



# **Women in Tobacco Farming: Health, Equality, and Empowerment**

**A study conducted in China, Tanzania and Kenya**

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## Executive Summary

This study is to provide quantitative data and qualitative information of women's role in tobacco farming, including their labor input, health knowledge and status, and economic empowerment and entitlement. Findings will provide evidence-based information for tobacco control advocates, policy makers, and funders to develop gender-aware programs, and programs for the improvement of livelihood of women farmers.

Three countries have been chosen for the study: China, Tanzania, and Kenya. China is the largest tobacco leaf production country in the world. Tanzania is the second largest tobacco growing country in Africa. Kenya has mostly small scale tobacco farming. Approximately 400 women tobacco farmers were interviewed in each country. Major findings are as follows:

### Labor input

In China, respondents spent 30-50 percent of their time in tobacco farming while their husbands only spent 30 percent. During the tobacco farming season, women work 16+ hours in the field. On average, women spent 6 to 8+ hours in the farm while their husbands spent about 4 to 5 hours. Where there was payment of a wage, as in the case of temporary laborers , women made less than the men (US\$8 for women per day vs US\$11 for men ). In Tanzania and Kenya, women spent about equal amount of time (between 40-50 percent) as their husbands when farming tobacco. However women spent additional time for child bearing and household chores. From their responses, it was found that transplanting, seeding, watering, and search for firewood were particularly laborious.

### Health knowledge and health status

About 40 percent of the respondents in China and almost 60 percent of Tanzania respondents were not aware of negative health effects of tobacco farming. 20 percent of the respondents in Kenya said they were not aware of negative health effects.

It was also found that there is no knowledge of the negative health impact on the unborn child as over 70 percent of the respondents in both Tanzania and Kenya had worked in the tobacco farm when they were pregnant, and even up to six months of pregnancy or more. Besides not being aware of the harmful effect, these women farmers continue to farm in their pregnancy because of the importance of their labor input to the family's livelihood.

Respondents indicated they have experienced vomiting while curing tobacco leaf and back problem from carrying water and firewood. A number of other symptoms associated with green tobacco sickness were also indicated, although the respondents did not associate such issues with tobacco farming.

## Economic empowerment and entitlement

Compared to women in Africa, Chinese women farmers had more decision making power. The overwhelming majority are decision makers or joint decision makers regarding the farming activity and finances were women. Almost 55 percent of Chinese respondents were the sole signatory to the contract with tobacco companies with access to bank accounts and the payment from the tobacco company. The situation in the Tanzania and Kenya was very different. Only a few of the respondents had such access. Only 14 percent of respondents in Tanzania and 23 percent of respondents in Kenya made decisions regarding finances.

The respondents' average annual income from tobacco farming ranged from US\$2,240 in China to US\$990 for Tanzania, and US\$299 for Kenya respondents. The average loan for Chinese household was US\$448, \$500 for Tanzania household, and \$200 for Kenya household. No continuous cycle of indebtedness was reported from Chinese households. In Tanzania 10 percent of households were in continuous indebtedness – meaning they could not repay debt year-on-year; this was true for 20 percent for Kenya households.

For the key indicators of land ownership and ownership of their dwelling, only a handful of the respondents in both African countries have ownership. These were mainly widows in female headed households. For women who were in male headed households in Tanzania, slightly above 10 percent owned the land and the house, while none in the Kenyan sample had ownership. Without this collateral, the women faced few, if any, choices for access to credit.

A common complaint among the respondents in all three countries studied was that they were treated unfairly by the tobacco company. Their feeling of powerlessness and being exploited came through in the qualitative information.

## Recommendations

Based on the above findings, this report recommends that women tobacco farmers need to be provided with support to improve their livelihood and to engage in other crops as an alternative to tobacco. Many do not want to continue farming tobacco. Education opportunities, knowledge about health risks of tobacco farming and protective measures, training on communication and assertive skills as well as better access to water and energy resources will go a long way towards improving the livelihood of these women. There is also the need to provide the knowledge and technical support for these farmers to grow crops other than tobacco and to provide the infrastructure for them to market these crops. Better access to loans and helping these women to form cooperatives will empower them. A multi-dimensional approach is needed in this endeavor. The involvement of governments, advocates, non-governmental organizations, the private sector, local agencies, and the farmers themselves will be of importance.

## I. Background and significance of the study

“Women and girls are more likely to be impoverished, less likely to get an education and more likely to suffer bad health. And when they’re born into poverty, it’s much more difficult for them to lift themselves and their families out of it.”

Melinda Gates of the Bill and Melinda Gates Foundation, *Why Poverty Is Sexist*, Time Magazine, March 2016.<sup>1</sup>

According to a United Nations Food and Agriculture Organization (FAO) report on the role of women in agriculture, women comprise about 43 percent of the agricultural labor force globally and developing countries, and almost 50 percent in Sub-Saharan Africa. Variations exist across regions, among countries and crops. Overall the labor burden of rural women exceeds that of men, and includes a high proportion of unpaid household responsibilities related to preparing food and collecting fuel and fetching water. It should be noted that official figures of women’s labor participation are often an under-estimation. Women tend to say that their home is their primary responsibility even though they are heavily involved in activities such as rearing livestock, gardening for home consumption etc. Censuses also tend to emphasize income-generating activities, and therefore underestimate subsistence production.<sup>2</sup>

The focus of this study is on women tobacco farmers in China, Tanzania and Kenya. Growing tobacco leaf is labor intensive. Preparing seedbeds, sowing, transplanting, weeding, fertilizing, harvesting, curing the leaf etc are all essentially back-bending manual labor. It is believed that a significant portion of the labor is undertaken by women, particularly in developing countries. There is however little empirical evidence to show the plight of these women and the challenges they face. A study of women farmers working in tobacco fields can inform governments and advocates of women’s wellbeing and ways to address this issue.

The tobacco epidemic is well recognized as the number one preventable public health problem in the modern era. In addition to the many strategies aimed at reducing the demand for cigarettes, tackling the problem from the supply side is deemed to be of equal importance. The World Health Organization Framework Convention on Tobacco Control (FCTC) in 2005 has stipulated that efforts are needed to provide economically viable alternatives to tobacco farmers. Yet, world production of tobacco leaf has steadily increased since the FCTC. In 2012,

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<sup>1</sup> <http://time.com/4262483/why-poverty-is-sexist/>

<sup>2</sup> FAO ESA Working Paper No. 11-02 March 2011 “The Role of Women in Agriculture”

nearly 7.5 million tonnes<sup>3</sup> of tobacco leaf was grown on almost 4.3 million hectares<sup>4</sup> of agricultural land.<sup>5</sup>

Many countries, especially developing ones, regard tobacco farming as a good thing. It brings in much needed revenue to the government, provides employment for the rural population, earns foreign exchange for the country, and cash income for individual farmers. Often forgotten in the equation, however, is the fact that many tobacco farmers live in poverty, the environmental toll to the land, the health hazards to the farmers, and the health costs to the country.

High income countries such as the United States, Canada, and Australia, have transitioned their agricultural economies in response to the national reduction in cigarette consumption and the increasing awareness of the harmful effects of tobacco farming. A shift in tobacco leaf farming from developed countries to the developing world can be seen. In the developing world, tobacco farming is on the increase. China is the world's leader in tobacco production, responsible for 42.6 percent of the world's total in 2012.<sup>6</sup> Three of the top ten tobacco leaf producers are in Africa: Malawi, Tanzania and Zimbabwe<sup>7</sup>.

There is only minimal information on the likely disproportionate and harmful impact tobacco farming has on women farmers. A deeper understanding of the female role in the tobacco farming landscape will broaden the evidence base on gender dynamics in tobacco and strengthen tools available to tobacco control advocates, policymakers, and funders in developing gender-aware programs.

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<sup>3</sup> 1 metric tonne = 1.10231 US ton

<sup>4</sup> 1 hectare = 2.47105 acres

<sup>5</sup> Tobacco Atlas fifth edition <http://www.tobaccoatlas.org/topic/growing-tobacco/>

<sup>6</sup> Tobacco Atlas fifth edition

<sup>7</sup> FAOSTAT 2012. <http://faostat.fao.org/>

## 2. Objectives of the study

This study aims at providing a better understanding of gender inequality in tobacco farming, including any negative health, economic, or empowerment outcomes for women tobacco farmers, thereby contributing to a richer and stronger evidence base around women's unique role in tobacco farming.

Specifically, the study will gather quantitative data on these farmers and include topics such as:

- Women's knowledge level of and their attitude towards the health hazards in the tobacco farming processes, as well as their health condition and access to women's health care services.
- The extent of women's participation in tobacco farming and laboring.
- Women's role in any decision making regarding tobacco farming and laboring.
- Income level and employment structure with regards to farming and laboring, as well as access to earnings from tobacco farming.
- Women's interaction directly and indirectly with the tobacco industry.
- Women's entitlement of their household income allocation and assets

Three countries are included in this study: China, Tanzania and Kenya. China is by far the top producer of tobacco leaf in the world with an output of 3.2 million tonnes in 2012.<sup>8</sup> It has about 5 million farm households engaged in growing tobacco.<sup>9</sup> The area devoted to tobacco farming has been stable at around 1.4 million hectares in the last ten years.<sup>10</sup> Tanzania ranks 8<sup>th</sup> among tobacco leaf producers according to FAO Statistics for 2012, producing 120,000 tonnes, and is second only to Malawi among African countries. With agriculture accounting for a quarter of the country's GDP, 85 percent of its exports and employing 80 percent of the country's workforce<sup>11</sup>, tobacco farming is an important part of the country's economy, and is the country's second most important export among food and agricultural products in 2011.<sup>12</sup> Kenya is as yet not an important producer of tobacco leaf, producing 15,000 tonnes in 2012. It is chosen as the third country in this study, working with a partner organization that has been involved in tobacco control policies in the country. Findings from each of these countries are presented in this report in the order of the magnitude of their tobacco leaf production. Table 1 shows the tobacco leaf production, export value of the leaf as well as the role of tobacco leaf in the agriculture export economy of these three countries.

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<sup>8</sup> Tobacco Atlas Fifth Edition <http://www.tobaccoatlas.org/topic/growing-tobacco/>

<sup>9</sup> *China Agriculture Yearbook* (2013). State Bureau of Statistics. China Agricultural Press

<sup>10</sup> FAO STAT 2012

<sup>11</sup> *The World Fact Book - CIA* <https://www.cia.gov/library/publications/the-world-factbook/>

<sup>12</sup> FAO STAT 2012

**Table 1: Comparison of  
Tobacco Leaf Production, Export Value, and Role in Agriculture Economy  
China, Tanzania and Kenya**

	Year	China	Tanzania	Kenya
<b>Area harvested (hectares)</b>	2012	1,480,000	156,000	23,000
<b>Production (tonnes)</b>	2012	3,200,000	120,000	15,000
	2011	3,157,000	130,000	14,000
<b>Export quantity (in tonnes) (as a percentage of country's total tobacco leaf production)</b>	2011	224,000 (7%)	74,022 (57%)	6,225 (45%)
<b>Export value (in US\$1,000)</b>	2011	652,000	106,585	21,783
<b>Rank of tobacco leaf export among agricultural product exports (by value)</b>	2011	14	2	12

Source: FAO Statistics 2011 and 2012

### 3. Methodology

The study in all three countries employed a mix-method design, using a quantitative method in the form of a structured questionnaire, as well as qualitative methods including focus group discussions and key informant interviews. Findings from such discussions enable researchers to gain a deeper understanding of the impact of tobacco farming on the livelihood and health of the farmers. A sample of the opinions expressed in these focus groups and key informant interviews is at Appendix 1.

The target is to survey 400 woman tobacco farmers in each country. The decision on a sample size of 400 in each country is based mainly on time and resource availability. It is also considered that 400 is a large enough sample for statistical analysis. All three study teams used a broadly similar questionnaire which has been designed based on literature review of farm studies conducted in China and Indonesia by Principal Investigator. The questionnaires are broadly divided into the following sections: sociodemographic characteristics, labor input, health knowledge and access to health facilities, decision making and empowerment.

Refinements tailored to local context and specific objectives of this study were made. Pre-tests provided useful information to fine-tune the questionnaires. All three study teams conducted a pilot study before the actual fieldwork. In addition to the quantitative survey, the open ended questions and/or focus group discussions and key informant interviews provided useful insights to supplement the quantitative data.

In order to obtain the consent of county officials at the study sites in China, it was agreed that the names of the two counties in the study will be anonymized for external readership. In this report, they will be referred to as “County A” and “County B”. No such limitations were placed on the names of the regions in Tanzania and Kenya when their consent was obtained to conduct the study.

In China, the study included structured questionnaire survey of 243 farmers in County A and 193 farmers in County B, making up a total of 436 respondents. In Tanzania, 408 female farmers, who were either spouses of male-headed households or female heads of households, were interviewed. In Kenya, 419 respondents were interviewed for the quantitative survey. There are also 20 focus group discussions comprising of 10-12 respondents and 20 key informants for qualitative interviews.

Fieldwork for all three countries were conducted in late 2015 and early 2016. A gallery of photos taken during the fieldwork or provided by the collaborators is at Appendix 2.

## 4. The study in Yunnan province in China

### 4.1 Study sites

The backdrop to any discussion of tobacco farming and tobacco industry in China is to the fact that tobacco is a state owned monopoly. Tobacco farmers sell only to the government, and the whole process of tobacco farming, including seed supply, planting areas, pricing and procurement of tobacco leaves, are all fully controlled by the China National Tobacco Corporation and its subsidiaries in different provinces. Tobacco farmers have little autonomy over the crop production and transaction.

The study was conducted in two counties in the Yunnan province in China. Situated in the southwestern part of China, Yunnan is a region known for its many ethnic minorities. The province is the most important tobacco producing province in the country, accounting for 60 percent of tobacco planting area in the country.<sup>13</sup> Tobacco farming areas in Yunnan are divided into two categories: old tobacco farming areas and new tobacco farming areas. Two counties in this province were chosen as study sites: **County A** in southwestern Yunnan, a new tobacco farming area, and **County B** in northeastern Yunnan, an old tobacco farming area. Figure 1 shows the location of the study sites.

**Figure 1: Study Sites in China**



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<sup>13</sup> A Brief Review of Tobacco Farming in Yunnan, Zhou Haiyuan, [http://www.tobaccochina.com/tobaccoleaf/roundup/synopsis/201311/2013111982945\\_595018.shtml](http://www.tobaccochina.com/tobaccoleaf/roundup/synopsis/201311/2013111982945_595018.shtml), November 25,2013.

## County A

Tobacco farming was introduced to this county by the local government in 2008. Various measures were introduced to provide incentives to farmers. For example, the government would provide RMB150 (US\$22)<sup>14</sup> per mu<sup>15</sup> as subsidy. Tobacco farmers would also have priority when the poverty alleviation office provides low-interest micro-credit. For migrant farmers who grow over 15 mu of tobacco, the government would provide settlement allowance of RMB500 (US\$75) per household. Local farmers who were reluctant to grow tobacco could rent the land to migrant farmers and the rent should not exceed RMB250 (US\$37) per mu. Township and county officials need to pay a sum as guarantee to ensure that tobacco procurement target can be met. These guarantee amounts are in the range of several thousand RMB (hundreds of US dollars), depending on the level of the official. The guarantee money will only be returned to these officials when the production targets are met. They will also get a bonus.<sup>16</sup>

Currently, this county produces Turkish tobacco which only serves the export market. In 2015, the total tobacco farming area in County A is 12,500 mu.

**County A**

**Area:** 394 square miles

**Total population:** 200,000 (2011)

**Ethnicity:** Dai is the biggest ethnic group, accounting for 33.2% of the total population.

**Annual net income of rural residents:** RMB6, 420 (US\$960) per capita (2013) and is slightly higher than the provincial average.

**Agriculture:** Traditionally, Dai people here are excellent rice growers as the land is flat and fertile. In the past two decades, tropical fruits have also become popular.

<sup>14</sup> 1 RMB (Chinese Yuan) is converted to US\$ using current exchange rate for the purpose of this report. US\$ 1 = RMB 6.71.

<sup>15</sup> 1 mu = 0.165 acre , 0.067 hectare, or, or 0.00026 sq. mile. Mu is the commonly used unit for farm area in China.

<sup>16</sup> Opinion on 2012 Turkish Tobacco Production, County A Government, 2011

[http://ynxxgk.yn.gov.cn/M1/View.aspx?int\\_Document\\_ID=1822523&int\\_DepartmentID=1](http://ynxxgk.yn.gov.cn/M1/View.aspx?int_Document_ID=1822523&int_DepartmentID=1)

## County B

County B is situated in the Qujing prefecture in the northeastern part of Yunnan. With a long tobacco farming history, this prefecture is regarded as “the biggest tobacco leaf producing area not only in China, but also in Asia”<sup>17</sup>. In 2015, the total tobacco farming area in this county is 259,300 mu.<sup>18</sup>

County B
<b>Area:</b> 2,344 square miles
<b>Population:</b> 1.5 million (2012)
<b>Ethnicity:</b> The majority is Han Chinese
<b>Annual net income of rural residents:</b> RMB5,552 (US\$828) per capita, and is lower than the provincial average.
<b>Agriculture:</b> Tobacco is the main crop.

### 4.2 Data sources and sociodemographic characteristics

Fieldwork was conducted in October and November 2015 in County A and County B respectively, using a convenience sampling method. Respondents were identified through personal contact with village and town officials, village doctors, as well as tobacco farming technicians who are villagers hired by the tobacco corporation to supervise and support tobacco farmers.

Table 2 shows the sociodemographic characteristics of the study sample of 436 women. Information obtained is based on self-report only. Where the questions in the survey related to the husband, there are between 427 to 434 responses, and these were reported by the women respondents. The average age of the respondents is 45 years, with a standard deviation of 11 years. In general, the education standard is low: 36 percent do not have any formal education, while slightly under half has education up to 6 years. The average size of the household is 4.5 people. About half of the respondents have been tobacco farmers for 5 to 9 years, 10 percent for 10 to 19 years, and 30 percent have been in tobacco farming for over 20 years. The size of their tobacco farm varies considerably, ranging from 0.5 mu to 30 mu. The median is 3 mu.<sup>19</sup>

<sup>17</sup> Exploring and Developing Tobacco Leaf Culture in Qujing, Zhang Hong, *Qujing Daily*, Jan 22, 2016. [http://epaper.qjrb.cn/html/2016-01/22/content\\_63460.htm](http://epaper.qjrb.cn/html/2016-01/22/content_63460.htm)

<sup>18</sup> Management of Tobacco and Cigarette Production Achieve Good Results, Zhou Kaiping, *Qujing Daily*, Feb 15, 2016. [http://epaper.qjrb.cn/html/2016-02/15/content\\_65006.htm](http://epaper.qjrb.cn/html/2016-02/15/content_65006.htm)

<sup>19</sup> 3 mu is 0.2 hectares or 0.4942 acres

Farming areas for these villages have decreased in recent years. With the economic growth and urbanization of the country in recent decades, more job opportunities exist for farmers to work in urban areas and earn higher income. This is in line with the general decrease in tobacco farming areas in the country as a whole. The area harvested for tobacco farming has been on a downward trend from almost 2 million hectares in the early 1990s to under 1.5 million hectares in 2012.<sup>20</sup>

In trying to understand the economic status of the respondents, researchers used the method employed in WHO's Global Adult Tobacco Survey for China in 2010.<sup>21</sup> A list of 10 items, consisting of electric appliances, telecommunication devices, vehicles etc, were given to respondents, and for each item that the respondent has, one point is given. Those who scored 5 or below are considered as low income, 6 – 7 is middle income, and 8 and above will be considered as high income. They were also asked to describe their own living standard as poorer, middle income, or better than others in the village.

**Table 2: Sociodemographic Characteristics of Study Sample in Yunnan**

<b>N = 436 women respondents</b>	
<b>Average age of respondents</b>	45
<b>Education level of respondents</b>	
<b>Did not have any</b>	35.8%
<b>Education up to 6 years</b>	47.9%
<b>Average household size</b>	4.5
<b>Median size of tobacco farm</b>	3 mu (0.2 hectares)
<b>Years in tobacco farming</b>	
<b>Less than 5 year</b>	11.9%
<b>5-9 years</b>	47.9%
<b>10-19 years</b>	10.3%
<b>Over 20 years</b>	29.8%
<b>Economic status</b>	
<b>Low income</b>	36.9%
<b>Middle income</b>	46.6%
<b>High income</b>	16.5%
<b>Self-reported living standard</b>	
<b>Poor</b>	35.3%
<b>Medium</b>	62.2%
<b>Good</b>	2.5%

Source: study survey

<sup>20</sup> FAOSTAT 2012

<sup>21</sup> Methodology of the Global Adult Tobacco Survey — 2008–2010 Global Health Promotion. 2016 Jun;23(2 Suppl):3-23.

### 4.3 Labor Input in Tobacco Farming

Women spend 30-50 percent of their time on tobacco farming while their husband only spend 30 percent. According to the interviews, women tobacco farmers in County A usually work 16.8 hours a day in tobacco farming season. On average, women worked 8.4 hours a day and their husband worked 5 hours a day. In County B, women tobacco farmers usually work 16 hours a day during the tobacco farming season. On average, women work 6.4 hours a day and their husband work 4.8 hours a day.

The lack of labor is often cited by the respondents as one of the big challenges or difficulties of tobacco farming. The hiring of temporary help or laborers is common. Women temporary laborer earn on average RMB55 (US\$8.20) a day, compared to the average of RMB78 (US\$11.6) for male laborers. Farmers also “exchange” labor with their neighbors, which means helping each other without pay, and/or supplementing each other’s deficiency at different times of the farming cycle. The questionnaire did not ask the proportion of women to men for the temporary laborers. But bearing in mind that a lot of men in villages go to urban areas to work for a salary, it is surmised that most of the temporary laborers are women.

As can be seen from Table 3, the women farmers are working all day long in various activities. Compared with the men in the household, they have a busier time. That also means the women have less time for themselves for self-enriching activities, or take care of their own health and wellbeing. The survey asked the respondents their participation in different stages of tobacco farming, as well as their husband’s level of participation. The results in table 4 gives an even clearer picture of the difference in labor input between the men and the women.

**Table 3: Percentage of Time Spent on Agricultural Activities and Housework by Female Tobacco Farmers and Their Husbands in Study Sample in Yunnan**  
(Percentage)

	<b>Female Farmer N=436</b>	<b>Husband* N=432</b>
<b>Tobacco farming</b>	50	30
<b>Other crops farming</b>	20	20
<b>Housework</b>	20	10
<b>Livestock raising</b>	10	10

Source: study survey

\* The percentage for the husbands do not add up to 100%. The likely reason is that they work outside the farm

**Table 4: Participation\* in Tobacco Farming by Different Family Members Last Year in Study Sample in Yunnan**  
(percentage)

		<b>Female Farmer N=436</b>	<b>Husband N=432</b>
<b>Seeding</b>	Not participate	19.5	48.4
	Fully participate	69.0	36.2
<b>Transplanting</b>	Not participate	5.5	30.4
	Fully participate	81.9	51.2
<b>Water, weed, spray</b>	Not participate	8.7	35.7
	Fully participate	76.4	46.5
<b>Harvesting</b>	Not participate	4.6	34.1
	Fully participate	82.8	49.8
<b>Curing</b>	Not participate	11.9	35.3
	Fully participate	66.1	50.9
<b>Sorting</b>	Not participate	9.4	31.8
	Fully participate	75.2	56.0
<b>Selling</b>	Not participate	14.9	32.3
	Fully participate	75.7	59.0

Source: study survey

\*Respondents were asked the extent to which they and their husbands participate, in the various stages of tobacco farming. Their answer could be “do not participate”, “participate partially”, “participate half the time”, “mostly participate” and “fully participate”. The data presented in this table only report the first and last categories.

#### **4.4 Health Status and Health Service Use**

In response to the question of whether they think tobacco farming has affected their health, 31 percent of the women did not think there is any effect. 28 percent and 36 percent respectively said there are minor effect or some effect, while 5 percent of the respondents did not know. But when they were asked whether they have experienced various discomforts, half experienced dizziness, and 33 percent have experienced headaches. See Table 5. It is likely that the women do not associate these discomforts with tobacco farming as their knowledge level is low, although the symptoms that the respondent were presented with in the

questionnaire are symptoms of what is described as green tobacco sickness.<sup>22</sup> The women also gave information on whether their husbands experienced such discomforts. As can be seen from Table 5, the men did not experience as much discomforts. This is to be expected, as their participation in various stages of the tobacco farming process is less than that of the women.

**Table 5: Discomforts in the Course of Tobacco Farming among Respondents and Their Family Members in Study Sample in Yunnan**

	Percentage	
	Female Farmers (N=430)	Husbands* (N=427)
Dizziness	50.0	13.3
Headache	33.7	13.3
Nausea	16.5	2.8
Skin allergy	14.2	3.0
Vomit	8.8	2.1
Bellyache	2.3	1.4
Salivation	0.9	0.5
Pesticide poisoning	0.2	0.2

Source: study survey

\* Husbands' data as reported by women respondents

Accessibility to health care services can be considered as good, as there is coverage for all under China's rural cooperative medical scheme, which aims to provide universal coverage for rural population. As of the end of 2012, 98 percent (800 million people) of the country's rural population is covered under the Rural Cooperative Medical Scheme (RCMS).<sup>23</sup> Each village has a health station and there are also private practitioners. Even with the insurance scheme, out-of-pocket health care expenditure can be a significant proportion of the farmer's income. Over half of the respondents have spent more than RMB3000 (US\$448) in the previous year on health care in their household. National data shows that in 2011, the per capita out-of-pocket

<sup>22</sup> Green Tobacco Sickness (GTS) is a type of nicotine poisoning caused by the dermal absorption of nicotine from the surface of wet tobacco plants. Tobacco harvesters, whose clothing becomes saturated from tobacco wet with rain or morning dew, are at high risk of developing GTS. [https://en.wikipedia.org/wiki/Green\\_Tobacco\\_Sickness](https://en.wikipedia.org/wiki/Green_Tobacco_Sickness)

<sup>23</sup> Bulletin of the World Health Organization 2014. Progress and challenges of the rural cooperative medical scheme in China. <http://www.who.int/bulletin/volumes/92/6/13-131532/en/>

health care expenditure for rural population is RMB437 (US\$65).<sup>24</sup> As the household size is approximately 4 or 5 people, the out of pocket health care expenditure for the household from the national data is about RMB2200 (US\$325). It can be postulated that the tobacco farmer's family has a higher out of pocket health care expenditure as other farm families. The study did not however explore the reason for this, nor can a causal relationship be established.

#### 4.5 Empowerment and Entitlement

Women “hold up half the sky” is a proclamation often quoted in China, meaning that women are equal to men in the new republic. This is in contrast to the traditional Confucian society which adheres to very patriarchal principles and philosophy. Compared to respondents in Tanzania and Kenya, the women in these farming households in China are more empowered: almost all the respondents know how much money was spent on tobacco farming and how much was made from tobacco farming. Women are also highly involved in decision making about what crops to grow. Table 6 shows that 41.7 percent of the respondents made the decision on their own, and 33.7 percent made the decision together with their husbands. This means that the overwhelming majority of women are the decision makers, or are the joint decision maker with the husband. More than half of the women are the signatory to the contract for the tobacco corporation. Being the contract signatory means a bank account would be opened in their names and the tobacco corporation would transfer the income of tobacco to that bank account.

**Table 6: Decision Makers and Tobacco Farming Contract Signatory in Respondents’ Families in Study Sample in Yunnan**

<b>N = 436 women respondents</b>	<b>Percentage</b>
<b>Decision maker</b>	
Female farmer	41.7
Husband	15.4
Both	33.7
Other	9.2
<b>Contract signatory &amp; collect revenue</b>	
Female farmer	54.6
Husband	33.9
Other	11.5

Source: study survey

<sup>24</sup> National Health and Family Planning Commission of the People’s Republic of China <http://www.nhfpc.gov.cn/htmlfiles/zwgkzt/ptjnj/year2013/pdf/fl1.pdf>

#### 4.6 Tobacco Leaf Production Financing and Alternative Crops

Survey results show that the median income from tobacco farming for the household is RMB10,000 (US\$1490), with the 25 percent quartile earning RMB6,000 (US\$896) and the 75 percent quartile earning RMB20,000 (US\$2980). Tobacco farming is not the only source of income for these farming households: on average it contributes about 25 percent to 30 percent of the household's income. There is income from other cash crops, wage labor, livestock raising and other sources. Thus income from tobacco farming is influenced by a host of reasons. The size of the farm, and the proportion of the farm devoted to farming tobacco are also important factors. On average among the respondents, annual income from tobacco farming is RMB15,022 (US\$2240).

**Table 7: Biggest Difficulty in Tobacco Farming for Respondents in Study Sample in Yunnan**

<b>N = 436 women respondents</b>	<b>Percentage</b>
<b>Natural disasters</b>	35.0
<b>Labor-consuming</b>	25.0
<b>Lack of laborer</b>	17.8
<b>Not allowed to grow more</b>	9.1
<b>Unfair grading</b>	7.5
<b>Lack of money to buy agricultural supplies</b>	2.8
<b>Lack of skills</b>	0.9
<b>Other reasons</b>	1.9

Source: study survey

62.4 percent of respondents said they needed to borrow money for tobacco farming. The average loan is RMB3000 (US\$448), but the range could be from several hundred RMB to tens of thousands. 35 percent of the respondents cite natural disasters as the biggest challenge in growing tobacco, and 25 percent cite the labor intensive nature of tobacco farming as the biggest difficulty.

Despite these challenges, 72.9 percent of the respondents said they definitely will continue to grow tobacco next year, while 19.3 percent said that they probably will. Only 7.8% said that they definitely will not be growing tobacco again. The fieldwork shows that the perceived high profit is the main motivation for planting tobacco, followed by habitual practice and request from authorities. See Table 8.

**Table 8: Reasons for Growing Tobacco  
for Respondents in Study Sample in Yunnan**  
(N = 436 women respondents)

	Percentage
<b>High profit</b>	75.9
<b>Habitual practice</b>	36.2
<b>Government's request</b>	22.0
<b>Family members want to grow</b>	16.5
<b>Government's subsidy</b>	8.9
<b>Sufficient laborers</b>	3.2
<b>Other reasons</b>	12.4

Source: study survey

It would seem that the farming of tobacco leaf is so institutionalized that despite the fact the only a third of the household's income comes from tobacco farming, and the complaints of unfair grading as well as decrease in allowed tobacco farmland, and being subject to natural disasters, an overwhelming percentage of the households interviewed still consider that they definitely will continue to grow tobacco. In general, tobacco farmers do better than farmers of other crops such as rice, corn or wheat, although they spend much more time and labor. Without the concept of the opportunity cost of their labor, these respondents do feel that tobacco farming provide them with high profit.

The overwhelming majority of respondents who will continue or likely to continue growing tobacco should also be seen against the backdrop of Yunnan as the number one tobacco growing province in the country. Over 70 percent of the revenue for the province comes from tobacco. To illustrate the importance of tobacco in the province, it is noted that it has one of the world's biggest cigarette factory, the Hongta Cigarette Company, in its Yuxi county. In 2010, this company produced 270 billion cigarettes, which amounted to 11.7 percent of all cigarette sales in the country.<sup>25</sup> Such is the importance of tobacco in Yunnan. A steady supply of tobacco leaf according to allocated quota is of high importance. A lot of incentives are there for farmers to continue to grow tobacco.

<sup>25</sup> Tobacco Free Kids. The Chinese Tobacco Market and Industry Profile  
[http://global.tobaccofreekids.org/files/pdfs/en/TI\\_Profile\\_China.pdf](http://global.tobaccofreekids.org/files/pdfs/en/TI_Profile_China.pdf)

## 5. The Study in Tabora Region in Tanzania

### 5.1 Study sites

Tanzania has had a rapid growth of tobacco farming since 2009. In 2009, it produced only 58,700 tonnes of tobacco leaf, increasing up to 120,000 by 2012. Many farmers have taken up tobacco farming in the last 6 or 7 years, possibly in addition to their subsistence farming. The country is one of the top tobacco leaf growing countries in Africa, second only to Malawi. Tobacco leaf is among the top agricultural export of the country, second only to coffee. In 2011, it exported 57% of its production.

The site of the study in Tanzania is the region of Tabora, which is the major tobacco leaf growing region. Tabora is one of Tanzania's 30 administrative regions, located in the central-western part of the country. There are more than 60,000 tobacco growers in Tabora, consisting mostly of small farmers, producing almost 70 percent of tobacco production in Tanzania. The major buyers of tobacco leaves in Tanzania are Tanzania Leaf Tobacco Company and the Alliance One Tanzania Limited. The largest cigarette company is the Tanzania Cigarette Company, a subsidiary of Japanese Tobacco. Trade liberalization has contributed to a steady increase in tobacco farming in Tanzania. Growing tobacco in Tanzania is important to both the government and the tobacco industry.

**Fig 2 Study site in Tanzania**



#### **Tabora Region**

**Area:** 20,400 square miles

**Population:** 2.29 million (2012)

**Ethnicity:** The Niamwezi tribe is the main ethnic group.

**Annual per capita income in the region:** About US400

**Agriculture:** 90% of population are farmers. 34% of the total cultivated area is dedicated to tobacco.

## 5.2 Data Sources and Sociodemographic Characteristics

There are seven districts in Tabora. The study sample includes respondents from each district. The survey was conducted in the fall of 2015 among tobacco farmers in this region. A structured questionnaire that included some open ended questions was designed, pilot tested, revised and administered. The method of sampling is stratified random sampling which aims at including as many sub-regions as possible. The sample size is 408 farmers and the unit of observation is a household.

The questionnaire included basic information on demographic and socioeconomic characteristics, acreage owned, rented, planted and harvested. Labor inputs of women, men and children in tobacco, maize and other crop farming were also collected. Other questions included household wealth indicators such as type of house, number of rooms per house, use of clean water and electricity along with asset measurements such as number of cattle and number of trees owned. The questionnaire also includes questions pertaining to household decision-making processes between women and men such as household expenditures, sale of agricultural products as well as title to land and house.

Table 9 provides sociodemographic characteristics of the study sample. It shows that among 408 survey households, 352 households are male-headed, while 56 households are headed by females – many of them widows. Average age of respondents (female) is 35 years old, 5 of the respondents are older than age 60 and 26 of them are younger than age 20. Among these respondents, 30 percent of the women are illiterate, compared to 16 percent of the husbands, as reported by the wives. Mean household size is about 6 people. The average year of growing tobacco among the respondents is 6 years, possibly reflecting the fact that with the rapid growth of tobacco farming in the country since 2009, some farmers have taken up tobacco leaf farming in addition to or in place of their subsistence farming. They have been growing tobacco for close to 6 years. The mean area of cultivation is 2.2 hectares, about the national average. Two measures of wealth in rural Africa are the number of timber trees owned and number of cattle owned. On average, each household has about 50 trees and one cattle.

It should be noted that only 9.4 percent of households have running water and 7 percent of household have working electricity. According to World Bank report, the national average for electricity supply for rural households is at 14 percent and water supply at 44 percent. Rural areas in Tanzania are virtually disconnected from the national electrical grid. Only 3 percent of people living in rural villages use electricity, while 95% use firewood for cooking. Access to electricity is almost zero for the two poorest quintiles of households even in urban areas.<sup>26</sup>

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<sup>26</sup> Data from World Development Indicator (WDI) of the World Bank, and Demographic and Health Surveys (DHS). See also <http://blogs.worldbank.org/african/only-14-of-tanzanians-have-electricity-what-can-be-done>

**Table 9: Sociodemographic Characteristics of Study Sample in Tabora Region, Tanzania**

	Tanzania N = 408	Kenya N = 419
<b>Women in male headed households</b>	352	353
<b>Women headed households</b>	56	66
<b>Average age of respondents</b>	35	50 (male) 52 (female)
<b>Illiterate</b>		
<b>Male</b>	16%	17.4%
<b>Female</b>	30%	18.7%
<b>Average household size</b>	6	6
<b>Average area cultivated (hectares)</b>	2.2	3.7 acres (owned) 1.48 acres (tobacco)
<b>Household owning their land (%)</b>		91%
<b>Average years in tobacco farming</b>	5.7	16.8
<b>Average number of cattle</b>	1	7
<b>Average number of Trees</b>	50	50
<b>House with running water</b>	9.4%	22%
<b>House with electricity</b>	7%	12%
<b>Average distance to nearest main road</b>		0.9 miles
<b>Average distance to nearest town</b>	6.8 miles	3 miles
<b>Average distance to nearest health station</b>	1.5 miles	2 miles

Source: study survey

Note: for easy comparison, the same data from Kenya is shown side by side with those of Tanzania, where data is available from our study in both countries. But because the questionnaires used in the respective countries were not identical, there are some blanks in the above table.

### 5.3 Women's Labor Inputs in Tobacco Farming

To help respondents provide estimated hours and days spent in tobacco farming, the questionnaire developed instruments for different stages of farming, from clearing and planting to selling activities. Interviewers asked women their input as well as and their male household members, including the time spent by their children. The total number of hours worked was converted into a number of days as a unit of measure (8 hours per day). Besides tobacco leaves, farmers also grow maize and other crops such as ground nuts. It was estimated in 2015 that the household, on average, spent 258 days farming. Within 258 days, 199 days (close to 80%) the

household worked on tobacco leaf farming, 45 days on growing maize and 14 days on other crops, as shown in Table 10.

Men spent 136 days while women spent 116 days on all crops. Within those days, women spent 32 days on maize and other crops while men spent 25 days on maize and other crops. Children spend 4 days on tobacco farming and 2 days on other crops. Furthermore, women have a lot of other household responsibilities such as child bearing and rearing, food preparation, transporting water and other activities.

**Table 10 : Household Time Spent (in days\*) in Tobacco, Maize and Other Farming for Study sample in Tabora Region, Tanzania**  
(N = 408 women respondents)

Crop Type	Men	Women	Children	Total
<b>Tobacco</b>	111	84	4	199
<b>Maize</b>	20	24	1	45
<b>Other</b>	5	8	1	14
<b>Total</b>	136	116	6	258

Source: study survey

\*number of hours worked is converted to eight-hours days as a unit of measurement

As often observed, tobacco farming is very labor intensive. The survey results show that the tobacco farmers in the study spend an equal amount of time as their male counterparts in tobacco farming, in addition to women’s usual household chores and taking care of their children. Table 11 shows the labor input of tobacco farming within household members. In general, men and women spent 74 days and 73 days respectively, almost equal time on clearing and planting, fertilizing, weeding and harvesting and storing tobacco leaves. The only differences are that men spent more time on curing (including searching for firewood, 36 days for men, versus 11 days for women) and selling the tobacco leaves on the market. Within the tobacco farming activities, the most time consuming activities are clearing and planting, followed by curing, weeding and harvesting. Children’s time and effort amounts to 2 days. From the survey interview, it was found that elderly women (age >50) spent more time (about 84 days) than their younger counterparts. Women reside far from township areas and have less wealth, spending more time on tobacco farming.

**Table 11: Household time spent in tobacco farming (in days\*)  
For Study Sample in Tabora Region, Tanzania**  
(N = 408 women respondents)

Type of Activity	Men	Women	Children	Total
<b>Clearing and planting</b>	52	50	2	104
<b>Fertilizing</b>	2	2	-	4
<b>Weeding &amp; harvesting</b>	16	17	1	34
<b>Curing**</b>	36	11	1	48
<b>Storing</b>	4	4	-	8
<b>Selling</b>	1	-	-	1
<b>Total</b>	111	84	4	199

Source: study survey

\*hours worked are converted to eight hours day as a unit of measurement

\*\*including searching for firewood

#### 5.4 Health Status and Health Service Use

Tobacco farming activities including planting, chemical spraying and curing which make women farmers vulnerable to poisoning and nicotine absorption. These exposures may lead to symptoms of headaches, nausea, muscle weakness and dizziness. Out of 408 women, 110 of them (27 percent) reported suffering from tobacco related illnesses, as shown in Table 12. 57 percent of all interviewed women were not aware of the negative health consequences of chemical sprays or curing. 60 percent of women were not aware of the consequences of working on tobacco leaf farming during pregnancy. However, almost the same percentage of women still works in tobacco farming during pregnancy. Among the women who work while pregnant in the farms, 70 percent have worked during the first six months, while 50 percent of them have worked in the farm beyond six months.

Among individual women, 36 percent of them have visited a health clinic at least once during the past year. Those women who spent more than 150 days working in the tobacco farm visited the health clinic more often. On average, women visited at least two times per year, with a total cost of 22,604 Tanzania Shillings for those visits (or \$12.50). The average income per household is about \$990.

**Table 12: Health Knowledge of Survey Respondents  
in Tabora Region, Tanzania**  
(N = 408 women respondents)

	Percentage	
	Yes	No
Aware of dangers of tobacco planting	43	57
Aware of health consequence of chemical spray	41	59
Aware of health consequence of curing	42	58
Percentage of women who have worked in tobacco farm during pregnancy	59	41
Suffered tobacco-related illness	27	73

Source: study survey

## 5.5 Empowerment and Entitlement

Measurement of empowerment and entitlement of men and women within a household can be measured with seven indicators: (1) decision to grow tobacco, (2) decision to borrow money, (3) who sells tobacco leaf to the market, (4) who collected revenue, (5) who allocated the revenue, (6) who owns the land, and (7) who owns the house. Table 13 provides responses within these groups. The women respondents who had a male head of household either jointly made decisions, or the decision was made by the husband alone. There are 56 women respondents who were heads of the household; they were mostly widowed, divorced, or single.

As shown in Table 13, 42 percent of husband and wife couples jointly decided to grow tobacco, and 43 percent of husbands alone decided to grow tobacco. 52 percent of husbands made the decision to borrow money, while the decision is jointly made in 34 percent of the responses. 78 percent of husbands sell tobacco leaves at the market and 83 percent of husbands collected money from tobacco leaf sales. It should be noted that the number of responses for each question varied due to missing or unavailable data.

Among these tobacco-farming households, some of them also grow maize and other crops. It is interesting to note that for maize-growing households, more females collect money than males do by selling the crop to the market. It was learnt from interviews that maize growing is more for subsistence, and the value of selling maize is minimal.

With regard to allocating tobacco revenue, about 60 percent of male farmers made the decision. However, it was found in our detailed analysis that the woman who spent much more time in tobacco farming have more say in deciding revenue allocation than women who spent less time in tobacco farming.

One of the basic measurements of entitlement is the ownership of land and the home dwelling. Respondents were asked to identify whether the ownership was under the name of the husband or if it was jointly-owned. Responses indicate that almost 86 percent of the husbands held land ownership and 85 percent of the husbands held the ownership of their dwelling. Only a few women own the land and their home.

**Table 13: Empowerment and Entitlement for Survey Respondents in Tabora Region, Tanzania (percentage)**

	Joint	Husband	Respondent Alone
<b>Decision to plant tobacco (N = 407)</b>	42	43	15
<b>Decision to borrow money (N = 401)</b>	34	52	14
<b>Sale of tobacco leaf to market (N = 406)</b>	7	78	15
<b>Revenue collection from tobacco (N = 403)</b>	1	83	16
<b>Revenue collection from maize (N = 229)</b>	23	30	47
<b>Revenue allocation (N = 404)</b>	31	60	9
<b>Land ownership (N = 363)</b>	11	86	3
<b>House ownership (N = 369)</b>	13	85	2

Source: study survey

## 5.6 Tobacco Leaf Production Financing and Alternative Crops

Farmers in Tanzania are organized into co-operatives, and they elect the leadership from among themselves. They pay 15,000 to 35,000 Tanzania Shillings (between US\$7.50 and \$17.50) per year to cooperatives as a membership fee. Cooperative leaders are expected to serve in the interest of the farmer members, and are involved in the grading and pricing of the leaves in the farmer's dealing with the tobacco companies. However, there is a sentiment expressed which seems to say that cooperative leaders receive incentives from and are

influenced by tobacco companies, and may not always act in the best interest of the farmers. They also seem to do better than the farmers whom they represent.

As shown in Table 14, among interviewed tobacco-farming households, they earned on average close to US\$990 in the previous year. Seventy-five percent of those households borrowed money to pay for fertilizer or seeds. They borrowed in amounts close to \$500 from tobacco cooperatives, at an interest rate close to 10 percent per year. About 10 percent of households are in continuous indebtedness, meaning that they are unable to repay their loan even when they receive their income, especially for the farmers who earned less than \$990 per year.

Many farmers complained about the unfair tobacco leaf grading and high interest rate for their loans, leading to their indebtedness. About 80 percent of the farmers believed that tobacco farming covered their cost, and 60 percent of them continue to grow tobacco leaves. Some farmers complained about the delay in payment from cooperatives, ranging between 2 to 4 months.

When asked if they would consider switching to alternative crops, more than 60 percent of them could not identify alternatives. While these farmers may have been farming other crops for subsistence, they may lack the necessary knowledge to switch to other crops as a source of income. Therefore it would require special effort to provide financial support, agricultural technology, know-how, and marketing opportunities for these tobacco farmers to consider growing other crops.

**Table 14 : Tobacco Leaf Production Financing for Study Sample in Tabora Region, Tanzania**

N = 408 women respondents	
Average amount of loan borrowed (past year)	\$500
Average interest paid	10%
Average revenue received from tobacco leaf sale	\$990
Percentage of household with continuous indebtedness	10%
Percentage of household whose revenue can cover production cost, not counting own labor cost	80%
Percentage of households which desires to continue growing tobacco	60%
Percentage of households which does not know alternative crop options	60%

Source: study survey

## 6. The Study in Migori and Embu Counties in Kenya

### 6.1 Study sites

Agriculture is the mainstay of the Kenyan economy, employing 75 percent of the workforce and accounting directly and indirectly for 51 percent of GDP.<sup>27</sup> Tobacco cultivation was initiated by the government in the 1960's to increase farm incomes among smallholder farmers. Tobacco is grown mostly in the Nyanza, Western, Eastern and Central regions. An estimated 80 percent of the tobacco farming takes place in the Southern Nyanza region, mainly in the Migori, Kuria, Suba, and Homa Bay districts of Nyanza province. The area under cultivation for tobacco leaf has gradually increased from 14,160 hectares in 2000 to 23,000 hectares in 2012.<sup>28</sup> Production of tobacco leaf amounted to just 15,000 tonnes in 2012. The yield has fluctuated in the last 10 years, with the highest production recorded in 2005 at 25,000 tonnes. The value of tobacco leaf export is 12<sup>th</sup> among the country's 20 leading food and agricultural exports.<sup>29</sup>

The Kenyan Ministry of Agriculture statistics cite the total number of tobacco farmers in the country at around 36,000, all but 5,000 of them contract farmers.<sup>30</sup> A 2012 International Development Research Center (IDRC) report indicates that there are 55,000 households which are dependent on tobacco leaf production.<sup>31</sup>

The main tobacco companies in the country are British American Tobacco Kenya (BAT-K), which held an almost monopolistic position until the late 1980s. BAT-K's main local rival is Mastermind Tobacco (Kenya) Limited, and a local company of the worldwide company Alliance One. Industry documents show that BAT-K enjoys high-level political connections and uses its clout to shape policy, force farmers to sell to them rather than to its competitors, and continues to pay farmers very poorly.<sup>32</sup>

Tobacco production in Kenya is organized on the concept of contract farming - a system whereby companies use smallholder farmers to produce cash crops. The contract restricts the contracted farmer to farm inputs loaned by the company, which are generally expensive

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<sup>27</sup> "Feed the Future", a publication of the US Government Global Hunger and Food Security Initiative. Retrieved from <http://www.feedthefuture.gov/country/kenya>

<sup>28</sup> FAOSTAT 2012

<sup>29</sup> FAOSTAT 2012

<sup>30</sup> Institute of Legal Affairs (2012, rev. 2013). Briefing paper. Tobacco industry interference in Kenya: exposing the tactics. Retrieved from [ilakenya.org/wp-content/uploads/2012/12/Tinterference.pdf](http://ilakenya.org/wp-content/uploads/2012/12/Tinterference.pdf)

<sup>31</sup> Kibwage, J. K., Netondo, G. W., Magati, P. O., Mutiso, F. M., Sitati, A. M., and Nyambeki, F. (2012). *Phase II 4<sup>th</sup> Technical Project Progress Report on Diversification of Household Livelihood Strategies for Tobacco Small-holder Farmers: A Case Study of Introducing Bamboo in South Nyanza Region, Kenya*. SEUCO/ Maseno University/INBAR. IDRC, Canada.

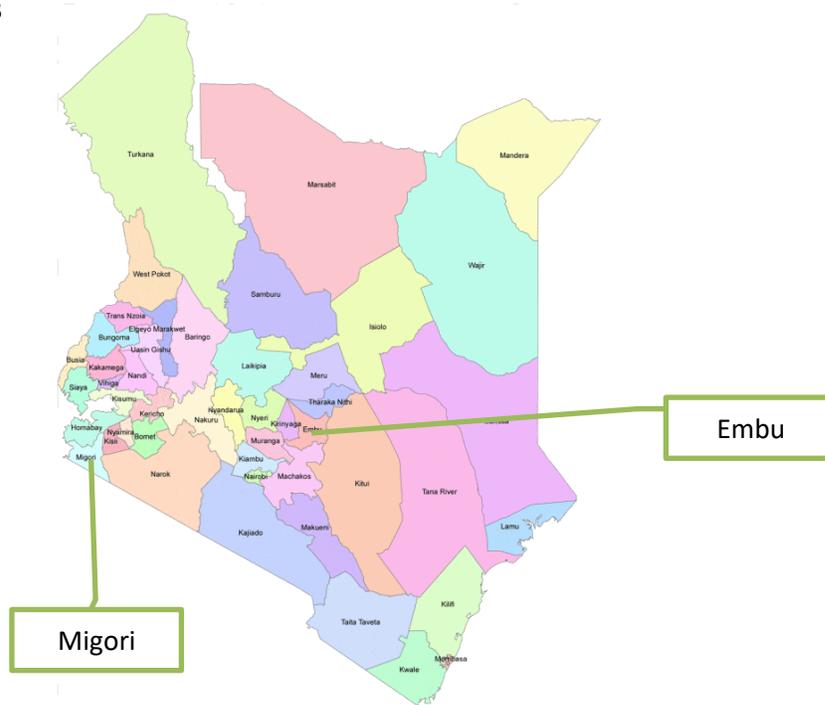
<sup>32</sup> Patel, P., Collin, J., & Gilmore, A. B. (2007). The law was actually drafted by us but the Government is to be congratulated on its wise action: British American tobacco and public policy in Kenya. *Tobacco Control*, 16(1):e1.

compared to those available in the local market or subsidies offered by the government. The Ministry of Agriculture classifies tobacco as a non-scheduled crop, meaning that the government does not allocate any funds towards any activity associated with tobacco including extension services. This, however, has not had a negative effect on tobacco farming. Tobacco growers receive extension services from tobacco companies.

Despite the perception of the economic importance of tobacco leaf, data suggest that tobacco leaf makes only a minimal contribution to Kenyan exports. From official figures of Kenyan exports, which group together tobacco leaf and manufactures, the export value of tobacco leaf and manufactures in 2011 was approximately 3.8 percent of total exports.<sup>33</sup>

Although tobacco is grown extensively in some regions in Kenya, it is not a significant crop in terms of broader national agricultural production with recent government data indicating that it constitutes a mere 0.6 percent of total agricultural gross marketed production. This is equivalent to just 0.03 percent of GDP, based on total crops grown in Kenya accounting for 19.7 percent of GDP in 2014.<sup>34</sup> It is currently grown for commercial purposes in three regions where it is considered to be a significant crop, and the two study sites are among them.

**Fig 3 Study sites**



<sup>33</sup> Kenyan National Bureau of Statistics (2012). Retrieved from [https://www.usaid.gov/sites/default/files/documents/1860/9\)%20Kenya%20facts%20and%20figures%202012.pdf](https://www.usaid.gov/sites/default/files/documents/1860/9)%20Kenya%20facts%20and%20figures%202012.pdf)

Tobacco leaf and manufactures export amount to Ksh 18,633 million. Total export is Ksh 482,944 million.

<sup>34</sup> Kenya GDP and Economic Data (Republic of Kenya 2015)

## Migori County

Situated in the southwestern part of the country, Migori borders Tanzania and Lake Victoria, and is a county where agriculture is an important aspect of the economy. Only 15 percent of its residents have secondary level education and above. 65 percent have only primary school education, and 20 percent have no formal education at all. Here, only 9 percent of residents who have no formal education, 9 percent of those with a primary education and 22 percent of those with a secondary level of education or above are working for pay.

## Embu County

Situated 75 miles northeast of Kenya's capital Nairobi, Embu county's main economic activity is farming. It employs 70 percent of the population, and 88 percent of the households is engaged in agricultural activities. The county has a good number of schools, including primary, secondary as well as tertiary education institutes. 71 percent of the young people between the age of 15 – 18 are in school.

### Migori

**Area:** 1000 sq miles  
**Population:** 917,000  
**Age Distribution:** 0–14 years 49%, 15–64 years 48% and over 65 years 3%  
**Ethnicity:** many ethnic groups. Second most diverse county in the country  
**Income level:** 43% of population live below poverty line. Annual per capita income is Ksh128,000 (US\$ 1260)  
**Agriculture:** Thousands of acres of tobacco grown in its Suna West, Kuria West and Kuria regions

### Embu

**Area:** 1080 sq miles  
**Population:** 516,000 (2009)  
**Ethnicity:** The indigenous Aembu people, as well as other tribes  
**Income level:** 42% of population live below poverty line. Annual per capita income is Ksh122,000 (US\$1200)  
**Agriculture:** Farming is the main economic activity, employs 70% of population.

## 6.2 Data Sources and Sociodemographic Characteristics

Farmers who are actively engaged in tobacco farming, tobacco extension and field technicians, local leaders and women tobacco farmers are the sources of information. Seven focus group discussions comprising 10-12 respondents each and twenty in-depth interviews with key informants were conducted. Discussions and interviews were recorded and transcribed. Focus group participants had experience and knowledge on tobacco, livelihood, environment and information related to farming activities of the community. 419 women farmers were interviewed in the quantitative survey. The survey instrument is based on the one used in the Tanzanian survey with local adaptations. Table 15 shows the demographic characteristics of the respondents.

Similar to the study in the Tabora region of Tanzania, about 15.7% of the household heads in the sample are female (about 14% in Tabora). The average age of household heads is much older (in the 50s compared with 35 in Tabora sample). The literacy level of the women respondents seems to be higher. Only 18.7% here are illiterate compared to 30% in Tabora. The area under cultivation for tobacco is much smaller than in Tabora. Here, it is only 1.48 acres on average, compared to the average of 2.2 hectares (5.5 acres) in Tabora. Both samples have the same average household size, and on average own the same number of trees. The Kenyan sample has on average a much larger number of cattle (7 compared to 1 in the Tabora sample). The percentage of household with access to running water and electricity are higher than that in Tabora (22% for running water vs 9.4%, and 12% for electricity vs 7%). Here, farms which do not have access to running water have to get their water from wells (42.7%) or fetch from rivers (35.3%). The average distance to nearest town is much closer (1.4 km vs 11 km in Tabora). The distance to nearest health station is 3 km, similar to 2.4 km in Tabora. A health station could be a fairly rudimentary set up to provide the most basic health care services to the farmers.

## ***A day in the life of woman farmers in Embu, Kenya***

The women wake up between 4am and 5am to prepare for the day. Their first chore is to milk the cow(s) for those households with milk cows.

At around 5.30 am they wake up children. The children often help in washing utensils used during the previous supper. Women with small children do the utensil washing themselves

Breakfast is prepared and served by 6 am. Most women use firewood as a source of energy to cook food. Breakfast usually consists of milk tea and leftover food from previous supper. Leftover food may include *Githeri* (mixed beans and maize), *Ugali* (local corn meal) or sweet potatoes. If they are able to afford school fees, The women see off the children to school by 6am.

Between 6:00 to 7:00 am, most women go to water tobacco seedbeds down the river, an average 1.5 km away. During weekends or school holidays, the children help with the watering.

Between 8am and 9 am the women go to farms and stay there until 5 pm or 6pm. If the farm is far from the homestead ( for example, rented farm), the women have to prepare lunch for children in the morning before going to the farm and pack some so that they do not come back to the house for lunch. Women farmers bear the brunt of the hard and often back bending labor including clearing the field, fetching water from nearby streams, transplanting seedlings, weeding and harvesting, fetching firewood, and curing the leaves .

After returning from farm activities at around 5 pm, the women will embark on evening chores, fetching water, bathing the children, washing the uniforms for the children, going to the mill and buying vegetables for supper. They then prepare supper, which is taken between 7pm and 10 pm depending on family preference. Most women end their day between 9pm and 10 pm when they retire to bed

**Table 15: Sociodemographic Characteristics of Study Sample in Kenya**

	Kenya N = 419	Tanzania N = 408
<b>Women in male headed households</b>	353	352
<b>Women headed households</b>	66	56
<b>Average age of respondents</b>	50 (male) 52 (female)	35
<b>Illiterate</b>		
<b>Male</b>	17.4%	16%
<b>Female</b>	18.7%	30%
<b>Average household size</b>	6	6
<b>Average area cultivated (hectares)</b>	3.7 acres (owned) 1.48 acres (tobacco)	2.2
<b>Household owning their land (%)</b>	91%	
<b>Average years in tobacco farming</b>	16.8	5.7
<b>Average number of cattle</b>	7	1
<b>Average number of Trees</b>	50	50
<b>House with running water</b>	22%	9.4%
<b>House with electricity</b>	12%	7%
<b>Average distance to nearest main road</b>	0.9 miles	
<b>Average distance to nearest town</b>	3 miles	6.8 miles
<b>Average distance to nearest health station</b>	2 miles	1.5 miles

Source: study survey

Note: This table juxtaposes the data from Kenya with Tanzania side by side for ease of reference. The content is the same as Table 9.

The average size of land owned by respondent households was 3.7 acres; the average land rented for farming purposes was 0.75 acres. Ninety one percent of respondent indicated that they own the land on which they do tobacco farming.

The average weight of tobacco leaf harvested per season over a twelve-month period per household was 1067 kg. This compares with 982 kg harvested for maize, which is the next most important crop. The average revenue from tobacco sales was Ksh 72, 069 (US\$706) per household. Thirty-six percent of the respondents said this amount cover the farm input costs while 64 % said the amount does not cover costs. Almost all the respondents sold their tobacco to tobacco companies. 82 percent of respondents indicated that the tobacco company sets

price of tobacco leaf, 15 percent said Agent sets the price while 1.6 percent said the price is negotiated between farmer and buyer.

### 6.3 Women’s labor input in tobacco farming

With data on how many hours are worked for different stages of the tobacco farming cycle, a metric of 8 hour man days is used to show how much time is devoted to each process. See Table 16. The most time consuming activities are weeding and curing. The data shows both the men as well as the respondents spend about the same amount of time on tobacco farming work, with the men spending more time on firewood collection.

**Table 16: Time spent in days\* by household on tobacco farming for study sample in Kenya**  
(N = 419 women respondents)

Type of Activity	Men	Women
Clearing and planting	4	4
Fertilizing	2	2
Weeding and harvesting	14	14
Spraying chemicals	2	2
Firewood collection	21	11
Curing	21	21
Storing	1	1
Leaf grading	4	5
Selling	2	1
<b>Total</b>	<b>71</b>	<b>61</b>

Source: study survey

\*hours worked are converted to eight hours day as a unit of measurement

It is learnt from the respondents that farm inputs from the tobacco companies are expensive, and that farmers are not allowed to find cheaper inputs elsewhere. Earnings from first sales will go to repaying loans. Farmers can only begin to earn an income in the subsequent sales after the loans are paid off. Often times, the leaves at that time would be of poorer quality, and these fetch an even lower price.

#### 6.4 Health status and health service use

From the focus group discussions, the participants mentioned the following as the health problems related to tobacco farming: chest problem and coughing, cancer, miscarriage during pregnancy, asthma, headache and vomiting, eye problems, as well as skin and itching problems.

As shown in Table 17, 80 percent of the respondents are aware of the health risks of the different stages of farming tobacco . Alarmingly, 73 percent of respondents have worked in the tobacco farm while pregnant and 79 percent of respondents said they engaged in tobacco farming while nursing or taking care of children under five. Participants in the focus groups also described the health risks at different stages of the tobacco farming. When preparing the nursery bed, they are exposed to pesticides because they lack protection and are not aware of handling techniques. During the transplanting of seedlings and the subsequent watering and spraying of fungicides, injuries can result because of poor posture leading to back pain. Being exposed to early morning cold also led to respiratory problems. Injuries would result from falls. Skin contact with tobacco leaf, exposure to chemicals, carrying heavy loads on their back or head exposure to chemical sprays and inhaling toxic fumes are all experienced during the farming season. When harvesting and curing, the farmers might experience exposure to tobacco dust and fumes. Watching the curing process all through the night also results in lack of sleep.

**Table 17: Health Knowledge and Tobacco Farmers  
in Study Sample in Kenya**  
(N = 419 women respondents)

	Yes (%)	No (%)
Dangers of tobacco planting	80	20
Health consequence of chemical spray	82	18
Health consequence of curing	78	22
Work in farm during pregnancy	73	27

Source: study survey

#### 6.5 Empowerment and Entitlement

The women in the farming household here do play some role in decision making in the choice of what crops to plant as well as selling the leaves. Over 20 percent of the respondents There is also a high percentage of respondents of over 30 percent who are responsible for collecting the money and deciding how to spend the income from the tobacco leaves. On land and house ownership however, responses show that it is entirely in the hands of the man of the

household. Even for those respondents who are in women headed households, they also do not necessarily own land or house.

**Table 18: Women Empowerment and Entitlement in Study Sample in Kenya**

N = 419 women respondents	Joint	Husband	Respondent alone
Decision to plant tobacco (%)	38.7	38.2	22
Decision to borrow money (%)	36	41	23
Sale of tobacco leaf to market (%)	14.8	52.3	32.9
Revenue collection (%)	10.3	50.4	38.4
Revenue allocation (%)	26	37	37
Land ownership (%)		96.7	1.4
House ownership (%)		98	2

Source: study survey

### 6.6 Tobacco Leaf Production Financing and Alternative Crops

86 percent of respondents said that the main reason for engaging in tobacco farming was to earn more income. A few said their land could only grow tobacco. And 12 percent gave other reasons for engaging in tobacco farming. Focus group discussions revealed that a major motivation to engage in tobacco farming was the loan facility offered by the contracting company. The participants noted that even though the loan facility was expensive, it was fairer than looking for cash money from other sources to buy farm inputs. Without title to owning land or their dwelling, access to financing is very challenging for these women farmers. Another motivation for continued tobacco farming was that farmers get a lump sum amount or bonus in the end. The money earned helps them improve their livelihood, e.g. build their houses. The discussions revealed that most women were staying in grass thatched houses often in dilapidated condition. Upon getting a lump sum from tobacco farming, they were able to construct more permanent houses. It was also learnt from these discussions that some women tobacco farmers were already engaged in tobacco farming before getting married.

**Table 19: Tobacco Leaf Production Financing in Study Sample in Kenya**

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N = 419 women respondents

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<b>Average Amount of loan borrowed (past year)</b>	Ksh 20000(US\$200)
<b>Revenue received from tobacco leaf sale</b>	29,900 Kenyan shillings (US\$ 299 )
<b>Percentage of household with continuous indebtedness</b>	20%
<b>Percentage of household where revenue from tobacco covered the production cost</b>	36%
<b>Percentage of household with desire to continue growing tobacco</b>	53%

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Source: study survey

## 7. Summary and Conclusions

This study was conducted to provide an improved understanding of women tobacco farmers, their labor input, their awareness of the health risks of tobacco farming, as well as their level of empowerment in decision making related to their health and financial wellbeing. China, Tanzania and Kenya are the three case studies in this study. The regions where the surveys were conducted are among the most important tobacco growing regions in the respective countries. So even though this study does not claim that the findings are representative of women tobacco farmers in the country as a whole, findings can be illustrative of what the women tobacco farmers in these countries face. While this is not an effort at a comparative study of the three countries, and China and the two African countries are at very different stage of economic development with entirely different cultural and social backgrounds, some interesting parallels and contrasts can be drawn. This study of women farmers also did not set out specifically to compare the women farmers with the male farmers. Thus the comparison between women farmers and their male counterparts will only be pointed out where the data is available.

### Low level of education

Women tobacco farmers in all three countries have a low level of education. In China, which has a very high literacy rate for women at 94.5 percent<sup>35</sup>, over 83 percent of the respondents have less than 6 years of education or no education at all. In Tanzania, 30 percent of the respondents are illiterate, while in Kenya, 19 percent of the respondents are illiterate. This is in line with the literacy level for women of Tanzania and Kenya at 65 percent and 75 percent respectively<sup>36</sup>. Compared with the male farmers in these households, the women farmers have a higher level of illiteracy.

With little or no education or even illiterate, women farmers do not have much choice to improve their outlook in life. In China, the majority of women farmers in the study (73 percent) will continue to grow tobacco, despite the many hardships cited, including being subject to natural disasters and the labor intensive nature of the growing tobacco leaf. In the case of Tanzania, 60 percent of the respondents will continue to grow tobacco despite their complaints of unfair grading and their indebtedness to the tobacco companies with which they have contracted to grow tobacco. Similarly, in Kenya, 53 percent of the respondents say that they will continue to grow tobacco.

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<sup>35</sup> *The World Fact Book* - CIA <https://www.cia.gov/library/publications/the-world-factbook/>

<sup>36</sup> *The World Fact Book* - CIA <https://www.cia.gov/library/publications/the-world-factbook/>

A corollary of low level of education is the lack of knowledge about any alternative farming or means of livelihood. 60 percent of the Tanzanian respondents could not identify alternative farming. The respondents in China are different. Tobacco farming makes up only about 25 – 30 percent of the household's earnings, and there is income from other crops, livestock farming, wage labor in the cities as well. Less than 10 percent of respondents devote their entire farm to tobacco farming. The main reason these farmers continue to grow tobacco despite the challenges has more to do with the factors related to the fact that tobacco is a state owned industry, and that farmers have quotas to meet. The rapid urbanization of China's rural population has drawn many men to work in cities for wage labor, and the women who have less education are left behind in these farms. In contrast, Tanzanian and Kenyan respondents have tobacco farming as their main economic activity. Planting of other crops such as maize for the is more for subsistence.

#### Low level of awareness of and high risks of exposure to health risks of tobacco farming

Tobacco farmers (women and children) are often exposed to chemical poisoning through fertilizers and pesticides and they also absorb nicotine during the curing of tobacco leaves. The Global Adult Tobacco Survey China 2010 Fact Sheet indicated that only 23 percent of the adult population believe that smoking causes stroke, heart attack and lung cancer, and only 25 percent believe that exposure to tobacco smoke causes hear disease and lung cancer.<sup>37</sup> Thus it is not surprising that the respondents suffer the discomforts associated with farming tobacco without much realization that tobacco farming could be a contributing factor. Among the symptoms associated with green tobacco sickness presented in the questionnaire, half the respondents suffer from dizziness, while 33 percent suffer from headache. (The corresponding percentage for the husbands of these women are much less at only 13 percent for both symptoms). Yet it is interesting that these women do not associate tobacco farming as a possible contributing factor to their discomforts. About 40 percent of the respondents thought tobacco farming did not have any negative effect on health, and only 28 percent thought it had negative effect on health.

For the respondents In Tanzania, about 60 percent of respondents are not aware of the health consequences of working in tobacco farms, including the chemical spraying and curing of the leaves in the barn. And over 60 percent of them have continued to work there while pregnant. In Kenya, the awareness level is high in comparison. Only 20 percent of the respondents are not aware of the health risks of the different stages of tobacco farming. Yet over 70 percent of them have worked in the tobacco farm while pregnant.

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<sup>37</sup> GATS China Factsheet. [http://www.who.int/tobacco/surveillance/en\\_tfi\\_china\\_gats\\_factsheet\\_2010.pdf](http://www.who.int/tobacco/surveillance/en_tfi_china_gats_factsheet_2010.pdf)

### Labor input by women into tobacco farming is at least equal to that of men in addition to their household work

In China, the women's input during various stages of tobacco farming is significantly higher than that of the male farmers. A much higher percentage of the respondents fully participate in various stages of tobacco farming as compared to that of the men. This could be due to the fact that some men have found wage labor and do not regard tobacco farming as the main economic activity. Even so, when the time spent on other activities are taken into account, women's labor input is more than that of men.

In Tanzania, the labor input of women has been shown to be somewhat less than that of men. Men's input into tobacco farming is the equivalent of 111 days of 8 hours<sup>38</sup>, while that for women is 84. In Kenya, man's input in tobacco farming is the equivalent of 71 days of 8 hours, while that of women is equivalent to 61 man days of 8 hours. It is universally observed that the women in the household are responsible for housework, bearing and nurturing of the children, and taking care of the older generation and the sick in the family. For the women farmers in the tobacco fields, this is an added burden in addition to labor intensive and time consuming work in the various stages of the tobacco growth cycle.

When women are busy all the long, they have little time left for their self enrichment, both physically and intellectually. Nor do they have time to do anything to invest in themselves and to improve their future, or participate in village activities and communicate and organize with women in their same situation to improve their outlook.

### Hardships in the women tobacco farmer's life

In Tanzania, less than 10 percent of the respondents have access to running water or electricity in their homes and for their farms. In the case of Kenya, it is only slightly better, with 22 percent of the homes with access to running water, and 12 percent of the home with access to electricity. This makes the labor intensive nature of tobacco farming even more laborious, as it is necessary to fetch water for irrigation and fetch wood for curing. And women farmers bear the larger proportion of such tasks and suffer the harsh conditions of tobacco farming.

In the case of China, economic development in the country in the last few decades mean that tobacco farmers have much better access to modern conveniences than their African counterparts. Even so, in the interior of the country which is where tobacco is grown, life on the tobacco farm is still hard labor, and because many men have become migrant laborers in the cities, most of the back bending work in tobacco farming is done by women. As hired laborers in tobacco farms, women earn less than men.

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<sup>38</sup> The unit of "days" is used as a unit of measurement to reflect 8 hours of labor input.

## Women farmers have less entitlement in their farmland and in their home and less empowerment

China is the exceptional case here. Compared with the men, a higher percentage of the respondents are decision makers on what to grow, to sign contract with the tobacco agency and collect the revenue from their sales. Women farmers will conduct their negotiations with the agency. Besides the fact that women in the modern Chinese society are more empowered than in traditional society, one reason could be the structural changes happening in the economy. Men devote a significant part of economic activity to wage labor in the urban areas, and farming may not be their main preoccupation.

Still, the researchers find that women farmers here are less likely to be able to argue their case during any conflicts with authorities. Nor are they able to sit on committees to take part in village affairs and in general participate equally as men. Since women are expected to stay home to take care of children and parents in addition to their farm work, they have fewer chance to travel. Although it is not a part of the study, the group discussions showed that in general, the men had travelled more and further outside of their village than the women. Limited exposure may have made women less knowledgeable and less communicative and thus more disadvantaged in the public sphere as well.

In Tanzania, in almost the majority of the cases, only the women who are widowed or single, meaning that they are the head of their own household, will get to decide on what to grow, borrow money, sign contract or own their land. In the other households, while it is sometimes a joint decision, it is overwhelmingly the men who will be the one to be responsible for collection of revenue from the tobacco leaf. Very few of them have ownership or even joint ownership to the land and their house. It is the male farmers who go to market to sell the leaf, sign contracts and collect the revenue from the tobacco farming.

Compared to the Tanzanian counterparts, the Kenyan women farmers have a larger role in deciding what crops to plant, whether to borrow money, taking the leaves to the market, selling them as well as collecting the money and deciding how to allocate the money. One reason would be that the tobacco farms are much smaller than the farms in Tabora, and that tobacco farming is not as important an element in the household economics as in the tobacco farming households in the Tabora region. It is interesting to note that land ownership and house ownership is still entirely the man's domain, and there is no joint ownership. The few who do own the land or the house are widowed women farmers.

### The illusion of good income from tobacco farming

In all three countries, the respondents are under the impression that farming tobacco brings profits, despite the fact that the complaint of unfair grading of their tobacco leaf is common among all three cases. In the case of China, it is true that because of the institutionalized nature of tobacco farming, their produce can fetch a known price. In Tanzania and Kenya however, the majority of the farmers are in debt to the tobacco companies and 10 percent of the Tanzania respondents and 20 percent of the Kenyan respondents are in a continuous cycle of indebtedness. This is because they borrow the money to buy the inputs for the tobacco farming, and because the price that their produce can fetch is at the discretion of the tobacco company which grades their leaf, farmers are at their mercy. The average earning of the Tanzanian respondents is about to US\$990 for the year, while Kenyan respondents report an average earning of US\$500 for their tobacco crop. Note that the average size of the tobacco farmland in Kenya is smaller than that of Tanzania.

### Lack of awareness of the value of their own labor and limited access to apply for credit

In all three studies, farmers do not calculate the value of their own labor into the input cost. Considering that their time can be put to other gainful employment, especially in the case of China, the labor cost of the work in the farms should be factored into their calculation of their earnings. Extensive research has shown that tobacco farming seldom generate a net gain for the farmers if they factor in their own labor cost.<sup>39</sup> The concept of opportunity cost is not something that the farmers are familiar with. The women seem to just work hard and then get what they can get, with little negotiating power.

In the focus group discussions in both Tanzania and Kenya, a common issue voiced was the difficulty for women farmers to access credit.

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<sup>39</sup> Hu, T. Mao Z, Jiang H, Tao M, Yurekli A (2007) The role of government in tobacco leaf production in China: National and local intervention> International Journal of Public Policy, Vol.2 Nov, pp.235-248.

Keyser J. (2007) Crop substitution and alternative crops for tobacco, Study conducted as a technical document for the first meeting of the Ad Hoc Study group on alternative crop substitution by the Conference of the Parties to the WHO Framework Convention for Tobacco control.

Kidane A, MdumaJ, Naho, Hu, T (2016) Economic returns and costs of tobacco, maize and groundnuts: The case of Tabora region, Tanzania. African Statistical Journal Vol. 19 ( forthcoming ).

## **8. Recommendations and Future Program Development**

### **8.1 Improve the livelihood of women tobacco farmers and their outlook in life:**

Provide education opportunities: The literacy rate of the women farmers in Tanzania and Kenya is low. The Chinese farmers also do not have a high level of education. Providing more education opportunities for women would be a worthwhile starting point to improve the livelihood of women farmers in general.

Provide water and energy resources: In the case of Kenya and Tanzania, the livelihood and health of women tobacco farmers can be improved by providing the farms with water collection systems for wells and irrigation, as well as power supply such as through solar power. Access to running water and access to electricity supply is low in these two cases. The time-consuming and strenuous nature of fetching water is the cause of falls and other health risks and cause much hardship. Availability of modern communication equipment such as mobile phones will help the women to access many more opportunities .

Provide health and safety knowledge: Women tobacco farmers can benefit from a higher awareness and knowledge of the health risks of tobacco farming, as well as knowledge about the need to protect themselves from chemicals of insecticides and fertilizers. They need to be introduced to the need and importance of protective gear, and their right to insist on such from the companies which contract with them. Health education programs on the health risks to the farmer herself, as well as the risk to unborn child if working in tobacco farm during pregnancy, need to be organized.

Provide training for communication and assertive skills: In all three countries, skills such as community organization skills will greatly help the women to have a broader outlook and communicate with other farmers in the same situation and learn to negotiate with their husbands as well as the tobacco companies or village elders. Community organizers can help women to form cooperatives and counsel them on assertiveness and to protect their own rights. Opportunities for women to participate in community affairs will also help the women to be better able to take charge of their own destiny.

Provide affordable loans: Establishing financial loan programs to provide affordable loans for farmers (particularly women) to grow non-tobacco crops or other productive enterprises will be of great benefit to the women tobacco farmers. This is particularly true for the African countries of this study. In the case of the Chinese farmers in this study, it would seem that they borrow from their relatives and the tobacco company provides them with help and incentives. Difficulty to obtain loans did not emerge as an issue for them.

Equal rights under the law: In the case of the African countries, the inheritance law for women to have ownership and entitlement of land and houses will also help women farmers achieve greater empowerment. This however can only be done by legislation. But the demand for such need to come from the grassroots population. Thus educating the women on their right to such equal treatment, as well as inculcating the concept of opportunity cost, will go towards empowering women to be more assertive for their own financial well being.

## **8.2 Support the cultivation of alternative crops or alternative means of livelihood:**

Provide knowledge and technical support for alternative crops: Programs to raise the awareness of women tobacco farmers to alternative crops and alternative means of livelihood will be a first step to switching from tobacco farming. Technical support on what and how they can plant alternative crops, on the suitability of climate and soil conditions, on the need for irrigation systems, and on the selection of seed and choice of fertilizer and pesticides etc can benefit tobacco farmers in general and women tobacco farmers in particular.

Provide financial and marketing infrastructure for alternative crops: The economics of the chosen alternative crop(s), marketing infrastructure, logistical support, pricing information are areas which are essential to a successful transition from tobacco farming. This also applies to other means of livelihood for farmers such as raising livestock on their farms.

Provide financial incentives to diversify crops: Government policy is needed to establish support programs for tobacco farmers and provide incentives for them to diversify to at least one crop. Cash subsidies during the transition period will be needed for the farmers. Government insurance programs are needed to protect farmers against risks and vulnerability of growing other crops.

Establish cooperatives for farmers: The formation of cooperatives will help farmers, and women farmers in particular, to learn more from each other and will also improve their bargaining with potential buyers.

## **8.3 Building evidence base and capacity building**

This study could only be regarded as the starting point of gaining a better understanding of the women tobacco farmers working in China and in African countries. In this connection, it is recommended that:

- Data collection needed to build up the evidence base on tobacco farmers should be established to conduct surveys on the economic return and cost of alternative crops and tobacco farming in Africa
- Surveillance studies need to be conducted on the health status of tobacco farmers, their access to health services, and the affordability of health care services
- A training program for women farmers should be developed to help women farmers to learn job skills, financial management, market information
- Health surveillance studies should be conducted on the health of male and female tobacco farmers.

These recommendations involve a multidimensional approach which will require the collaboration of and funding from multiple international organizations, such as the World Bank, the World Health organization, the UN Food and Agricultural Organization, the African Development Bank; philanthropic organizations such as the Bill and Melinda and Gates Foundation, the Michael Bloomberg Philanthropy, and the Howard Buffet Foundation; as well as non-profit public service organizations and alliances. The capacity of the public health advocates in these countries can be strengthened to play a vital role in this endeavor.

The above list of program recommendations are organized under each theme about how to improve women's livelihood, their health, their empowerment, crop substitution. In fact many of these program recommendations have multiple impacts on those four themes and these four themes are also interrelated. Therefore a matrix is summarized to show these interrelationships. This matrix would be useful for future program investment development. See Table 20.

**Table 20: A Matrix of Key Recommendations**

Investment Programs	Achievement of objectives			
	Improving Women's Livelihood	Improving Women's Health	Empowering Women	Crop Substitution
Education Opportunities/ Vocational Training	✓		✓	✓
Water/Energy Resources	✓	✓		✓
Provide Health Knowledge and Health Risk Information	✓	✓		
Provide Access to Health Services	✓	✓		
Provide training for Communication and Assertive Skills	✓		✓	✓
Provide Affordable Loans	✓		✓	✓
Provide Financial and Marketing Infrastructure	✓		✓	✓
Establish Women's Cooperatives			✓	✓
Data Collection	✓	✓	✓	✓

## Appendix 1: Quotations from focus group discussions

(Note: all farmers quoted here are women tobacco farmers unless otherwise specified.)

### **Workload and harsh working conditions**

- “Tobacco farming takes prolonged time: watering the seedling, searching for firewood, preparing the land for cultivation”.

Farmer in Tanzania

- “Transplanting is a tedious process. Transplant is done while one is in bending or squatting position for long periods and is often a source of back pain problems.”
- “It takes an average of 20 minutes walk to the river and an average 30 minutes trek from seedbed to farms. We suffer colds and cold weather ailments because of waking early to go the river and to transport the seedlings”. (Note: Transplanting takes place at onset of rainy season when it is wet and walking paths are often slippery. )

Farmers in Kenya

### **On Health**

- “We have arthritis because of waking up in the morning to water tobacco and our backs pain a lot for carrying firewood to cure tobacco. For example I am allergic to tobacco, and when curing and grading approaches my chest pains a lot because of inhaling smell and I get difficulties in breathing”.

- “We have heard tobacco causes cancer and pneumonia to the farmers”.

Farmers in Kenya

- “I vomit while curing”.
- “The health center is far from home or from farm”.
- “I am losing weight because of exhaustion”.

Farmers in Tanzania

### ***Health problems with chemicals***

- “There was one chemical which was given by Mastermind for seedbed and that chemical was extremely poisonous and you see these seedbeds are prepared on the riverside and you can imagine the danger that it can cause if there is rain and the water run out to river.”

- “There was a time I used this chemical for painting the fence to kill the termite. I used a cloth to cover my hand while I apply the chemical to the wood. I then threw it into my pit latrine. The pit latrine had cockroaches. All these cockroaches came out crawling and they all died because of the chemical. My cat ate dead cockroaches and it also died”.

Farmers in Kenya

### ***Working in farm while pregnant***

- “When a woman is pregnant, the husband does not care about her situation and she still has to go to the farm to harvest or weed or do any tobacco activity. At times she might be weeding and he is spraying around tobacco farm and this may cause miscarriage to the woman because of spraying chemicals”.

Farmer in Kenya

### **Gender inequality**

- “Men do not work hard. They do not do any housework. After finishing ploughing, they just wash themselves and then sit down in front of TV or go out for fun. Women need to cook and do other housework.”
- “Many men take No. 4 (drug). They just stare at each other without doing anything.”
- “Men smoke opium and take No. 4. You cannot expect men to manage family finance.”
- “Even the most hardworking man does less than woman.”

Farmers in China

Male tobacco farmers in China

### ***Domestic problems arise***

- “You find that when tobacco was grown in big numbers there was a lot of domestic conflicts because there was tradition that tobacco selling and receiving of money was for the men. During sales season, you would find many drunk. Women look at this as irresponsible use of money which resulted to domestic violence”.
- “The problem starts because the man goes to the bank and collects all the money. By the time he gets home, he has nothing in the pocket - he has passed through the bar and drunk everything in the name of brushing off ‘dust’ or ‘sweat’”.
- “In most cases you find that the wife and children are intimidated to a point that none can dare to question the man.”

Farmers in Kenya

### ***Unequal treatment by tobacco company & authorities***

- “There is inequality especially selling tobacco. The tobacco companies tend to favor men more than women because they assume women know less about tobacco grading and also farming”.
- “We know what good tobacco is because we grow tobacco every year”.
- “Men are more powerful. The villagers would listen to them. If a woman becomes village head, no one would listen”.  
Farmers in China
- “Men manage village affairs. Old men take more responsibilities for this.”  
Male tobacco farmer in China
- “In our culture only men have title to land and house”.
- “I have no control over the revenue we get from tobacco. My husband is in charge”.  
Farmers in Tanzania

### **Engagement with tobacco industry**

#### ***Powerlessness in face of tobacco company /authorities***

- “When we sell the tobacco leaves, the villagers’ committee disappears, the director disappears. No one helps us. Each household just sells their own leaves. Nobody thought of negotiating with the corporation together”.
- “Don’t know how to solve this problem. There are many such cases in our village, but we have no chance to meet the staff of the tobacco corporation”.
- “We didn’t think of raising our complaints through formal mechanism. The villagers’ committee does not dare to say anything either”.  
Farmers in China
- “The planting areas, type of tobacco and procurement price are all decided by the tobacco corporation. No negotiation”.
- “Only those who are educated and knowledgeable would be called to the meeting, not someone like us”.  
Farmers in China

### ***Exploitation by tobacco company***

- “I belong to tobacco farmers cooperative. The leadership is corrupt. When we elect officers they promise that they will guarantee higher price for our product. Once elected they become very friendly with the tobacco companies”.
- “Cooperative leaders are only interested in enriching themselves”.  
Farmers in Tanzania
- “At times I think when entering into contract, they are like “robbers”. But poverty pushes me to continue being exploited”.
- “The Company should not give inputs in excess to the farmers because the farmer takes all the burden of repaying such inputs and this result in the farmers getting next to nothing. For instance, if I need 2 sacks of fertilizer let me be given 2 sacks of fertilizer and not 3 or 4 sacks. In addition, inputs should be given at a fair price that is equivalent to what is costing at the market”.
- “The company is there to exploit us and we regret participating in tobacco farming because it is more burdensome than we anticipated”.  
Farmers in Kenya
- “I am unhappy with growing tobacco because I had to argue with the tobacco procurement station about grading.”  
Farmer in China

### ***Women perceived as unable to lead***

- “Women are not good at communication. They may be able to communicate with the fellow villagers, but not able to communicate with officials at township, county and provincial levels, so cannot solve some problems”.
- “The director should lead the whole village. Woman has no idea how to take the lead, so woman cannot be the director”.  
Male tobacco farmer in China
- “Women are not assertive when they need to make big decisions. It seems that the director and party secretary are facing such heavy pressure that no woman dares to say ‘I can do it’. “  
Women’s group leader in China

## **Tobacco farm economic return and alternative crops**

### ***Poor return and unfair grading***

- “You start tobacco activities from the month of August to May the following year- when the last tobacco to be sold. The lump sum money is not enough compared to the work done for almost 12 months”.

Farmer in Kenya

- “We produced 200 kg of cured tobacco. I was expecting about three million shillings; We got less than half of what we expected”.
- “We expected that our tobacco produce will be graded as # 1; tobacco company graded our produce as # 3 We got very low price”.
- “Grading is unfair, prices are low and unpredictable. We are more in debt. Payment is slow”.

Farmers in Tanzania

- “We think the color and moisture are the same as last year, but the grading was high last year and low this year. We don’t know why”.
- “The grading was not good. My sister and I went to the tobacco procurement station and argued with them”.
- “We think it is good, but the tobacco procurement station says not good, too moist.”

Farmers in China

### ***Alternative crops and alternative employment***

- “I want to be engaged more in maize and rice farming. Unfortunately the market price is very low and we have no guarantee to sell these produce”.
- “Once we tried planting more tomatoes, potatoes and vegetables instead of tobacco. We took our produce to the market. The buyers offered very low price. We have to sell our produce at this very price; otherwise the produce will rot”.
- “In this area there is no prospect for non farm employment”.
- “We can sell milk to households every morning, but we need to do livestock breeding, and also a three wheeler motor cycle to distribute the milk”.

- “Even if we know how to cultivate other crops, such as groundnuts, sunflower seeds, rice and vegetables, the selling price has to be attractive. We have to be provided with fertilizers, seeds, chemicals and extension services at concessionary prices”.

Farmers in Tanzania

***Changing society and Aspirations***

- “I want to learn information technology.”

(Young girl in China who had worked in Zhejiang province and returned to home village)

- “Men all used to work in the coal mines, but the mines were closed down due to safety concerns. Now men stay at home.”

(Male tobacco farmer in China)

----- End -----