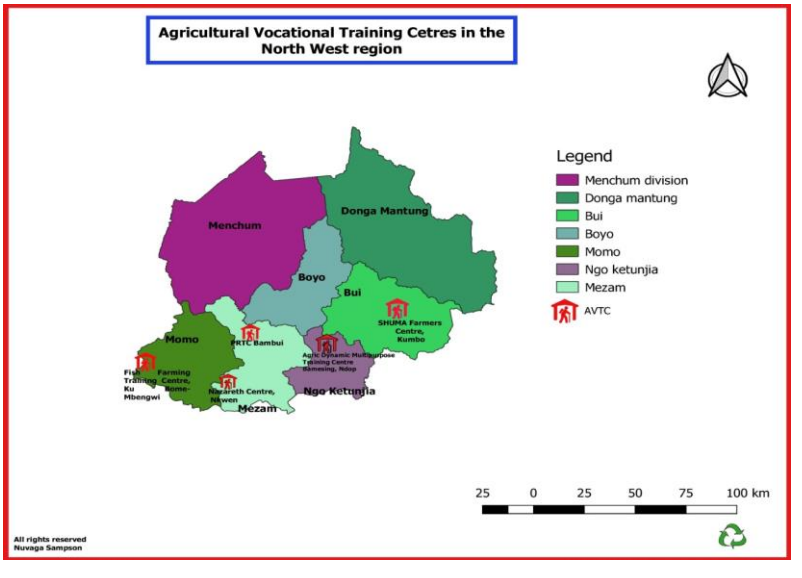

Figure 2: Map showing Location of Agricultural Vocational Training Centers in the North West (Source: Nuvaga Sampson (2018))

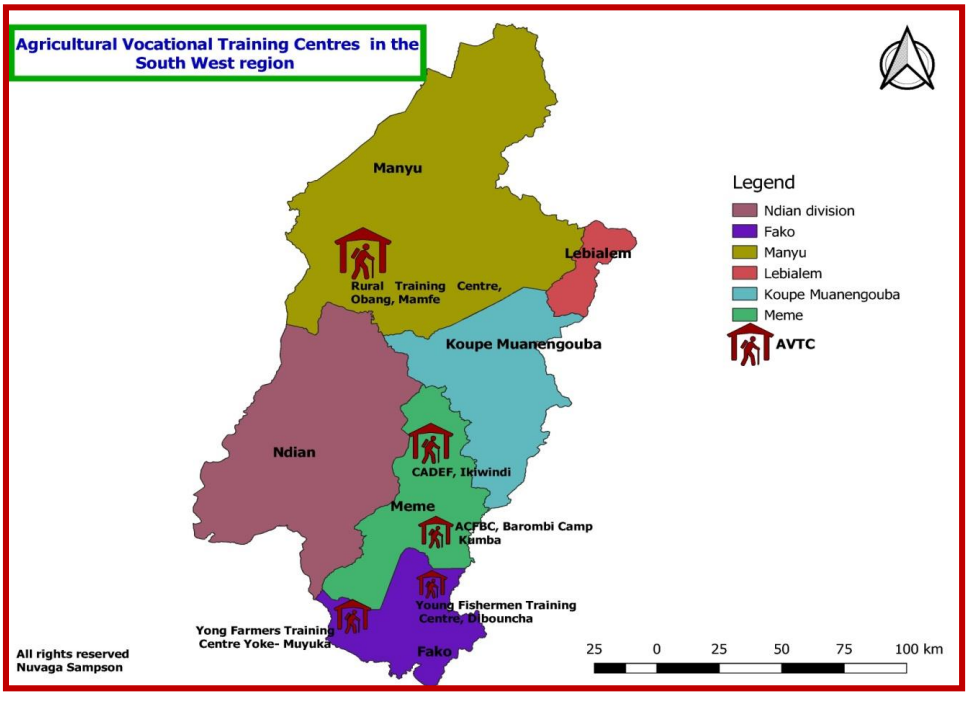

Figure 3: Map showing location of Agricultural Vocational Training Centers in the South West (Source: Nuvaga Sampson (2018))

To analyze the quantitative data, the counting techniques namely frequency and proportions were used while Multiple-Responses- Analysis was used to calculate the aggregate score for conceptual components. A chi- square test was used to appraise the influence of the use of knowledge construction on the development of employable skills in trainees. For qualitative data, responses were analyzed using the thematic approach whereby viewpoints were grouped under key themes which were later counted for frequency of occurrence.

Results

To what extent does trainers' use of knowledge construction lead to the development of employable skills in agro pastoral trainees?

Table 1: Trainees' perceptions on trainer's application of knowledge construction

From my observation of the way our trainers train us, they	Stretched				Collapsed
	Very often	**Often**	**Rarely**	**Never**	**Often**
Give us the opportunity to debate and brainstorm on what is taught during classes.	42.8% (107)	38.0% (95)	16.8% (42)	2.4% (6)	80.8% (202)
Present us with problems on course material and ensure that we learn by solving the problems.	38.8% (92)	38.4% (96)	19.6% (49)	5.2% (13)	75.2% (188)
Give us home work.	42.4% (106)	36.0% (90)	16.8% (42)	4.8% (12)	78.4% (196)
Correct the homework together with us.	51.6% (129)	29.6% (74)	15.2% (38)	3.6% (9)	81.2% (203)
Ask us questions in the classroom.	63.2% (168)	24.0% (60)	8.4% (21)	.4% (1)	91.2% (228)
Give us time to reflect.	51.2% (128)	40.4% (101)	6.8% (17)	1.6% (4)	91.6% (229)
Listen keenly to our responses.	60.0% (150)	31.6% (79)	5.6% (14)	2.8% (7)	91.6% (229)
Probe's us to get more when we express our views.	44.0% (110)	44.4% (111)	9.2% (23)	2.4% (6)	88.4% (221)
Give immediate feedback to our responses.	44.8% (112)	42.8% (107)	11.2% (28)	1.2% (3)	87.6% (219)
Encourage everyone in the class to participate in lessons.	66.0% (165)	25.6% (64)	6.8% (17)	1.6% (4)	91.6% (229)
Send us on internships to unfamiliar environments.	39.2% (98)	41.2% (103)	10.0% (25)	9.6% (24)	80.4% (201)
Use available laboratories (farms) as classrooms to engage us in actual work activity.	31.2% (78)	36.8% (92)	20.0% (50)	12.0% (30)	68.0% (170)
MRS	**48.1% (1443)**	**35.7% (1072)**	**12.2% (366)**	**4.0% (119)**	**83.8% (2515)**

Summarily, majority (83.8%) of the trainees were of the opinion that their trainers applied knowledge construction in their training. Out of these opinions, a greater majority of them (91.6%) affirmed that their trainers often gave them time to reflect, listen keenly to their responses and encourage everyone in the class to participate during lessons. This was followed by 91.2% of them who said their trainers often ask questions in the classroom. In the same line, 88.4% of the trainees were of the opinion that trainers often probe them to get more when they express their views. 87.6% of them confirmed that their trainers often gave immediate feedback to their responses.

On the other hand however, up to 20% of the trainees were of the opinion that their trainers rarely used available laboratories (farms) as classrooms to engage them in actual work activity while 12% argued it was never done. Similarly, 19.8% of them held that trainers rarely presented trainees with problems on course material and hardly ensured that they learned by solving the problems. Similarly, 16.8% of the

trainees held that their trainers rarely gave them the opportunity to debate and brainstorm on what is taught during classes and also rarely gave them home work.

Employable Skills

a) Initiative

Table 2: Trainees' perception of their employable skills exhibited with regards to initiative

Initiative	Stretched				Collapsed
	Very often	**Often**	**Rarely**	**Never**	**Often**
I do the right things without being told.	2.4% (6)	50.4% (126)	39.2% (98)	8.0% (20)	52.8% (132)
I find out for myself what I need to know.	.4% (1)	46.4% (116)	47.6% (119)	5.6% (14)	46.8% (117)
I keep going when things get tough.	2.0% (5)	30.0% (75)	55.6% (139)	12.4% (31)	32.0% (80)
I easily spot opportunities.	2.0% (5)	19.2% (48)	64.8% (162)	14.0% (35)	21.2% (53)
I take advantage of opportunities that others pass by.	1.6% (4)	28.4% (71)	59.2% (148)	10.8% (27)	30.0% (75)
I quickly identify problems.	1.6% (4)	32.4% (81)	55.6% (139)	10.4% (26)	34.0% (85)
I welcome new ideas.	13.6% (34)	57.6% (144)	24.8% (62)	4.0% (10)	71.2% (178)
I am eager to know more about opportunities for farmers.	14.0% (35)	51.6% (129)	24.0% (60)	10.4% (26)	65.6% (164)
I think up new ways of doing things.	2.8% (7)	35.6% (89)	48.8% (122)	12.8% (32)	38.4% (96)
MRS	**4.5% (101)**	**39.1% (879)**	**46.6% (1124)**	**9.8% (221)**	**43.6% (980)**

In aggregate, 46.6% of the trainees were of the opinion that they rarely exhibited initiative. Out of this, most of them (64.8%) could not easily spot opportunities, followed by 59.2% who could not easily take advantage of opportunities that others pass by and 55.6% who could not easily identify problems and keep going when things get tough.

However, less than half (43.6 %) of the trainees were of the opinion that they x-rayed initiative. Out of this, most of them (71.2%) held that they welcome new ideas for farmers while the next majority (65.6%) agreed that they are often eager to know more about opportunities for farmers. This was followed by a 52.8% who held that they do the right thing without being told.

b) Multi-tasking

Table 3: Trainees' perception of their employable skills exhibited with relation to multi-tasking

Multi-tasking	Stretched				Collapsed
	Very often	Often	Rarely	Never	Often
I perform two or more activities at the same time successfully	2.4% (6)	20.0% (50)	58.4% (146)	19.2% (48)	22.4% (56)
I make mistakes when I attempt to concentrate on more than one activity at a time*	60.8% (152)	34.8% (87)	4.4% (11)	0.0% (0)	95.6% (239)
I do as many things as possible simultaneously	4.8% (12)	20.4% (51)	51.2% (128)	23.6% (59)	25.2% (63)
I perform task as quickly as possible	1.2% (3)	13.6% (79)	54.0% (135)	13.2% (33)	32.8% (82)
I take time to finish a task before I move to another task*	65.6% (164)	28.8% (72)	4.8% (12)	0.8% (2)	94.4% (236)
Use little time to perform different tasks	0.8% (2)	20.8% (52)	52.4% (131)	26.0% (65)	21.6% (54)
MRS	**1.7% (25)**	**17.0% (255)**	**46.6% (699)**	**34.7% (521)**	**18.7% (280)**

*MRA; reversed conceptual polarization.

Almost half (46.6%) of the trainees held that they rarely multitask. Out of this, most (58.4%) of them could not perform two or more activities at the same time successfully, 54.0% could not perform task as quickly as possible while 52.4% of the trainees rarely used little time to perform different task.

Very few (18.7%) of the trainers held that they often multitask. Out of these few, majority (32.8%) held that they perform the task as quickly as possible. This was followed by the opinion that trainees perform two or more activities at the same time successfully (22.4%).

c) Problem solving

Table 4: Trainees' perception of their employable skills exhibited in relation to problem solving

Problem solving skills	Stretched				Collapsed
	Very often	Often	Rarely	Never	Often
Clearly define the problem before trying to solve it.	2.8% (7)	60.0% (150)	35.2% (88)	2.0% (5)	62.8% (157)
Break down the problem situation in to its different parts.	1.6% (4)	26.0% (65)	62.0% (155)	10.4% (26)	27.6% (69)
Strive to look at the problem from different perspectives and generate multiple solutions.	2.0% (5)	27.2% (68)	62.8% (157)	8.0% (20)	28.8% (72)
Decide on the most appropriate of the solutions.	5.6% (14)	38.8% (97)	49.9% (124)	6.0% (15)	44.4% (111)
Apply/implement the chosen solution.	5.6% (14)	60.4% (151)	28.8% (72)	5.2% (13)	66.0% (165)
Go back to evaluate the effectiveness of the solution applied.	1.6% (4)	20.0% (50)	44.8% (112)	33.6% (84)	21.6% (54)
MRS	**3.2% (48)**	**38.7% (581)**	**47.2% (708)**	**10.9% (163)**	**41.9% (629)**

Generally, almost half (47.2%) of the trainees' rarely exhibit problem solving skills. Out of these opinions, most (62.8%) of them rarely strove to look at a problem from different perspectives and generate multiple solutions while 62.0% would rarely break down a problem situation in to different parts. Despite this, trainees to some extent (62.8%) often clearly define a problem before trying to solve it and they often (66.0%) implement a chosen solution.

Half (49.9%) of the trainees also rarely decided on the most appropriate solutions to apply and as well rarely (44.8%) or never (33.6%) went back to evaluate the effectiveness of the solution applied.

Hypothesis: There is no significant relationship between trainers' use of knowledge construction in the training of agro pastoral farmers and the development of employable skills in trainees.

The relationship between trainers' use of knowledge construction in the training of agro-pastoral farmers and the development of employable skills was appraised using Logistic Regression Model. Employable skills were measured in terms of trainees' exhibition of initiative, multi-tasking and problem-solving skills. The variability explained by this model was significant (Omnibus Tests of Model Coefficient: $\chi 2=23.289$; $P=0.003$). The Explanatory Power (EP) / Predictive Power was

however, small with a value of 8.9% (Cox & Snell R Square=0.089). The null hypothesis stated above is then rejected; therefore implying that trainers use multiple knowledge construction in the training of agro-pastoral farmers has a perceptible influence on the development of employable skills in trainees. However, though this influence was perceived to be significant, the very moderate explanatory power indicates this component alone is far from impacting employability skills on trainees to a satisfactory extent. None of the predictive indicators making up this predictive component emerged as significantly determining the development of employable skills in trainees.

Table 5: Model Fitting Information and Model Explanatory Power

Omnibus Tests of Model Coefficient	**Explanatory/predictive power of the model (Pseudo R-Square) based on Cox and Snell***
$\chi 2=23.289$ df=8 P=0.003	0.089

*Dependent variable: Development of employable skills in trainees.

Table 6: Likelihood Ratio Tests depicting the predictive level of trainers' use of knowledge construction in the training of agro-pastoral farmers on the development of employable skills

Indicators of knowledge construction	**Score**	**df**	**Sig.**
Give us the opportunity to debate and brainstorm on what is taught during classes.	1.221	1	0.269
Present us with problems on course material and ensure that we learn by solving the problems.	3.548	1	0.060
Give us home work.	0.075	1	0.784
Correct the homework together with us.	0.047	1	0.829
Ask us questions in the classroom.	4.016	1	0.075
Give us time to reflect.	1.963	1	0.041
Listen keenly to our responses.	0.389	1	0.533
Probe's us to get more when we express our views.	1.634	1	0.201
Give immediate feedback to our responses.	1.063	1	0.302
Encourage everyone in the class to participate in lessons.	3.409	1	0.045
Send us on internships to unfamiliar environments.	2.162	1	0.044
Use available laboratories (farms) as classrooms to engage us in actual work activity.	5.269	1	0.022

Just 4 out of the 12 components of Knowledge construction (KC) emerged as significantly determinant of employable skills development. The most significant (0.022) determinant component is trainers' use of available laboratories (farms) as classrooms to engage trainees in actual work activity. The least determinants are trainers' ability to correct trainees' home work with them (0.829) and to give them home work (0.784).

Hindering Factors in Training that Affects the Development of Employable Skills in Trainees

Disparity in educational level: Most of the trainers were of the opinion that differences in the educational level of the trainees make the training difficult. One of the respondents for example said "some trainees cannot even read and write while others are very quick to master what is taught".

Lack of interest: From the interview with the trainers, majority of them pointed out that the low success rate in developing employable skills in trainees is also linked to trainees' lack of interest in farming. One of the respondents clearly explained this when she said "Some come in who don't have a passion for agriculture. They take it as the last option so they easily leave if they have another opportunity". Another respondent said, "Some abandon and travel abroad after funding while others only come for the money".

Lack of effective follow up: A good number of the trainers interviewed acknowledged that one of the limitations of the programme is ineffective mentoring and follow up of the trainees. In the words of one of the trainers, "an in session counselor for example, is supposed to have a maximum of 30 trainees to follow up but some have up to 116 which makes it ineffective. This makes some trainees to drop the project or escape with the funds".

Poor implementation: Poor implementation was another factor identified by some of the trainers as a limitation to the successful development of employable skills in trainees. According to one of the trainers "The programme is well designed but the trainers are not committed so it is not effectively implemented". Another respondent said "Some reference farmers are not versed on how to coordinate trainees sent to them".

Insufficient resources: About 50% of the trainers interviewed stated that the insufficiency of resources such as didactic material and funds to support significant partners (reference farmers) central to the training hinders its effectiveness. This is depicted in the words of a respondent who said "Most reference farmers hardly have enough space and food to accommodate and feed the trainees sent to them".

Discussion

Cameroon is a predominantly agricultural country but agriculture is being increasingly abandoned to the old and very few people in the community. At the same time there is an alarming rate of unemployment among youth in the country. The only practical solution of this rising unemployment is to reverse the trend and facilitate the youth to find value in agricultural employment. For this, the government has made an effort to train and fund farming projects for youths in rural communities where an effort is made to inculcate knowledge construction in training to enhance employable skills among the students. This effort, however, is failing and a large percentage of graduates from these institutions have remained unemployed.

In the narrow ambit of training trainers and other stake holders of the agricultural vocational training centres in Cameroon such as AFOP, the directors and reference farmers should be given orientation on the fact that knowledge construction is necessary but not sufficient to enhance the development of employable skills in trainees. The application of knowledge construction should be encouraged. Aspects of knowledge construction that were lowly applied such as the frequency with which trainers gave trainees homework, correction of trainees homework together with them, giving problems on course material and ensuring that they learnt by solving the problems and asked questions in class. Trainers should listen keenly to trainees responses, and probe them for more when they express their views.

More pertinent is the need to seek and implement strategies that will make farming attractive to youth. The criteria for recruitment of trainees should consider inducting strict measures on interest in farming and educational level of the trainees to avoid the disparity and lack of interest that hinders the development of employable skills. More trainers and in session counselors should be trained and recruited to avoid the problem of infective follow up. Necessary human, financial and material resources should be provided and on time to enhance the smooth running of the programme.

In today's increasingly complex life and world of work, youth needs to develop employable skills such as problem solving initiative and task-shifting (multitasking) which should enable them to adapt to changing situational demands in the world of work. Yet most of the graduates from these schools lack the motivation and self esteem to start up their own farms and agric businesses. Even those who get ready made jobs still lack initiative. Very few graduates from such schools can transfer knowledge they obtained from school to different environmental and situational demands. Most of them find it difficult to identify problems, generate possible solutions, select the most suitable of these and implement. Furthermore, multi-tasking, a 21st century skill employers long to have in their employees is lacking in most of these graduates. Many of them have difficulty in successfully engaging in two or more activities or to successfully shift from one activity to another. As mentioned above, most of them even lack the motivation and self esteem to start up their own farms or agricultural business.

One obvious conclusion is that the fault lies with training which is too theoretical and distant from the contextual realities, the trainers do not fully engage trainees in learning and do not fully adapt knowledge to practical activities. However, facts show that the trainers are already doing that. The trainers do engage the trainees in learning and use farms as laboratories. The article admits many trainers apply knowledge construction and impart practical skills during on farm training as 83.8% of the trainees were of the opinion that their trainers applied knowledge construction in their training and 91.6% affirmed that their trainers often gave them time to reflect, listen keenly to their responses and encourage everyone in the class to participate during lessons. However, while remaining within the walls of these institutions such conclusions are inevitable. It is therefore necessary to engage with the larger socioeconomic reality and look for the causes of students' alienation elsewhere.

The paper combines the two themes of agricultural abandonment as a socioeconomic transformation and employable skills development in learners as a tool to reverse the trend. It is based on the assumption that skill development can induce the disenchanted youth back into a vocation they have abandoned for more lucrative work and more attractive city based life. It also assumes that trainers in a training centre can also develop such cultural transformative qualities as initiative, problem solving and multitasking. The qualitative interviews revealed that the youth abandoned agriculture for more lucrative work and urban lifestyle of less hard labour. It is the changes in the mode of production and the emergence of a new political ecology that has influenced youth to stay away from agriculture. The new social ecosystem is based on neoliberal principles and an advanced form of capitalism which has taken hold of the imagination of 'backward' Third World societies. Rapid expansion of mechanization and agrochemicals has reduced incomes and destroyed livelihoods as well as the entire fabric of rural culture. Urbanization, in fact, has been encouraged as a policy calling it the engine of growth. No wonder the youth is alienated from agriculture and rural life.

Conclusion

Based on the survey findings, there is a significant relationship between trainers' use of knowledge construction in training and the development of employable skills in trainees. Most of the trainers encouraged all trainees to actively participate in lessons, sent them on internships to unfamiliar environments and used available farms to engage them in practical work activity. This influenced the development of employable skills as some trainees agreed that they could initiate, multitask and solve problems. The degree of such influence was however low because skill development was unsatisfactory (below 50 %).

These findings are consistent with Lave and Wenger's (1990) position that students are more inclined to learn by actively participating in the learning experience. According to Lave and Wenger (1990) learning is more effective when it is situated, that is, it occurs as a function of the activity, context and culture in which it takes place. Similarly, Brown, Collins & Duguid (1989) argued that meaningful learning

only occurs when it is embedded in the physical and social context within which it will be used. Also, the findings fall in line with Fomba's (2001) perspective that "learning through community engagement is capable of generating indigenous knowledge values at local level, with inherent opportunities for innovation and use in the global community". Work learning which is derived from the socio cultural and economic realities of the community to Fomba's (2001) is integrative and mostly occurs within the framework of traditional apprenticeship training. This kind of learning Fomba's (2001) argues "exposes learners to vocational opportunities, occupational orientations, available resources and how to create wealth by naturally processing learners from 'job seekers' to 'job creators". Active learner involvement in the learning process is thus indispensible in enhancing deep understanding and the development of employable skills in trainees.

Trainees lack of interest in farming, limited resources, ineffective follow up and disparity in educational levels obtained from qualitative data are factors that also account for the low development of employable skills by trainees. This is in line with Anania & Kimaro (2016) perspective that rural youth do not perceive agriculture as a remunerative or prestigious profession and until they find meaningful economic opportunities and attractive environments in rural areas, they will continue migrating to the cities.

The destabilizing role of the neoliberal money economy is best manifested in the trans-world migration of both manual and intellectual labour disintegrating communities, dismembering families, destroying and hollowing out the historic socioeconomic fabric of the Third World societies.

Agriculture was not just a vocation or profession. It was a culture designed to nurture the generations who worked the soil. Historically it created a relationship among people who worked on land and lived in communities. Knowledge, love and protection of land, water and seeds, was organically knitted into this work. Problem solving, initiative and multitasking was built into work and imperceptibly induced into the personality of most children even without any formal education.

Alienation of youth from agriculture is not just spontaneous. Looking a bit deeper and connecting it with the factors of emerging new economy it is not difficult to see that the new ecology being fostered is designed to clear the land of small farmers for the neoliberal corporate mechanized industrial farms where labour force will be greatly reduced and the few alienated workers using new inputs of machines, agrochemicals and GM (genetically modified) seeds will increase productivity of mono-cultural crops. What is happening in Cameroon is a transition.

Problem solving, initiative and multitasking are cultural skills which young people can also acquire from the social environment in which they lived. Educational institutions can hone these skills but by and large cannot develop them. Also, transferring school knowledge to real life is difficult. The 21st century economy employers demand holistic skills yet they are breaking and destroying the very culture that creates them.

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LARRY LOHMANN

WORK, WASTE AND CLIMATE: A LANDFILL DELIRIUM WASTE AS WORK

For some time, one of the big themes of contemporary art photography has been modern waste. One after another, photographers such as Sebastiao Salgado (1997) and Edward Burtynsky (2009) have produced impressive images showing ragpickers roving over smoking landfills on the outskirts of cities like Manila or Mexico City; migrant shipbreakers swarming atop the towering carcasses of decommissioned ships to extract steel or furniture on the beaches of Bangladesh, troops of lower-caste manual workers carting human waste from latrines in Delhi, figurative descendants of Victorian-age wastepickers cooking toxic discarded electronic components over open fires to extract scarce materials in southern China. Such photographs famously bring to light not only the poverty and suffering endured by their subjects, but also the unprecedented volume of waste – much of it of new varieties –produced by international manufacturing and trade. But they are important for another reason as well: they offer a reminder that taking care of waste will always be work. And the more waste, the more work.

Why should anybody need to point this out? Every office worker knows that productivity depends on workplaces being cleaned out at night. Every student of feminism understands that the tremendous volume of care work that underpins capitalism is partly about recycling and looking after waste. Every fan of post-apocalypse science fiction realizes how quickly even the shiniest urban towers fade back into the soil without daily repair and waste removal. As the anthropologist David Graeber points out, "only a very small part of the time human beings spend working is spent in producing anything, at least in the sense of bringing new things – shoes, sausages, fluorescent light bulbs, even buildings – into being. Much more is spent adjusting, refashioning, repairing, maintaining, cleaning, rearranging or transporting things" (Graeber 2012: 288). A large part of that has always been, broadly speaking, working with and looking after waste.

Yet many intellectuals are gripped by recurring fantasies that one day waste work will disappear or be enormously reduced through mechanization, regulation, and techniques of "proper disposal". Believing that the increasing miniaturization of computers will someday usher in a "weightless economy", for example, they forget that the "problem of toxic waste becomes more intense as the chips get smaller" and the competitive rush to obsolescence more all-encompassing (Hughes 2016: 191). Entranced by visions of robots taking on the work of cleaning up after humans, they forget that robots, too, are powered through the production of waste

and ultimately amount to just more junk that will have to be disassembled, worked over, converted and diluted through human effort. It is partly because they serve as an antidote to such delusions of labourless perpetual motion that the photographs of a Salgado or a Burtynsky are so valuable.

These illusions are sustained in part in the fact that some of the same forces that have increased waste over the last two centuries – and especially over the last 40 years – have also tended to conceal the nature and structure of the labour that goes into contending with it. Many contemporary misunderstandings surrounding waste – including some shared by waste experts – have been encouraged by this elision.

At most times and in most places, a certain amount of waste work has been integrated in fairly obvious ways into people's everyday lives and the natures that make up those lives. In vast numbers of rural villages, for example, food waste is part of animal-raising, animal waste is part of field care, and plant waste, cleaned up and recycled through fire, is part of the care of grain, forests, water and humans alike. These varieties of subsistence waste work, knowhow about which is shared widely, are not always sharply distinguishable from what may be less-visible activities of photosynthetic organisms, rocks undergoing weathering, ocean currents, and other nonhuman beings that are constantly working in ways that maintain livable climates. In many urban societies under capitalism as well, diverse kinds of waste work skills have been extremely widely distributed over the visible surface of society, usually under a bewildering variety of other names – from rag-and-bone collection to quilt manufacture to wartime metal and paper drives to the recycling of sugar sacks and other packaging into clothing – and always overlapping with knowhow concerning repair, refurbishment, maintenance, renovation and so on (Strasser 1999). In Soviet society, although the wastes of the nuclear and oil industries were consistently hidden away under expert administration, the world of ordinary people was full of incomplete goods and buildings constantly *na remont* (under repair), demanding intimate engagement with nonhuman things that, unlike the seemingly finished, immutable, passive consumer goods of the West, were constantly striking back and in need of the application of varied popular waste manipulation skills. Apartment balconies were kept stocked with bizarre trash so that TV antennae could be fashioned out of aluminum forks, baskets out of sliced rubber balls, buckets out of old tires, and so on (Alexander 2012). In Indonesia, a different dynamic has taken hold in the wake of the throwaway society: the further one goes from Jakarta through the Outer Islands, the more recycled unrecyclables – used disposable razors, reconstituted cigarettes – begin to appear for sale, repackaged, in local markets (Sangkoyo 2012).

However, contrary imperatives generally come strongly into play in societies characterized not only by rampant urbanization and fossil-fuelled industrialization but also by globalized trade, planned obsolescence, throwaway goods, cyclical construction booms, landfills and municipal sewer systems. In a sense, what ensues is merely a version of what Marx described as a metabolic rift, but it has some special characteristics that he did not describe in much detail. Three of these deserve

particular mention. First, waste becomes more separated physically from daily livelihood and consigned to the activities of a land resource construed as nonhuman, or to faraway "pollution havens". Ordinary waste is placed out of sight in fenced-off sites under the jurisdiction of a small cadre of mechanized experts with specialized waste knowledge, where soil and bacteria take on the unpaid labour of waste out of sight of the public, or transported to where only the poor will see it; nuclear waste is removed to policed sites where it can be worked on by geological time or kept circulating in unpublicized networks. As a threat to the creation of value and not to be engaged with by ordinary workers; some waste is even shipped across oceans. Thus in creating simplified, nonnatural humans capable of producing commodities out of simplified, nonhuman natures, capital also creates a simplified realm of dirt and garbage disaggregated and distanced from the realm of wage labour from which surplus must be extracted. In this world, every house may well have the same appliances, but not necessarily a balcony or backyard stuffed with odd discards and outhouses. In exchange for not having to do much waste work themselves, citizens tacitly agree not to mention the waste work that other humans and nonhumans do. Discards can be redeemed from the status of "waste" only by becoming managed "resources". The same work/waste logic is applied to climate. Just as the labour of coping with spoiled food and exhausted packaging is concealed in the landfill, the work of maintaining and repairing the earth's climate is diverted to rock formations to be filled with liquid carbon dioxide, industrial plantations of cloned or artificial trees, or specially-modified organisms concealed on farms or under the ocean's surface – processes that await new Salgados and Burtynskys who will perhaps someday make them more visible.

Second, waste knowledge becomes expert knowledge, while many vernacular waste skills are lost. Just as, in much of 19th-century Europe, what had been the domains of those who knew their way around kitchens, watermills, woodlands, horses, sailing ships and so forth was aggregated into "energy" under the control of specialists charged with the augmentation of industrial labour productivity (Huber 2009, The Corner House 2014), so too waste has largely detached itself from, say, housekeeping, swidden, and everyday, labour-intensive *bricolage* and repair work and passed into the hands of engineers, state authorities and technicians and the partially deskilled labour resources they call upon.

Third, and finally, waste becomes an abstract thing lacking internal differentiation and divorced from the dense networks of relations that otherwise give it sense. In landfills, plastic packaging mixes with cardboard, construction refuse and organic substances until municipal authorities are belatedly forced to re-enlist citizens' unpaid labour to try to re-separate waste streams that had earlier been combined. In sewers, sewage mixes with food scraps from garbage disposal units. Fossil- and biotic-origin carbon dioxide are mixed and indiscriminately dumped into the same carbon sinks, while carbon dioxide itself is aggregated into the abstractions "greenhouse gas" and "carbon dioxide equivalent". These processes of abstraction, built into the quotidian expert politics of shifting and concealing waste work, lie at the root of numerous popular and expert delusions: for example, that the "anthropocene" era begins with human use of

fire in the landscape, or that landfill overflow is something for which individual consumers are responsible, rather than the industrial, mining, commercial and construction concerns that, in the UK and other countries, generate the vast bulk of landfilled wastes (DEFRA 2006). As such, they are akin to the more general capitalist abstraction processes that continually try to divide a simplified "society" from a simplified "nature", obscuring the complexity of subsistence.

Waste Crisis as Work Crisis

If waste is work, waste crisis (including climate crisis) is work crisis. For capital, crisis point is reached not when planetary boundaries or limits are breached, nor when waste sinks physically fill up, nor when energy return drops to a level below energy investment, any more than it is reached when workers suffer fatal heart attacks on the assembly line. Problems emerge, rather, when human and nonhuman beings can no longer deliver enough unpaid work, including cleanup work, to zones of commodified labour to make investment of previously-accumulated surplus capital profitable. Under capitalist competition, this is a recurring phenomenon due to the fact that each increment of increase in the productivity of exploited wage labour requires delivery of a far greater increment of unpaid work, including what Jason W. Moore (2015) calls appropriated ecological surplus. This leads periodically to the exhaustion or "maxing out" of the capacities and energies in question (which are always parasitized from historical and evolutionary pathways more or less systematically distinct from those explicitly dominated by capital) and a move by capital to new frontiers. The free or low-cost waste-handling and other capacities of human and nonhuman beings along these new frontiers then in turn also become fatigued, sclerotic or inflexible, their constitutive, non-commodified relationships frayed and their flexibility vitiated in the same way. Capital again fails to find places to go, contributing to over accumulation.

This "maxing out" is not measurable physical depletion but more in the nature of a loss of ability to perform for capital. It does not occur when resources run out but rather at the multiple points where the boundaries that capital uses to distinguish natural resources from paid work and unpaid reproductive work stop functioning in a productive way for capital. For example, women begin to refuse to do tasks of cleanup, disassembly and repurposing without pay. Landfills become inoperative not just when there is no more soil to cover the rubbish with, but when they become sources of too much unrest in adjacent settlements. Similarly, following a period of flexible adaptation, ocean surface layers and land-based organisms begin to balk at diluting and processing excess fossil-origin CO_2 (MacKey, Prentice et al. 2013). Conversely, geological or biological formations fail to isolate or stabilize the identity of radioactive substances with long half-lives to the extent that capital requires. And so on. It is here, and not when official "payments for ecosystem service" programmes come into force (see below), that the hitherto free use of "ecosystem services" begins to "cost" capital. Formalized ecosystem service transactions are merely efforts to rationalize the distribution of some of these new costs among various fractions of capital.

One expression of – and contribution to – the "maxing out" of human and nonhuman abilities to provide unpaid services to the process of surplus value creation is regulation. Thus the US environmental regulation of the 1960s and 1970s – necessitated by widespread environmental movements – was almost immediately experienced by neoliberal ideologues as a curb on accumulation or even a "growth ban" (Lane 2015, Robertson forthcoming) because it was seen to pinch off the pipeline carrying capital's wastes to the free waste sinks it needed to ensure labour productivity. The question, as always, then became: where to find a fresh frontier? Capitalist commodities – and the rents that partake of the value they bear – are *intercultural* and *internatural* phenomena, and always need new appropriatable life forces outside the world of established commodity relations in order to sustain themselves. These life forces might be found in an area where physical contamination has not yet affected accumulation, or where low-cost cleanup workers have amassed relevant skills from their past lives, but they might also be made available in an economically-accessible area where less regulation exists or social movements are criminalized. Hence, for example, the emblematic, picaresque trans- Atlantic rovings of the ship *Khian Sea* in 1986 in search of a place to unload a deadly cargo of toxins from Philadelphia that could not be dumped in the regulated zones of the United States.

Since the 1970s, however, two forms of magical thinking about regulation have suggested that perhaps capital need not search for new frontiers of appropriatable free human and nonhuman work, but just return to using old ones. One fantasy holds that, rather than being a *symptom* of the decline in the usability of old frontiers where free work can be mined, regulation is the *cause*, and that if it were removed, the vitality of the old frontiers would still be there for capital's appropriation. Oppress women anew, the thinking goes, and they will immediately go back to providing unpaid reproductive work in support of a male labour aristocracy. Oppress immigrants through threats of expulsion or exclusion and they will quietly go right back to providing previous levels of low- or no-cost labour. Abolish welfare programs and other old reservoirs of free work can once again be tapped without capital's having to pay increasing costs for their maintenance. Get rid of environmental regulation, in addition, and all of the previously-costless activity of organisms in the old waste dumps on land, in the sea and elsewhere will instantly return to effective service in the cause of capital *gratis*. This is one meaning of Trumpism, which only carries to extremes certain wishful, simplistic impulses long visible among many fractions of capital.

A second form of magical thinking about regulation is ecosystem service markets. Here the idea is that the old frontiers of appropriation are indeed worn out, and that environmental regulation is indeed an unavoidable expression of this fatigue, but that the old frontiers can be patched up and revived through various ingredients imported from new frontiers, as a skin graft from a leg or a laboratory culture can help reconstruct a burned face. Tokens of cheap regulatory relief can be mass-produced that will entitle capital to go on using old frontiers as long as they create new frontiers somewhere else. Instead of reducing their environmental impact at

home, businesses can comply with environmental norms and laws by buying standardized, low-cost units of environmental compensation (CO_2 emissions reduction equivalents, units of bat conservation, internationally-transferrable mitigation obligations and so on) from the other side of the country or the other side of the globe, thus evading expensive pressures for structural change. Extractive and pollution pipelines that conventional environmental regulation threatens to pinch off can be repaired by novel products derived from a further, second-order retooling of human and nonhuman nature. For example, power plants in Europe can "offset" their greenhouse gas emissions by colonizing as-yet unappropriated parts of the photosynthetic capacity of tracts of land in Latin America, Africa or Asia. In general, corporations can mine the future for such units by claiming that their investments in ecosystem services prevent a measurably greater increment of environmental degradation from occurring elsewhere, and that their purchase of these increments of "avoided degradation" cancel out the destructiveness of their own activities. For example, steel or chemical firms can be conceptualized as "no longer producing waste" because what they do produce has been "cancelled out" by their payments for certified, relative waste "savings" elsewhere and in the future. Ecosystem service markets thus work as an expression of self-fulfilling colonial mythologies contrasting unimaginative Others "fated" to destroy their environment through irresponsible industrial development or slash-and-burn farming with enlightened investors who alone are capable of independent action to ensure of the future of nature. Aside from the obvious fantastical, numerological aspects of this sort of accounting, attempts to open ecosystem service frontiers set in motion the same sort of dynamic of "maxing out" seen along other frontiers. For example, organizing even a single new waste-processing ecosystem service such as carbon sequestration following capitalistic requirements may soon exhaust or "max out" the capacity of the relevant land to provide it, as happened in the Chiapas case described by Tracey Osborne (2015), where "emphasis on timber species and requirements for thinning and clearing underbrush … attracted pest infestations, thereby reducing carbon storage" (75); the same thing may happen when capitalized forest conservation becomes needed to supplement the raw appropriation of forests conserved or cultivated over generations of relations with indigenous peoples now suffering evictions or criminalization. It should not need to be pointed out that the disrespect for existing vital relationships involving nonhumans that is inherent in ecosystem service fabrication processes is the analogue of the racism, sexism, or criminalizing procedures that are mobilized in capital's appropriation of the unpaid work of humans in support of wage labour productivity.

Waste and Climate: The Case of Landfill Gas

Landfill gas (LFG) is one good example of waste naturalized as a fetishized abstract object under a regime of urbanization, globalization, planned obsolescence and financialized infrastructure. No landfill gas, one might say, without landfills – that is, without a particular ecological organization of society in which waste as work is hidden away in the mechanized dump and its technicians, transport lines, soil microorganisms, confining fences and linings and, sometimes, resident troops of

wastepickers. No landfill gas, either, without sweeping pressures toward competitive overproduction; a structure for aggregating discarded matter from a vast diversity of sites and processes; an intellectual tradition of commensurating divergent social processes into chemical formulas and redistributing blame downwards as a result; and a history of defeated or dormant skills of disassembly, repair and composting. Yet once "waste" is crystallized into LFG and other, similar objects, it becomes difficult even to raise the political problems suggested by the photographs of a Salgado or a Burtynsky, or to think about the hard work of seeking pathways toward civilizational alliances among waste workers, farmers, industrial labour, householders and indigenous peoples. Reducing LFG emissions becomes an uncriticizable "positive step" in a distinct political programme dominated by experts, state regulators and capitalists.

If the concept of landfill gas as a problem of large-scale waste dumps is one means through which the politics of capitalist exploitation and appropriation is obscured, the concept of LFG as methane, a "greenhouse gas", is a means through which the history and causes of climate change are hidden. When the presence of such greenhouse gases in certain quantities becomes identified with the problem of climate change, then mitigation focussed on molecules regardless of their origin becomes the organizing principle of a solution, and an abstract "society" the agent of change. LFG becomes the political as well as the chemical equivalent not only of disintegrating methane clathrates, exhalations of methane from rice paddies, coal mine methane leaks and so forth, but also of fracking and forest policy outcomes, pollution from adipic acid plants, and carbon dioxide-increasing road-building programs. It becomes a self-contained "waste problem" concealing the connections between work and the fossil fuel complex as well as those between work and the landfill complex. And it becomes wholly "solvable" as soon as LFG is converted into another resource, like coal, for increasing the productivity of wage labour, at which point capital can move on to the next "waste problem" without confronting the appropriation-rooted dynamics of either the solid waste crisis or the climate change crisis. Through the spatial and conceptual organization of waste, the landfill industry comes to reinforce the fossil fuel industry, and vice versa, in alliance both against ordinary communities affected by their operations and against any serious attempt to address either the solid waste or the climate crisis.

It is worth observing in a bit of detail how this is achieved in one of the 403 landfill gas projects administered worldwide by the United Nations' Clean Development Mechanism (CDM), which are collectively expected by 2030 to produce certificates entitling the buyers to avoid environmental restrictions that would otherwise require them to reduce 938 million tonnes of carbon dioxideequivalent emissions (Centre on Energy, Climate and Sustainable Development 2016). Like all such projects (not only the 403 landfill gas projects, but all 8,466 carbon-crediting projects that have appeared in the CDM pipeline), Mexico's Puerto Chivos Landfill Gas Project produces these carbon credits for its buyers (in this case the British firm CO_2 Global Solutions) via a political process of *scenario elimination*. In the case of Puerto Chivos, this process establishes the CDM project's burning of the landfill's methane to generate electricity

as the sole action connected with dump operations that could reduce emissions and thus mitigate climate change. Only by identifying the project developers as responsible for undertaking the sole initiative that could address the climate change impacts of this particular waste dump (and, implicitly, such developers in general as the only parties who could address the climate change impacts of such waste dumps in general) can their ownership of the carbon credits be established, their rental claims founded, and their profits and those of the buyers be defended. That is, for the credits to be valid, all alternative ways of addressing waste issues in the region (Zaragozas) must be discredited if not criminalized outright.

Thus the Puerto Chivas Project Design Document (PDD) has no choice but to rule out recycling of the organic fraction of the solid waste feeding the landfill as an alternative way of reducing methane genesis and thus climate impacts. After all, the realization of this alternative would not only invalidate the carbon credits as tradeable units, but also establish the property claims of whatever movements had arisen to promote recycling in the area. No evidence or argument is marshalled for this act of elimination: the recycling of "part of the organic waste (particularly cardboard and/or paper) that is destined for landfilling" is simply "not considered a plausible alternative to the project activity". (In CDM methodology, to say that such alternatives are "implausible" is stipulated in law to be equivalent to saying that such alternatives simply could never happen; multiplicity is logically at odds with the creation of rents.) As the PDD states, the "emphasis in waste management in the case of Puerto Chivos landfill is to control the waste flows and make sure that waste is treated and disposed of in a controlled site properly. Hence, this alternative is dismissed" (ENERGREEN Atizapán S.A., Carbon Solutions de México S.A. et al. 2013: 15). That is, the only alternatives considered are those that assume the existence and necessity of landfill complexes without prior recycling. The aerobic composting of organic waste (for example, food and green waste) that would otherwise go to the landfill – an alternative which, like recycling, would likely be much more labour-intensive than the CDM project – is summarily ruled out as "not a plausible alternative to the project activity" via the same nonargument: "the main intention Puerto Chivos landfill is to control the waste flows and make sure is treated properly as of a controlled site" [sic] (ibid.). In keeping with this bias, the public consultation about the project excluded discussion of even such extremely limited alternative possibilities for reducing the local environmental impacts of the landfill, about which nearly 90 per cent of the 40-odd people present (mostly professionals, teachers and students) were reported as being dissatisfied.

According to the PDD, project proponents succeeded in promoting an understanding among these "stakeholders" that the "project will bring an environmental, health benefits and solve odour concerns from the local community, since it will allow reducing GHG emissions from LFG emitted to atmosphere" [sic] and that it was "very important" to develop the project (ibid.: 69-70).

Conclusion

What are the effects of capital's restless attempts to appropriate unpaid cleanup work done by humans and the rest of nature? Neglect of this question has led to repeated confusions about what waste is and how it might better be approached. A refreshed perspective is especially important in an era in which discussions about solid waste have come to focus largely on landfills and discussions about global warming to focus largely on real or imaginary carbon sinks. Critiquing these discussions, and their intersection in carbon credit schemes involving landfill methane, is one foundation for moving forward across a wide range of issues in political ecology.

Note: This is the first English publication of the article, which was published in Spanish as a chapter in *Ecología Política de la Basura: Pensando los residuos desde el Sur*, edited by Fernanda Solíz, Abya Yala 2017.

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Review

James Bloodsworth 2018. *Hired: Six months undercover in low-wage Britain*. Pp. 280. Atlantic Books, Ormond House, 26-27 Boswell Street, London WC1N 3 JZ. Trade paperback, £ 12.99. ISBN 978 1 78549 015 5.

At first reading, an ideal ethnographic account that seems to have broken clear of the colonial roots of this discipline, *Hired* offers insight into working class Britain in the twenty-first century by an author imbricated in its social milieu. This is not a monograph on the "others" of far off lands who are studied for the peculiarities of their condition and the author James Bloodworth does not seem to be on any civilizing mission to improve their condition. The aim in writing the book, as the author says, is to address the reading middle classes because "there is much to be in disgust about and it takes a certain kind of comfort and affluence not to see it" (Preface, p.7)

Bloodworth spent six months working across Britain at some of the most grueling and low-paid jobs like picking and packing at a warehouse, as a domestic care- giver to the elderly and the disabled, at a call centre, as a cabbie driving his own car, and did intermittent rounds of hard labour at construction sites. He lived and worked at random sites across the country, in Rugeley, a North England small town; in Blackpool, a squalid coastline town; former collieries like Cym, Afan and Ebbw Vale across South Wales valleys , and in London's digs.

The aim was to experience and expose the exploitative "gig economy" – the illusion of self- employment and independence created by large global organisations like Amazon and Uber to maximize profits while keeping cost of operations low. After the crash of the 1980s, all across England, institutionalized and unionised work has dried up. Gone are the factories and the farms, gone the coal mines, gone too is any sense of pride in work or in family profession, or any measure of safety and stability for people at the bottom rung of the social ladder. Meanwhile, the "gig" economy has taken off, expanding rapidly in the past decade all over the world to mean flexible jobs often paid at piece rate and organised over telephone apps. In 2017 alone, almost a million people in England joined this informal sector. (p.209)

At Amazon, for instance, the world's largest retailer, working on "zero hour contracts" means without contracted hours, and yet workers are closely tracked with time cards and a hand held-device that they must carry. "It was quarter past six in the evening and the siren had just sounded for lunch," opens the book *Hired*. (p.11) In perhaps the best descriptive part of the book, the author details how workers have targets to meet and walk ten miles a day in the warehouse on average, with one half-hour and two fifteen-minute breaks in the day. The half-hour break for lunch is not paid for, nor is "idle time" which includes trips made to the toilet. Each of them, called the "pickers" as they unpack orders, stow them on shelves, collect ordered items and pack them for delivery. At the end of the week, workers are consistently underpaid for hours clocked in that are fudged up by the managers.

There is nowhere to lodge a complaint or follow up with litigation because technically there are no employees, only piece rate workers, and the boss is often an algorithm operated by someone in California's Silicon Valley. The author discovers the vulnerability of any worker as he falls ill or misses a day of work for any reason. The individual is then penalised for not meeting target rates and the only solution that the organisation has to offer is to advise everyone to self-medicate.

At Uber, working again on the dreaded "zero hours", the author rents a car as a London cabbie. The myth of being an "independent contractor" dissolves quickly as he races to keep up answering rates and customer ratings. Missing three calls in a row, the app logs him out automatically; to maintain an account with the app, 80 per cent calls have to be responded to. Drivers have no choice which calls to accept, even if it means driving to "dead time", the time required to reach a customer and drive home from the last drop off. There is no shortage of drivers because the company incurs no investment in them nor are there any taxes for Uber to pay. Interestingly, Uber does not call itself a company at all but only a technology app with a cab operator's license. This also makes Uber cabs cheaper than the old London black cabs without passing on the profits to the man operating the cab.

The author describes meeting new people is a perk of the job, but drivers are given regular tell offs for conversations held with customers. They are warned to veer away from topics like religion, politics and sport, and to speak calmly and professionally at all times. They are encouraged to be somewhat subservient to the client and not engage in a commentary on the state of the world. Some cabbies report they feel watched, like as though the app was listening in to conversations. The Uber app also relies heavily on customer ratings and if the average goes down, the driver is warned, retrained, and/or logged out automatically. Some drivers get so desperate as to offer customers bottled water and mints to keep their ratings up. Most of them testify that Uber app technicians are not a neutral or mechanical entity but follow corporate policy in keeping more drivers on the road than is necessary, for longer hours than is necessary, and asking them to be on the road at odd hours so customers are always satisfied. To cap it, some customers using a cheap service tend to disrespect the person driving them around, treating him as a low-life down on his luck.

The experiential writing is harrowing in most part, an annotated field diary, or "snapshots" as he calls them, often peppered with personal accounts of how much weight the author had gained from working long hours on bad food, how the ill will of the managers and unfair wage cuts make him want to turn to alcohol in the evening, and so on. Bloodworth spoke with new workers and with old ones where he went, he spoke to the local people and to immigrants. Graciously, he acknowledges that the working class is where he rose from and the fate he narrowly avoided. For now, "Ultimately, I was a tourist" (p.5), in the comfort of being able to draw money from the bank and not trapped in the torpor of dead end jobs.

Throughout the text, instead of quoting from other such ethnographies, Bloodworth draws parallels with Charles Dickens and the squalour of nineteenth

century England, with George Orwell's twentieth-century dystopia, and Welsh poet Idris Davies, who worked as a miner in his youth and championed the working class. Not that the author's prose is anywhere near that of the aforementioned Britons nor, certainly, anything near the elegiac ethnographies of the German W G Sebald. Bloodworth has the journalistic tendency of taking the evocative to mean piling similes one on top of the other that may be enervating at points.

All the same, the post-austerity England he paints is harrowing, even by third world standards. The urban poor in Blackpool, for instance, hide in alleys and doorways, creeping out at night to sleep outside department stores or wherever there is camera recording the comings and goings of people likely to attack them. The homeless roll up in green plastic sheets to resemble large caterpillars stacked in damp cardboard boxes, where it is sometimes hard to tell a heap of dirty clothes lying on the ground from a living man. And this is not the fate of a desperate few. Citing a 2016 report by a charity for the homeless, the author notes how one in every three families in England lives on the brink of losing their homes, rented or mortgaged, if someone loses a job and stays out of work for over a month (p. 104).

From his stint as a domestic caregiver to the elderly and the incapacitated, he learnt how cuts to the national health programme mean the ageing population is left to fend for itself since overworked and underpaid health workers have little time to give to each case. In Ebbw Vales, a small town in South Wales, after the crash of industrial jobs in the 1980s, every sixth person is on anti-depressants and the population comprises mostly the over-50s with inabilities and disabilities, while younger people generally leave home to find work further out.

For the young, being a student remains an enviable existence, especially after the imposition of tuition fees, and going to university is the preserve of the comfortable classes. A young person from the working classes is less likely to complete graduation even if they make it to university, which is generally an upgraded polytechnic. Making it to a good university is still way out of bounds for the working class. "Second-rate 'unis' are…the political elite's condescension to meritocracy – the utopian idea that opportunity in life can bear no relation to the prosperity enjoyed by one's parents." (p. 152) Prospects after this poor quality education and a pile of student loan debt are not much better, and Bloodworth quotes from a 2015 report that finds 58.8 per cent graduates at unskilled jobs that do not require a degree (p.153).

But where does he locate the faultlines and how do his respondents locate them? To those who lost traditional professions like coalmining or working in a steel factory, like in the South Wales, it is the European Union that has brought a flood of White migrants – the Polish, the Romanians – who look down upon the black and brown migrants. To others in northern towns, working in warehouses and call centres, or even Londoners driving their own cars as taxicabs, it is the multicoloured immigrants who are blamed for bringing down wages and not the multinational corporations working outside the purview of labour laws.

Taking on government policy is where Bloodworth falters, and he writes elsewhere about why he does not see a set of suggestions for policy change as part of his brief. It is change in public opinion that he avowedly seeks, as he says in writing about *Hired*. His position on immigration and cheap labour ruining the market is equally vague on policy. Bloodworth is prickly about defending his views. "To others, even acknowledging that migration can affect pay and conditions is seen as a racist dog-whistle," he writes defensively in a newspaper column. (*The Guardian*, March 2018) He is not "border obsessed", he insists. "In an increasingly interconnected world, the border-obsessed nation state probably has a sell-by date." (p.259) And yet, he argues, it is because the immigrants are desperate, and they are in huge numbers, that they will take any kind of work on any sort of conditions, with a degree of predictability.

While *Hired* spends considerable time in riding up against the immigrant, albeit in a soft pedaled sort of way, the author has a one-line suggestion about how the British labour movement needs to be more inclusive in organising migrant labour (ibid.) In the Epilogue, the author is prescriptive in a limited sort of way. He differentiates between what he calls working class politics of the Left and middle class progressives who "back every liberation movement", "…they are less likely to be seen at a picket line than at a demonstration outside the Israeli Embassy. The deserving are *over there* – in Cuba, in Palestine, or in other exotic seeming land" (p. 263).

Bloodworth argues for a close reading of Britain's class system because, "A book about work is inevitably a book about class", he writes in the introduction. (p. 4) But for all his left-wing credentials, the weakness of the writing lies in how the author refuses to connect the dots to complete the picture because the workings of global capital and its effects on local economies cannot be studied parochially. This weakness cannot be attributed to the limitations of ethnography because the author makes no claims to academic rigour and clearly steps outside of its parameters. In the way he writes about immigrants, he also rolls back to the imperial gaze that ethnography tends to cast on "the others" to the mainstream.

Clearly, the face of what was known as the Left is changing in Britain. A reviewer at *The Guardian* – the oldest Jewish newspaper in England – hailed Bloodworth as "… the best young leftwing writer Britain has produced in years", (Nick Cohen, 11 March 2018). Still, it must be remembered that the author was part of *The Guardian*'s two-year-long campaign against Jeremy Corbyn, present leader of the Labour Party, because of his "foreign policy". This included Corbyn's position on immigration, his criticism of Israel and "pro-Palestinian sympathies" that were toted as being "anti-Semitic" in a confused conflation of the two terms. (Bloodworth, *The Guardian*, August 2015) Ultimately, *Hired* may be read for the detailed, first- person account of the effects of the neoliberal economy on the weakest people in society in present-day Britain, without accepting the author's polyglot politics that falls somewhere between the left-liberal and the far right.

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Review

John Smyth 2017. *'The Toxic University: Zombie Leadership, Academic Rockstars and Neoliberal Ideology'*. London: Palgrave. Palgrave Critical University Series. 248 pages. Price: £25. A long review by Munir Ghazanfar.

In his book 'the toxic university' Smyth has referred to scores of critical books on recent changes in the universities and he has freely quoted from many. In fact he has used numerous other sources on the same topic to validate, strengthen and give flesh to his own argument and prove that he is not the only voice nor the only academic who has reached this conclusion. Numerous other academics all over the developed world have noticed the same trends, reaching the same conclusions.

In the West (and the Third World merely follows) the objectives of education have changed gradually but especially over the past four decades. As Smyth puts it, 'the ideal of education used to be deepening and broadening intelligence and sensibilities, developing historical consciousness and hermeneutic adroitness, acquiring diverse knowledge and literacies, becoming theoretically capacious and politically and socially perspicacious with [forms of] education aimed at honing technically skilled entrepreneurial actors adept at gaming any system'. Education now is a consumer good with students as investor consumers and is priced at income generating capacity. 'What should we study that will sell', represents the student thinking rather than public service and aptitude which have disappeared. Universities today have become hand-maidens of the market economy and have lost their independent critical ability.

A new market identity for the universities

After the fall of Soviet Union and China capitalism has gone burlesque and considers itself master of the universe trying to gobble up all previous institutions and cultures in one go. In its current phase capitalism is no longer just confined to economy. It is now neoliberalism, a governing socio-political rationality that submits all aspects of human existence to market principles.

The toxic university is the new university of the neoliberal period where teaching and research are now considered economic goods needing to be measured, counted and audited like in business. The new objectives of education are marked by such phrases and epithets as efficiency, productivity, quality and growth. As to the assessment of quality and social significance of its material and intellectual production market and profitability are considered to be the best judge. It is in this context that the reconstruction and recreation of the university should be seen. The new industrial requirements have taken the joy out of the job and added a lot of burden and pressure on academics. Self-motivation has given way to external pressure, monitoring and audit.

The academics are being given to understand that their jobs are scarce and if they want to keep them they will have to show efficiency and research productivity in terms of research grants won, articles published in top research journals, research students' PhDs completed, conferences attended etc, etc. They are given minimum targets and their achievements are measured and monitored by an army of managerial staff using a system of incentives and punishments.

Under the neoliberal governance there are escalating and intensifying new demands by the government for completion of doctoral degrees as well as publishing in the top journals forcing the academics and the universities to compete in a situation of false scarcity. The academics are constantly under pressure to file reports and apply for new grants even what to read, what to write, how many words, where to publish. The incessant demands to publish is creating a fast scholarship and insulating the academics from the broad world and social reality around them, an absence of deep reflection on what they are doing and for whom. What is being destroyed is the notion of civil commons----access to human life goods.

Taylor's assembly line concept of efficiency and productivity have been picked up by neoliberals as their basic philosophy and being applied across board to all fields of human activity. The concept of efficiency and productivity are flawed generally but particularly disastrous in the field of scholarship, yet they are never opened for debate. The emphasis on the other hand is on creating zombies who cannot and will not challenge these concepts.

The incessant pressure to speed up productivity requires academics lying to win research grants in fiercely competitive market creating a corrupt academic culture. "You can[not] find me a single academic who hasn't had to bluff or lie – to get grant". In addition academics need to acquire a new set of skills, "skills of presentation and inflation."

Under neoliberal rationality education is reduced to a consumer good in which students invest (often incurring considerable debt) to advance their own prospects for economic success. The value of being an educated individual is reduced to income earning capacities, being an educated public registers no value at all by this metric. 'What can we study that will sell, scholars' interest becomes subsumed in the struggle to survive. Now even the public is increasingly constrained to judge universities by market metrics, Neoliberalisation replaces the education's social objective of deepening and broadening intelligence and sensibilities and developing historical consciousness to how education can serve the market. The objective of the corporate driven capital working through the government is clear but it is cloaked in an epistemological veil.

Strategies to create a market identity

First, the expansion of the number and role of managers is a new phenomenon in the university. Managers are there to see that the transformation of the university

from a critical academic institution to a conformist business venture is completed and the progression is translated into measurable terms.

Second, the nexus between academics and the governance of their subjects has been severed. The academics do not decide which graduate students will be offered funding, what collaboration between institutions will take place, at what terms, how many business representatives will sit on the boards of study, what courses will be taught and sometimes what will be the content of those courses. Creative academic work requires trust while competition and the hard managerialism means withdrawal of that trust. As trust is withdrawn even more managerialism is required.

Third, research grants by private sector corporations and student fees are increasingly becoming the source of university funds and where the government funds a research it only tries to subsidise the research objectives of industry. Even philanthropy grants come tied to objectives and determine the direction of the university. The recent 150 million pound gift to Oxford will mainly help pay for an institute focused on artificial intelligence. Brooke Masters in a recent article in the Financial Times (25/6/19) has discussed how plutocrats are shaping the agenda at universities.

Fourth, another important strategy is that employed by governments to manipulate the public through media where some artificial cliches and opposite meanings to common terms are repeated so many times they start looking real. In the universities the objective is the building of unwaivering confidence in the role of the market and then using the concept as an arbiter to disengage criticism. Using the banal concepts of quality, efficiency, excellence, best practices repeatedly and continuously and helping them to sign on vision and mission statements.

A fifth strategy is to change the motivation of the academics from moral, self esteem to money incentives. University academics were doing a lot of pro bono work like marking theses, serving on professional bodies, editing journals, organizing and attending conferences. This is not responsive to competitive pressure and in many cases wasn't related to incentives. Competition rather corrupts it. Competition, even incentives do not by themselves produce originality of thought. Creative academic work requires trust at a number of levels. Competition destroys that trust. Teaching and research are based on a relationship of pleasure and tradition. The defining character of hard managerialism is the withdrawal of trust in the university academic community by the government and in its capacity to assess critically its own activities and to improve them. The traditional university was like a Greek Lyceum a brotherhood of scholars, while today's western university is like a corporation with defined social and economic objectives.

Looking back historically it was the notion of esteem that was at the core of much academic authority and what academics craved and it was what gave the scholars their voice and arguably was the key mechanism for regulating quality and ensuring

integrity in research and teaching. In fact esteem was the method by which the relative value of academic work was measured. It was also the basis of university's collective authority in the society. As soon as esteem was monetised or overtaken by an economy of money it introduced a radically different and totally alien motivating force into the universities that brought with it an ideology that had an insatiable appetite fed in terms of managerial class.

Enclosure of the academic commons

Merit in research gives an outward impression of fairness but it actually comes from family background. The process of selectivity far from being a benefit for smart working class is simply another way for the middle class to entrench their benefit. It is selectivity of class.

The marketisation and expropriation that accompanies amounts to a process of enclosure and primitive accumulation. Competition comes from marketisation which leads through expropriation and branding to enclosures. What is being enclosed is the intellectual commons or the social networks of mutual aid, solidarity and process of human exchange that had not yet reduced to market form. What distinguishes the intellectual commons is that they are features of a gift economy, structured around reciprocal relations of giving and taking, rather than the commodities bought and sold at a price in a market economy.

In the past even when there was competition among researchers there was room for sharing, like sharing unpublished papers, exchange of ideas at conferences, feedbacks on research proposals, etc. Competition among researchers becomes market like when livelihoods come to depend upon winning in conditions of scarcity. Thus research selectivity leads to aggressive competition, ownerships and enclosures while young scholars become increasingly marginalised.

This is the research bourgeois revolution. Who wins now depends upon quantitative assessment which leads to specialization and division of research labour. The increasing siloisation of academic work brings with it forms of fast scholarship which keeps the grant cash flowing but leaves no time to reflect where the scholarly work is going. It also brings with it a kind of detachment from the process of "wider intellectual understanding" of how research connects to the society's wider body of knowledge. This is actually quite serious because what it means is that the researchers are becoming alienated from social knowledge, creating a situation where others with more political and economic power are free to interpret [and synthesize] and therefore appropriate this knowledge for their ends.

Strategy of fear

The fear of terrorism has been used throughout the West to create a surveillance state and fed insatiably by mass media as a massive distraction from the even more insidious stealth revolution of neoliberalism that has completely taken over our

lives, institutions and societies with scarcely a word of opposition being uttered. In the name of security a surveillance state has been created.

Terrorism is a new fear that has been introduced to send a message of compliance, "don't be too radical, don't be too critical, follow, devote all your time and attention to narrow prescribed duties, winning research grants, producing PhDs and publishing. Everyone else is devoting himself and ticking the score card, only you will be left behind. Wake up, shake up and compete. Secret watchdogs, too, send their reports on you which will be taken into consideration without informing you. The bogey of terrorism, thus, is a form of management.

Proletarianization of academics

Smyth then takes up the concept of proletarianization as used by the French philosopher Bernard Stiegler, to explain the work of university academics. Stiegler regarded society as suffering from "generalised proletarianisation". Whereas nineteenth century capitalism proletarianised workers by delegating their knowledge and know-how to machine reducing them to labour power, twentieth century capitalism has proletarianized consumers by depriving them from their own way of life and massively replacing them with 'preformatted and standardized life-styles' fabricated and marketed on a worldwide scale by global corporations exclusively driven by profit. Just as the producer is reduced through proletarianisation to mere labour power, in the case of consumer there is a loss of knowledge and memory --- [through a reduction]--- to mere purchasing power --- for example, in ranking and rating scales and League Tables marketing agencies have essentially appropriated the decision making process for students and their parents.

Braverman (1974) uses the proletarianisation thesis to describe the degradation of work in the twentieth century to describe the loss of freedom and autonomy, the fragmentation of work, deprofessionalization and enhanced compliance [as in the textile industry of the Third World] that comes with increasing managerialization and overall intensified control of work practices imposed upon all manner of work during the past several decades including that in the universities.

Of course, the proletarianisation makes the academics dispensable and easily replaceable making it possible to reduce their wages, make them work harder and become more compliant. But it could also make the academics more antagonistic against the institutional management and more political.

But will they also become more productive, probably yes in terms of measurable numbers of research publications, teaching loads and completion of research higher degrees, but innovation and quality will decline because that requires an environment of trust, which will disappear. Creative academic work requires trust while competition and hard managerialism means withdrawal of that trust. Academic endeavour is not something that can be imposed by order. Research functions within a context, and ethos and a dynamic.

Why don't the university academics protest and resist?

The school teachers are also under increasing demands and pressures for targets, results, monitoring and assessments but they have collectively protested from time to time. Why have the university academics not collectively protested against the new intrusive policies of metrification, targets and assessments while the universities have been transformed from places of intellect to houses of business (so much for the modern 'knowledge economy!') where quality and efficiency is inspired through incentives and fear. Why have the academics failed to respond effectively. There could be any set of following reasons:

One, the academics have become increasingly more individualistic and have become too busy with no time to consider the wider implications of what they are doing;
Two, because of the narrowly defined professional demands of their subjects their identity is changing from intellectual to professional;
Three, because of the increasing pressure of work and competition they are more and more cut off from society and therefore cannot contextualize;
Four, they are afraid to lose their jobs in an artificial environment of scarcity;
Five, their identities are gradually changing and they are building confidence in market which then becomes an arbiter to disengage criticism or some of them are confused and think some of the proposed changes might lead to improvement;
Six, some may also have a general issue with defining the past as better;
Seven, younger academics have only experienced the present and not seen the past, they have not had an empirical experience. In any case whatever experience of the past is rapidly eroding and where previous experience still exists it is just a short window;
Eight, some may consider the assessment demands a part of normal management and may fail to distinguish between management and managerialism. The former is organisational need of any big institution while the latter is a political project to force the academics to accept a change in the very purpose of the university;

Cancer stage of capitalism

Deliberating further on this issue of zombie academics who do not protest, Smyth arrives at a more fundamental problem of our time. Following Mcmurtny (1999) he calls it the cancer stage of capitalism which breaks down the body's defence systems. Mcmurtny argued that social systems are similar in many ways to cellular systems, which are susceptible to carcinogenic invasion by malignant invaders which attack and disable the immune system. Capitalism is now a cancer which has taken over the life-sustaining functions of its host life social-system.

Historically the alarms were incorporated in the traditional knowledge system which first noticed the invasion and activated the social institutions of the society to rise, organise and defend. Capitalism has attacked tradition ensuring the loss of community and historical consciousness which has made large swaths of people in

general and university academics in particular vulnerable to the cancer of neoliberalism, without even noticing it.

Over the past four decades, the neoliberal mainstream media has been consistently disorienting the warning systems of the society, by changing the meaning of the terminology of the social indicators of disease. Our immune system is now either paralysed or recircuited to give us the wrong or opposite signals, where red lights were to glow green lights show. For example speculation is considered economic growth, adopting a foreign language as medium of instruction is considered modern and progressive, exchanging natural food and health with poisoned food is promoted as productivity, migration of able-bodied and skilled persons leading to hollowing of society is celebrated as welcome remittances and foreign exchange earnings, when enemies are taken as friends and friends considered enemies the defence system of society is completely broken and the cancer stage of capitalism is far advanced.

Today the market has appropriated all types of community functions that are represented by the human agency in person, collective or institutional form, protecting us and enabling access to basic life goods. Universities are one of the most important institutions of the community. They are now in the hands of neoliberalism. Smyth argues that massive, irreversible damage is being inflicted on this social institution with little or no opposition. It is cause for alarm especially when that institution happens to be the last remaining place in which social critique and criticism is incubated and fostered.

It is important to keep in mind that Smyth's book is more like a review treatise. These are not just his personal opinions or observations. He has marshaled enormous amount of recent publication to show his observation are validated by critical literature from the universities of the West from Australia to the US. Gradually since around 1980s the role of university manages has been expanded and changed from management to managerialism, whereby they are playing an increasing role in implementing a new agenda for the universities over and above the head of the academics. The universities had a lot more freedom in the past but they never existed in space. They were always social institutions and by and large fulfilled social objectives which in the past was a critique of tradition and the old world and a struggle for the creation of a new world. That was the period of transition from feudal thought to capitalist thought.

Having played a relatively progressive role at one time the capitalist ideology has now come to a dead end in the era of neoliberalism. This new phase of capitalism, neoliberalism is now a governing sociopolitical rationality that wants to submit all aspects of human existence to the market principles. It is now changing the world to serve the needs of the capital at the national and international scale. The universities are the last remaining place where social critique is incubated and fostered. Quite understandably the corporate world targets this function of the university but it is moving very cautiously so that while the universities are changing, a majority of the

academics especially the younger ones do not understand the objective and the direction of change. Smyth has tried to uncover the design and spread awareness. He has tried to warn them and wake them to the reality that academics are being gradually disempowered and proletarianized and soon they will have nothing much to lose. On the other side the state through the mainstream media discourse, the highly paid university managers, and a system of incentives is trying to change the very identity of the academics. The academics are being paid for research publications, for attending meetings and doing peer reviews, etc. This pro bono work as well as the intellectual commons of sharing and cooperation is being replaced by aggressive competition, ownership and enclosures among colleagues. Changing the motivation of academics from self esteem and gift relationship to incentives and greed is changing the academic identity and destroying the academic resistance. It is like taking the fortress from within. Under the business mantra of efficiency, productivity, quality and fast scholarship the academics run twice as fast to stay in the research grant game. This is leading to a kind of detachment from the process of wider intellectual understanding of how their academic work connects to the society's body of knowledge and is leading to alienation from social knowledge.

According to John Symth the market has appropriated all types of community functions that are represented by the human agency in person, collective or institutional form, protecting us and enabling access to basic life goods. Universities are one of the most important institutions of the community. They are now in the hands of neoliberalism. Massive, irreversible damage is being inflicted on this social institution with little or no opposition. It is cause for alarm especially when that institution happens to be the last remaining place in which social critique and criticism is incubated and fostered.

What is the objective? The objective of education no longer is to transform the individual by giving him historical consciousness and deepening and broadening his sensibilities. The objective of education under neoliberalism is best summed up by a student quote, *'what should we study that will sell'*. A corresponding quote from the university managers would be *'what should we teach that will sell'*. University, by and large, has changed from an intellectual place to a market place.

Note: This book is thick description of change in the universities. In order to make the author's argument clear and vivid this review is relatively long and uses the author's words wherever necessary.

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