Chapter 20
Land Reform, Tobacco Production, and Wood Resources in Zimbabwe

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ABSTRACT
This chapter explores the land reform-tobacco production-wood resources nexus using a political ecology theoretical framework. It uses secondary data sources, literature review, and onsite expert verification to estimate the quantity of wood resources used by farmers to cure tobacco. The area of forest woodland cleared to cure one hectare of tobacco increased across tobacco farming regions in Zimbabwe. Despite the fact that the country has environmental agencies and departments, farmers continue to use wood to cure tobacco in a typical clientilistic and informalisation of state institutions. The use of firewood to cure tobacco is a long-term threat to ecological sustainability. The Fast Track Land Reform Programme should incorporate sound environmental plans and avoid informalisation of state institutions.

INTRODUCTION
Land policy in Zimbabwe is characterized by competition for geographic space among the different racial groups. Colonialism set in motion massive cyclic land grabs that dichotomized rights to land. That is, prime land for white settlers and marginal land for the majority black population. The post-colonial land policy has three critical phases; the 1980-1990 policy of willing buyer willing seller; the 1990-1999 compulsory land acquisition and the Fast Track Land Reform Programme from the year 2000. The Fast Track Land Reform Programme is radical redistributive land reform (Moyo & Chambati, 2013) often described as, disruptive and disorderly grab of white-owned commercial farms with considerable destructive environmental impacts (Clover & Eriksen, 2008; Mukwada et al., 2014;). The Land discourse in Zimbabwe is therefore highly polarised between views for ‘the revolutionary process’ (Rukuni & Eitcher 1994; Dalal-Clayton, Dent & Dubois, 2003; Moyo 2007, Scoones et al., 2010 ;) and a racist reform process. Despite this polarization new land use rights ushered in new small scale tobacco farmers who are beneficiaries of the land...
grabbed by the state from the white commercial farmers. Unfortunately, the global discourse gives little attention to local land grabs and the implications of the ensuing cropping systems on wood resources.

The preoccupation of the current global discourse on land is on the renewed acquisition of land (land grabs) for large scale commercial agriculture, a phenomenon with footprints that stretch back to the time of colonialism (Odusula, 2014). Land grab in current literature is understood as purchasing and leasing of land by state and private enterprises in order to produce crops for export (Watson et al., 2006; GRAIN, 2008; Cotula et al., 2009; Daniel and Mittal, 2009; De Schutter, 2011; White, et al., 2012; Borras & Franco, 2012). Displaced white commercial farmers from Zimbabwe are known to have moved into other countries like Zambia, Malawi and Mozambique and started viable agricultural ventures with land deals facilitated by the respective states. There is a general belief that land grabs are driven by countries experiencing food shortages and high prices for agricultural products. To hedge themselves against unforeseeable food shortages and related crises they have embarked on a global investment program at the expense of the communities that are displaced by such large scale agricultural investments. These factors are viewed as the reasons why there is a global replay of the large-scale land acquisition in Africa with linkage to the colonial phenomenon. Perhaps Africa should be viewed as an agro-economic pacifier and the building block to global economic rejuvenation as it has become the preferred destination in times of crisis.

In short, land grabs imply transnational and domestic deals of a commercial nature regardless of scale and output markets (Borras & Franco, 2009). The word land deals imply a business transaction involving two parties and in most cases in the African context it is the state and a private foreign company. Aarts (2009) considers this definition of land grabbing to be inadequate as it suggests that land grabbing is an illicit behavior whereas deals are completely legal. Contrary to this view, the definition of land grab is appropriate because land grabs are negotiated by political and business elites without the active involvement of local communities. Arguably, land grabs are also driven by the perceived view that the African state has failed to meaningfully invest in agriculture and rural development (Sadomba, 2008; Cotula, 2009; Scoones et al., 2010). Whilst there is general agreement on the definition it is essentially narrow and less inclusive of all the manifestations of the phenomenon of land deals and grabs. Viewing land grabs as externally driven tends to exonerate the complicity of the local state in the deals (Hallet, 2009). This line of argument masks the real roles of the African state in land grabs. African states are complicity to the phenomenon of land grabs through poorly crafted land policies and the emergency of a black business and political elite that wants to exert its powers on resources. Therefore, understanding the interplay between the national and the global movements in land deals helps to unravel the connections between land reform, tobacco production and wood resources in Zimbabwe. This chapter explores the land reform-tobacco production-wood resources nexus using a political ecology theoretical framework. This is a negation of the traditional understanding of the concept of land grabbing; land grabbing is viewed as a product of power relations dynamics between the national state and global forces.

POLITICAL ECOSYSTEM THEORETICAL FRAMEWORK

The political ecosystem theoretical framework has sound philosophical grounding to explain the linkage between land reform, tobacco production and its impact on wood resources. To put this into context the following discussion explores the meaning and implication of the political...
ecology theoretical framework. Blaikie and Brookfield (1987:17) define political ecology as: the concerns of ecology and a broadly defined political economy which together encompasses the constantly shifting dialectic between society and land-based resources.

The term ecology implies connections or defined networks that have power over resource allocation and control. That is the social and political conditions surrounding the causes, experiences, and management of environmental problems (Lowe & Rüdig, 1986; Watts 1986; Bryant & Bailey, 1997; Zimmerman, 2000; Rocheleau, 2008) and their link to the land reform and emerging cropping systems. Power, in turn, means the ability of an individual (or group) to achieve outcomes which reflect their objectives (Drazen, 2000). The thrust is therefore the distributional relationships (Kallis, 2008; O’Malley, 2009) of land resources and the related environmental problems as manifested through the extensive use of wood resources to cure tobacco. The beneficiaries of the Fast Track Land Reform Programme are perceived to be controlling the productive forces and they do so in forms that threatens environmental sustainability.

Political ecology examines the political dynamics of land redistribution and related impacts on wood resources and enhances understanding of the human-environment interconnectedness (Bryant 1998:80). It is therefore a suitable theoretical tool to explore the connection between land issues and environmental resources like wood which props tobacco curing in Zimbabwe. It positions people, places and practices in relation to broader processes of social and economic change at the local, global and intermediate scales (Jarosz, 1996). The Fast Track Land Reform Programme though fundamentally driven by frustrations with the land issue its applications has global connections. Political ecology identifies contextual sources of ecological change, questions of access and political ramifications of environmental alteration that shapes practice (Peet & Watts, 1996). Thus, it has great scope for analyzing the linkage between tobacco production and the depletion of wood resources as an element of the complex environmental change.

Political Ecology of the Fast Track Land Reform Programme

Redistributive ‘Fast Track Land Reform Programme’ is a product of a number of societal pressures including an emerging black elite and economy of affection, ideological shifts, emerging political opposition, populist liberation war demands, and a constitutional crisis and growing rural poverty (Moyo, 1995; Chimhowu & Hulme, 2006; Chigumira, 2010). Figure 1 shows the driving factors for the fast track land reform program and possible social, economic and environmental impacts. It is emotional, polarizes opinions (Matondi & Dekker, 2011), controversial and politically motivated. The Fast Track Land Reform Programme is blamed for sharp economic decline with agricultural output slumping more than 60% and real GDP by up to 40% between the year 2000 and 2010 while real per capita incomes in 2011 were 37% lower than when Zimbabwe got independence from Britain in April 1980 (Hawkins, 2012).

The Fast Track Land Reform Programme has divided academics on its social impacts. There is a group of academics that is apologetic to the cause and impact of the land reform programme and is generally viewed as beneficiaries of the grabbed plots or have marriages of convenience sustained by conflicting theses on the impacts of the land reform (Hwakins, 2012). Hawkins further accuses such academics as using carefully-sanitized case-study data to prove that sub-Saharan Africa would be a better place without commercial agriculture. Moyo and Yeros (2005) believe that the Zimbabwe case has not been recognized as vanguard nationalism because of ‘intellectual structural adjustment’ accompanied with neoliberalism and a hostile media campaign. Furthermore, in the views of Moyo and Chambati (2013) discrediting of the
Zimbabwean Fast Track Land Reform Programme has entailed dubious theories of ‘neopatrimonialism’, which reduce African politics and the state to endemic ‘corruption’, ‘patronage’ and ‘tribalism’ (de Grassi 2008; Olukoshi 2011; Mkandawire, 2012), while overstating the virtues of neoliberal good governance. Under these circumstances they argued, it has been impossible to see class politics and mass mobilization. A critical, follow up question to this line of argument could be; why did the struggle for land became so radical at a time when the political support for the ruling party was waning? The fact that this form of land reform attracted global criticism is much deeper than trying to argue on the basis of class struggles since the workers were not represented in the process. It was more of political discord within the ruling elite and their capitalist appetite for land. Nevertheless, the land reform has taken place and consequently, the analysis should shift towards its environmental impacts and its risks on livelihoods. It is disturbing that the impact of tobacco production on wood resources seems to be getting little attention despite the rapid depletion in wood stock in tobacco farming regions of Zimbabwe.

The Fast Track Land Reform Program started as an illegal occupation of land driven by liberation war veterans and some peasants aligned to the ruling party. The process was formalized and regularized in July 2000 amid highly politicized and contested environment (Lahiff, 2001; Turner & Ibsen, 2002). The process was ‘legalized’ through the enacting of the Rural Land Occupiers (Protection from Eviction) Act of 2001 (Marongwe, 2002; Madhuku, 2004; Masiwa, 2004). Everything to do with the program was accelerated; this is a fundamental departure from previous philosophy, practices and procedures for acquiring land and resettling people.
The Fast Track Land Reform Program parceled out land as a strategy for fulfilling the political imperatives of the day. The program was designed to meet the populist demands of the political elite canvassed as addressing the needs of the poor. This had an overarching philosophical belief that change in ownership may result in increased agricultural production and equity in land ownership (Sadomba, 2013). It provided the emerging black elite with a strategic resource for patronage. This confirms the observation by Chabal and Jean-Pascal (2003) and Berstein (2003) that African states engage in the economy of affection dominated by relations of kinship, ethnicity and patronage. The Fast Track Land Reform Programme in Zimbabwe exhibits some of these features through political networks. It is therefore, useful to use political ecology to explain the underlying dimensions of the acquisition and redistribution of land (Chamenogwa, 2012). The impacts of tobacco curing on wood resources in Zimbabwe should not be solely viewed as an isolated issue but as part of the great network of political patronage, instrumentalization and informalisation of the process of redistributive land reform. The beneficiaries of the land reform are therefore front runners in a grand battle between the political elite and its network of global buyers of the crop. The peasant farmers remain dependents of an intricate network of financiers, auctioneers, exporters and the ultimate buyers and users of the product. They never realize adequate returns to wean themselves from the cycle of poverty that characterizes tobacco farming. Poverty driven environmental action by communities tends to endanger their livelihoods as survival is not hinged only on tobacco production but other cropping systems that enhance livelihoods and minimize environmental degradation.

Instrumentalization of disorder as a sub-concept of political ecology is a socio-centric approach focusing on aspects of agency and historicity of the African state with an emphasis on the deployment of disorder for political and economic ends (Chabal & Daloz, 1999; Chabal, 2005 & 2009). The Fast Track Land Reform Programme in Zimbabwe typifies the gross application of the concept of instrumentalization. In this case war veterans assumed the powers of the state and grabbed land in fashionable clientelism and political patronage (Zamchiya, 2011). However, other authors have described the land reform as achieved through peasant mobilization (Moyo & Yeros, 2003). Scoones et al. (2010) describe it as a process where informal political practice was at play whilst most of the beneficiaries were ordinary citizens. The danger with this type of analysis is the challenge of separating the war veterans from the antagonism within the ruling political elite. Political elites abandon formal developmental paths through the deployment of disorder and coercive force to both accumulate and distribute state resources. The Fast Track Land Reform Programme, to an extent was a manipulated process, such that it was violent and chaotic benefiting political elites and their networks, together with a few ordinary citizens benefiting in exchange for political support (clientelism). Chabal and Daloz (1999:158) describes it as the economy of affection whereby political elites aim to gather and use power to generate resources which can be used to purchase the affection of the people with the exchange involving ‘scarce’ resources and votes in particular. It is therefore critical to see how the demands for environmental sustainability can be achieved under circumstances of political clientelism and patronage. Whilst the beneficiaries are proud that they are on land they have to remember to pay back through a positive vote when the time comes. How then can the political patronage system provide strict measures on wood resources management and stop the fatal linkage between wood resources and tobacco production? How is environmental sustainability attained when there are weak institutional and highly personalized powers? The distribution of land resources is skewed in favor of citizens that support the ruling elites. The inclusion of the poor people, as beneficiaries of the land reform legitimates
state-sanctioned violence and state-managed disorder. The depletion of wood resources due to tobacco farming confirms the consequences of instrumentalization of the land acquisition process and creates conditions for land grabs that expose the poor to long term livelihoods erosion.

A second concept which merits review within the political ecology framework is neopatrimonialism. Neo-patrimonialism focuses on the structural organization of the African state and its societal interactions (Bratton & Van de Walle, 1997; Van de Walle 2001; Therkildsen, 2005; Erdman & Engel, 2007). It is a combination of patrimonial and legal-rational bureaucratic domination that personalizes political and administrative relations with no distinction between the private and the public (Bratton & van de Walle, 1997). The emerging social networks and their impacts on decisions dominate land allocation. Thus, beneficiaries are most likely to be abusive in their relationship with the environment because they disregard sustainable environmental management in the context of patrimonialism. The departments that administer sustainable environmental management are silenced by the collusion between the political elite and the beneficiaries of the land reform. Thus, political corruption and bureaucratic corruption exist simultaneously and tend to mutually reinforce each other (Advig & Fjeldstad, 2000).

In Zimbabwe the war veterans were key informal actors that took the role of land officers and district administrators in parceling out land and acted as a foot-bridge between the bureaucracy and the general populace. De Wit and Berner (2009) argue that these actors are more effective if they are a part of the political machinery and they can balance the need to make money and the need to remain popular, reliable and connected to decision making processes. Non-state institutions and actors create institutional pluralism that generates contempt for formal rules and regulations resulting in the manipulation of power. Individuals and groups may take their claims to resources to institutions which they feel will most likely give them the most satisfactory outcomes and their political identities are also fluid allowing them to participate in different clientelistic networks.

The Fast Track land Reform Programme clearly exhibits the dominance of informal institutions and the criticalness of individuals within the political elite groups. Such a scenario typifies the idea of land grabs, perceived at global level as a process that is illegal and controversial. It is therefore the focus of this unit to profile the land reform-tobacco production–wood resources nexus.

**METHOD AND MATERIALS**

**Description of Study Sites**

Tobacco is grown in Agro-ecological zones II and III of Zimbabwe where the general climatic and soils conditions are favorable and provide the highest potential for tobacco production. The country is divided into five natural regions. A natural region is an area, in which defined environmental variables are more or less uniform (Vincent & Thomas, 1960). There is a strong physical relationship between rainfall distribution and the demarcations of agro-ecological regions. Zimbabwe is the largest producer of flue-cured tobacco in Africa, and the world’s fourth-largest after China, Brazil and the United States of America (Food and Agricultural Organization, 2011). Tobacco accounts for more than 50% of the country’s agricultural exports, 35% of total exports and nearly 10% of Gross Domestic Product (GDP) and 43% of agricultural GDP (Diao et al., 2006) up from 6% in the 1990s (Rukuni & Eicher, 1994). The size of land allocated to tobacco farming has been expanding significantly growing by an aver-
age 49% between 2010 and 2014. This has been mainly due to the increase in the number of both the newly settled and other communal farmers.

**Data Sources**

The chapter used secondary data sources, literature review and onsite expert verification of use of wood resources by farmers. The tobacco delivered by small scale farmers and those that use wood resources to cure tobacco were targeted. The literature review targeted estimates of the impact of tobacco curing on wood resources. This was critical in estimating the quantity of wood required to cure a kilogram of tobacco. The data had gaps but was critical to identify trends in wood resources use.

**Estimating Wood Consumption**

Estimating the quantity of wood used to cure tobacco under varying environmental and technical conditions is challenging. The rate of wood consumed to cure a kilogram of tobacco depends on the efficiency of the process particularly the tobacco barn and the condition of the firewood used. Most traditional barns used in Zimbabwe are inefficient and require large volumes of wood. Wood is less efficient than coal and therefore the curing process demands an excessive amount of firewood.

Specific Fuel Consumption (SFC) is the kilograms of wood used per one kilogram of cured tobacco. Clay (2003) estimated that 19.9 m$^3$ of wood are required to cure a metric ton of tobacco. Siddiqui and Rajab (1996) provide a worst case scenario of 14.2 kilograms of fire wood to cure a kilogram of tobacco from experiments carried out in Tanzania where farmers use *miombo* woodlands as in Zimbabwe. Earlier estimates by Fraser (1986) put the average for Africa at 4.8 kilogram of wood per kilogram of tobacco cured, Zimbabwe 10.8 kilograms per kilogram and Kenya 8 kilogram per kilogram of tobacco cured. These estimates vary greatly and caution has to be exercised when dealing with the figures as they may extrapolate some exaggeration on wood consumed. Despite the exaggeration the estimates provides a basis for analyzing the political ecology of tobacco farming. Estimates by Scott (2006) for smallholder farmers in Zimbabwe showed that they use 43 m$^3$ of fuel wood (approximately 15 000kg/yr) to produce an average of 1 400kg of cured tobacco. This translates to a Specific Fuel Consumption (SFC) of 10.7kg of wood to cure one kilogram of tobacco.

A lot has changes on the ground and more farmers are moving in to grow tobacco using wood as the major source of energy. The worrying dimension to the issue of tobacco curing is the increasing numbers of people growing it with limited training and knowledge on the environment.

This study used total tobacco production figures for selected years covering the post 2000 period when there was a major shift in land ownership and increasing numbers of small scale farmers on formerly commercial farming areas of the country. The data used here for national estimates covers two seasons (2009 and 2010) because it was the only data available that was disaggregated by province and type of farmers. Only 90% of the total national farmers were used since the remaining 10% though doubtful was considered to be those famers that used coal as the main source of energy to cure tobacco. Some district specific figures were also used from those sections of the districts where it was verified on the ground that the totality of farmers used wood to cure tobacco. The selected zones were Nyazura and Hurungwe areas of the country. The data were reorganized to calculate percentage changes in numbers of growers, hacterage and tobacco production. A woodland clearance factor of 0.6 hectares per one hectare of cured tobacco (Siddiqui & Rajab,1996) and wood consumption factor of 10.7(Scot,2006) were used to estimate wood consumption. These factors were considered more accurate because they were based on an experimental study on energy efficiencies in tobacco curing in Tanzania under conditions...
that are similar to those of Zimbabwe. However, these methods must be used with caution because the volume of wood used depends on type of wood species, status of wood and type of barn used among a list of other factors. The thrust in this study was to explain the political ecology of tobacco farming in Zimbabwe and the possible environmental implications.

ESTIMATES OF WOOD USED FOR TOBACCO CURING IN ZIMBABWE

The area of forest woodland cleared to cure one hectare of tobacco increased by 19.8% across tobacco farming regions in Zimbabwe (Table 1) between 2009 and 2010. There were marginal decreases in Mashonaland Central and Mashonaland East Provinces. In contrast, there has been a marginal increase in Manicaland and Masvingo Provinces. In some provinces, forest woodland hectarage clearance has declined but production has increased. This increase in area cleared is attributable to the new farmers that are switching on to tobacco farming due mainly to the perceived high returns, the allocation of new plots by the state and the use of firewood as the major source of energy. Put simply, in 2009 all tobacco farming regions planted 42218 ha of tobacco and this approximately used 25331 ha of forest resources. This increased to about 50442 ha planted in 2010 and using about 30266 ha of forest area. The latter translates to about 302.66 km² constituting 0.2% of the total forest land of 156 240 km² (World Bank 2010) of forest decimated over a period of two years. This trend is unsustainable from an environmental and social perspective as the wood resources have other competing daily uses such as timber and firewood.

The political ecology perspective on the use of wood resources has its roots in a land distribution system that is chaotic; violent and highly influenced by patrimonialism. Thus, land redistribution in Zimbabwe is a political process driven by an emerging black elite and economy of affection amidst increasing political opposition. There are high chances that such beneficiaries of the land disregard existing laws on the environment and tend to emphasize short term benefits on tobacco production vis-a-vis the long term impacts on the environment and community livelihoods. The Fast Track land Reform gave the opportunity to the

<table>
<thead>
<tr>
<th>Province</th>
<th>Area Planted 2009 Ha*</th>
<th>0.6ha/ha Cured Tobacco</th>
<th>Area Planted 2010 Ha*</th>
<th>0.6ha/ha Cured Tobacco</th>
<th>Increase in 0.6ha/ha Cured Tobacco</th>
<th>% Increase 0.6ha/ha Cured Tobacco</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mashonaland East</td>
<td>12199</td>
<td>7319</td>
<td>11690</td>
<td>7014</td>
<td>-305</td>
<td>- 4.3</td>
</tr>
<tr>
<td>Mashonaland West</td>
<td>6770</td>
<td>4062</td>
<td>17991</td>
<td>10795</td>
<td>6733</td>
<td>62.3</td>
</tr>
<tr>
<td>Masvingo</td>
<td>18</td>
<td>11</td>
<td>50</td>
<td>30</td>
<td>19</td>
<td>63.3</td>
</tr>
<tr>
<td>Mashonaland Central</td>
<td>14053</td>
<td>8432</td>
<td>11155</td>
<td>6693</td>
<td>-1739</td>
<td>- 25.9</td>
</tr>
<tr>
<td>Manicaland</td>
<td>9178</td>
<td>5507</td>
<td>9556</td>
<td>5734</td>
<td>227</td>
<td>3.9</td>
</tr>
<tr>
<td>Totals</td>
<td>42218</td>
<td>25331</td>
<td>50442</td>
<td>30266</td>
<td>4935</td>
<td>19.8</td>
</tr>
<tr>
<td>Average</td>
<td>8444</td>
<td>5066</td>
<td>10089</td>
<td>6053</td>
<td>988</td>
<td>19.8</td>
</tr>
</tbody>
</table>

Source: Author’s computation based on production statistics from the Tobacco Marketing Board
Notes: Ha* – hectares under tobacco per province;
** Multiplied by a factor of 0.6ha/ha-estimated hectarage of wood cleared per every hectare of tobacco cured (Siddiqui & Rajabu, 1996).
Source: Source: Authors’ computation and Tobacco Industry and Marketing Board
new settlers to exploit available plant resources in an unsustainable manner, both in the areas of high agricultural potential and those of low potential (Chibisa, Ruzive & Mandipa, 2010). The fast track compulsory land acquisition process by virtue of its rapid pace, as well as its unplanned and chaotic nature, was bound to adversely affect biodiversity. The key issues surrounding tobacco production in Zimbabwe rests in the ideological views on the land and resultant political imperatives. Poverty reduction and empowerment are the major political slogans used to take over the land from white commercial farmers. Though there is debate on addressing the issue of poverty reduction uncontrolled shift to tobacco farming by these farmers does not guarantee sustainable livelihoods and livelihoods and such farmers are most likely to be food insecure as they invest most of their resources into tobacco farming at the expense of food crops. The farmers are therefore instruments of change and samples of the positives of the ‘peasant empowerment’ through the land reform program. The Political ecology of land reform, and tobacco production in Zimbabwe confirms the thesis that poor rural communities do not degrade wood resources because they are ignorant of its importance or they are careless but that they are trapped in the interplay between local political elites; their insatiable appetite for natural resources control against an international network of land investors that that is clamoring for unhindered access to land resources (Stott & Sullivan, 2000).

Huge investment into tobacco farming is done at the expense of crop diversification and sustainable rural livelihoods. Therefore, research in tobacco production and curing emphasises efficiency in tobacco curing. The efficiency thesis is understood in the context of improving economic performance; buttressing the ideological and political objectives of the ruling elite; and supply global tobacco markets. Tobacco farmers are instruments of local ownership of land resources and justification for the perceived ‘successes in tobacco production. There is the little attention on the environmental implications of expanding tobacco production and shrinking wood resources. The use of firewood to cure tobacco is a long term threat to ecological sustainability. Short termism approaches dominate tobacco production space through availing coal as input packages for curing tobacco. Supplying inputs without adequate training is also problematic and those that finance tobacco production have to take full responsibility of educating the farmers on the ecological implications of their farming practices. The impact of tobacco on ecosystems is more penetrative than this chapter can demonstrate. The fast track Land reform program should therefore be re-examined in the context of tobacco production with a view to convincing the farming community to adopt sustainable cropping systems.

Zimbabwe lacks estimates of wood resources used to cure tobacco partly because there have been no national scientific studies since the carnage of wood resources related with tobacco production is a recent phenomenon. Given this new development studies should be aimed at unravelling the extent to which tobacco farming is consuming the wood resources stock in the communities that grow and cure tobacco using firewood and forecast emerging national scenarios. The benefits of the Fast Track Land Reform should review to facilitate environmental accounting for tobacco farming and curing system. Critical questions that can direct research in this regard could be: Who is benefiting from the tobacco production done on newly acquired land? What is the role of the local political elites in the production and marketing of tobacco on the international markets? To what extent do the current tobacco production systems work as fronts of the global land dealers and their local political cum business networks? How sustainable is tobacco farming?

Tobacco farmers in Zimbabwe and other parts of Africa are found in miombo woodlands (Swahili word for a brachystegia species or in local Shona Language encompass tree species
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called munhondo, musasa and mupfuti) with an estimated coverage of between 2.4 million km$^2$ and 3.8 million km$^2$ (Millington, 1994; Campbell, Frost & Byron, 1996; Frost 1996; Frost et al. 2003). These ecological systems are dominated by genera brachystegia, jubernardia and isoberlinia and support the livelihoods of over 100 million rural and urban dwellers (Bradley and Dewees, 1993). Unfortunately, the current forest utilization has resulted in continued deforestation (Chidumayo, 1997; Luoga et al., 2002; Chidumayo & Mbata, 2002; Chambwera, 2004; Luoga et al., 2005). Using wood to cure tobacco with little action towards reforestation programmes can only exacerbate poverty levels among the communities surviving on miombo woodlands. Hence, the current patterns of wood resources utilization are unsustainable (Abbot & Homewood, 1999; Geist, 1999; Luoga et al., 2002). The increasing trends in wood resources leaves the tobacco producing communities vulnerable because their land will be degraded; unproductive and poverty levels worsening. In the short to medium terms tobacco farmers in Zimbabwe will continue to use wood resources to cure tobacco; and feed the local business community; which acts as fronts of the international society of land grabbers and land dealers. Unfortunately, there is a lack of decisive policy instruments and management measures to effectively curb the loss of wood resources. To what extent then would the Zimbabwe wood lands continue to support the global insatiable thirst for flue cured tobacco?

The rising number of smallholder farmers venturing into tobacco production in the aftermath of the Fast Track Land Reform Programme means that environmental degradation is likely to worsen. Table 2 shows the trends in tobacco production in Nyazura area of Zimbabwe. There is a marked increase in production and clearance of forests. This can be contrasted with Tables 3 and 4 where a similar pattern obtains for Hurungwe District and Mzilawempi Communal Area. In all the three cases the decline in tobacco production and related forest clearance in 2008 is a result of economic decline and a hyper inflationary environment. It was no longer viable to engage in farming activities using the Zimbabwean dollar. However, the period after 2009 to the present has shown resurgence in the number of tobacco growers and the area of wood cleared. The major driver is the use of foreign currency to pay farmers and the availability of land among those who benefited from the Fast Track Land Reform Programme. It is critical that the linkage between the politics of the economy, land reform and cropping systems is clearly understood in its broad sense. The economic crisis in Zimbabwe is anchored on the land problem as the local ruling elites struggle to control local resources through the acquisition of land from commercial farmers.

Despite attempts by both environmental agencies and service providers to put in place mechanisms to contain problems of deforestation farmers continue to rely on wood resources to cure tobacco. For example the Forestry Commission of Zimbabwe launched the Tobacco Wood Energy Programme which encouraged farmers to plant fast growing tree species such as eucalyptus for tobacco curing. These take on average five years to mature; and over 15 years to harvest an indigenous tree (Du Toit et al. 1998). Meanwhile farmers continue to cut down indigenous trees for fuel. The irony of using exotic plants in regions where the miombo woodlands are the native ecosystems has its own ecological impacts that are not fully known in Zimbabwe. The eucalyptuses trees dominate ecoregions; reduce biodiversity and are believed to use more ground water when compared to indigenous plants. Thus, investigation into new and efficient technologies provides opportunities for farmers to prolong their tobacco farming. In line with the efficiency thesis it is suggested that possible areas of intervention include improving heat generation, transfer and distribution. Thus, high rates of wood use can be considerably reduced if investment is done in furnace technology, barn construction and efficient loading (Geist, 1997). However, the tobacco curing efficiency thesis as
referred to earlier is a tired political clientelism slogan meant to sustain local representations of the global land grabs. The institutions that have developed in these areas are more inclined to the ruling elites and benefit on the informalisation of state functions.

The driving force behind the increase in depletion of wood resources is the political ecology of land reform and tobacco production. Farmers and elites are delighted by short term gains for those whose crops fetch high prices at the market. This is done in total negation of the environmental damage associated with the crop and the livelihoods of the communities. Another dimension with political implications is the argument that communities have been empowered through parcelling out land. The environmental practice as exhibited by the extent to which the farmers use wood resources is anchored in political patronage, corruption and informalisation of land and wood resources control.

**SOLUTIONS AND RECOMMENDATIONS**

The discussion in this chapter used the political ecology theoretical framework to explain the land reform–tobacco production–wood resources nexus and to portray local scale land grabs as a subtheme of a major global movement. Short term solutions to the issue of tobacco production and depletion of wood resources in Zimbabwe should be used as a transitional mechanism to a more

Table 2. Estimates of Tobacco production and wood resources consumption in Nyazura, Manicaland Province of Zimbabwe

<table>
<thead>
<tr>
<th>Year/Season</th>
<th>Production in Kg</th>
<th>Hectarage</th>
<th>Wood used in Kg</th>
<th>Estimated Ha of Forest Cleared**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>1 102 500.0</td>
<td>787.5</td>
<td>11 796 750.0</td>
<td>472.5</td>
</tr>
<tr>
<td>2000</td>
<td>1 078 600.0</td>
<td>770.4</td>
<td>11 541 020.0</td>
<td>462.2</td>
</tr>
<tr>
<td>2001</td>
<td>1 003 500.0</td>
<td>716.8</td>
<td>10 743 450.0</td>
<td>430.1</td>
</tr>
<tr>
<td>2002</td>
<td>90 700.0</td>
<td>64.8</td>
<td>970 490.0</td>
<td>38.9</td>
</tr>
<tr>
<td>2003</td>
<td>120 500.0</td>
<td>86.1</td>
<td>1 289 350.0</td>
<td>51.7</td>
</tr>
<tr>
<td>2004</td>
<td>980 900.0</td>
<td>700.6</td>
<td>10 495 630.0</td>
<td>420.4</td>
</tr>
<tr>
<td>2005</td>
<td>630 800.0</td>
<td>450.6</td>
<td>6 749 560.0</td>
<td>270.4</td>
</tr>
<tr>
<td>2006</td>
<td>1 052 700.0</td>
<td>751.9</td>
<td>11 263 890.0</td>
<td>451.4</td>
</tr>
<tr>
<td>2007</td>
<td>990 600.0</td>
<td>707.6</td>
<td>10 599 420.0</td>
<td>424.6</td>
</tr>
<tr>
<td>2008</td>
<td>877 400.0</td>
<td>626.7</td>
<td>9 388 180.0</td>
<td>376.0</td>
</tr>
<tr>
<td>2009</td>
<td>530 500.0</td>
<td>378.9</td>
<td>5 676 350.0</td>
<td>226.8</td>
</tr>
<tr>
<td>2010</td>
<td>636 600.0</td>
<td>454.7</td>
<td>6 811 620.0</td>
<td>272.8</td>
</tr>
<tr>
<td>2011</td>
<td>763 920.0</td>
<td>554.7</td>
<td>8 173 944.0</td>
<td>327.4</td>
</tr>
<tr>
<td>2012</td>
<td>916 704.0</td>
<td>654.8</td>
<td>9 808 732.8</td>
<td>392.9</td>
</tr>
<tr>
<td>2013</td>
<td>1100 044.8</td>
<td>785.7</td>
<td>11 770 479.4</td>
<td>471.4</td>
</tr>
<tr>
<td>2014</td>
<td>1 320 053.8</td>
<td>942.9</td>
<td>14 124 575.7</td>
<td>565.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5655.2</strong></td>
<td></td>
<td><strong>Kg</strong></td>
<td><strong>Multiplied by a factor 10.7kg/kg Estimated Wood used to cure one kg of tobacco from traditional barns in Zimbabwe (Scott, 2006)</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5655.2</strong></td>
<td></td>
<td><strong>km</strong></td>
<td><strong>Multiplied by a factor of 0.6ha/ha-estimated hectarage of wood cleared per every hectare of tobacco cured (Siddiqui &amp;Rajabu, 1996)</strong></td>
</tr>
</tbody>
</table>

Source: Authors’ computation and field verification
Table 3. Tobacco production in Hurungwe District of Zimbabwe and estimated wood use

<table>
<thead>
<tr>
<th>Year/season</th>
<th>Ha</th>
<th>Yield (1000kg/ha)</th>
<th>Total production (kg)</th>
<th>Estimated wood use (kg)</th>
<th>Estimated Ha of Forest Cleared **</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003/04</td>
<td>5770</td>
<td>1.9</td>
<td>10963.0</td>
<td>117304.1</td>
<td>3462.0</td>
</tr>
<tr>
<td>2004/5</td>
<td>7444</td>
<td>1.1</td>
<td>8188.4</td>
<td>87615.9</td>
<td>4466.4</td>
</tr>
<tr>
<td>2005/6</td>
<td>5689</td>
<td>0.9</td>
<td>5120.1</td>
<td>54785.1</td>
<td>3413.4</td>
</tr>
<tr>
<td>2006/7</td>
<td>5426</td>
<td>0.9</td>
<td>4883.4</td>
<td>52252.4</td>
<td>3255.6</td>
</tr>
<tr>
<td>2007/8</td>
<td>5090</td>
<td>0.6</td>
<td>3054</td>
<td>32677.8</td>
<td>3054.0</td>
</tr>
<tr>
<td>2008/9</td>
<td>4100</td>
<td>0.5</td>
<td>2050</td>
<td>21935</td>
<td>2460.0</td>
</tr>
<tr>
<td>2009/10</td>
<td>10513</td>
<td>0.8</td>
<td>8410.4</td>
<td>89987</td>
<td>6307.8</td>
</tr>
<tr>
<td>2010/11</td>
<td>16689</td>
<td>0.7</td>
<td>11682.3</td>
<td>125000.6</td>
<td>10013.4</td>
</tr>
<tr>
<td>2011/12</td>
<td>7760</td>
<td>0.4</td>
<td>3104</td>
<td>33212.8</td>
<td>4656.0</td>
</tr>
<tr>
<td>2012/13</td>
<td>14543</td>
<td>0.7</td>
<td>10180.1</td>
<td>108927.1</td>
<td>8725.8</td>
</tr>
<tr>
<td>2013/2014</td>
<td>17000</td>
<td>1.0</td>
<td>17000.0</td>
<td>181900.0</td>
<td>10200.0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>84635.7</td>
<td>905602.0</td>
<td>151817.4</td>
</tr>
</tbody>
</table>

Kg Multiplied by a factor 10.7kg/kg Estimated Wood used to cure one kg of tobacco from traditional barns in Zimbabwe: (Scott, 2006)
** Multiplied by a factor of 0.6ha/ha-estimated hacterage of wood cleared per every hectare of tobacco cured: (Siddiqui & Rajabu, 1996)
Source: Authors’ Computation and Field Verification.

Table 4. Number of households, hacterage under tobacco and estimated wood use in Mzilawempi Communal area of Hurungwe District in Zimbabwe

<table>
<thead>
<tr>
<th>Year</th>
<th>Households</th>
<th>Hacterage</th>
<th>Estimated area of Forest Cleared (**)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>54</td>
<td>43.4</td>
<td>26.0</td>
</tr>
<tr>
<td>2004</td>
<td>54</td>
<td>45.5</td>
<td>27.0</td>
</tr>
<tr>
<td>2005</td>
<td>54</td>
<td>55.0</td>
<td>33.0</td>
</tr>
<tr>
<td>2006</td>
<td>110</td>
<td>93.5</td>
<td>56.1</td>
</tr>
<tr>
<td>2007</td>
<td>235</td>
<td>189</td>
<td>113.4</td>
</tr>
<tr>
<td>2008</td>
<td>643</td>
<td>603</td>
<td>361.8</td>
</tr>
<tr>
<td>2009</td>
<td>764</td>
<td>688.0</td>
<td>412.8</td>
</tr>
<tr>
<td>2010</td>
<td>940</td>
<td>848.2</td>
<td>508.9</td>
</tr>
<tr>
<td>2011</td>
<td>985</td>
<td>875</td>
<td>525.0</td>
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<td>2012</td>
<td>1088</td>
<td>973.5</td>
<td>584.1</td>
</tr>
<tr>
<td>2013</td>
<td>1201</td>
<td>1086.0</td>
<td>651.6</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>3299.7</td>
</tr>
</tbody>
</table>

** Multiplied by a factor of 0.6ha/ha-estimated hacterage of wood cleared per every hectare of tobacco cured: (Siddiqui & Rajabu, 1996)
Source: Authors’ computation and field Verification.
sustainable cropping systems and livelihoods. These may include alternative sources of energy, suitability assessment of the land and training of farmers and their advocacy groups. The alternative source of energy that is cheap in the long term in Zimbabwe is solar energy and research should be directed towards assessing the feasibility of using solar to cure tobacco. The government of Zimbabwe has departments that deal with issues of farmer extension services and these should be capacitated to train farmers in liaison with higher institutes of learning.

Long term community based measures should be adopted. These can be in the form of environmental tax or levy for those extracting a specified quantity of wood above established thresholds for exploitation of common pool wood resources. This can then be invested in the establishment and management of wood resources and broader environmental management activities in identified communities. This can be used to come up with an investment vehicle tenable after a specified period for reinvestment in the industry including the procurement of inputs for the participating farmers. This will in the short term be expensive and problematic to farmers but the long term befits are more rewarding.

To empower financially weak famers there is need to form associations, not only in the form of farmers associations in the old sense but associations that lobby the local government and the global land barons on their rights on satisfactory pricing of tobacco. Tobacco is viewed at the global level as a crop that merits banning because of the health problems associated with it. This will expose the famers to a sudden loss of revenue and livelihoods and a permanent entrapment in the poverty cycle. This can only be achieved if those famers start diversifying their cropping systems so that when they plan to boycott they have alternatives for their survival. In fact a long term solution is the diversification of the cropping systems within small scale farming zones with movement towards the traditional food systems.

One worrying dimension of tobacco production is the increase in the volume of wood consumed. Thus, appropriate technologies are necessary to improve efficiency in tobacco curing. Achieving efficiency, however, is not the panacea to the problems of tobacco production but constitute transitional mechanisms towards attaining sustainability in cropping systems. Mass land reform programs have been found not to produce the desired effects of attaining food security and social balance. Often land resources are limited and fixed spatially and temporally and continuous cycles of land reforms remodeled as new concepts does not fix the problems of land shortage. In this regard the type of land reform selected should be targeted to those families owning agricultural land to produce food first and foremost for their families and sell specified thresholds to the state.

The use of private property rights has been globally found to motivate farming business. The Fast Track Reform Programme in Zimbabwe has reversed these types of property rights and vested all land in the state. That is the beneficiaries of the land have no ownership rights. This has to be reviewed to improve farming efficiency and responsibility over the resources. The depletion of wood resources is partly an extension of the clientilistic relationships. These relationships have set in extensive deforestation within tobacco farming regions of the country. This is characteristic of a restless and disempowered community which is one of the effects of cycles of land reforms and land grabs. These farmers are not sure if they last on the land and may be driven by the attitude to maximize exploitation of resources.

**CONCLUSION**

This Chapter discussed land reform, tobacco production and wood resources using a political ecology theoretical framework. The discussion emphasized the linkage between local land grabs and the international land grabs. It has been re-
emphasized in the discussion that land grabs are cyclic and driven by the ruling social and political paradigms. The intention of the Fast Track Land Reform Programme, in the case of Zimbabwe, in theory is noble but the operational formats exhibit the behavior of local elites struggling to control local resources and work as fronts of neo-colonial thinking. The peasant beneficiaries of the land lack security of tenure and are susceptible to eviction. The state exudes a lot of power and decides who settles where at any given time. Peasants who find themselves on land that has no security of tenure are therefore vulnerable and may lose their land to global land grabbers. Patronage and clientelism force those who have benefited from the land reform to work as clients of the political elites and will have to pay back during times of elections. The political ecology surrounding such thinking dominates the poor and keeps them hooked to the ruling political system. Meanwhile, where political patronage is the business of the day environmental sustainability becomes an issue and wood resources are consequently depleted.

In this context the following research directions and areas are proposed for further studies: the local-global land deals interfaces; informalisation of the politics of land reform; options for sustainable tobacco farming; political patronage and global land deals; land tenure systems and wood resources; and land deals and communal agriculture.

ACKNOWLEDGMENT

I would like to thank all those who provided useful information in the course of writing this chapter.

REFERENCES


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**KEY TERMS AND DEFINITIONS**

**Informalisation**: Using individuals and related institutions outside the framework of the state to perform state functions for the benefit of people linked to a ruling political elite.

**Instrumentalisation**: Using the beneficiaries of the land as objects to achieve political objectives.

**Land Deals**: Legal and illegal acquisition of land in a country by the state and its related agencies, individuals and business entities with the intention to use it for specified purposes.

**Land Grab**: The acquisition of land by the state individuals, business entities at both international and local levels.

**Land Reform**: The allocation of land to the intended population by both colonial and independent African states resulting in the process in changes to rights over land.

**Neopatrimonialism**: Implementing the land reform basing on who knows who in the state agencies and outside of it with sole purpose to solidify control of resources and related benefits.

**Political Ecology**: The linkage between political and ideological thinking of the state as connected to the issues of land reform, tobacco production and wood resources.

**Tobacco Production**: The growing of tobacco and curing it using wood resources.