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Tobacco Production Baseline Survey in Serengeti, Tarime and Rorya Districts, Mara Region

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Abstract: Using 2009/2010 cropping season survey data from 181 randomly selected smallholder tobacco farmers, this study provides baseline information on tobacco farming in Mara region. Both descriptive and inferential statistics were employed in data analysis. Result indicates that farmers adopted tobacco farming from tobacco farmers in Kenya. Drought and inadequate supply of inputs were identified as the major production constraints. Others were incidence of pests and diseases, shortage of fire woods, poor extension services and hailstones. Low selling price and contradicting grading systems were the major tobacco marketing constraints. The study also revealed that access to extension services was similar across study districts with over 65.7% of the respondents accessing technical expertise mainly from Alliance One Tanzania employees. Given the positive and negative impacts of tobacco farming, majority of the respondents (95.6%) still were willing to proceed with tobacco farming as their main source of income. However, watermelon, maize and sunflower were ranked as first priority alternative cash crops to tobacco in Serengeti, Tarime and Rorya districts, respectively. This study concludes that tobacco farming still is the main household income source; hence, more investment is required to ensure sustainable economic development of rural communities in Mara region.

Key words: Baseline, marketing, production, tobacco.

1. Introduction

As was the case with other traditional cash crops, tobacco was introduced in the country during the colonial period in the 1930s. In Tanzania, tobacco is one of the major agricultural export crops. Recently according to the BOT [1] quarterly report, tobacco was ranked as the first foreign exchange earner in Tanzania. Tobacco sub-sector offers employment to many Tanzanians in both tobacco farms and in the tobacco processing factories. In addition, the crop provides raw material for cigarette manufacturing factories, thus offering further employment opportunities to people in the country [2]. In Tanzania, tobacco is grown in Tabora, Morogoro, Ruvuma, Mbeya, Iringa, Rukwa, Singida, Shinyanga, Mara, Kagera and Kigoma.

In Mara region tobacco farming has been going on informally since 1990s. Enticed by market opportunity from Kenya, farmers in Tanzania took self-initiatives to source production inputs and to market their products in Kenya. Due to the informal nature of production and marketing arrangements, regional and district governments lacked data on crop size. As a result, the local government lost out on crop cess and the country lost out on value addition processes and foreign exchange. According to Alliance One [3] report, it was revealed from Kenyan side that tobacco which infiltrated the Kenyan market from Mara region was of substantial magnitude (over 500 tonnes per season valued at about 0.7 billion Tshs). In early 2000s, tobacco buyers based in Tanzania attempted to procure tobacco from the three districts but were frustrated by farmers who chose to sell the product to the

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neighbouring country of Kenya; as a result the buyers pulled out from operating in the three districts ever since. The illegitimate trade denied the government colossal sums in cess, while the farmers suffered immensely as the unscrupulous traders purchased the crop at low price. The many years of growing tobacco without the recommended farm inputs and knowhow brought in some crop diseases which spilled over to the Kenyan tobacco crop which caused massive detrimental effects. It was under this background that the government allowed the production of tobacco in Mara region on trial basis. Furthermore, it was under this background this study was undertaken following the completion of trial phase.

2. Materials and Methods

The study was conducted in Serengeti, Tarime and Rorya districts in Mara region. These three predetermined districts (Serengeti, Tarime and Rorya) were selected on the basis of presence of many smallholder farmers who grow tobacco. A total of six wards and six villages were purposively selected to represent the entire tobacco growing community in Mara region. Then a random sampling was done to draw a sample of 30-40 farmers from each village. A total of 181 respondents who are tobacco growers were interviewed in this study. A combination of two approaches namely informal and formal surveys were used to collect information. Informal survey was used to collect qualitative baseline information through focus group discussion (FGD) using a checklist; in-depth discussion with political and government officials such as District Executive Directors (DED), District Council Chairpersons and District Agricultural and Livestock Development Officers (DALDOs); and Problem ranking as one of PRA tools. Also Key informant's interview was used to collect information from different leaders at different levels from the district to the village level. The approach was also used to capture the social and institutional context of people's lives [4] and changing livelihood scenarios at community level [5] in relation to tobacco farming practices such as social, economic and environmental impacts of tobacco farming.

A formal survey, on the other hand, employed a structured questionnaire designed to collect both qualitative and quantitative information from the randomly selected tobacco farmers in the purposively selected villages. The questionnaire focused on things such as household characteristics, tobacco production, input distribution, supply and marketing aspects. The information gathered using questionnaire also focused on agro forestry practices, income generating activities, access to agricultural extension services support, and lastly farmers' altitude toward tobacco production. PRA data were analyzed thematically with the help of villagers in each community. Validation was performed through triangulation that was censured by judicious use of various PRA tools, which inevitably led to some overlap between the tools (e.g. the checklists for different group exercises. Questionnaire data were analyzed using a Statistical Package for Social Science (SPSS) Version 12.0 to provide descriptive statistics such as means, percentages, frequencies, standard deviation, cross tabulation and correlation. In addition, inferential statistics such as t-test were performed where appropriate.

3. Results and Discussion

3.1 Tobacco Production and Marketing Aspects

Information given in the focus group discussions (FGD) in all three districts revealed that tobacco production in the study area started as early as in 1992. Farmers in the study area adopted tobacco farming from their counterparts in the neighboring country of Kenya. During that period farmers sold their produce to tobacco companies in Kenya such as Alliance One Kenya, BAT and Stand Com. Forty nine percent of the respondents acknowledged to have been advised to grow tobacco while fifty one percent were not advised. The majority (70.4%) of farmers in the study area was advised to grow tobacco by their fellow farmers and/or

relatives of tobacco farmers from Kenya. Other sources of advice reported by the respondents in their ascending order include Alliance One Kenya (26.5%), Parents (2%) and District extension officers (1%). The economic impact of tobacco production was reported as the main factor which influenced the adoption of tobacco farming by the majority of farmers who engaged in its production without any advice. Currently, the main tobacco varieties which are grown by farmers include K326, RG17, Brazil, and Diamond. However, this study recognized that most of farmers were not familiar with tobacco varieties. This was revealed when they were asked if they knew exactly which type of tobacco varieties they were growing. Minority of the respondents (27.7%) admitted to have known the varieties while the majority (72.3%) indicated not to have known the tobacco varieties they were growing.

The study also revealed that a big number of respondents (73.5%) practice contract farming while a small number of them (26.5%) had no contract in tobacco farming. In this particular study, farmers reported contract farming as a powerful way of linking farmers to buyers as well as ensuring them accessibility of production inputs and of good prices for their products. Similar results were also reported by Elepu and Nalukenge [6] who highlighted that contract farming has successfully enabled smallholder farmers in developing countries to commercialize their farming operations through the creation of market linkages, both domestic and international. Furthermore a number of studies involving various agricultural commodities done in several developing countries in Africa, Asia, central and Latin America have shown that smallholder farmers have variably benefited from contract farming through the access of production inputs, output markets, market development, rural development and other intangible benefits [7-9]. In Uganda some of these contract farming schemes have been credited for playing a key role in increasing the profitability of crop farming, reducing marketing risks, and above all opening up new markets for non-traditional cash crops both at domestic and international levels [10-13]. However, on the other side in this study farmers were complaining to have not benefited from contract farming. According to the respondents, the agreed terms in the contract such as provision of protective gears, transportation allowances, tobacco arrears payments and provision of inputs at low price are not taken into account, when farmers eventually get into these contracts. This observation was consistent with the previous findings [10-13] whereby smallholder farmers have reportedly experienced some contractual problems in dealing with large agribusiness firms, resulting them giving up contract farming. Also Rweyemamu and Kimaro [2] reported that in most of occasions farmers enter into these contracts unguided, partly because of desperation caused by the lack of alternative marketing arrangements.

3.1.1 Sources of Tobacco Seeds

Results show that Alliance One Tanzania (AOT) was ranked as the main supplier of tobacco seeds (75.1%). Other sources which were reported in their ascending order include; collection from previous crop (16.4%), fellow farmers within the same location (6%), fellow farmers from Kenya (1.5%), Top Save Company (0.5%) and BAT Company (0.5%). These results imply that tobacco seeds used by most farmers are mostly restricted by Alliance One Tanzania preferences. The same results were also noted by Jaffee [14] and Simtowe [15] who reported that smallholder farmers were restricted in all aspect of production to whom they could sell. Although adequate tobacco seeds are supplied by Alliance One Tanzania, still farmers reported to be driven by good qualities in other seed varieties which are not supplied by Alliance One Tanzania. However, this trend has various negative effects on tobacco production due to the following facts: Most farmers lack knowledge on seed selection and purification; thus, there is a high chance of contamination of seeds which may lead to pests and diseases spread. Where hybrid seed varieties are

involved, this might contribute to poor yield especially when the quality of seed might already be compromised.

3.1.2 Sources of Fire Woods for Tobacco Curing

Results reveal that personal woodlot (52.3%) was a major source of fire woods. Buying from other farmers was ranked as the second source while a common natural forest was ranked third. These results suggest that currently, common natural forests do not support tobacco production on their own. Also, the results imply that tobacco production has created an opportunity for people to sell trees for fire wood as another household income generating activity. Furthermore, farmers in the study area have already recognized that tree planting is part and parcel of tobacco production sub sector.

3.1.3 Tobacco Production Constraints in the Study Area

Major constraints hindering tobacco production in the study area were identified and ranked. Prolonged drought was ranked as the first constraint followed by untimely as well as inadequate input supply. This situation might be attributed by inputs market failures which continue to be pervasive in the study area as long as Alliance One Tanzania continues to be the major supplier of inputs for tobacco production. This finding conforms to that of World Development Report [16] which reported low improved seeds and fertilizers use as among the major constraints on increasing agricultural productivity in Sub-Saharan Africa. These were followed closely by incidence of pests and diseases, shortage of fire woods, shortage of labour force, lack of protective gears, poor extension services and hailstones. Other constraints identified by farmers in tobacco production include lack of capital, shortage of barns, burning of barn during tobacco curing and lack of incentives.

On the other side of the coin, political and government officials identified a number of shortcomings which still face tobacco production sector in Mara region. These include low rate of forming local cooperatives unions/societies among farmers, existence of farmers who are not registered by the Tanzania Tobacco Board (TTB), lack of facilities among tobacco subject matter specialist (SMS) at the district level, unsatisfactory services rendered by Tanzania Tobacco Board (TTB) and illegal selling of tobacco to neighbouring country in the bid of securing good prices.

3.1.4 Suggested Solutions for Tobacco Production Constraints

According to the farmers responses, the suggested solutions for tobacco production constraints include: the provision of capital in terms of credit (21%), improvement of input supply and distribution (20.2%), recruitment of enough trained extension officers (16.1%), provision of protective gears (14.5%), tree planting campaign (12.9%), establishment and strengthening of existing cooperative unions (10.5%) and encouragement of establishment of agrochemical shops as alternative sources of input supply (4.8%).

3.2 Tobacco Marketing in the Study Area

Majority of the respondents (93.4%) had access to tobacco markets while the minority (6.6%) had no access to tobacco markets. Most farmers who don't have access to the market were the ones who don't have contract with Alliance One Tobacco Company; as a result they do indirect marketing of their produce through their fellow farmers who have contract. Table 1 shows different buyers of tobacco produced by farmers in the study area.

According to the established contract farming between tobacco farmers and Alliance One, farmers are obliged to sell their produce to AOT. However, the results in Table 1 reveal the existence of other buyers of farmers' produce. When farmers were asked why they breached their contracts which they had dully signed, they said that AOT offered lower prices than other buyers who had no formal contracts with the farmers. This argument is supported by an explanation from one member of the focus group discussion in Kogaja village:

Table 1 Different buyers of tobacco produced in the study area.

Buyers of tobacco produced in study area	Count	Percent	Rank
Alliance One Tanzania (AOT)	147	79.9	1
Alliance One Kenya (AOK)	29	15.8	2
BAT Company	3	1.6	2
Retailers	3	1.6	3
StandCom Company	2	1.1	3
Total	184	100	4

"…we wonder what is happening to Alliance one Tanzania, because the same tobacco grades would fetch lower prices at AOT, but higher prices at other tobacco companies like BAT, Standcom and its sister company Alliance One Kenya".

The same phenomenon had been reported in Malawi whereby 15 percent of the tobacco on the Zambian market is smuggled from Malawi [17] because it can fetch more money on auction floors there than in Malawi. Therefore, with this situation in the study area farmers sell their tobacco to Alliance One Tanzania for the sake of loan repayment, after which they would start seeking for alternative buyers who would offer good prices. On the other hand, the respective district councils loose annual cess contribution from tobacco production. This phenomenon has necessitated to the need of having a close scrutiny of the grading system which is used by Alliance One Tanzania, Alliance One Kenya and other identified buyers in the study area so that farmers can secure good price within the country.

3.2.1 Tobacco Marketing Constraints in the Study Area

The study also revealed a number of tobacco marketing constraints which farmers are currently facing in their endeavor.

Results in Table 2 reveal that majority of the respondents ranked contradicting grading system and low price which was offered as the main marketing constraints. This finding conforms to what was observed by Ngirwa [18], who reported that smallholder farmers complained on the grading system which goes through many stages in the extent that it is difficult for the farmers to grasp. The same experience

Table 2 Tobacco marketing constraints in the study area.

Tobacco marketing constraints	Count	Percent	Rank
Contradicting grading systems	116	40.1	1
Low selling price	115	39.8	2
Payments of tobacco taking place in Kenya	26	9	3
Monopolistic market of tobacco	13	4.5	4
Poor transportation services	7	2.4	5
Few registered selling points	6	2.1	6
Sub standard scales	6	2.1	6
Total	289	100	

was also prevailing for tobacco farmers in Malawi whereby tobacco price are largely influenced by buyers and hence, on the ground, tobacco price remained disappointingly low [19, 20]. Not only farmers themselves but also their representatives are usually not knowledgeable enough on the different tobacco grades and have little influence on the final grades offered to farmers [2]. Other marketing constraints in their ascending order include payment for tobacco being done in Kenya, monopolistic market of tobacco, poor transportation services, few registered selling centers and the use of sub standard scales. With regards to the payment of tobacco to be done in Kenya, government officials and Alliance One leaders reported to have no formal information. However, they reported to have informal information with regards to this practice among farmers especially those with no contract farming and those who act as middlemen. On the other hand, the research team witnessed one of the tobacco payments taking place at Alliance One office in Mugumu, Serengeti.

3.2.2 Suggested Solutions for Tobacco Marketing Constraints

According to the farmers responses, the suggested solutions for tobacco marketing constraints include: having uniform grading systems between AOT and AOK (28.7%), provision of good prices which would reflect production costs (24.5%), having more than one tobacco companies which would create competition among themselves (22.7%), having strong local cooperative unions (8.8%), having free marketing system in tobacco production (4.6%), provision of

tobacco transportation allowances (1.4%) and establishment of more registered selling centers for tobacco (0.9%).

3.3 Production Trend of Tobacco over the Four Cropping Seasons (2008 to 2011) in Mara Region

Table 3 shows that the overall production trend of tobacco has increased for almost three fold. Further analysis shows that the average production in Serengeti district was higher than that of Tarime over the four cropping seasons. This situation might be attributed by the total size of land cultivated as well as the number of farmers involved in the tobacco farming.

The rate of growth of the farmer's base involved in tobacco farming in Serengeti was higher as compared to that of Tarime and Rorya (Table 4). Apart from this, independent farmers were estimated to account for about twenty percent of the farmers' population in the area.

3.4 Comparison of Tobacco Yields among the Three Districts

The independent sample t-test was used to test whether or not there is any difference in tobacco yield among the three districts namely Serengeti, Tarime and Rorya. Descriptive statistics shows that the yields of tobacco in Serengeti, Tarime and Rorya have a mean yield of 658.1569 kg/acre, 972.7672 kg/acre and 785.8138 kg/acre, respectively. This means that tobacco yield in Tarime district was higher than the ones recorded in Serengeti and Rorya districts. However, these yields were below the potential yield of 1,012 kg/acre [21]. According to the independent t-test and the pre-specified level of significance, there was a significance difference between the tobacco yield in Serengeti and Tarime districts with the *P*-value 0.01. The average area per respondent under tobacco production in Serengeti, Tarime and Rorya districts was 2.4764, 1.8651 and 1.7538 acres, respectively. The observed yield difference between the two districts was not associated with the size of the area under cultivation. This argument is supported by the correlation analysis which was done to measure the linear relationship between the area cultivated for tobacco and tobacco yield. The correlation analysis revealed the negative correlation coefficient (0.196) indicating that there was a statistically significant ($P < 0.004$) linear relationship between the two variables such that the more area under tobacco cultivation a person has, the smaller the amount of tobacco yield that person gets. This implies that there are other internal and external factors which influence tobacco production in the study area. Therefore, further investigation patterning to these factors is needed.

Table 3 Tobacco production trend over the four cropping seasons in Tarime and Serengeti districts.

Location	Total tobacco yield (tones) in different cropping seasons			
	Year 2008	Year 2009	Year 2010	Year 2011
Tarime	272	343	706	484
Serengeti	472	935	1,362	1,687
Total	744	1,278	2,068	2,171

Source: Alliance One Tanzania, 2011.

Table 4 Contracted farmer base in the study area over the four cropping seasons.

Location	Contracted farmers over the four cropping seasons			
	Year 2008	Year 2009	Year 2010	Year 2011
Tarime/Rorya	538	610	779	806
Serengeti	1,233	1,220	1,761	1,771
Total	1,771	1,830	2,540	2,577

Source: Alliance One Tanzania, 2011.

3.5 Access to Agricultural Extension Services Support

Generally, results show that access to extension services was similar across the study districts with over 65.7% of the respondents obtaining technical expertise from different sources. However, the results also reveal that farmers in Rorya district have more access to extension services as compared to farmers in the remaining two districts. This is followed closely with Tarime district whereby 60.3% have access to extension services. Access to extension services is considered as one of the factors for enhancing performance and ultimately good produce; Rorya and

Tarime were at a better chance to produce more tobacco as compared to Serengeti. This argument is supported with the average yield performance in the three districts as revealed in this study. The respondents in this study identified and ranked sources of extension as presented in Table 5.

The results in Table 5 show that most of the district council extension officers were not directly involved in technical support to ensure good performance of tobacco sub sector in the study area. This argument is supported by the explanation given by most of the district officials in Serengeti, Tarime and Rorya suggesting that currently there is no any memorandum of understanding between Alliance One and relevant districts in question.

3.6 Agro Forestry Practices and Environmental Conservation Initiatives

The study revealed that majority of the respondents (87.2%) was engaged in tree planting. On the other hand, minority (12.8%) reported to have not been in tree planting as yet. Inadequate supply of tree seeds and seedlings were mentioned as one of the limiting factor in tree planting for most of the farmers. Eucalyptus and gravellia were ranked first as the most preferred tree for planting in the area. Other tree varieties identified as most preferred in the area in their ascending order include mbulumatale, local trees, *Acaccia Spp* (michongoma), makamia, *Accacia tortilis* (migunga) and fruit trees such as avocado and citrus. Similarly, farmers identified varieties of trees which had higher demand even though their planting materials were not readily available. Eucalyptus was ranked the first (45.1%). Mika which is a local tree was ranked the second (13.4%). Other tree varieties identified include: fruit trees such as avocado and citrus (12.2%), *Acaccia* spp. *(*michongoma) (11%), mbulumatale (8.5%), fertilizer trees (4.9%), mikurankanga (3.7%) and *Accacia tortilis* (migunga) (1.2%).

Table 5 Sources of extension services to tobacco farmers.

Sources of extension services	Count	Percent	Rank
Alliance one Kenya extension officers	112	88.2	1
District council extension officers	15	11.8	2
Total	127	100	

This study went further to crosscheck different environmental conservation initiatives which are implemented in the study area. In Serengeti district, under collaboration with Alliance One Tanzania, three seedlings nurseries have been established. Farmers currently obtain tree seedlings for planting from these nurseries. The rate of tree planting within the district is convincing. For instance, the District Council Chairperson reported to have already planted a total of 100,000seedlings in his farm. Tarime DED reported that Alliance One has been emphasizing tree planting and the use of improved barn to minimize tree cutting from the natural forest. Also, the district had launched a tree planting campaign. He also, reported that in the previous season (i.e. 2009/2010) 450,000 seedlings had been planted in the district. Unlike in other districts, in Rorya there is currently no any environmental conservation initiative in progress. Mr. Joseph Nandrie the Acting Regional Administrative Secretary (RAS) of Mara region by then had this to say to the community:

"People must note that trees are like other crops which are grown for different purposes, therefore, they should build a habit of investing on them for their betterment".

3.7 Income Generating Activities

Three main categories of income sources were identified by the respondents in the study. Majority of the respondents (73.4%) indicated crop production as their main source of income. This was followed by selling of livestock and its products (22.4%). Lastly is involvement in small businesses (4.2%). These results imply that in the study area as it is for other rural communities in the country, agricultural sector still plays a great role to sustain a living. Further analysis was done to examine the extent of contribution of each source on household income. Fig. 1 shows the extent of contribution of each source in each district in the study.

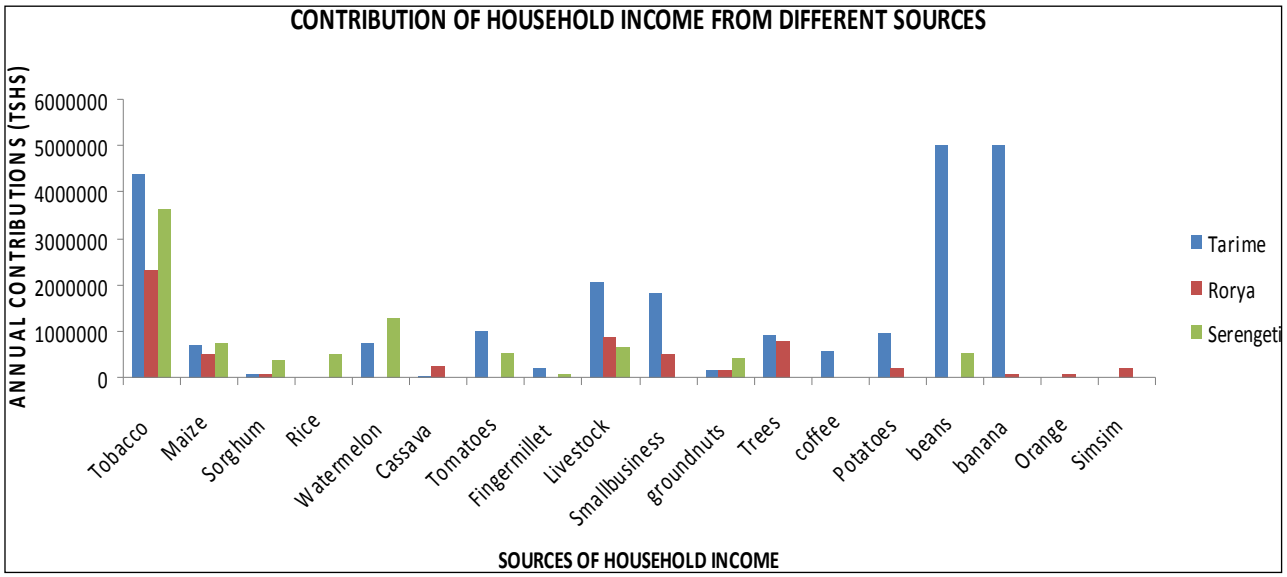

Fig. 1 Contribution of household income from different sources.

Furthermore, the existence of tobacco farming in the area has created other income generating activities/opportunities. These activities include buying and selling of cattle (cattle trade), selling of fire woods for tobacco curing from private owned forests, building of guest houses, starting and running of grocery/small shops and installations and running of milling machines. Tobacco farmers in the study area identified and ranked other potential crops which can be used as good source of household income. These were identified district wise; In Serengeti, Tarime and Rorya districts watermelon, maize and sunflower, respectively were ranked first in the order of importance as sources of household income. The crops which were ranked second in this category for Serengeti, Tarime and Rorya were maize, tea, and cotton, respectively. This study also revealed that tomato in Serengeti and coffee, sunflower and sweet potatoes in Tarime were ranked third. As for Rorya, third rank was accorded to groundnuts.

3.8 Social, Economic and Environmental Impacts of Tobacco Production

Both positive and negative impacts of tobacco farming were identified by tobacco farmers. Economically, tobacco farming has improved household income in terms of cash as well as ownership of assets such as livestock, good houses, motor cycles, bicycles and milling machines. District council officials on their side acknowledged to have experienced a significant impact of tobacco production through annual cess contribution. Fig. 2 shows annual cess contribution of tobacco in the study area.

Socially, tobacco farming has reduced illegal activities such as livestock theft which was practiced by young people in the past years. On the other hand, the negative impacts of tobacco were reported by both female and male farmers. It was reported that tobacco production has caused tuberculosis, head and spinal

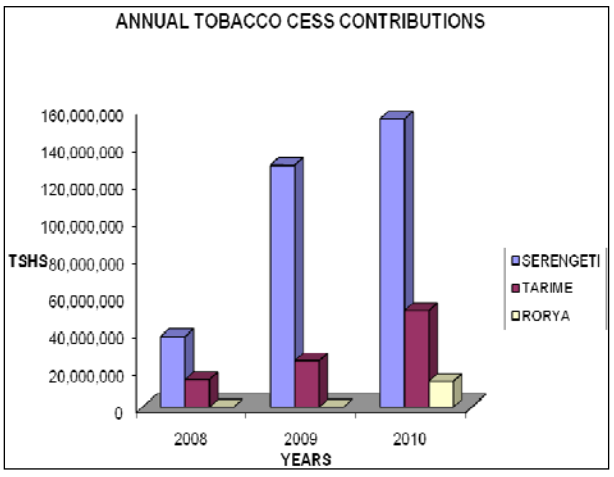

Fig. 2 Annual tobacco cess contribution by district.

cord pains to both for female and male farmers. Specifically for males, tobacco farming has reduced their manhood powers of their sexual organs, and with females tobacco farming has been a cause of miscarriages. This observation is in line with what was reported by WHOM [22], that smoking has been identified as the leading cause of preventable diseases and premature death in industrialized countries. By 2030 a projected 8 million people in developing countries will be killed by tobacco every year [22].

3.9 General View of Tobacco Growers on Tobacco Production in Mara Region

Using liker-type question within the household questionnaire, farmers were asked whether or not exclusion of tobacco farming in their area was beneficial to them and to the entire community at large. Majority of the respondents (71.8%) opposed this opinion while minority 28.2% supported the idea. Furthermore, given its positive and negative effects farmers were asked whether or not they would like to proceed with tobacco farming. Once again, the majority of the respondents (95.6%) showed willingness to continue with tobacco production. It was only 4.4% of the respondents who were not willing to continue with tobacco farming. These results conformed to the general view from all focus group discussions held in all the districts. The focus group discussion in all the three districts opted to continue with tobacco production. The focus group discussions pin pointed income generation from tobacco farming which is currently taking care of children's education, building good houses and buying household assets as one of major reason to continue with tobacco farming. These results imply that farmers in the study area have been willing (from the beginning) and are still willing to continue with tobacco production. Therefore, deliberate efforts need to be made from both sides (i.e. farmers and government) to ensure that tobacco continues to offer sustainable economic development in Mara region.

3.10 General View of Political and Government Officials on Tobacco Farming in Mara Region

Basing on the fact that tobacco farming was farmers' own initiatives, its significant contribution to households' income, absence of other cash crops with more income than tobacco; Serengeti's District Agricultural and Livestock Development Officer (DALDO) suggested that farmers should continue with tobacco production. However, some investments to improve the sector have to be made. These should include farmers observing the rules and regulations accompanied with tobacco farming, ensuring that technical and extension services from different stakeholders such as Tanzania Tobacco Board (TTB), TORITA and tobacco companies are available and fully operational. On the other hand, Serengeti's District executive Director (DED) declared that, "*Tobacco farming has brought positive impacts to most of farmers. As time goes on farmers are expanding their area for tobacco production, this is a sign of acceptance of tobacco farming (that is to say they are motivated by the sector*)." He also said that tobacco farming has been a good source of District Council income, and that a significant change of farmers' welfare within the district can be witnessed. The same observation was also made by DALDO of Rorya who said; despite its challenges on environmental degradation the sector has brought positive impacts to the rural community within the district. In Serengeti district, tobacco has overtaken cotton production in terms of income generation. As a result, some parts of the district where tobacco performs better, farmers have abandon cotton production. Despite the concerns on environmental degradation, tobacco farming should be made sustainable. The matter needs good planning and strategies to overcome what are thought to be negative effects of tobacco farming. At different occasions both Tarime District Executive Director and Mara Regional Administrative Secretary suggested that farmers should continue with tobacco production provided that the positive effects surpass the negative ones.

4. Conclusions and Recommendations

The results of the study indicate that tobacco production in Mara region has been taking place since back 1992. Farmers adopted tobacco farming from tobacco farmers in Kenya. Both positive and negative impacts of tobacco farming have been observed in the study area, however, the positives ones surpass the negative ones. Despite the challenges farmers are facing in the aspect of production and marketing in tobacco sector, most of stakeholders in the region are still encouraged to continue with tobacco farming. However, watermelon, maize and sunflower were ranked first in the order of importance as alternative cash crops to tobacco in Serengeti, Tarime and Rorya districts, respectively. Other alternative cash crops identified by farmers were coffee, cotton, tea and groundnuts. Therefore, this study concludes that tobacco farming is still the main household income source in Mara region.

From these results we recommend that, above and beyond the marketing and inputs distribution aspects, efforts aiming at improving the production of tobacco in Mara region should be underway. These should focus on tree planting, improvement of marketing services, input availability and distribution, recruitment of enough well vested extension officers, establishment and strengthening of Local Cooperatives Unions (LCU), improvement of the Tanzania Tobacco Board (TTB) services through the establishment of a TTB branch in the region, trickle down effects of tobacco cess contribution from the district level to the village level and improvement of infrastructure. Furthermore, further research on tobacco varietal suitability in relation to agro ecological zones and improvements of fertilizer applications (fertilization regimes in tobacco production) should be done.

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