

FSFW Working Paper No. 1
Agriculture and Livelihoods

Rural Perspectives on Alternatives to Tobacco Farming and Environmental Degradation in Malawi

By Axel Klein, Chifundo Kamwaza, Dorothy Chisusu, Mavis Chipso Nyirenda & Elizabeth Kayange

Disclaimer

- 1** Foundation for a Smoke-Free World (FSFW) Working Papers contain preliminary material and research results and are circulated in order to stimulate discussion and critical comment.
- 2** The papers have not been subject to the same degree of rigor for peer review as in scientific journals, but each paper undergoes at least one double blind peer review by an external expert.
- 3** Any opinions expressed in the papers are those of the authors only and are not necessarily endorsed by FSFW.
- 4** Copyright remains with the authors who are free to publish any version of it in outlets, such as journals and book chapters, without further FSFW permission.

About the Foundation for a Smoke-Free World and the Agriculture and Livelihoods Team

The Foundation for a Smoke-Free World (herein referred to as “the Foundation” or FSFW) was launched in September 2017 as an independent, nonprofit organization dedicated to accelerating global efforts to reduce deaths and harm from smoking, with the ultimate goal of eliminating smoking worldwide. Since the adoption of the World Health Organization’s (WHO) Framework Convention on Tobacco Control (FCTC) in 2003, countries that comprise 90% of the world’s population have resolved to achieve significant reductions in smoking rates by 2025.

The Foundation’s mandate and global efforts in this field promise many positive health impacts. These efforts will invariably entail a reduction in tobacco products and, thus, a reduction in the incomes of tobacco-producing farmers and tobacco-reliant economies. This economic disruption will not be felt uniformly and will disproportionately affect socially and economically vulnerable populations because they represent much of the rural poor and the agricultural labor force globally. This creates a unique opportunity to (a) support smallholder tobacco farmers as they transition to alternative crops and livelihoods and (b) catalyze a sustainable and inclusive transition.

Through its various programs, the Foundation’s Agriculture and Livelihoods Team works to prepare smallholder tobacco farmers for an era of reduced demand for tobacco. The Foundation does this by helping to facilitate the establishment of more secure, equitable income strategies for farmers and will seek to partner with a diverse set of stakeholders to ensure success and sustainability.

About the Working Paper Series

The goal of the FSFW-Agriculture Working Paper Series is to provide preliminary and timely access to ongoing research and information being generated by, or closely relevant to, the Foundation’s work in Agriculture and Livelihoods in order to enrich the ongoing dialogue and learning of emerging challenges and opportunities for economic diversification, agricultural transformation, and improved welfare in tobacco growing areas of the developing world. These can be from a science and technology, socio-economic, management, and/or policy perspective.

Although the FSFW-Agriculture Working Paper Series is not subject to the same degree of rigor for peer review as in scientific journals, each paper undergoes at least one double blind peer review by an external expert. Any opinions expressed in the papers are those of the authors only and are not necessarily endorsed by FSFW. Copyright remains with the authors who are free to proceed with further publishing any version of their paper through other outlets, such as journals and book chapters, without requiring FSFW’s permission.

Suggested Citation

Klein, Axel, Chifundo Kamwaza, Dorothy Chisusu, Mavis C. Nyirenda, and Elizabeth Kayange (2019). "Rural Perspectives on Alternatives to Tobacco Farming and Environmental Degradation in Malawi." FSFW Working Paper No.1, Agriculture and Livelihoods, Foundation for a Smoke-Free World, New York, NY.

Explanatory Note

We have retained the term tobacco company as it is used in Malawi. Within the tobacco industry, companies that contract with farmers to grow tobacco are usually referred to as 'tobacco growing companies' or 'tobacco leaf companies.'

Keywords: smallholder tobacco production, livelihood transitioning, Malawi, environmental degradation, deforestation

Table of Contents

Abstract.....	i
Acknowledgments	ii
About the Authors.....	iii
Acronyms	iv
1. Introduction.....	1
2. Methodology.....	3
3. Results and Discussion.....	8
4. Conclusion and Recommendations.....	32
Endnotes	35

List of Tables

Table 1: Field Visit Sites	4
Table 2: Key Informant Interview Guide	5
Table 3: Inputs Provided to Tobacco Farmers per 0.5 HA by Tobacco Companies	9
Table 4: Gross Margin Analysis of Alternative Crops in Lilongwe District	21
Table 5: Gross Margin Analysis of Alternative Crops in Kasungu District	22
Table 6: Obstacles and Interventions to Producing Non-Tobacco Crops	25
Table 7: Surveyed Brick Kilns in Likuni Area in Lilongwe (1994)	30

Abstract

The paper offers a rich narrative based on a field survey of the rural perspective of multiple actors along the tobacco value chain in Malawi on the challenges and opportunities for seeking alternative livelihoods to tobacco farming. Tobacco farmers in Malawi are facing multiple challenges including falling tobacco prices and imperfections in the marketing and production systems. In spite of these drawbacks, the very existence of a regular tobacco auction and the support packages provided to farmers by the tobacco leaf companies make tobacco a more attractive option than alternative crops. Farmers have little attachment to tobacco itself but appreciate the relatively high prices the crop continues to achieve, the support provided and the relative certainty of making a sale. Even though alternative crops can be more profitable, the weakness of existing support services and markets make this risky.

With no reserves and in the absence of a social support system, smallholder farmers are highly restricted in their ability to explore and experiment. They are facing multiple challenges, including growing populations, falling productivity and the rapid encroachment of the savannah because of unsustainable levels of deforestation. The habitat transformation in the wake of expanded subsistence and cash cropping and of income diversification, including brick burning, is threatening the viability of rural communities. Since the main driver behind this process is fuelwood/charcoal production, there are opportunities for diversification in terms of crops and bio-fuels processing that need to be immediately explored.

Acknowledgments

The research team would like to thank the FSFW for their generosity in making this research possible. We appreciated the intellectual freedom and lack of bureaucratic constraints that allowed us to explore different ideas without stricture or interference.

We would also like to acknowledge the impact of the events organized by the Foundation, and the discussions and open exchanges with different members from the Foundation. Jim Lutzweiler, Michael Johnson, Alexandra Solomon and Saisha Srivastava helped us in shaping our ideas and testing propositions. Without their confidence in the project, we would never have taken off. Our anonymous reviewers deserve special mention as their insights prompted exacting revisions of our original manuscript. A final thank you to Romita Shah for calmly steering the process.

In Malawi, we were fortunate to be able to draw on excellent academic and scientific support and would like to give particular thanks to Professor Richard Mkandawire, Simon Munthali and Francis Mkanda for being so collegiate and congenial throughout the entire project period. Judith Kamoto and Robertson Khataza shared insights into the forest economy and rural social sociology.

A project like this always depends on the cooperation of many stakeholders and informants who have to patiently field the questions relentlessly thrown at them by eager researchers. We would like to thank inter alia Tanya Clarke and Nerbert Nyirenda from Invegrow, Françoise Malila and her colleagues at Alliance One, Fenton Sands at USAID, Rob Kilner at Tamaz, Twea Twapashagha and Katharina Diekmann at GIZ, Bouke Bijl at Agricane, Dr C.Z. Chilima at the Department of Forestry, Hon B. Kadzamira, Felix Thole at Tobacco Association of Malawi, Onyx Msachiwwa at Cquest capital, the Rastafarian association (Marcus Magaso), Ngabaghila Chatata at Thanthwe Farms, Ted Kwelepeta, and Max Chafuka at Cquest capital.

We would like to thank the Lilongwe and Kasungu Agricultural Development Divisions (ADDs) for accommodating us and the hard work in coordinating our research with the people from the district Agricultural Development Officers and Agricultural Extension and Development Coordinators in both Lilongwe and Kasungu.

Most importantly, we would like to thank the people of Chidula, Changombe, Chikwiya Mwendera, Nsalu, Mchacha, Mfuti, Mbuna, Mkando and Mpeni villages. Throughout the field research, our team was received with generosity, patience and kindness. The stoic resolve with which these farmers are taking on the multiple challenges posed by both their economy and environment was inspiring and deserves our ongoing commitment.

About the Authors

The research team was put together by Axel Klein, Project Director, Centre for Biocultural Diversity, University of Kent, and lead author of the report, and included a number of international experts with experience in transitioning diverse sectors. In Malawi, Chifundo Kamwaza, Team Leader, led the field research team comprised of Dorothy Chisusu, Senior Researcher, and the four researchers, Mavis Chituzu Nyirenda, Austin Matola, Linda Sowoya and Ellis Munthali. A special thank you to Arnold Kulemeka for getting us safely into the field and home again.

The authors Axel Klein, Chifundo Kamwaza and Dorothy Chisusu may be contacted at axelcklein@yahoo.com, c.akamwaza@gmail.com, and chisusu.dorothy@bunda.luanar.mw.

Acronyms

ADMARC	Agricultural Development and Marketing Corporation
AHL	Auction Holdings Limited
ARET	Agriculture Research and Extension Trust
CBM	Cubic meter
DWT	Dark Western Tobacco
EPA	Economic Planning Area
FAO	Food and Agriculture Organization
FCT	Flue cured tobacco
FCTC	Framework Convention on Tobacco Control
GOM	Government of Malawi
JTI	Japanese Tobacco International
JICA	Japan International Cooperation Agency
NASFAM	National Smallholder Farmers Association of Malawi
MK	Malawi Kwacha
PPE	Personal Protective Equipment
TAMA	Tobacco Association of Malawi
TC	Tobacco Commission
TCC	Tobacco Control Convention
VSL	Village Savings and Loan
USAID	United States Agency for International Development
VFA	Village Forest Areas
WB	World Bank

1. Introduction

1.1 From Export Diversification to Environmental Rehabilitation

The project was conceived in response to a serious but well-defined problem – how to assist Malawian farmers in transitioning from tobacco, their most important cash crop, to other income-generating opportunities, both on and off-farm. It is based on the assumptions that the ongoing decline in cigarette consumption in developed countries will continue to exert downward pressure on tobacco prices, with serious ramifications for tobacco farmers and national economies in low- and middle-income countries (LMICs) that are heavily reliant on tobacco exports.

Our objective was to understand the opportunity structure for diversification and transitioning from tobacco farming to other crops as seen from the perspective of the farmer. By talking directly to a range of farmers and other members from across village communities we wanted to gather the lessons that had been learnt from cultivating alternative crops and engaging in off-farm income generating activities. We wanted to capture the opportunities for alternative incomes as perceived by farmers and villagers and how they compared these against tobacco. Understanding options and the obstacles that prevented farmers from moving out of tobacco is hopefully of use to economic planners and development cooperation partners at a time of economic restructuring. We also sought to learn more of the perceived benefits of the tobacco economy in order to better identify effective alternatives.

Within a few weeks of embarking on the field research, however, it became apparent that farm income and export earnings are only one aspect of a broader and urgent threat: the relentless environmental degradation and destruction that has effectively transformed large parts of Malawi from woodland to savannah. If the unsustainable farming and resource extraction processes continue, large tracts of land will become desert.

Environmental challenges are raised in all the policy documents of leading development cooperation partners. The two leading cooperation partners, United States Agency for International Development (USAID) and the European Union (EU), in their respective programming documents, discuss the environmental challenges under the rubric of climate change and have launched multiple programs to address these challenges.^{1,2} The technical papers of the World Bank (WB) on Malawi also identify climate change as the key environmental challenge.³

However, in Malawi it is deforestation that contributes to environmental degradation, a phenomenon that is well understood by professionals working in agriculture and within the rural communities affected – and is obvious during any visit to tobacco-growing villages. Its full significance has not been grasped by the national government, by the main cooperation partners or by the Non-Governmental Organization (NGO) community.

We contend that this deforestation problem is colossal and urgent, and requires a rapid, coordinated, and radical response. To assist, we seek to understand these environmental challenges and in response have proposed concrete steps to improve the current situation.

1.2 Tobacco: The ‘Green Gold’ of Malawi

In the early post-independence era, tobacco production in Malawi was the preserve of large estates supported by the Agricultural Development and Marketing Corporation (ADMARC). Tobacco processing and export was and remains in the hands of international companies now known as tobacco leaf companies. After the World Bank-led Structural Adjustment Program (SAP) opened the market to smallholder farmers in 1992, smallholder production of burley tobacco shot up from 10,000 metric tons (1994) to over 80,000 tons (1997-

1999).^{i 4 5 6 7} According to the Tobacco Commission (TC), there were 134,654 growers in the 2019/2020 season registered in clubs and estates, with a minimum of 10-15 members each. The total number of farmers involved in tobacco production is estimated to be much higher.⁸

Production has been increasing steadily, so that in 2015, when the country was exporting an estimated 125,789 tons or 5.4 percent of global tobacco market, it was ranked as the world's sixteenth most important tobacco exporting country.⁹ Malawi is therefore acutely exposed to fluctuations in tobacco markets. In recent years an increase in export volume has masked the impact of falling prices. From 2015-2016, a 24.5 percent increase in exports was achieved even though prices fell by 7.2 percent. Farmers are working more to keep pace. Sugar and tea exports face an uncertain outlook since the EU abolished preferential sugar quotas for African producers in 2017 and because of shifting consumer preferences in United Kingdom (UK) tea markets. Further, the poor performance of other export crops leaves farmers with little choice but tobacco. Tobacco continues to dominate the export sector, accounting for US\$600 million against the combined total of US\$200 million for tea and sugar in 2014.³

The need for economic diversification was understood even before the decline in Malawi's tobacco markets.ⁱⁱ¹⁰ With tobacco accounting for nearly 60 percent of foreign exchange earnings, 10 percent of Gross Domestic Product (GDP) and 80 percent of employment, Malawi is one of the world's most tobacco dependent economies.^{11 12}

Change has been slow in coming, in some part due to the dominant role of the tobacco sector in the national economy and politics. For example, pressure from industry, farmers associations and trade unions have contributed to the refusal of the Malawi government to sign onto the World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC).

It also has to be recognized that tobacco is the only sector in the national economy where capital has accumulated, where economies of scale are found, and where technical capacity and scientific expertise have developed. While the need for diversification remains urgent, it is important to lock in the lessons learnt from tobacco cultivation and the technical and organizational achievements of the tobacco industry when moving into new areas of agricultural production.

1.3 The Smallholder Tobacco Farming Sector

While the social extension of tobacco farming has enabled smallholder farmers to participate in the cash crop economy, the environmental cost in terms of deforestation, land and soil degradation, water pollution and ecosystem disruptions have been substantial.¹³ While it has not been a topic of deep discussion in macro-economic strategy papers,³ the impact and gravity of environmental degradation at village level is alarming.

There has been significant habitat loss as the land dedicated tobacco farming was expanded from 41,763 hectares in 1961 to 194,218 hectares in 2000.⁹ Furthermore, the construction of drying sheds and furnaces and the need for firewood for drying harvested tobacco leaf continues to drive deforestation and has contributed significantly to progressive environmental degradation of large parts of the Lilongwe and Kasungu districts. Progressive deforestation has dramatically reduced the diversity and fertility, with soil erosion converting former miombo woodlands into dry savannah and eventually desert. The run-off of fertilizer and pesticides has contributed to water pollution and eutrophication in Lake Malawi with consequences for fish stocks and aquatic eco systems.^{14 15}

i A light air-cured tobacco used primarily for cigarette production.

ii The government appears willing to reduce its reliance on tobacco, in part due to its focus on an emphasis on sustainable agriculture in Malawi, including within its National Export Strategy 2013-2018 (NES).

This spiraling, self-perpetuating process of resource depletion, is recognizable in the reported scarcity of water and the need for increasing amounts of fertilizer to counteract declining soil productivity. If the rate of erosion continues unchecked, many rural communities will be unable to support themselves in the near future.^{16 17}

2. Methodology

2.1 Qualitative Approach to Applied Research

The project objective was to gain an understanding of the economic opportunities as they appear to people working along the tobacco value chain, with a focus on the tobacco farmers. The intention was to record the indigenous knowledge of possible alternatives, to understand farmers' obstacles, and then move towards identifying interventions. In a field that is often dominated by large quantitative data sets collected against pre-defined variables, these bottom-up perspectives were intended to complement and give life to the growing body of macro-economic data.

In the preparatory phase, research instruments were developed, lists of thematic areas drawn up and questions formulated that would generate the required information. These were piloted during the first field visit, and the responses were then reviewed against the information we were looking for and the instruments adjusted accordingly in the subsequent sessions, with participation from the entire team. From the outset, the project was defined as inductive research, that is, we were not out to test any particular hypothesis; rather, we were interested in developing new theories that could be adjusted based on what we discovered in the field.

Researchers performed thematic analysis, an inductive or "bottom-up" approach to identify common and recurring themes. Thematic analysis followed six phases; (1) becoming familiar with the data; (2) generating initial codes; (3) searching for themes; (4) review; (5) identifying causal relations between themes; and (6) producing the report.

We determined that knowledge generation was not an end in itself but should be used to facilitate 'substantive change.' Research should be applied and, where possible, influence conversations between beneficiaries, civil society, government agencies and the donor community. Equally, it should help identify opportunities for technological innovation that can help raise productivity. This was linked to finding ways of up-scaling production, already a well-known challenge when working with smallholder farmers, as a precondition for competitiveness and to prepare the ground for investment. As we reviewed the field data, the research problem changed, and with it, the research questions and lines of inquiry.

In order to understand how farmers calculated the costs and benefits of alternative crops, gross margin analysis was used for crops preferred by smallholder farmers in Kasungu and Lilongwe district. Gross margin analysis reveals a value chain in which returns exceeds production cost, with the potential goal of complementing and/or replacing tobacco.

In the analysis, gross margin was calculated as follows:

$$\text{Gross margin} = \sum \text{Gross Income} - \sum \text{Total Variable Cost}$$

Where gross income and total variable cost (e.g. maize, soybeans, groundnuts and, Irish potatoes) are values of total crop production and value of total cost of production, respectively. Variable cost of production is defined as costs that change with the level of output or scale of production, these are usually direct materials and direct labor used in production. The gross income and total variable cost presented in the equation above were calculated as follows.

$$\text{Gross Income} = \text{Total Crop Quantity Produced} * \text{Market Price}$$

$$\text{Total Variable Cost} = \text{Sum of Variable Costs Incurred in Crop Production}$$

2.2 Identifying Research Sites

Several field locations were identified within two districts, Lilongwe and Kasungu, both well developed and important centers of tobacco cultivation. While it was clear from the outset that by pursuing this narrower focus might preclude us from drawing broader generalizations, we preferred to go into depth in a few selected sites. When trying to understand the way that farmers managed risks and responded to opportunity, time is needed to establish trust and to give informants the space to clarify their thoughts.

The two districts were chosen because of their significance to the national tobacco economy. It is our hope that we captured feedback that is generally representative for the region and, to some extent, for farming communities across the country. Conscious of previous and ongoing field studies, we strove in our site selection and research design to avoid duplication and undue imposition on village communities.

The villages that were selected had a large number of contract farmers (versus those with overwhelmingly independent farmers). With tobacco as the major cash crop and tobacco companies as the biggest players, we first wanted to see if there were any differences in outlook on the economic space and the opportunities available outside of tobacco farming. Secondly, we wanted to gain a better understanding as to why farmers contracted with companies.

Last, we visited villages in a remote area of Kasungu where cannabis was cultivated illicitly. The region was remote, and no tobacco was being cultivated.

Table 1 shows a list of areas selected for the study in Lilongwe and Kasungu districts.

Table 1: Field Visit Sites

Lilongwe District		Kasungu District	
Extension Planning Area (EPA)	Name of Villages	Extension Planning Area (EPA)	Name of Villages
Ukwe	Chidula village	Chipala	Chikwiya village
Chiwamba	Changombe village Mwendera village	Mkanakhoti	Mchacha village
M'ngwangwa	Nsalu village Mfuti village	Lisasadzi	Mpeni village
Chingoti	Chingoti village	Mtunthama	Mkando village
Chitsime	Mbuna village	Santhe	Santhe village

2.3 Selecting Participants

While tobacco farmers form the key constituency of informants, we were taking a holistic approach to farming communities. That meant that we did not want to confine our information collection to the designated tobacco farmer, that is the contracting party in a production agreement or the claimant to a piece of farmland. We are aware that a broader group of people are involved in and dependent on tobacco farming even though they may not be formally recognized as such.

Consequently, we matched the number of male tobacco farmers interviews with the number we conducted with women, many of whom were also playing an important part in tobacco farming. Care was taken to interview diverse groups of informants as much as circumstance allowed, including contract and independent farmers, large and small land owners, men and women.

2.4 Research Process

In each village, the team first made contact with traditional authorities to introduce the project and obtain formal permission. We also liaised with extension officers. To defuse tension and clarify misunderstandings, meetings were also held with the major tobacco growing company in the area (Alliance One Tobacco Company), whose cooperation was helpful.

The main data gathering instrument, however, was the interview, often conducted with just one individual at a time. Interviewers followed an interview guide that ensured there was consistency in the data that was being collected, but they also took time for follow up and open discussion that allowed informants to determine the topics that they felt relevant.

Table 2: Key Informant Interview Guide

<i>Theme 1: Roles and Responsibilities</i>		
	Questions	Probes
1	What role do you play within agriculture in this area?	Involvement in other cash crops - other crop types; amounts. Source -- who do they deal with; social networks
2	What do you think are the most common agricultural problems you face in this area?	Why/not do they practice: livestock, fisheries, horticultural crops, cereals, field crops, support system (extension officers, teachers, vets etc.); markets, access to finance, technical skills
<i>Theme 2: Agricultural Decision Making</i>		
3	What are the views on growing alternative cash crops?	Constraints/opportunities; resources available; support structures
4	Who is in charge of making these decisions? Household and area?	Crop types, growing, management, finance, marketing/selling
<i>Theme 3: Markets and Networks</i>		
5	What is the typical market experience?	How do you sell (auctions, farmgate); who to and at what prices; where; stories

6	Do you have social groups that help with marketing and finding markets?	How do they work; who organizes them; any external organization involved; what is missing from these groups
7	Is there any information on direct marketing?	Farmers market; roadside stand; on- farm sales; retail stores; commodity markets; restaurants; institutional sales (to school/hospital); product auctions; wholesale marketing; cooperatives

Theme 4: Access to Information

8	What information is available about alternative cash crops?	Extension agent, community leader, NGO, friend, family member and so on
9	Who in the community can you go to for information on alternative crops?	
10	Extending your growing season (green house/high tunnel)?	
11	How would you like to receive information?	

Theme 5: Access to Finance

12	Do you have access to loans or financing options?	What kind: money lenders; grants; government loans; cooperative equipment sharing; peer-to-peer lending
13	What has worked and failed in these processes?	Interest rates; repayment terms
14	Do you have financing options for inputs and equipment?	Fertilizer; equipment
15	Is financing different for men and women?	Terms or repayment

Theme 6: Technical Capacities

16	Do you know any successful farm models/programs in this area that have helped farmers?	Hands on training; model demonstration; resources
17	What sort of training and information do you think should be available to farmers that want to transition from tobacco?	Extension workers; model farms
18	What technical skills do you have?	Animal/ livestock husbandry (beef, dairy, sheep, goats, pigs and poultry); pasture and hay land management; conservation and best management practices; irrigation systems; livestock processing capacity; nutrient management and soil health; weed, pest and disease management; specialty crops (fruits nuts, herbs, flowers, ethnic crops); business planning, financial record keeping, soil management, assessing and selecting markets, identifying markets, product pricing

Theme 7: Social Capital

- | | | |
|-----------|---|---|
| 19 | Do you have someone who is able to mentor you? | Are you involved; why/not have you not joined them; what makes them positive or negative? |
| 20 | Do you know of any co-op farming groups? | |
| 21 | What advice would you offer policy makers, government and organizations to help farmers succeed in this area? | |
-

These could take the form of target-focused questioning during visits to particular sites (e.g., fishponds, tobacco-curing barns) or impromptu conversations in random encounters. In all villages, in-depth interviews were also held with smaller groups which often led to substantive conversations. The format with the larger groups changed over the course of the project. The team would divide up large groups and the interviews would be running in parallel, usually with men and women in separate groups.

In some villages, classrooms or village halls were available, but often, the researchers would be sitting in the shade of a tree surrounded by variously composed groups of villagers. Several techniques were used to guide the process and to focus the attention of participants. One was a flow chart across the agricultural cycle to record and develop costing for inputs/returns for different agricultural products. Another one was mental mapping to get a better understanding of how groups understood their village assets. Where possible, interviews were recorded and subsequently transcribed. More often, interviewers took notes. For group interviews and focus groups, interviewers worked in pairs, with one responsible for writing down the information.

The results presented are based on the different data sources that were accessed during the research. They represent 1:1 interviews with farmers and other villagers as well as focus group discussions with additional villagers, both men and women. We also include information gathered from observational findings, interviews with stakeholders in the capital, and informal conversations throughout the field work process.

In order to represent the perceptions of the farmers interviewed during field research, direct citations from interviews and discussions are used throughout the text. This is an opportunity to give a voice to those we interviewed rather than the researchers summarizing. In the interest of anonymity, the names of informants have been withheld, but references to interview date and location were included in an earlier version of the paper. The complete set of interview notes and transcripts are held by the lead author.

2.5 Interviews Along the Value Chain

Field research with tobacco farmers was complemented with participants involved in the wider tobacco industry, including extension workers, transporters whose business was taking tobacco from farm gate to market, senior technical staff and management.

As the research identified fuel production early on as a major alternative income source, we also interviewed wood-fuel sellers. Since one of the main uses of firewood is construction, we interviewed brick-makers in different locations. This included both artisanal operations and larger industrial factories.

To understand the wider context for the farming sector, the rural economy and particularly the identified themes – tobacco, fuel production and construction – we also interviewed government agencies and

ministries, particularly in the Directorate of Forestry, as the main custodian of national assets. These were complemented by interviews with private-sector companies that were working with different commodities such as sugar, dairy products and soya, and companies that were moving into new product areas such as hemp.

International Development Cooperation experts from USAID, GIZ and the European Commission provided additional insight and technical advice, as well as suggestions on transitioning pathways.

3. Results and Discussion

3.1 The Integrated Production System

The Malawi tobacco industry has been described as an example of ‘state capture’¹⁸ by six companies operating as a cartel intent on controlling policy making.¹⁹ Yet, the reluctance of successive Malawian governments to impose restrictions or sign on to the Framework Convention on Tobacco Control (FCTC) is not merely the result of adept lobbying by large companies. Farmers and many other players along the supply chain have a vested interest in maintaining access to a dynamic market for tobacco products. Exposing how tobacco companies have been seen to be championing farmer interests^{20,21} is important for understanding the pressures and arguments presented. The fact that the International Tobacco Growers’ Association (ITGA) is funded almost entirely by the tobacco industry and has used its position to mobilize the agricultural lobby and undermine the World Health Organization (WHO) is pertinent to an understanding of the international politics of tobacco control.^{22,23} But it still does little to address farmers’ concerns with the structure and organization of the tobacco market. For many smallholder farmers it is not the tobacco crop that is the problem, but the structure of the market that puts them at a disadvantage.

Since 2012, the large tobacco leaf companies operating in Malawi - Alliance One Tobacco, Limbe Leaf Tobacco Company, Japanese Tobacco International (JTI) Tobacco, Malawi Leaf Tobacco, and Premium Tama Tobacco – have been operating their respective variants of an Integrated Production System (IPS). By engaging in contractual arrangements with smallholder farmers, leaf companies secure their supply of tobacco and ensure that the quality of tobacco leaf produced meets the standards of international markets. By organizing contracted farmers into ‘clubs’, tobacco leaf companies achieve economies of scale. Doing so helps to ensure adequate production and makes input provisions (seeds, fertilizer, equipment), training and extension work economical.

By signing a contract, farmers also commit to abiding by a code of standards that seems designed for corporate virtue signaling rather than meeting the needs of Malawi’s rural poor.ⁱⁱⁱ One farmer said that: “we are not allowed to employ children because they should be in school. But there are very few adults who can work in the fields, so we need to look for outside people to assist.” Since many able-bodied adults are migrating to the cities or abroad and children are being kept off the farms, it appears that an increasing burden of agricultural labor is being born by the elderly.

For their part, farmers obtain market access for their produce and support from seed to sale. Being signed up by one of the companies remains therefore a prized achievement for smallholders. In many rural areas, it is the only opportunity short of migration for moving from subsistence into the formal economy.

iii The Agricultural Labor Practices Code of Philip Morris International promotes laudable standards on non-discrimination of tobacco workers regardless of sexual orientation and prohibits verbal abuse. Yet, this is meaningless in Malawi where the penal code prohibits “carnal knowledge against the order of nature.”

3.2 Input Costs

If tobacco cultivation has created opportunities for rural development, the distribution of benefits remains highly uneven. They are open only to farmers with holdings of a minimum of half a hectare of land can and preferably more. Next, they have to be able to raise enough money for a deposit in a company specified bank account against which inputs will be provided. Size of the deposit and the conditions of access seem to vary. Informants that were contracted by JTI reported that they had put down a deposit of MK60,000 (US\$ 80) per hectare, for instance. According to Milanzi,²⁴ for tobacco cultivation in the same district, the deposit required only a few years earlier had been substantially lower at MK40,000.

Regardless of the size of the deposit and the detail of the conditions, all contracts appear to be running along similar lines. Farmers commit themselves to grow the tobacco and the companies provide the inputs required: seedlings, fertilizer, pesticides, plastic sheets and basic tools, sometimes protection equipment and extension services including training. One group of informants explained how the provision of inputs per 0.5 ha of farmland would be split into three phases as show in Table 3.

Table 3: Inputs Provided to Tobacco Farmers per 0.5 HA by Tobacco Companies

Months Fertilizer Was Provided	Type of Fertilizer Provided	Quantity (Units)
August	CAN ^{iv}	50 kgs
	UREA ^v	100 kgs
	Super D ^{vi}	250 kgs
October	NPK (23:21:0+4S) ^{vii}	100 kgs
	Tobacco seeds	4 grams
	Maize seeds	10 kgs
November	Maize fertilizer	
	Tree seedlings	170 seedlings
	Nyonga pack (pesticides) for nursery and main farm	2 x 5 liters

Source: Data from interviews with tobacco farmers in Lilongwe and Kasungu districts, October – November 2018.

For these inputs above, the group of farmers had been charged a total of MK 460,000 in the 2017/18 season, against MK 525,000 in the previous two years. They could not explain what was behind these fluctuations but speculated that it might reflect the kwacha's appreciation against the dollar, suggesting that tobacco companies passed on savings they were making on purchasing inputs.

Farmers could not explain how the costs of inputs for which they were being charged were being calculated. They could also not report the total cost of inputs and services that had been provided to them at the time of interviews. It would appear then that at no point in the cycle do farmers have a precise understanding of how much they owe the tobacco leaf companies. What complicates this even further is that some of the companies are providing a spectrum of support that goes well beyond tobacco farming. According to one of the

iv Calcium Ammonium Nitrate (CAN), also known as nitro-limestone or nitrochalk, is a widely used inorganic fertilizer. It contains 27% nitrogen and 8% calcium as calcium carbonate (lime).

v An inexpensive form of nitrogen fertilizer with a NPK (nitrogen-phosphorus-potassium) ratio of 46-0-0.

vi This fertilizer is used for basal dressing in flu-cured tobacco.

vii NPK fertilizer is a complex fertilizer comprised of three which include 23% of Nitrogen (N), 21% of Phosphorous and 4% Sulphur elements. According to a recent government ban, farmers are supposed to use 23:21:0+4S

extension workers responsible for a cluster of villages, the company was also providing “maize seeds so that even if the tobacco crop has not done well, at least, they should be able to feed their families.”

Further, to enable farmers to meet financial obligations like school fees and medical bills, they were helping farmers grow “soybeans, groundnuts and beans so that farmers can sell these crops” during the “dry” period before the tobacco leaf money arrived. The research confirms findings from a study in different geographical regions of Malawi where farmers did not know what they owe at the outset and the “obligations of the company to the farmer are never detailed in black and white.”²⁵

The company officers on the other hand see their roles in a much more positive light. One extension worker in Lilongwe district reported spending time settling disputes between families or counselling strained relationships. While his own dependents preferred life in the capital, he spent as much of his time as he could in the rural areas where he enjoyed being something “like a social worker.” While difficult to quantify, this points to the complexity of the relationship and a depth of dependence that has yet to be captured in the existing body of literature.

The overriding purpose of tobacco company field officers, however, lies in providing training and carrying out inspections. The leaf technicians visit the villages in rotation to ensure the optimal application of inputs, check on the quality of the crop and transfer skills. Alliance One, for instance, employs a team of more than 180 leaf technicians, each of whom is responsible for 80- 100 farmers. Conducting between 12-15 visits to each area per season, the leaf technician will check specific issues at each location. One leaf technician explained that the tasks would range from giving advice on planting seedlings to marketing. “Tobacco is the only crop that has a control market. Unlike crops like maize which can be sold anywhere, tobacco is specialized, and people need guidance to be sure that there is a market for it.”

The extension workers play a more general role and actively engage in directing behavior change, instructing farmers to plant tree seedlings or to clear up the ubiquitous plastic rubbish debris from consumer items or farming inputs. In the absence of a rubbish collection system, garbage is left to blow across the fields and is increasingly getting mixed in with tobacco leaves at harvest time. Some of the informants were appreciative of this role. “They send advisors to us, they come specially for tobacco farmers so that when we meet problems, we can go to them. When advisors see that specific farmer is not doing well, they also interview.”

The relationship is complex, multilayered and often comes with steep obligations. Farmers with limited literacy and numeracy skills were struggling to keep abreast of their obligations. Companies, on the other hand, were keeping an account of inputs provided to each of the contracted farmers, who were accumulating a rising debt over the cycle. None of the farmers interviewed reported that they were being updated on their debt status. Instead, they were simply presented with a summary of the deduction from the payment they received for their tobacco after auction.

One group of Ukwé farmers, who had contracted with JTI, reported that after they sold their harvest, the leaf company paid into a bank account that was held in a collective by the farmers club. Each farmer was then told how much had been realized against a sales sheet from which the institutions were then deducted. None had kept a tally of the inputs they had received and their monetary value. They were therefore unable to present an independent account and challenge the calculations with which the company presented them. This confirmed the findings of previous research that farmers “are often not aware of how much they owe leaf companies.”¹²

3.3 Transporting Tobacco

If farmers find it difficult to keep a tab on their debts and obligations to the companies, they face even greater uncertainty regarding the money they are going to earn from the sale of their tobacco after harvest. According

to the contract between farmers and tobacco leaf companies, the mutual obligations are straightforward, with companies providing support from seed to sale while farmers provide land, labor and by end of season, the stipulated quota of tobacco. In addition, farmers fulfill a range of other tasks such as clearing fields from debris to preventing contamination of tobacco leaf and growing trees to be used for firewood when tobacco is being cured. Some of the informants said that they felt poorly supported by the tobacco leaf companies in the period after the harvest.

One key company obligation is to arrange for the collection of tobacco from the farm to the auction houses, often eagerly awaited by farmers who at that point are often steeped in debt. It is important to underline the keen sense of isolation experienced by farmers in rural areas that are poorly serviced by buses and have no access to railways.

Tobacco leaf companies contract out the transporting of tobacco, sometimes to leading farmers in the area. For enterprising farmers, such as one of the informants who was the secretary of the Central Region Tobacco Association (CRTA), this is an opportunity to expand their business. They can use the money from tobacco to fund the acquisition and maintenance of vehicles that can then be used to transport other crops and passengers.

According to farmers at Ukwé who were under contract with JTI and Premium TAMA, it can work out well. After harvest, the lead farmer and the company extension officer communicate to them the day that the trucks will arrive to collect the tobacco bales. On that day, they use oxcarts to carry the bales to the company's depot or a central point (for instance, a church yard). Each bale is weighed, and the weight noted against each farmer's name. Then the trucks carry the tobacco to auction accompanied only by the lead farmer and the extension officer. When the tobacco is sold, the money is deposited into the account that has been opened by the club, and each person is told how much has been realized minus the input's loans.

Yet, this model of providing some villagers with opportunities for accumulation and growth is seen by others as fraught with abuse and inefficiencies. It was reported, for example, that some of the supervisors were quick to stamp the tobacco once it had been cured and packed, but then did nothing to organize for its collection. Instead, the bales were left sitting on the farm with "chickens climbing all over, children playing on it and leaf getting spoiled." You find that the supervisor is just at his house and not bringing the vehicle around to pick up your tobacco. We go and speak to him but sometimes they get angry and threaten to remove us from the club. They have a lot of power, because for you to stay in a club, you need to get on very well with this supervisor. So, we don't say much when things like these happen, we just look on." Occasionally, supervisors will even ask for incentives for organizing transport, knowing full well that the farmer has little choice if he does not want to be left sitting on his tobacco.

Once tobacco has been collected, it may not necessarily be bound for the auction floor. Farmers in one village reported that transporters were trying to minimize fuel costs and were not heading for the market until all the contracted farms in an area had delivered their tobacco. This left the tobacco that had been delivered in earlier sittings in the yard with the risk of becoming spoiled. These findings confirm earlier studies from other locations in Malawi which reported that tobacco is regularly stored in the compounds of transporters where it remains exposed to elements for weeks, sometimes for months, and are liable to deteriorate.²⁵

3.4 The Hybrid Sales System

Farmers experience heightened uncertainty when tobacco arrives at the auction house. In the first instance, bales have to be off-loaded, stored and taken to the auction floor. There, the leaf is assigned a specific grade by a representative of the Tobacco Commission (TC) and if it does not meet the required quality standards, it will be rejected from the auction. Next comes the actual sale, where the auctioneer shouts out prices until a

buyer from the leaf companies signals intention to purchase. It is after that step when companies must deliver on their commitment to purchasing agreed upon quota from their contracted farmers.

This system, which runs on the reasonable-sounding argument that prices are set by global markets and cannot be fixed a year in advance, creates dependency among farmers. They are at the mercy of different service providers at each stage and have no alternative outlets for their produce. In contrast, all the other partners, including the state-owned agencies such as the TCC, as well as auction houses and transporters are guaranteed their cut which is often paid up front. The farmers, on the other hand, risk low prices or possibly the rejection of their crop.

From inception, the system has favored service platforms, be these marketing boards during the colonial era, state-owned auctions markets after independence or the current trading platform monopoly. There are four auction houses in Lilongwe, Mzuzu, Limbe and Chinkhoma, that are all run by Auction Holdings Limited (AHL). AHL also dominates tobacco re-handling, which involves processing and sale of the poorer tobacco grades that have been rejected at the auction.

At auction, farmers can only sell the tobacco quota that they have been licensed to grow by the TC. It has been argued that this arrangement creates two disadvantages for farmers: first, the quotas are set at a level to ensure an oversupply in the market while at the same time preventing individual farmers from taking advantage of a successful harvest and selling anything above their set quota or punishing them for failing to register in time.⁸

If the absence of alternative sales outlets allows auctioneers to pass transaction costs on market users, the limited number of buyers have created a monopsony that has had the effect of dragging down prices even before the recent downturn in tobacco markets. Collusion among tobacco buyers in Malawi has been reported from participant observation on auction floors²⁵ and from wider studies of the value chain. Farmers are, therefore, at a structural disadvantage in the wider tobacco market.

3.5 Little Ability to Organize Collectively

Low level of organization among rural producers puts farmers at a disadvantage. There are currently hundreds of thousands of farms with fewer than a handful of acres where agricultural tasks are performed by a combination of family, kin networks, mutual help laboring arrangements and hired labor. This is itself a reflection of changing family composition and the ongoing flow of urban migration. All over Malawi, tobacco farmers organize themselves into clubs that “take different shapes with varying functions, intents, and affiliations.”²⁵ Typically, clubs help members access loans, share knowledge, organize transport and marketing arrangements.

At higher levels, clubs get together to form local, regional and national organizations such as the Tobacco Association of Malawi (TAMA) and the National Association of Smallholder Farmers’ in Malawi (NASFAM). Since 1995, NASFAM has been running the largest association of tobacco-growing smallholder farmers, promoting good agronomic practices and the marketing of tobacco.¹² According to one NASFAM field officer, “We encourage the club to be composed of ten people who live close by each other. They can share some knowledge, make good decisions and sell their farm products as a group to the NASFAM association.”

In the villages that were visited in the course of the fieldwork, the most dynamic clubs are those that are contracted by tobacco companies that provide finance and physical inputs on which most farmers rely. In turn, companies depend on the farmers collective efforts to supply the volume of tobacco that they require. Supplying physical inputs and technical extension services is more cost effective, it would appear, if it can be delivered to groups of farmers in a given locality.

The clubs are in competition and exclusive: “when it comes to tobacco, you can only grow for one group, so can only work with either groups like Alliance One, JTI or Limbe Leaf only.” Once farmers sign a contract they are bound to work with that specific company. “It is not possible for a farmer to take tobacco that he farmed under JTI and to Limbe Leaf or Alliance One.”

While the formation and internal organization of these clubs vary, they often have a corporate personality, which means that the responsibilities of every single member are carried by the group. Each member is committed by his/her contract with the tobacco company to produce a fixed amount of tobacco and this obligation is passed on to the club. Should any individual experience a shortfall in output, and consequently fails to repay his debts to the company, the club assumes liability.

Interestingly, then, the most active and dynamic social organization that is found in tobacco growing communities is designed primarily for facilitating the interdependent relationship of farmers and tobacco companies. While farmers report benefiting from the guidance of extension workers, skill transfer, mutual assistance and peer-to-peer encouragement, they receive no support in critical areas of leaf quality grading or price. Nor are the clubs designed to further the collective interests of rural producers.

Outside of farming itself, the remnants of traditional forms of organization, eroded under both colonial and post-colonial state, retain little significance beyond the symbolic. Political organization through village headmen and chieftaincy systems lack any tangible authority and provides at best a platform for consultation. The absence of local organization leaves rural producers in a position of vulnerability vis-à-vis state agencies and the market. Clubs do not seem to be playing a role in supporting individual farmers in disputes with, say, transporters, leaf checkers or buyers. The clubs that have been contracted by the tobacco companies are therefore not seen as an organizational mechanism for safeguarding the structural interests of smallholder farmers. Their principle function is to streamline production and ensure a regular supply of tobacco leaf.

Notwithstanding these drawbacks, club membership is still a preferred choice for most farmers who see concrete benefits from the relationship with companies. The provision of inputs and extension services is critical to raising production, estimated by one study to be 40-74% higher per acre.²⁶ Equally important are post-harvest arrangements, which for all their shortcomings, are better than leaving it to farmers to organize for themselves. As one informant said, “once the product is sold, the next morning you get a sale slip against the number assigned to each bale and how much each was sold for.” Then the loan is deducted, and the remainder paid out.

3.6 Non-Contractual Farmer Tradeoffs

Farmers who work outside of farming clubs do not have to factor into daily visits of extension workers, training sessions or briefings by technical staff. They are also free from debt to companies for supply of inputs and under no pressure to produce their quota. The benefits of autonomy are countered, however, by not being provided with fertilizer and pesticides, or benefitting from technical expertise. Non-contract farmers received neither protective equipment nor any of the social benefits, such as fuel-efficient cooking stoves. However, the real differences emerge at the point of sale.

From the perspective of one non-contracted farmer, tobacco companies arrange transfer of crop to market while purchasing tobacco from contracted farmers at a “fair price.” Non-contracted farmers would either have to organize transport or sell at a lower price to one of the many independent tobacco traders. These traders, referred to by informants as vendors, make their profit in the margin between the price they pay at the farm gate and what they get on the auction floor. The vendors provide an outlet for farmers who are not contracted to any company. They also provide an outlet for contract farmers who decide to sell before the company has come to collect. Reasons could include urgent financial needs, surplus, frustration with the

company, among others. Farmers reported being cheated by tobacco traders but that it was impossible to challenge this more sophisticated adversary.

While contract farmers are assured that their tobacco will be bought once grade and price have been established at auction, non-contract farmers are exposed to corrupt practices and extortion. A supervisor working for one of the tobacco leaf companies explained how farmers are partly complicit, as some will try to influence the process by paying bribes. Accordingly, this supervisor said, “you need luck on your side [*ku* auction floors *ndi kamwayi kamunthu*].” It was further explained that the porters at the auction house collect payments to speed up offloading the tobacco bales. Farmers are often anxious to avoid their tobacco lying idle at the auction house where the quality is liable to becoming compromised. They will then try to induce the leaf classifiers to raise the grade with payments of *tnm mpamba* or airtel money or in hurried transactions outside of the auction house. Leaf buyers may expect a kickback.^{viii}

Each step seems to open a new set of complications. The informant explained, “they tell the farmer to pay MK 5,000 per bale for his tobacco to be sold quickly. Imagine a farmer with five bales paying MK 25,000, but the tobacco still isn’t sold. One month on, he goes to find out why his tobacco hasn’t been sold and is met by someone else who tells to pay MK 2,000 per bale. The farmer has no choice but to go and sell his goats and pay this new person too.” Even that does not guarantee a sale, however, and if the bales go through three rounds of auctioning without finding a buyer, they are returned to the owner. After a third pass on the auction floor, a non-contract farmer “will have to bribe the buyer to purchase the tobacco.”

The dysfunctionality of the system can have profound consequences. One informant said: “I have carried back my tobacco once. I used an ox-cart because I did not have enough money to hire a car. The tobacco was of good quality, so I do not understand why it was sent back. I ended up selling the bales to a vendor for MK 30,000. That is when I stopped farming tobacco, in 2016.”

A key informant working for a tobacco company explained that measures had been put into place to eliminate corrupt practices, such as undercover staff looking like ordinary villagers who, by pretending to be farmers, can move around the auction without being noticed. In addition, direct telephone lines have been installed where corruption can be reported. Yet, in a context where corruption is generally taken for granted, where farmers perceive whistleblowing to lead to reprisals and where farmers are desperate to sell their product, many corrupt officers remain undeterred.

The informant noted that it was typically a contract farmer who reported tobacco officials. Contract farmers can also appeal to the contacts they know in the tobacco company. This may not always work, but one informant did report that when her tobacco is “found with a bad leaf” and priced low, she could turn to someone and ensure that the price is corrected.

Despite disadvantages of being locked into an asymmetric relationship with buyers, contract farmers enjoy tangible benefits over the cycle. Much of the complicated and challenging aspects of off-farm operations are organized for them, including transportation and handling at auction houses. Most importantly, perhaps, there is an assurance that contract farmers will be able to sell their crop at the end of the process while independent farmers can be left sitting on their crop.

3.7 Women in Tobacco

Women are fully engaged in clubs and farming groups; the tobacco leaf companies are happy to include women in their contract. There are, therefore, no structural impediments against female participation in the tobacco economy. Male dominance has become more prominent with the shift from traditional consultative

viii *tnm mpamba* and airtel money are mobile banking services in Malawi.

decision-making patterns in rural households to the contract system. In the contract system, crops are selected by the contracting parties. Contracting parties at the household level are invariably the 'heads of households', an administrative term that has further shifted intra-household power relations. In most cases, therefore, it is men who are the contracting parties responsible for the production and sale of the main crops. While women are included in contracts, they are often only involved once their husbands, brothers or fathers have deceased and they are heading the household by default.

Such women rely on social and kin networks to mobilize labor. Otherwise, the tasks involved are loosely divided and grafted onto culturally constructed gender roles. Thus, men would do certain tasks involving bursts of highly physically demanding tasks, such as watering, and women the tasks that require endurance, like weeding. Household units are highly effective as there was a common purpose, complementarity and trust.

There is, however, a crass imbalance in the distribution of proceeds. As one informant puts it, "women are good at farming the tobacco but when it comes to money some men will get lost for a few days spending the proceeds and then only come back after the money has been spent." The justification offered by informants was that land rights are held by the men and that women therefore are not entitled to the proceeds, whatever their input has been. Not only does this run against the tacit understanding of the workings of a family unit where members work together for the benefit of the collective, it also goes against the entire understanding of usufruct rights on which Malawian villages are based.^{ix} Land rights are vested in the community whose members have the right to farm it.

The research team observe that the fiction of land ownership is a ploy used by many men to collect money earned from tobacco and spend as they deem fit. Tobacco companies find it convenient to go along with this as they prefer working with a single contact. This also helps them avoid involvement in domestic issues around distribution of proceeds. This occurs across the entire cash cropping economy. It is particularly irksome for women when their post-harvest labor input is greater such as the spent time removing the husks of groundnuts. Some male informants did not see this as an issue: "we will simply take the groundnuts to market when we feel we need the money. We don't always ask a woman for her opinion. She might even ask what happened to the bags, but we will not respond."

3.8 Saving Clubs and Associations

Access to capital remains one of the main barriers for all farmers. Women are likely to be more affected because they find it hard to claim ownership or even access land that could stand in for collateral. An alternative model to access small amounts of capital promoted by development agencies are the so-called Village Savings and Loan (VSL) groups.

Attractive in their simplicity and low cost, they build on existing social capital, such as trust, cohesion and solidarity within villages and are reported as having significantly contributed to lifting households out of poverty in rural Malawi²⁷. Yet, the very preconditions that facilitate starting up a VSL also restrict their efficacy as an investment vehicle for diversification and upscaling. They usually involve small numbers of participants, which limits the amount of capital each VSL can raise. They are also self-mobilized among neighbors and acquaintances, which again limits these groups to people of the same social class, and, usually, the same sex²⁸.

With encouragement from international organizations focused on women rights in rural communities, some women have organized themselves and formed clubs outside of their marital bonds. Through organizations such as Care International, women have been given the opportunity to develop VSLs (village banks/*banki*

ix The right to use or enjoy a thing possessed without changing the character of the property.

nkhonde), with initial loans being facilitated by donors. It has allowed women to turn their social groupings/capital (e.g., church, children, etc.) into opportunities for organizing clubs and associations. There is a gender division in VSL participation with most men reluctant to join *banki nkhonde* groups, partly because they perceive it is a slow source of finding money and because it is seen as a female organization. Instead of joining themselves, many men borrow from their wives. “We [men] do not get involved in the village banks but ask our wives to take loans when we need them.”

One group of women in Lisasadzi were able to create farming groups that provided them with money for household expenses: “we farm tomatoes and cabbage together. We have plots near the riverbed that were given to us by the chief. Men think these crops are for women because most of it can be used for cooking and not so much for selling.” Having access to these independent sources of income is critically important to women given that men often control all earnings from the cash crop.

These independent village banks have the potential to evolve into full-fledged cooperatives and in some villages, chiefs and village heads have assigned common land to them. In other cases, women have joined up to hire out labor and invest their earnings into the club: “We can go out as a group and charge farmers our labor. We will work together to make money so we can have more to distribute later.”

3.9 Female Run Enterprises

Often, women must become enterprising such as with livestock, soy bean farming and running small grocery shops in town because their husbands are failing to look after the family. In the village of Simulemba, one woman started out as a laborer. She bought a pig with her savings, gradually expanding the herd, before opening a small shop in the local market: “I did this for my daughter because my husband drinks a lot but this is my money and he can’t take it.”

Another woman who was farming tobacco explained: “my husband does not live here. He goes to Johannesburg (joni) to work. He is here now for holiday, but he does not farm, I do it by myself, this is my land. I ask my son to sell it for me because he has a contract.”

With increasing understanding of women’s contribution to value creation, their systematic exclusion from decision making and reaping of financial benefits is apparent. Efforts are needed to redress gendered exclusion along agricultural value chains. Women have already proven their value with their labor involvement; as one farmer put it, “*chikondi ndi mu chigafa*” (love is in the shed).”^x

3.10 Access to Fuel

In rural Malawi, domestic responsibilities are divided along lines of age and gender. Cultural traditions allocate responsibility for collecting firewood to women and girls. This was not considered a particularly arduous task when the country was once covered by miombo woodland.

Today, women are most directly affected by the depletion of local wood fuel sources as they spend time collecting firewood and are the main users of firewood at a household level (i.e., cooking, heating and water purification)²⁹. However, this is increasingly more difficult because of the rapid pace of tree loss. Girls not only have to go even further afield but are also taking wood from live trees, trees that are often under protection. An EPA officer at the Chipala EPA was dismayed by this: “women go into this mountain behind us. They come in and cut down the trees for firewood. They will cut everything down even the small ones, they do not care. If there is a forest fire, they are the first to come and uproot trees and they are happy about this. They do not want to grow the trees, just use them.”

x The husband wants the women for the labour in the barn/shed after tobacco sales all the earning are taken by the man.

Some stakeholders are providing rural households with more efficient cooking (*chitetezo m'baula* and rocket stoves) that reduce the amount of fuel wood used in cooking. It is possible that solar panels, that are increasingly being installed in villages, can be used to power stoves. To preserve the fast dwindling wood reserves, women, as the main consumers and domestic users, should be brought into the discussion and have their needs addressed.

3.11 Diversifying at the Farm Level

Rural communities continue living under the shadow of famine as food production is failing to keep pace with the needs of a growing population. Hundreds of people died in the famine of 2002,³⁰ and from July 2016 to March 2017 parts of the country faced a food security emergency in addition to devastating floods. Poverty among rural families is so endemic and service provision so rudimentary that households regularly experience food shortages.³¹

Even farmers with larger plots find it difficult to escape the vicious circle of declining soil productivity, land fragmentation and population growth, due to both market failure and the rudimentary institutional infrastructure. Unable to bank their proceeds post-harvest, they typically invest proceeds in capital assets such as buildings in the market (shops), cars, motorbikes or bicycles. Motorbikes are particularly popular because of mobility and prestige and also because of the high demand for transport. A regular experience, though, is being forced to sell these assets at some point in the cycle to buy farming inputs. These cannot always be recovered after harvest, so many farmers see their fortunes slide. The difficulty in forming sustainable enterprises means that even successful farmers are struggling to lift themselves out of poverty.

Achieving food security is, therefore, the guiding principle for many rural households. This means mixing food crops for subsistence with cash crops and optimizing the mix of cash income and food production.²⁵ Key factors determining crop choice are nutrition and financial value. There is an in-built bias towards crops that have a dual function such as groundnuts or soy than can be sold or eaten. Farmers in Mkando village in Mtunthama EPA elaborated on the needs met by the most widely used crops: tobacco (cash), maize (food), groundnuts (food and cash), soya beans (food and cash), potatoes (food).

3.12 Reliance on Tobacco as a Source of Income

Tobacco remains attractive as a crop because of the prospect of a lump sum of cash at the end of the process. It is possible that there is an element of irrationality at work as has been suggested in the literature with farmers not accurately costing their own labor inputs^{12,19} or failing to keep track of the debts that they are accruing for the inputs.²⁵ However, the prospect of a 'sudden influx of cash' upon sale of tobacco is a key motivator. It can be used to meet family needs or to purchase large-ticket items that then may help in diversifying their income-generating activities or it can be blown on spending sprees in the capital.

Almost a folk motif, the notion of tobacco money has become engrained in the social imaginary, leaving many farmers reluctant to move to alternatives. Even when they are prepared to transition, the lack of knowledge about alternative crops, particularly the marketing opportunities and processes, cause some to revert to tobacco. This perception of tobacco as a source of individual and communal wealth is reported in other community studies. Tobacco is perceived as central to the well-being of farmers and to grow it continues to be part of the identity of a successful man.²⁵

Yet, in contrast to indigenous traditions recorded from the Americas where the tobacco leaf was believed to be an animate leaf with a soul,³² contemporary tobacco farmers in Malawi lend no spiritual importance or hold any sentimental attachment to tobacco. This is in contrast to maize or millet, which have a strong symbolic and ritual significance and figure widely in different forms of cultural expression, in stories, songs and dances.^{33 34 35} The importance of tobacco is entirely material. Many informants expressed their awareness

of the significance of tobacco to the Malawi economy while echoing dissatisfaction with tobacco prices reported in previous studies.¹² At the same time, signals from the auctions in recent years have been clear. The price of tobacco is falling and many farmers are learning the lesson: “I have stopped teaching my children how to grow tobacco so they might find interest in other crops.”

If farmers continue growing tobacco, it is not because of any sense of loyalty but because of what they saw as lack of alternatives. One informant explained, “we find it hard to switch since we are mostly familiar with tobacco farming even though the crop does not bring us a lot of profit. But we still grow it since we have no other choice.” As one focus group participant said: “most of us don’t plan on ending farming tobacco because we do not have any other crops that we can depend on to give us an income. Some of these other crops may end up getting destroyed or going to waste because they do not have markets. Tobacco, on the other hand, always has a readily available market.”

3.13 Market Functions and Inefficiencies

The market for tobacco is comparatively well-organized with auction houses and other trading platforms that, though skewed against smallholder farmers, provide at least a functioning mechanism for processing and sale. For other crops, farmers depend on vendors (independent traders) who come directly to the farmgate or to rural markets that have been established by the state-owned ADMARC. For the selling farmer, each option involves a different set of risks.

Many farmers reported that ADMARC markets are plagued by inefficiencies and abuse. Informants in Mfuti are angry about the corruption at the ADMARC office at Ngwangwa, which has stopped buying up any crop other than maize. Even that is bought only sporadically. Employees are regularly asking for bribe. This is said to be working for larger farmers but not smallholders. This problem may have arisen because quantities farmers wished to sell were too small to be profitable for a trading floor or brokerage system and the sellers were vulnerable because they were too detached from the legal system to find any redress.

In farming districts, corruption seems to be a major contributor to family hardship by eating into their income on crop sales. In Lilongwe district, for instance, officials at one ADMARC market apparently demanded kickbacks of MK 50 for each kilo of maize that was selling at MK 150. Elsewhere, ADMARC are said to be buying up crops well below government gazette prices with the local staff collecting the difference themselves.^{xi}

In the absence of a functioning government agency, many farmers fall back on the private sector: “we sell to vendors from towns because we don’t have any other place to go. If you go to ADMARC, they steal from you. I would rather have the vendor come here to prevent spending money on transport.” Farmers lack trust in government trading centers and often find themselves selling to vendors.

By selling to vendors, farmers are unlikely to obtain advantageous prices, but they can arrange a sale when there is need for cash. Farmers explain how they can sell a bucket or two while waiting for prices to pick up. Often, they are disappointed as maize stays within a price-range of MK 90 – MK150 per kg and soya bean within MK 50 – MK20 per kg. “In the end you find that you sold a lot of your crop stock trying to meet your family needs.”

Sales to vendors can be achieved more quickly and small quantities of produce can be sold easily. The problem is price, often around one-third of ADMARC prices. In addition, the farmer often must contend with faulty weighing instruments. In the pervasive culture of permissiveness, perpetrators of fraud and corruption can act with impunity against farmers who are outside the protection of the law.

xi A legacy from the British colonial administration, it refers to information that has been officially announced or published in a newspaper, a gazette.

3.14 Alternative Crop Experience

While smallholder farmers do have crops that they can grow as an alternative to tobacco, all of these come with problems that are both similar and different to the misgivings that farmers had voiced about tobacco. What troubled farmers most was the uncertainty surrounding the sale. There are two reasons for this uncertainty: the first is the price volatility of globally-traded commodities and the second is the reliability of partners. Farmers report that these partners often promise prices for crops before planting that are not honored after harvest. At this point, the farmer has no choice but to sell for what is being offered.

Soybean is a promising cash crop with growing global demand that has been promoted by development partners like the Clinton Foundation who distribute seeds and send out extension workers. One farmer in Chiwamba reported being given 750 kg of seedlings to plant ten acres of his land with soybeans with a promise of fetching MK 500 per kg but in practice only received MK 210. Another farmer reported that he had increased production after selling eleven bags of soybean for MK 300 in 2016. The following year, he harvested 1,900 kg; the price dropped, and he suffered an overall financial loss. This price volatility proved a disincentive to soybean production and made him decide to go back to tobacco. Others pointed to the sheer difference in price. They were being offered MK 180 per kg for soybean by Sun-seed or Mount Meru (SOYOLA). Tobacco, meanwhile, was selling at MK 800 per kg.

One advantage of soybeans, however, was the modest financial outlay as it required a lot of work but little fertilizer; for this reason, it has proved attractive to poor farmers. Growing crops that are labor intensive, for which there are large markets and that did not require much inputs is, therefore, part of a growth strategy. “If you don’t have enough fertilizer, then you go to the crops that don’t require fertilizer. However, crops like peanuts and soybean require is labor so you see how you will do this. When you find money you farm these products, when you harvest and sell them you will make money and you can then use this money to buy fertilizer for next year to add to your maize crop or something.”

3.15 Subsistence is the Key Driver

Farmers have to consider different factors before selecting their crop in relation to their own requirements and opportunities. Cassava, sweet potatoes and groundnuts are all attractive for having low input requirements. Sweet potatoes are reportedly not very labor intensive, but then farmers found it difficult to get good prices. While cassava did not need much fertilizer, it required significant watering during the dry season and had to be fence-protected to keep out livestock, all of which means it is labor-intensive. Prices are optimal during the lean periods from October through December and often move in opposite direction to the price of maize, as they are both staple foods.

Low input requirements are one of the advantages to growing groundnuts, but just as importantly, it is a source of food. In addition, a group of farmers in Ukwé reported having achieved prices for their groundnuts that compared favorably to those for tobacco. They were also receiving training and inputs from the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT).^{xii} One of the farmers explained that as a result of this support, “I grow groundnuts through a seed multiplication program by ICRISAT who buy the groundnuts at a good price. They only start buying in August, so I am not completely abandoning tobacco.”

The most popular crop by far was maize, the staple food in Malawi and subject to frequent export bans. It is a fast maturing crop that can be grown over a three-month period, while tobacco takes nine months from ground preparation to harvest and market. Timing is critical because prices in local markets are sensitive to supply flows and household needs vary. In Bunda, informants reported that they are selling maize in July and

^{xii} These are farmer clubs formed with assistance from the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), an international organization conducting research into agriculture and development in tropical countries, headquartered in India and active in Malawi.

August, by which time they have received their money for tobacco, which sells in March and April. So, the sale proceeds from maize are a mere supplement to the money already earned from tobacco sales. Yet, the advantage of maize as well as cassava, and to a lesser extent sweet potatoes and groundnut, was that they have a dual use as food crops.

3.16 Gross Margin Analysis

Table 3 presents a gross margin analysis of the value chains of five crops grown in Lilongwe district, sweet potato, cassava, soybean, groundnuts and maize, relative to tobacco. It shows that different crops do have the potential to achieve higher profit margin than tobacco once costs have been deducted. As we have already established, farmers are rarely as punctilious in their accounting compared to commercial companies they are dealing with. Breaking the information into the different phases therefore enables farmers to better enumerate their costs across the cultivation cycle. Secondly, as Table 4 shows, tobacco does provide far greater revenue at the point of sale than any other crop: MK 925,000 as opposed to MK 210,000 for sweet potato and MK 205,000 for maize.

Due to the high input cost, however, the profit achieved at MK 103,375 is only marginally higher than for maize at 96,000, and significantly smaller than that for sweet potato at MK 163,500. This supports findings from other studies that shows that horticultural crops (chilies and paprika) and legumes like soybean can be more profitable than tobacco, especially for smallholder farmers.¹⁹ Further, Table 4 shows how farmers get deep into debt during the cultivation phase where the production costs for tobacco are exponentially higher at MK 212,000 versus a mere MK 21,000 for soybean and groundnuts. The calculations show that tobacco revenues are much higher but that actual profits are only marginally higher.

Tobacco is still more profitable than maize, the prices for which are controlled in Malawi. However, the advantages of maize as well as for the other food crops are that they have a high subsistence value, an important consideration for smallholder farmers. This suggests that for farmers in certain districts there are opportunities for transitioning towards more profitable crops. Yet, much work needs to be done in improving infrastructure and in changing mindsets.

Table 4: Gross Margin Analysis of Alternative Crops in Lilongwe District ^{xiii}

	Tobacco		Sweet potato		Cassava	
Phases	Activities	Costs (MK)	Activities	Costs (MK)	Activities	Costs (MK)
Land preparation	Land clearing (July)	7,875	Cutting (December)	15,000	Land clearing (September)	12,500
	Tilling (July)	24,000	Land clearing (July – August)	9,000	Ridge making (October-November)	10,000
	Manure application (August)	6,000	Ridge making (November)	10,000	Cutting (December)	14,000
	Marking ridges (July)	13,000				
	Manure application (August)	40,000				
	Ridge making (September)	10,000				
	Sub-total costs	10,0875	Sub-total costs	34,000	Sub-total costs	36,500
Cultivating	Planting (November-December)	8,750	Planting (December)	5,000	Planting (December)	5,000
	First fertilization (December)	6,000	Weeding (January)	10,000	First weeding (January)	10,000
	Weeding (December)	15,000			Second weeding (February)	10,000
	Banding (January)	10,000			Third weeding (March)	10,000
	Second fertilization (January)	6,000			Fencing (April)	37,500
	Barn making (January)	50,000				
	Sub-total costs	95,750	Sub-total costs	15,000	Sub-total costs	72,500
Harvesting season	Harvesting (February -March)	68,750	Harvesting	-----	Harvesting	-----
	Grading (April-May)	22,500	Other costs	-----	Other costs	-----
	Bailing (April-May)	7,500				
	Transportation (May)	35,500				
	Other costs	10,000				
	Sub-total costs	14,4250	Sub-total costs	----		
Total variable costs		34,0875	Total variable costs	46,500	Total variable costs	109,000
Debt		48,0750	Debt	-----	Debt	----
Total production costs		82,1625	Total production costs	46,500	Total production costs	109,000
Revenue		925,000	Revenue	210,000	Revenue	205,000
Gross profit		103,375	Gross profit	163,500	Gross profit	96,000
Gross Margin Ratio		0.112		0.779		0.468

xiii Costs not documented above include the cost of renting land and other tools used in crop production.

Table 5: Gross Margin Analysis of Alternative Crops in Kasungu District

	Tobacco		Soybean		Groundnuts		Maize	
Phase	Activity	Cost (MK)	Activity	Cost (MK)	Activity	Cost (MK)	Activity	Cost (MK)
Land preparation	Land clearing (August)	3,000	Land Clearing (June- July)	8,000	Land Clearing (June-July)	8,000	Land clearing (August)	3,000
	Tilling (August)	3,000	Ridges (August - September)	15,000	Ridges (August- September)	15,000	Tilling (September)	6,000
	Fertilizing nursery (September-October)	3,000					Marking ridges (October)	1,500
	Chemical in nursery beds	12,000					Ridge making (October)	6,000
	Renting land	12,500						
	Land clearing (August)	7,000						
	Ridging (September-October)	12,000						
	Sub-total costs	52,500	Sub-total costs	23,000	Sub-total costs	23,000	Subtotal	16,500
Cultivating season	Planting (December)		Planting (December)	5,000	Planting (December)	5,000	Planting (December)	2,500
	First fertilizer application cost	112,000	Weeding (January-February)	8,000	Weeding (January-February)	8,000	First fertilization (December)	24,500
	Weeding	12,000	Banding (February)	8,000	Banding (February)	8,000	Weeding (December)	6,000
	Second fertilizer application cost	36,000					Banding (January)	6,000
	Banding (December-January)	12,000					Second fertilization (January)	22,500
	Barn making	20,000						
	Shed	20,000						
	Sub-total costs	212,000	Sub-total costs	21,000	Sub-total costs	21,000	Subtotal	61,500
Harvest season	Harvesting (February - March)	30,000	Harvesting (March-April)	-----	Harvesting (March-April)	----	Harvesting (May-June)	5,000
	Grading (April-May)	20,000	Grading	36,000			Packaging (July-Aug)	700
	Transportation (May)	56,000	Warehouse Transport	200			Transportation (May-June)	6,000
	Deduction	5,000	Other costs	6,500			Other costs	8,000
	Other costs	35,100						
	Sub-total costs	155,300	Sub-total costs	42,700	Sub-total costs	-----	Sub-total	19,700
Total variable costs	419,800	Total variable costs	86,700	Total variable costs	44,000	Total variable costs	97,700	
Debt	----	Debt	-----	Debt	-----	Debt	----	
Total production costs	419,800	Total production costs	86,700	Total production costs	44,000	Total production costs	97,700	
Revenue	560,000	Revenue	225,000	Revenue	180,000	Revenue	28,000	
Gross profit	140,200	Gross profit	138,300	Gross profit	136,000	Gross profit	-69,700	
Gross Margin Ratio	0.250		0.615		0.756		-2,489	

3.17 Off-farm Income Opportunities

The absence of banking facilities exposes farmers to the risk of becoming a victim of robbery or yielding to temptation, certainly an argument for converting cash earnings into assets as quickly as possible. If the opportunity is missed, farmers will have to wait until the next harvest at the earliest because the terms by which money can be borrowed via the VSL schemes are too slow or cumbersome, while the alternatives are usurious. Money lenders often provide the only available source of finance, charging reportedly between 100–1,200 percent interest per month for unsecured loans.³⁶ The popular term “*katapila*” carries the sense of menace that a money lender personifies in the collective imagination of rural Malawians.

Investing in buildings and vehicles is a popular option because they meet basic needs that can be easily managed while opening opportunities for patronage. Vehicles have the attraction of raising mobility, earning quick returns from taxi services, providing employment and prestige. For all these reasons, they also afford a good storage of value. It is common practice for cars, moto bikes and bicycles to be mortgaged in lean periods and then retrieved after harvest.

Single storey structures that are erected in market towns can be used for trading enterprises or tea shops. One farmer who was saving up to start a shop said: “I will build it up slowly and that means I should have money coming in all year round.” Alternatively, such buildings can be rented out or serve as shelter. Another investment option is livestock which can serve as a source of income and a source of food. However, livestock requires investment and comes at a risk. Farmers in Chiwamba said that: “keeping animals is not easy. You need the money to buy it, and before that you need to build a good place for it to stay. There is a lot of thieving here.”

Whatever route is ultimately chosen, the progression from farming to running a local business or commercial livestock farming is hamstrung by the low level of surplus wealth and a village microeconomy that is geared towards redistribution rather than capital accumulation. There is a need for continuous outlays, such as fuel for transport ventures, roof repairs, feed and immunization for livestock that are not negotiable. Payments for goods and services may not be coming in with the same regularity as family, friends and fellow villagers may claim privileged access. Foregoing the income for services and goods from investments is for village entrepreneurs, the other side of a moral economy that allows them to mobilize labor through kin and other networks. In rural Malawi, the pool of able workers available is dwindling due to migration and restrictions on employing child labor.

For entrepreneurs, this drives up costs, but many smallholders use this opportunity to supplement their farming income by hiring out their labor. Yet, there is an alarming dynamic at work at a time when population growth is leading to the fragmentation of landholdings into ever smaller parcels and when *savannification* is reducing fertility and productivity. An emerging class of urban individuals, often professionals working in administration or services, are buying or renting land outside of Lilongwe or Blantyre to grow food, particularly maize, with hired labor. This is not only opening up income opportunities for villagers but is also transforming independent farmers into landless laborers, whose existence is extremely precarious.

The commodification of village land comes with the acute risk of pauperization, with farmers ending up as day laborers on land to which they once held a claim. Even when laborers succeed in holding on to their land, they run the risk of neglecting their own crop. “We can work for ma biggie [big boss] because we do not want to go hungry, but then our land is left untended to. By the time we start working on our own land, it can be too late with the good rains having passed by, but what can I do? I need that same money to buy fertilizer and seeds.”

This creates a cycle of dependency on these “biggies”, with farmers missing out on the opportune times for planting their own crop, neglecting to weed and water and ending up with a lower harvest. This, along with

not being able to afford irrigation equipment, fertilizer and other inputs leave farmers vulnerable to their crops drying out before maturity or not growing vigorously. Caught in this classical poverty trap, smallholder farmers are diverted from optimizing their own crops and from investing into other value chains.

One option for many farmers is to use locally available resources, like labor, sand and firewood. These resources can be used to produce bricks that are urgently needed in both rural and urban areas.

3.18 The Business of Making Bricks

The principle building material used for homes and houses used in Malawi are bricks. Both rural settlements and urban areas are expanding quickly. They are significantly cheaper than cement blocks, the use of which has recently been encouraged by the government. The comparatively gentle surface of the brick and the color are highly prized by home builders in urban areas while villagers prefer it for easy handling, durability and low cost.

Catering for this need has increased demand for burnt bricks and, consequently, for firewood. The bulk of burnt bricks in Malawi is produced on stove kilns, an inefficient process that consumes a considerable amount of firewood.³⁷ The impact has been felt most in peri-urban areas where they supply the local construction industry. Demand for wood for burning bricks is even exerting pressure on mango trees in communal areas and indigenous trees in graveyards.³⁸

With a few and notable exceptions, this is an artisanal industry of small-scale producers. In rural areas, it is one of the most regular off-farm economic activities during the dry season. A kiln is made out of the mud bricks with a number of openings for ventilation. In Mwala, the men estimated that an oxcart of wood costing about MK 4,000 was required to fire a kiln of 1,500 bricks. Each year, about 10 brick kilns were burnt in the area to construct houses. Mostly, people would use the trees that they owned though some would have to buy from wood lots that can be harvested.

In many villages, kilns have been constructed to burn bricks for local use and for sale. Traders from urban centers are ready to buy them up by the truck load. This off-farm activity generates cash income that goes entirely to the men in the village. Yet the costs, in terms of the resources that are being consumed in the process, are borne by the community at-large. This is another instance in which the partial integration into the market economy has created an imbalance in the distribution of benefits and costs. The reliance on low skilled labor and natural resource base is, moreover, an unsustainable response to a deteriorating economic situation.

3.19 A Summary of Tobacco Alternatives

Farmers, by and large, had little attachment to tobacco but were reluctant to leave it because of the lack of obvious alternatives. Their main challenges can be summed up with the following:

1. Price stability – prices for all alternative crops are unstable. For instance, maize prices always fall when the market supply is high. Despite falling prices in recent years, tobacco was still seen as providing better prices and by extension guaranteed income.
2. Access to inputs – no other crop came with the same input supply package as tobacco. Even when there were similar initiatives for another crop, these were far less attractive for some contract farmers received compared to tobacco.
3. Transport – no other crop enjoyed post-harvest service provisions, particularly support with packing and transportation to market.

4. Marketing – the absence of independent, well-functioning markets for the vast majority of alternative crops shifts the power in favor of the operators and buyers such as ADMARC. Farmers are typically in a weak negotiating position.
5. Timing – tobacco sales start in March/April, which according to informants, was earlier in the cycle than the money they could earn from other crops.
6. High cash earnings – contract farmers especially could expect to receive large amounts of cash after the sale. Even though labor input is high and the growing cycle longer, these costs could be spread over households while the benefits were paid and often kept by the head of household.

3.20 Identifying Opportunities

By dividing the process into stages, we can better identify measures that will help to overcome obstacles and instead focus on the real challenges. Timing is essential for optimizing impact and effectiveness of interventions.

Table 6: Obstacles and Interventions to Producing Non-Tobacco Crops

Pre-Planting		Post-Harvest		Force Majeure	
Obstacle	Intervention	Obstacle	Intervention	Obstacle	Intervention
Lack of Seeds, inputs	Contract/loan system	Marketing	Contracts	Erratic rain fall	Irrigation
Labor	Mechanization	Asymmetry farmers-buyers	Distribution channels	Water shortage	Water catchment

When moving beyond farming, rural areas are yet to reach a level of prosperity and infrastructure development where they can support a vibrant off-farm economy. Farmers perceive their current options to be restricted to retail operations, transport businesses and entertainment facilities. There is limited discretionary spending available to rural consumers. Farmers, therefore, need to find markets where demand is strong and marketing and distribution are fragmented, with many buyers to strengthen the negotiation position of farmers.

In the search for alternatives to tobacco, much of the discussion runs along two tracks. First, there is the promise of the international commodity market for cash crops such as tobacco or soybeans. The second is the production of food crops for domestic markets, particularly maize, but also crops like onions or tomatoes, or cassava. Some products like groundnuts and soybeans can be sold both on the local market and internationally. For farmers, one of the attractions of food crops is that, in times of hardship, they can always be consumed by the household. Producing food is an insurance, while cash crops hold out the possibility of profit.

One of the key items of household spending, however, is fuel. Due of the low rate of electrification throughout Malawi, and in the absence of alternatives (e.g. liquified petroleum gas (LPG)), most households cook over open fires using fuelwood and charcoal. All households, then, need fuel. In rural areas, this has until recently been done by exploiting local forests. But these have vanished in large parts, forcing households to rely on markets. In turn, the loss of self-sufficiency has stimulated a new economic sector and large trading networks.

These developments are leaving much of the country with a dilemma. Commonly held wood resources are extracted at an unsustainable rate resulting in a steep increase in domestic labor power required to carry out traditional tasks like cooking and heating. At current trends, many households are on the road to imminent fuel poverty. At the same time, the collection and sale of firewood and brick burning are the only viable options for cash generation and engagement with the market. Typically, the benefits are skewed towards people, usually men, at the top of the political hierarchy. The costs, however, are borne by all users of a common resource. The speed and the scale of these processes are yet to be understood.

3.21 Deforestation in Rural Malawi

The alarming rate of tree loss is apparent to any visitor to rural Malawi, indicated by the tree stumps lining roadsides and the brown savannah landscape interspersed with verdant islands, a reminder of what this land looked like a few decades ago. These are the village graveyards, the one remaining sanctuary of ancient tree stands, now under pressure from all sides. Officially, these trees are protected, but when the need is great or a powerful individual demands it, the protection afforded by custom gives way all too easily.

In one field-site, the research team arrived just as two men settled to fell an ancient tree right in the heart of the village with a crosscut saw. In its shade, villagers had been resting for generations during the heat of the day and elders had been holding counsel with children playing in safety and comfort. Yet, money being tight, they decided to chop it down. Some of the wood would go to the women to sell as firewood, but most of it would be used to fuel the kiln for brick making. There was a clear sense of loss and an apologetic pointer towards a few seedlings that had been planted recently.

Everybody was aware, however, that the rate of re-planting in most villages is nowhere near enough to compensate for such losses. In one village, farmers on a tobacco contract would plant a couple of hundred trees, only to find that a third would be destroyed in the first year, mainly by livestock. The sharp decline in fuel wood availability was apparent in the amount of fuel that was used domestically, which was now down to headloads (the volume of firewood that a woman can carry on her head) whereas in the recent past larger quantities (e.g. cart loads) were still available to households.

In another village, the women said that fuel wood has become so scarce that they would sometimes have to buy charcoal. In their own area, trees were being cut well before they had matured. They had a tree nursery near the borehole for easy watering, and these trees, once mature, were supposed to be planted in the fields through budding. This means that one tree that has been cut can produce three to four trees. But they were all being cut before they mature. Consequently, trees are being depleted at a faster rate than they are being replaced. The failure of afforestation is due to a number of reasons but the lack of resources for planting and maintaining young trees and the difficulty in organizing stewardship for commonly-owned resources requires immediate attention.

Rural communities are, therefore, tipping into a cumulative, self-reinforcing cycle of natural resource destruction that is putting into jeopardy their survival as independent, viable communities. In Mduka village, for example, water tables have dropped because the trees that once covered the former catchment area have been felled to make way for farmland. The dam dug by Total Land Care in 2002 to enable irrigation has dried up and the yield has been falling, leaving the community short of food.

As trees are removed, soil becomes exposed to erosion from wind and run-off after the rains. Topsoil (upper and outermost layers of soil), for instance, that has accumulated over centuries is lost in the space of a few years, reducing soil productivity. One Food and Agriculture Organization (FAO)-funded study, using the Soil Loss Estimation Model for Southern Africa (SLEMSA) in Malawi, found an average national of soil loss rates of

29 t/ha/year.^{xiv,39} As a consequence, fertilizer use has been rising across the different agricultural communities. In Chipala, villagers talked about the loss of soil fertility as “*kuguga kwa nthaka*.”

Losing this primary asset is, therefore, setting off a chain reaction of environmental degradation that impedes future prospects, not merely for economic diversification but for survival itself.⁴⁰ One sophisticated observer said “no, most things are not available. There are no trees. One cannot do business without natural resources. If there are no trees, it also affects rainfall and most people in the area depend on agriculture for their livelihood.”

3.22 The History of Forest Loss in Malawi

In Malawi, the loss of forest cover can be traced back to the colonial period. However, the trend picked up sharply since independence. Over 40 percent of woodland was lost between 1972 and 1990. In the early post-independence period, forest management focused on establishing industrial plantations for national timber self-sufficiency. Large areas of indigenous wood were cleared in the Viphya area, in northern Malawi, in Dedza, Lilongwe, Ntcheu, Blantyre and Thyolo districts, to establish pine timber plantations. Foresters were withdrawn from Village Forest Areas (VFAs) and placed in forest reserves. This weakened traditional chiefs and they could no longer protect and manage their VFAs on customary land.^{41,42}

With the weakening of official controls in the early post-independence period, people moved into and cleared large areas of VFAs in a spirit of reclaiming the land. As a result, VFAs declined from over 5,000 in 1964 to 1,200 in 1985. However, at the same time, the National Tree Planting Program was initiated, which was focused on promoting the fast-growing exotic species (free seedlings). Incentives (tree planting bonuses) were used to encourage tree planting in rural areas.

In the period between 1986 and 1994, the Malawi’s forestry department took over responsibility for customary lands from local councils, with a view to generating more revenue from the extraction of royalties for timber and firewood harvesting. Proceeds were divided 75-25 between central government and local councils. No compensation was paid to local people for removing trees from their own fields or VFAs. Widespread corruption ensued involving forestry staff, who became unpopular for denuding woodlands from customary lands.

Between 1995 and 2010, when Malawi became a multi-party democracy, was the most devastating for forest management in Malawi. The first five years were characterized by the destruction of timber plantations, such as the Ndirande Timber Plantation in Blantyre and escalating deforestation through charcoal production on both private and customary land. Cost cutting introduced under the World Bank-administered Structural Development Program resulted in staff retrenchment and the cessation of tree planting programs.

Ownership of trees and forests was returned to local communities through networks of Village Natural Resource Management Committees (VNRMCs). Local people were authorized to extract wood and non-wood products without a license for subsistence use. In forest reserves, Malawi adopted a collaborative management approach (joint forest management), with the first pilot co-management activities in Chimaliro forest reserve and Liwonde forest reserve. However, licensing and law enforcement to control harvesting and transport of forest produce remained forestry staff duties. The forest legal frameworks of 1996 and 1997 ushered in a plethora of donor-funded projects and there were over 40 community forestry projects in 1996.

The historical trend of forest management from pre-independence to democratic Malawi can also be viewed from the national forest cover trends. It has been reported that in 1975, 47 percent of the territory in Malawi

xiv Developed in 1977 in Zimbabwe, the SLEMSA model estimated the long-term mean annual soil loss from sheet erosion on arable land by calculating the interaction between several factors including rainfall and erosivity index, soil erodibility, slope and length of slope factor, cropping and erosion control practices.

was classified as forest. However, today, out of the total area of 94,270,000 ha, 3,336,000 ha, which represents 36 percent, is classified as forest.⁴³ Of this area, 15 percent is under natural woodlands on customary lands, 11 percent under national parks and game reserves, and 10 percent under forest reserves and protected hill slopes. This represents the highest rate of deforestation in the South African Development Community (SADC) region, representing loss of some 30,000 to 40,000 hectares per year of (mostly miombo) woodland in Malawi.⁴⁴

During the last decade, the rate of deforestation (percentage of forest cover lost per year) ranged from 1 to 3 percent overall. For example, Malawi lost 2,501,571 ha of both indigenous and plantation forest between 1972-1992, with much higher loss after this period. Between 1972 and 1990, overall forest cover declined by 41 percent at the rate of 2.3 percent per annum; forest cover declined by 5 percent on public land, mainly in protected areas at the rate of 0.03 percent per annum; and 61 percent on customary and private land at the rate of 3.4 percent per annum, arising from increased demands for farmland and wood.⁴⁵ Much of the current deforestation pressure occurs in indigenous forests and woodland and on customary land.

In the initial period of independence, agricultural policy reserved the cultivation of export cash crops for large estates and designated Malawi's smallholder farmers to produce crops for local consumption. These large-scale farms were established during the colonial era through grouping and the alienation of customary land⁴⁶ and are now the property of the Malawian elite.⁴⁷ In 1999, smallholders were also allowed to grow and market barley leaf tobacco, changing the way in which agriculture was practiced within Malawi. It led to a dramatic increase in land used for cultivation, including an estimated 13,400 ha of forest.⁴⁸

Land cover mapping data from the past 45 years indicates a considerable amount of forest loss between 1970 to 1990 and a large expansion of crop land between 1992 to 2000. The majority of the forest loss occurred in customary land, with comparatively little loss in protected areas. Between 1972 and 1992, approximately 93,500 to 125,000 ha were lost per year. Over the same time, cropland expanded by 101,750 ha per year.

More forest loss occurred in the Northern Region between 1992 and 2010 compared to the Central and Southern Regions, largely because much of Malawi's remaining forest resources could be found there. Between 1992 and 2010, the Northern Region experienced forest loss rates of roughly 28,000 to 52,000 ha per year, and cropland expansion of about 32,300 ha per year.⁴⁹

3.23 Multiple Drivers for Deforestation

In Malawi, tobacco cultivation dates back to the early 19th century, when smallholder farmers cultivated the crop for trade and subsistence. Towards the end of the century, European settlers introduced Flue Cured Tobacco (FCT).^{50,51,52} Production expanded steadily, concentrated in a limited number of large-scale, commercial farms. When tens of thousands of smallholder farmers became tobacco producers during the 1980s, the demand for firewood increased dramatically. Studies conducted by the Agriculture Research and Extension Service Trust (ARET) point out that FCT and Dark Western Tobacco (DWT) consume 12m³ and 20m³ of wood (stacked) per 1000 kg of cured tobacco, respectively. In 2009, tobacco curing was estimated to be using about 163,340m³,³ 1 percent of the total biomass energy consumed in Malawi. Burley tobacco, in addition, requires 160 poles for every hectare of tobacco grown, for barn construction, hanging and drying.⁵³ In 1980, an estimated 40 percent of wood consumed in Malawi was for tobacco curing.⁵⁴

The process of tobacco-related deforestation can be summed up in four key points:

1. Converting forest land into agricultural land (deforestation);
2. Firewood for tobacco curing (forest degradation);
3. Timber for the construction of tobacco barns (forest degradation) and;

4. Poles and twigs for hanging and drying the tobacco (forest degradation).

Today, Malawi has one of the world's most tobacco-dependent economies and is in the top ten leading producers of the cash crop relative to surface area. FAOSTAT data indicates that tobacco production relative to surface area in Malawi is over 1 ton per square kilometer, more than twice that of second-highest, Zimbabwe.⁵⁵ The industry is responsible for the deforestation of the Central Region and some parts of Rumphi and Mzimba districts in Northern Region.⁵⁶

To meet the steady demand for wood resources, farmers are required by law to plant 320 tree seedlings for every hectare of tobacco grown. According to observations by ARET, most of the estates have started responding positively, but many smallholder farmers are struggling to comply, often due to a shortage of land.⁵⁷ It appears that the responsible regulatory authorities tolerate non-compliance of the afforestation law.

In 2008, tobacco curing was still one of the pressing demand factors for firewood. However, concerted action by the tobacco companies since that time has dramatically changed the situation. Most contract farmers now receive their firewood as part of the input package from the companies. These, in turn, are now producing their own firewood in sustainably run wood lots in different parts of the country.

The tobacco industry continues to be a factor behind ongoing deforestation, but it is no longer of the transformative significance that it was even a decade ago. Though the impact is still significant, it is overshadowed by the trees lost to brickmaking and domestic use.

In addition to tobacco, brick burning contributes significantly to deforestation. Village brick kilns described earlier are used on a larger scale and with different organization in the urban areas. In Lilongwe, there are professional brick burners who operate on rented land. One burner who runs a kiln in Area 43 explained that in order to earn MK 150,000 he and his workforce had to burn MK 30,000 worth of wood.

Brick production is set to expand in the country with steady levels of urbanization (3.7 percent).⁵⁸ The stream of rural migrants into cities is exerting pressure on the entire building sector. If the current rate is maintained, urbanization will require 1.7 billion units of clay bricks annually to meet the urban housing demand, which would, in turn, require about 850,000 tons of fuelwood per year if alternative technologies are not adopted. At this rate of fuel consumption, the entire country will be deforested within 25-30 years from the brick industry alone. While efforts are underway to pass legislation that will ban the use of bricks and force everyone to use concrete blocks in construction, little movement is expected until the consolidation of the new government. Like the licensing requirements for charcoal burning, this will not be easy to enforce and most importantly, impact harshly on the poor – both by raising the price of construction and closing an off-farm income opportunity.⁵⁹

One group of brick-makers in Lilongwe explained that they mostly sell to individuals that are building houses in Areas 43 and 49. The price per brick is between MK 7 and 8, and their kiln would produce about 40,000. Once they have sold their bricks, they will move to a different place to carry on. Their rent is calculated at MK 0.50 per brick, which translates to MK 20,000 for one kiln load. It will use about 7 tons of firewood, costing them between MK 28,000 to MK 35,000 (each ton costs about MK 4,000 to MK 5,000). The firewood is bought from a distant location which is about 30km away, a place called Chankhungu.

Some brick smakers are experimenting with other fuels, such as corn husks or petrol, but are finding that the different combustion levels produce lower quality bricks. In one larger enterprise the owners were proud of the environmental benefits they were achieving by using a coal firing kiln. In the Malawi context, conserving tree stocks has a greater ecological urgency than reducing carbon emission.

However, in general, the main fuel for brick production is firewood. A 1994 study established the calorific value of different tree species highlighted in the Table 7 below.³⁷

Table 7: Surveyed Brick Kilns in Likuni Area in Lilongwe (1994) ^{xv}

Kiln No.	Wood Type	Calorific Value MJ/kg	No. of Bricks x10 ³ (f)	Wt. Wood Used x10 ³ kg	Calculated Energy x10 ³ MJ (X)	Energy Rqd. Per Brick MJ
1	Brachystagia	21.5	97.4	26	559	5.7
2	Gmelina	18	80	20	360	4.5
3	Eucalyptus	19.4	33	14	272	8.2
4	Eucalyptus	19.4	42	18	349	8.3
5	Brachystagia	19.4	35	18	349	10.0
6	Eucalyptus	19.4	20	14	272	13.6
7	Eucal. & Gm.	18.7	36	21	393	10.9
8	Brachystagia	21.5	75	20	430	5.7
9	Brachystagia	21.5	75	25	538	7.2
10	Eucalyptus	19.47	50	30	584	11.7
11	Eucalyptus	19.4	50	30	582	11.6
12	Eucalyptus	19.4	50	31	601	12.0
13	Brachystagia	21.5	40	24	516	12.9

Third, the single most important driver for wood fuel and charcoal is domestic fuel consumption. In Malawi, only 3 percent of households have access to electricity, gas use is negligible and solar panels are predominantly used for lighting. Most households are therefore dependent on firewood and charcoal for cooking and heating. Fewer than 1 percent of households are estimated to be using any alternatives such as LPG, biogas, briquettes and pellets, paraffin and solar.

Urban households predominantly rely on charcoal. Over half of households in urban areas and over ten percent of households nationally depend on charcoal as cooking fuel. Total demand in 2016 exceeded 352,000 tons. According to the Ministry of Natural Resources, Energy and Mining² 35 million m³ of wet wood will be required to meet this demand which would involve clearing more than 25,000 ha of woodland. If consumption continues at current levels, charcoal demand is expected to nearly double between 2008 and 2023 and to reach 606,000 tons/year.⁶⁰ With the demand vastly outstripping the availability of supply, urgent action is needed if the remaining forest reserves are to be preserved. The National Charcoal Strategy seeks to reduce dependence of wood for domestic cooking and heating by promoting alternative fuels and more efficient cooking stoves. It is part of a wider effort at arresting and reversing the unsustainable exhaustion of

^{xv} X is the weighted mean value: it is the product of the calorific value of each type of wood and the mass of that species. In this case, the weighted mean energy required to fire one brick was found to be 8.5 MJ, which means that 1000 bricks require 0.7 tonnes of firewood. The study also reported a variation from 5.7 to 12.9 megajoules per brick because there is no agreed criterion to burn bricks.

bio-mass resources by different government ministries and has produced different legislative instruments.⁶¹ But no field trials for alternative fuels have been initiated yet and measures aimed at increasing cooking efficiency, such as improved stoves, are not enough to affect biomass demand on the scale that is needed.⁶²

In rural areas, firewood remains the single most important source of fuel. Its collection is one of the routine tasks of women and girls. Two objective markers for the fast-growing fuel scarcity are: 1) the increasing distances that have to be covered to reach sources and 2) the smaller loads of wood that are being collected and used. Informants in Mwala village reported that until recently, women could collect large quantities and lay them in store for later use. But now they are only collecting small “headloads” for immediate needs and have to cover greater distances to do so.

Fuel costs are rising even in areas that until recently were quite self-sufficient. Cultural assumptions about the right to access natural resources can no longer be reconciled with the reality of resource scarcity. Trees grown by farmers, particularly tobacco farmers, who have a legal obligation and are under pressure from the tobacco companies to do so, are now acquiring financial value. The firewood requirements of an average seven-member family in Chitsime were estimated by one focus group at MK 300 per day and over MK 2,000 per week. This was a drain on hard pressed rural budgets but also an opportunity for suppliers.

One of the unintended consequences of the “privatization of sylvan assets,” with the planting of trees by individuals and commercial operators, has been a redoubling of pressure on the existing commonly-held tree stocks.⁶³ It is the largest, oldest and most spectacular specimens that are being felled because, growing on customary land, they are under nobody’s protection. Traditional authorities lack power to protect even if there was an interest in protecting remaining resources. The responsible government agencies recognize both the need for a sustainable, affordable and reliable supply of charcoal and firewood for household and industrial needs as well as the adverse impact the unsustainable extraction is having on national forests and landscapes. The need for firewood is the biggest driver of deforestation but this insight has not yet led to a coherent policy response beyond the National Charcoal Strategy.

3.24 The Biofuel Value Chain

In Chitsime, the customary land has been denuded so that the wood supply is now the business of specialists who bring it from the Dzalanyama forest reserve about 60 kilometers away. They need to pay fees to the forestry officers for accessing the forest, which is MK 200 to 500 for a bike load, MK 2,000 to 6,000 for a pick-up-truck of 1 to 3 tons. While they are only allowed to collect dead wood, there are few checks.

The wood is predominantly sold to markets around Mitundu area and the town of Lilongwe. Suppliers are not allowed to cut live trees, though the respondent did not mention how the forestry personnel ensure that no live trees are being purposively cut. A bike-load of wood can fetch between MK 5,000 and 12,000, depending on luck and circumstance. One of the attractions of the trade is that the initial investment costs are low. The informant said that he was saving up for another venture, like opening grocery retailing shops, canteens and tea rooms. But for people who depend entirely on wood cutting it was much harder to transition to other livelihoods. The awareness that the Dzalanyama Forest reserve was getting depleted made him aware of the urgency of transitioning as well as the need for replanting to keep up “the good work.”

There are tens of thousands of people like him working on the urban periphery, who carry bags of wood or charcoal on their specially adapted bicycles into Lilongwe and other centers. Every day an army of wood sellers can be seen pedaling their cargoes into town. One study concluded that these small-scale subsistence wood cutters would produce up to 30 bags a month and accounted for 35 percent of the production. They were distinguished from better off rural dwellers, who would trade 30-100 bags using trucks (accounting for 27 percent); and the large-scale producers, who were usually urban based (27 percent of total production).⁶⁴

Understanding the socio-economic drivers behind both the demand and supply of biofuel products is important for both economic transitioning and addressing deforestation. At the same time, the contribution to the national economy by charcoal and wood fuel producers also hold out the promise of financial opportunity. According to some estimates, the forestry sector comprises up to 8 percent of GDP, the bulk of this a result of fuel products. Interventions should build on this experience and address the needs of rural suppliers as well as the demand from urban customers.⁶⁵

4. Conclusion and Recommendations

4.1 Improving the position of farmers in relation to external partners and structures

The paper builds on and contributes to a growing body of qualitative research on tobacco farming in Malawi and details the challenges faced by farmers in transitioning into alternative livelihoods. Factors that continue to lock farmers into tobacco cultivation include the relationships that have been established with the tobacco companies whose support has effectively established a form of dependency on their provision of inputs and training in new farming methods. For farmers, including those on contract with tobacco leaf companies, the post-marketing arrangements, such as the transport of their tobacco consignments and their processing at the auction houses, are riddled with complexity and uncertainty. In the existing market system, the interests of the farmers are clearly not a priority. Even with these problems to contend with, tobacco farming remains attractive even in a contracting market. In large part this is because the crop remains exponentially more profitable than the viable alternatives. For tobacco, there is always demand and a functioning marketing system to facilitate the farmer with production and marketing.

It appears that there are opportunities for producing different food crops for local markets. But there are persistent problems that arise from the asymmetry of power relations between farmer and purchaser. For small holders, the lack of financial reserve and access to information are structural features that extend to any alternative cash crop. Farmers who grow soybeans or ground nuts report that they are often unable to achieve prices that had originally been promised or been left sitting on their harvest. Even if the markets for other produce was not quite the monopsony found in tobacco auctions, there were far fewer outlets and traders. With regard to tobacco, all disadvantages were somewhat compensated by the long-term commitment of the tobacco industry. In the experience reported in the villages, the arrangements for growing alternative crops always turned out to be of a temporary nature. It was not merely a matter of renegotiating at the end of the contract, but too often the program came to an end or commercial operators had withdrawn. To facilitate the transition from tobacco, a comprehensive small-holder support package needs to be put in place from planting to post-harvest marketing.

At the same time, the vulnerability of farmers when dealing with commercial buyers should be addressed. Collective organization at local or regional levels should be invigorated to remove technical obstacles such as transport or the exposure to extortion at auction. There should be a mechanism for hearing farmers grievances and mediating in disputes over price or decisions on quality grading of their tobacco.

4.2 The Inequities of Property Distribution

One aspect of traditional community life in Malawi is that decisions are taken collectively. But as farmers move from subsistence farming to cash cropping, these inclusive processes have given way to a contractual approach to decision-making. Several assumptions on property and ownership have been imposed on a moral economy that had previously very different notions about accessing resources and distributing benefits. Cash crop farmers treat the benefits of the operation as a private possession of the designated contract party, invariably the head who usually is a male. The role of head of household has itself been

strengthened because of administrative requirements, to the detriment of women, at both the domestic and communal level. Rights to land are not automatic for women and exercised only through men, fathers, husbands, and/or brothers. For a woman to own land and take her place in a farming club, she must be an orphan or a widow. The death of a male is, therefore, the prerequisite for economic emancipation.

Since traditional rules on land use build on assumptions of free and plentiful land supply, they translate awkwardly into contemporary conceptions of property rights. With distribution calculated in terms of a cashless economy, the guidance is sparse. Traditional or customary law can therefore not be construed as a platform allowing male heads of households to collect all earnings from a crop that has been produced collectively by the entire household. If there is a legal basis for women to claim an equal share of family earnings, a mechanism should be devised that makes the law operable in rural areas. If no legal basis exists, it should be created.

Addressing distribution inequalities is not only a constitutional and human rights issue, but also an economic issue. Many women have acquired know how on planning money from the existing infrastructure of community savings groups. The development literature further suggests that in households where bargaining power shifts from male to female spending on child nutrition and schooling increases; the result has been key health and development gains.⁶⁶

4.3 Consequences of Resource Exploitation

For many years, farmers in Malawi have been responding to market opportunities by exploiting their natural resource base. To increase income, smallholders did not move up the value chain but extended production and resource exploitation. Under combined pressure of market shifts and population increase, this economic model of low-level value addition has set up a series of social and economic problems. Benefits of engagement with the market have been privatized, skewed heavily in favor of men over women, adults over children, politically powerful over less powerful, while the costs of extraction have been socialized. The entire village pays for the removal of shade giving fruit trees, while a few senior men collect the earnings from the sale of the wood.

This accelerating rate of unsustainable exploitation of the resource base has caused unprecedented levels of ecological degradation that are on the brink of rendering many communities unviable. The dynamic of resource depletion can be tracked to firewood harvesting and wholly inadequate afforestation efforts. Programs need to intensify the reduction of demand for firewood and tree planting.

4.4 Need to Expand the Knowledge Base

Moving forward, the issues raised during field work contribute to ongoing debates in the development literature, particularly around social justice, ecology and environmental resource management. Simultaneously, these findings suggest new agendas for research on a variety of topics.

Specifically, we make the following recommendations:

Recommendation 1. Extend research to other parts of Malawi

The data collection in two districts, albeit major coffee-growing ones, no doubt fails to give a complete picture. It is possible that very different insights could be gained from different scenarios elsewhere, which is why a study with similar design should be carried out in more districts preferably with different ethnic and social conditions.

Recommendation 2. Deepen understanding of food crop dynamics

Several food crops show promise as alternative crops especially for farmers who are not contacted by tobacco companies. A mixed method approach should look in-depth at the opportunities for cultivating horticultural crops and legumes. A deeper understanding is needed of the value chain, market mechanisms and the long-term sustainability of these alternatives.

Recommendation 3. Improve resource distribution modeling

New models of intra-household resource sharing should be devised to roll back discrimination against women. Women contribute to the production of tobacco and other cash crops but are not paid directly. Efforts should be made to ensure that women have access to at least part of proceeds from the sale of tobacco and other cash crops.

Recommendation 4. Strengthen farmers' organization

Explore how the position of smallholder farmers can be strengthened when dealing with external contractors, service providers and government agencies. This could involve the development of new organizations or the use of existing national organizations. It should strengthen their local engagement, specifically with the following issues: (1) tracking the account, so farmers on contract understand their obligations; (2) transport of produce, so that farmers get more autonomy and control when having their produce collected and transported; and (3) eliminating corruption at markets through better supervision of market workers, from produce handlers to leaf checkers.

Recommendation 5. Supply protective equipment

Approach the tobacco leaf companies, farmers associations, and donors to donate kits of personal protective equipment for tobacco farmers not working under contract.

Recommendation 6. Assessing the viability of biofuels as a smallholder cash crop

There are several fast-growing, high biomass-yielding crops suitable to Malawi that could be converted into biofuel. Urgent work is needed to identify crops that are suitable for cultivating in Malawi for processing. It needs to be calculated if such a crop can be produced on scale and cost to be cheap enough to be affordable, provide a viable alternative to wood fuel and charcoal while affording farmers a decent village livelihood. Hemp should be explored because of high yield, easy processing and multiple applications in industry and cosmetics.

Recommendation 7. Assess suitability of biofuels in household and artisanal cooking

The processing of biomass and production of biofuel briquettes and pellets have been tested in local conditions and the product tested in situ to assess whether it is fit for purpose. Trials with pellets need to be in different settings to feed back to the production as to how the needs of domestic and artisanal consumers can best be met. The obstacles and opportunities for people working along the supply chain, such as transporters and market distribution, should be explored.

Recommendation 8. Conduct qualitative research in other tobacco producing African countries

Research projects that focus on farmer perceptions on tobacco and alternative crops should be conducted in other countries to assess similarities and differences.

Recommendation 9. Support afforestation

Steep rises in the investment in afforestation and better forms of managing tree planting and protection both in farming areas and forest reserves. Greater cooperation between stakeholders should be encouraged and a focus placed on securing immediate benefits for local communities.

Endnotes

- ¹ Government of Malawi (GoM) and European Union (UN). Republic of Malawi-European Union, National Indicative Program 2014-2020. Brussels: *European Commission*; Published 2015.
- ² United States Agency for International Development (USAID). Country Development Cooperation Strategy. Lilongwe. *USAID*. Published 2013.
- ³ Record, R. Kandoole, P. Choi, N. Stylianou, E. Kalemba, S. Malawi economic monitor: harnessing the urban economy (English). Washington, D.C.: *World Bank Group*; 2017
<http://documents.worldbank.org/curated/en/536051495634418308/Malawi-economic-monitor-harnessing-the-urban-economy>. Published 2017.
- ⁴ Chirwa, E.W. Analysis of the Tobacco Industry in Malawi, Zomba. *United Nations Conference on Trade and Development*; Published 2011.
- ⁵ Food and Agriculture Organization (FAO) of the United Nations. *Review of Food and Agricultural Policies in Malawi: Country Report 2014*. FAO website.
http://www.fao.org/fileadmin/templates/mafap/documents/Malawi/MCR_May201... Published 2015. Accessed May 07, 2019.
- ⁶ Steven Jaffee. Malawi's tobacco sector: standing on one strong leg is better than on none (English). Africa Region Working Paper Series; No. 55. Washington, DC: *World Bank*.
<http://documents.worldbank.org/curated/en/505031468757241265/Malawis-tobacco-sector-standing-on-one-strong-leg-is-better-than-on-non>. Published 2003.
- ⁷ Moyer-Lee, L. and Prowse, M. How Traceability is Restructuring Malawi's Tobacco Industry. *Development Policy Review*. 2015; 33(2) DOI: 10.1111/dpr.12096.
- ⁸ Drope J, Makoka D, Lencucha R, Appau A. Farm-Level Economics of Tobacco Production in Malawi. *Centre for Agricultural Research and Development*. Published 2016.
- ⁹ FAO, Issues in the Global Tobacco Economy. Selected Case Studies. Raw Materials, Tropical and Horticultural Products Service Food and Agriculture Organization of the United Nations, Rome.
<http://www.fao.org/3/y4997e/y4997e00.htm#Contents> Published 2003. Accessed May 12, 2019.
- ¹⁰ International Monetary Fund (IMF). IMF Country Report No. 17/184. Malawi: economic development document.
<https://www.imf.org/en/Publications/CR/Issues/2017/07/05/Malawi-Economic>. Published July 5, 2017. Accessed May 08, 2019.
- ¹¹ Foundation for a Smoke-Free World (FSFW). Malawi Country Overview. New York, N.Y.: *Foundation for a Smoke-Free World*. Published 2019.
- ¹² Otanez MG, Mamudu HM, Glantz SA. Tobacco companies' use of developing countries' economic reliance on tobacco to lobby against global tobacco control: the case of Malawi. *American Journal of Public Health*; 2007; 99 (10):1759-71.
- ¹³ Lecours, N., Almeida, G.E., Abdallah, J.M. and Novotny. Environmental health impacts of tobacco farming: a review of the literature. *Tobacco control*. 2012; 21(2), 191-196.
- ¹⁴ Gondwe M., Guildford S. J. and Hecky R. E. Planktonic nitrogen fixation in Lake Malawi (East Africa). *Hydrobiologia*. 2008; 596, 251-267.
- ¹⁵ Hecky, R. E., H. A. Bootsma and M. Kingdon, 2003. Impact of land use on sediment and nutrient yields of Lake Malawi/Nyasa (Africa). *Journal of Great Lakes Research*. 2003; 29: 139-158.
- ¹⁶ Asfaw, Solomon; Orecchia, Carlo; Pallante, Giacomo; Palma, Alessandro. *Soil and nutrients loss in Malawi: an economic assessment*, 2018, Food and Agricultural Organization.

- ¹⁷ Njoloma, Joyce; Sileshi, Gudeta Weldesemayat; Sosola, Bruce; Nyoka, Betsera. Soil fertility status under smallholder farmers' fields in Malawi. *African journal of agricultural research*, 2016, 11(9):1679-1687 DOI: 10.5897/AJAR2015.10018.
- ¹⁸ Smith, J and Kelley, L. From colonization to globalization: a history of state capture by the tobacco industry in Malawi. *Review of African Political Economy*. 2018; 45(156) 186-202.
- ¹⁹ Otanez MG, Mamudu HM, Glantz SA. Tobacco companies' use of developing countries' economic reliance on tobacco to lobby against global tobacco control: the case of Malawi. *American Journal of Public Health*; 2007;99(10):1759-71.
- ²⁰ Benson, P. *Tobacco Capitalism: Growers, migrant workers and the changing face of a global industry*. Princeton, N.J.: Princeton University Press. Published 2012.
- ²¹ Otanez, M. and Glantz, S. Social Responsibility in Tobacco Production? Tobacco Companies Use of Green Supply Chains to Obscure the Real Costs of Tobacco Farming. *Tobacco Control*, 2011;20(6):403-11. DOI: 10.1136/tc.2010.039537.
- ²² Gilmore, A.B., Fooks, G., Drope, J. Bialous, S.A., Jackson, R.R. J *Exposing and addressing tobacco industry conduct in low-income and middle-income countries*, The Lancet, 2015; 385(9972):1029–1043.
- ²³ Action on Smoking and Health, Christian Aid and Friends of the Earth. BAI in its own words. file:///Users/axelklein/Downloads/ASH_371.pdf 2005, accessed 10 November 2019.
- ²⁴ Milanzi, T. *Living on the edge: Smallholder growers' responses to a changing tobacco economy in Malawi*. Unpublished PhD Thesis, University of Kentucky. 2017.
- ²⁵ Prowse M. A. Comparative Value Chain Analysis of Burley Tobacco in Malawi - 2003/4 and 2009/10. *Antwerp: Institute of Development Policy and Management*. Published 2011.
- ²⁶ Negri, M. and Porto, G. Burley Tobacco Clubs In Malawi: Nonmarket institutions for exports. *International Economics*. 2008; 146:85-107. DOI: 10.1016/j.inteco.2015.11.004.
- ²⁷ Ksoll C., Lilleør H.B., Lønborg J.H. and Rasmussen O.D., Impact of village savings and loan associations: Evidence from a cluster randomized trial. *Journal of Development Economics*. 2016; 120:70–85.
- ²⁸ Diagne, A. Sustainability issues of rural credit and savings programs: Findings from Malawi. Washington, D.C. International Food Policy Research Institute (IFPRI). Published 2000.
- ²⁹ Nankhuni F.J. and Findeis J.L. Natural resource-collection work and children's schooling in Malawi. *Agricultural Economics*, 2004; 31(2-3):123-134.
- ³⁰ United Nations Development Program (UNDP), Famine in Malawi: Causes and Consequences. New York: *UNDP, Human Development Report Occasional Paper*. Published 2008.
- ³¹ Food and Agricultural Organization (FAO) *Malawi: Country Fact sheet on food and agriculture policy trends*. Lilongwe 2015.
- ³² von Gernet, A. Nicotian dreams: the prehistory and early history of tobacco in eastern North America in Goodman, J., Lovejoy, P. and A. Sherrat (eds.). *Consuming Habits: global and historical perspectives on how cultures define drugs*. London: Routledge. Published 2007.
- ³³ Chinsinga, B. The politics of land reforms in Malawi: The case of the Community Based Rural Land Development Program (CBRLDP). *Journal of International Development*. 2011;23(3):380-393. DOI: 10.1002/jid.1776.
- ³⁴ Manda Manda, Levi Zeleza Folktales for Development (F4D): A case study and exploration of Malawi Tonga folktales. *International Journal of Development and Sustainability ISSN: 2186-8662 – www.isdsnet.com/ijds*. 2015;4(5):599-613.
- ³⁵ Morris, Brian. Medical herbalism in Malawi. *Anthropology and Medicine*, 2011;18(2) 245-255.

- ³⁶ Chirwa, E.W. and Matita, M.M. 2015 *Space, Markets and Employment in Agricultural Development: Malawi Country Report*. Western Cape, South Africa: Institute for Poverty, Land and Agrarian Studies. Published 2015.
- ³⁷ Zingano, B.W. *The problem of fuel wood energy demand in Malawi with reference to the construction industry*. Lilongwe, Malawi. <http://www.joyhecht.net/mulanje/refs/Zingano-fuelwood-bricks-2005.pdf>. Accessed November 12, 2019.
- ³⁸ Mutimba, S. and Kamoto, J. *Review of policies and regulations on charcoal and how to promote a systems approach to sustainable charcoal production and use in Malawi*. UNDP, Malawi. Published 2013.
- ³⁹ Omuto CT and Vargas RR. Soil nutrient loss assessment in Malawi. *Technical Report. FAO, UNEP and UNDP*. Published 2018.
- ⁴⁰ Government of Malawi (GoM). *Economic valuation of Sustainable Natural Resource use in Malawi*, Ministry of Finance and Development Planning. Published 2011.
- ⁴¹ Bunderson, W.T., Jere, Z.D., and Hayes, I.M. *Best-bet Agroforestry and Soil Conservation Practices. Malawi Agroforestry Extension Project*, Publication No. 43, Lilongwe. Published 2002.
- ⁴² Kamoto J. *Decentralised governance: A case study of forest policy and community based forest management in Lilongwe district Malawi*. University of Reading, 2009.
- ⁴³ Food and Agriculture Organization (FAO) of the United Nations. *Global Forest Resources Assessment 2010*, main report. FAO forest paper 163. Published 2010.
- ⁴⁴ Government of Malawi, *Malawi policy brief Forests and Woodlands*. Lilongwe, Malawi: Ministry of Natural Resources Energy and the Environment. Published 2013.
- ⁴⁵ Bunderson, W.T., Jere, Z.D., and Hayes, I.M. *Best-bet Agroforestry and Soil Conservation Practices. Malawi Agroforestry Extension Project*, Publication No. 43, Lilongwe. Published 2002.
- ⁴⁶ Peters, P. and Kambewa, D. "Whose Security? Deepening social conflict over customary land in the shadow if land tenure reforms in Malawi." *Journal of Modern African Studies*. 2007; 45(3): 447-472.
- ⁴⁷ Mkandawire, Richard. *Beyond "Dualism". The Changing Face of the Leasehold Estate Subsector of Malawi*. Virginia State University. Published 1990.
- ⁴⁸ Kägi, W. and Schmid, M. Tobacco and forests- the role of the tobacco industry regarding deforestation, afforestation and reforestation. Technical report, Basel: *BSS Economic Consultants*. Published 2010.
- ⁴⁹ Kainja, Sam. Forestry Outlook for Malawi: In Million Bekele (2001). *Forestry Outlook Studies in Africa (FOSA)*. Published December 2000.
- ⁵⁰ Bunderson W.T and Hayes I.M. Agricultural and environmental sustainability in Malawi. paper presented at the Conference on Sustainable Agriculture for Africa, Cote d'Ivoire, July, 1995. Published 1995.
- ⁵¹ Tobin, R.J. and Knausenberger, W.I. Dilemmas of development: burley tobacco, the environment and economic growth in Malawi. *Journal of Southern African Studies*. 1998; 24(2), 405-424.
- ⁵² Kishindo, P. Customary land tenure and the new land policy in Malawi. *Journal of Contemporary African Studies*. 2004; 22(2):213-225.
- ⁵³ Kambewa, P. and Chiwaula, L. *Biomass energy use in Malawi. A background paper prepared for the International Institute for Environment and Development (IIED) for an international ESPA workshop on biomass energy, 19-21 October 2010, Parliament House Hotel, Edinburgh. Chancellor College, Zomba, Malawi*. Published 2010.
- ⁵⁴ Utonga-Kafumba, C.R. *Increasing farmer participation in a smallholder-oriented forestry project: Analysis of the wood energy project in Malawi*. (Doctoral dissertation, Cornell University, Jan.). New York. Published 1984.

- ⁵⁵ Food and Agricultural Organization, *Malawi country indicators*. <http://www.fao.org/faostat/en/#country/130> Accessed 23/04/2019.
- ⁵⁶ Geist, H., Otañez, M. and Kapito, J. The tobacco industry in Malawi: A globalized driver of local land change. *Land-Change Science in the Tropics: Changing Agricultural Landscapes*. 2008;251-268.
- ⁵⁷ Mauambeta, D. Status of forests and tree management in Malawi. *A Position Paper Prepared for the Coordination Union for Rehabilitation of the Environment (CURE)*. Published 2010. DOI: 10.13140/2.1.3497.7926.
- ⁵⁸ World Bank Malawi Urbanization Review: Leveraging Urbanization for National Growth and Development, Urban, Rural and Disaster Risk Management Global Practice, Washington DC: The World Bank., 2016.
- ⁵⁹ NCIC: *Use of Sustainable Construction Materials Regulation*. Published June 18, 2018. <http://ncic.mw/announcements/use-sustainable-construction-materials-regulations/> Accessed: May 15, 2019.
- ⁶⁰ Government of Malawi (GoM). *National charcoal strategy 2017–2027*. The Ministry of Natural Resources, Energy and Mining. Published 2017.
- ⁶¹ Frames, D. P. *An Integrated Approach to Energy for Development: Case Study of the Malawi Renewable Energy Acceleration Program*. University of Strathclyde, Department of Electronic and Electrical Engineering Glasgow U.K, 2013.
- ⁶² Schuenemann, F., Msangi, S., and Zeller, M. Policies for a Sustainable Biomass Energy Sector in Malawi: Enhancing Energy and Food Security Simultaneously. *World Development*, 2018;103: 14-26.
- ⁶³ Zulu, L.C. The forbidden fuel: Charcoal, urban woodfuel demand and supply dynamics, community forest management and woodfuel policy in *Malawi Energy Policy*, 2010;38 (7): 3717-3730.
- ⁶⁴ Kambewa, P., Mataya, B., Sichinga, and Johnson, T. Charcoal – *The Reality: Charcoal Consumption, Trade and Production in Malawi. Technical Report to the Forest Governance Learning Group*. Malawi COMPASSII, Blantyre, Malawi. Published 2007.
- ⁶⁵ Hect and Kasulo. *Development of Forest Valuation Systems Malawi*. Policy Briefing Report. Oxford: Cardno Emerging Markets. Published 2013.
- ⁶⁶ Behrman, J. R. Intra-household Distribution and the Family., *Handbook of Population and Family Economics*, Mark R. Rosenzweig and Oded Stark (eds.), North Holland, Amsterdam, 1997, pp. 125-187.