

Coffee Yield [Productivity] and Production in Uganda: Is it Only a Function of GAP¹ and Diseases?

By

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¹ GAP is Good Agricultural Practices

Introduction

Over the last decade efforts by government, several development partners and private sector have been geared at improving good agriculture practices [better extension services] and fighting disease and pests, as the perceived main causes of low coffee productivity and production in Uganda. These efforts gathered a lot of steam in the last five years however; coffee productivity and production volumes do not seem to be responding in the expected manner.

Robusta exports during the five years 2005/2010 averaged around 2.1 million bags with a high of 2.7 million (2007/08) and a low of 1.4 million (2005/06 – the lowest in the last 20 years). This compares with average exports of 2.3 million bags over the previous five years (2000/04) and 3.2 million bags in the five years prior to that (1995/2000). Uganda's coffee production has stagnated actually at 2.7 million bags [165,000 metric tons] over the last 10 years. The trend of marketed production volumes in metric tons for the last 10 years is illustrated in table below.

Uganda Coffee Exports by Type Between 2000 and 2010 in 60kg Bags

| Year | 2000/01 | 2001/02 | 2002/03 | 2003/04 | 2004/05 | 2005/06 | 2006/07 | 2007/08 | 2008/09 | 2009/10 | Averages | %age |
|---------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|
| Total | 3,074,773 | 3,146,381 | 2,663,888 | 2,523,042 | 2,504,890 | 2,002,324 | 2,704,236 | 3,210,603 | 3,053,688 | 2,668,971 | 2,755,280 | 100% |
| Robusta | 2,614,862 | 2,716,005 | 2,239,766 | 1,979,353 | 1,988,360 | 1,408,314 | 2,144,482 | 2,713,498 | 2,405,137 | 1,957,400 | 2,216,718 | 80% |
| Arabica | 459,911 | 430,376 | 443,386 | 543,689 | 516,530 | 594,010 | 559,754 | 497,105 | 648,551 | 711,571 | 540,488 | 20% |

Source: UCDA Data Base, 2010

A closer look at Robusta trends where most efforts have been is even more disturbing! Robusta coffee share of 90% of the exports has reduced to 80% and the trend is down as can be seen from the table above and graph below. If you put in the factor of about 5%² [about 120,000] of total both Robusta and Arabica exports from cross border trade³, the state of Uganda's coffee productivity and production levels becomes even dire.

From the proceeding discussion, it's evident that good extension or agronomic services GAP and coffee disease and pest control are definitely not the only major factors of better coffee productivity [yield] and production in Uganda's case and they are other factors that explain the stagnation in Robusta coffee production.

Emerging Factors Affecting Coffee Productivity and Production Beyond GAP and Disease in Uganda

- **Increasing Urbanisation and Industrialisation**

Ten years ago driving from Kampala to Entebbe airport, the road was lined up with coffee trees and they could be seen all over the hills. Today the road and the hills are occupied with houses and human settlements; supermarkets, petrol stations, hospitals, schools, a golf course and these cover as far as the eyes can see. This scenario is true for the 50kms radius of the current Wakiso District [formerly part of Mpigi]. Areas like Bunamwaya, Kiwatule, Najera,

² This is an estimated figure by the Africa Coffee Academy through interviewing coffee traders involved in cross border trade.

³ Because a much better coffee price discovery and trading system in Uganda, Robusta coffee from Tanzania and Arabica coffee from Rwanda, Burundi, DRC and Kenya finds its way in Uganda and is processed and exported as Uganda coffee.

Namugongo, Gayaza, Kasangati, Kagoma were all coffee growing areas. All these hectares of land that produced coffee no longer do.

The case for Mukono is even more dramatic. Ten year ago driving from Kampala to Lugazi and Bugerere – coffee trees lined the road from as close as Banda! Bweyogerere, Seeta, Mukono were heavy with coffee farms and many coffee factories along the road. Today there is hardly any coffee tree and all have been replaced by warehouses, factories, housing estates, hotels, schools at every interval of a kilometre. The pressure on land under coffee in Mukono has escalated over the last 10 years due to rapid occupation of land by big money enterprises and the owners have kept relocating further in Mukono in areas like Nakasajja, Kalagi, Nakifuma, Nagalama --- again taking over coffee farm land in the former coffee producing areas.

Coffee Production Estimates: (2000/2001) in 60 Kg Bags

| District | Total Area Under Coffee (Ha) | Actual Production (60 kg Bags) | %-age |
|-----------------------|------------------------------|--------------------------------|------------|
| Robusta Coffee | | | |
| 1. Mukono | 52,900 | 682,410 | 20% |
| 2. Mpigi | 34,200 | 441,180 | 13% |
| 3. Masaka | 41,440 | 534,576 | 16% |
| 4. Sembabule | 3,940 | 50,826 | 2% |
| 5. Mubende | 22,040 | 284,316 | 8% |
| 6. Luweero | 17,940 | 231,426 | 7% |
| 7. Nakasongola | 2,020 | 26,058 | 1% |
| 8. Kiboga | 10,200 | 131,580 | 4% |
| 9. Rakai | 10,200 | 131,580 | 4% |
| 10. Kalangala | 2,771 | 35,746 | 1% |
| 11. Mbarara | 5,510 | 71,079 | 2% |
| 12. Bushenyi | 7,610 | 98,169 | 3% |
| 13. Ntungamo | 4,422 | 57,044 | 2% |
| 14. Rukungiri | 2,750 | 35,475 | 1% |
| 15. Kabalere | 2,565 | 33,089 | 1% |
| 16. Bundibugyo | 705 | 9,095 | 0% |
| 17. Kibaale | 4,924 | 63,520 | 2% |
| 18. Hoima | 4,614 | 59,521 | 2% |
| 19. Masindi | 26,940 | 34,753 | 1% |
| 20. Jinja | 5,535 | 71,402 | 2% |
| 21. Kamuli | 7,620 | 98,298 | 3% |
| 22. Iganga | 13,240 | 170,796 | 5% |
| 23. Lira | 367 | 0 | |
| 24. Gulu | 356 | 0 | |
| 25. Apac | 395 | 0 | |
| 26. Pallisa | 254 | 0 | |
| 27. Tororo | 175 | 0 | |
| 28. Busia | 145 | 0 | |
| 29. Kitgum | 235 | 0 | |

| | | | |
|-----------------|----------------|------------------|-------------|
| Subtotal | 286,013 | 3,351,939 | 100% |
|-----------------|----------------|------------------|-------------|

Source: UCDA Annual Report: 2000/01 - Page 14

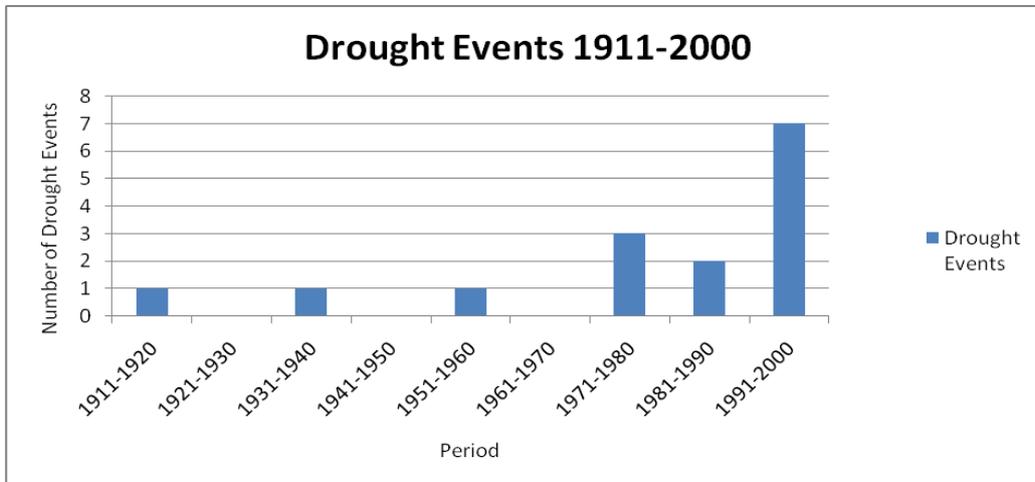
The table above shows the contribution of the districts of Mpigi and Mukono in coffee production 10 years ago. Over 33% came from these districts but to date only about 15% of the total coffee production is coming from these districts.

Although, Mukono and Wakiso have experienced the most loss of land for coffee the situation is also happening in other big towns like Masaka, Mbarara etc and the aggregated effect is that a good amount of hectares under coffee have been lost to urbanisation and industrialisation thus reducing the land under coffee and thus production volumes.

- **Changing Weather and Climate**

The Meteorological Department of Uganda recorded an increase in the frequency of drought, identifying the occurrence of seven notable droughts between 1991 and 2000; almost four times the number of events logged between 1981-1990 and more than double that of the previous decade with the highest number of drought events (1971-1980)⁴.

Occurrence of Droughts in Uganda by Decade



Source: Meteorological Department of Uganda

The weather has been significantly affecting coffee production in Uganda. The effect of weather has been so significant since the onset of El Nino rains in the early 2000s throughout the country. This is characterized by long rainy seasons from August up to April. May to July has been Dry. This means that the old climatic/weather pattern of 2 distinct rainy seasons per year has been distorted. There is essentially one long rainy season and dry months in between. This has been the case in 2009 and 2010 mainly in Southern Uganda. This can be attributed to climate change. This has had an effect of change in production cycles i.e. there is no clear difference between main crop and fly crop seasons especially in Central Uganda.

Most farmers talked to in Mityana, Bushenyi and Masaka indicated that weather patterns are becoming increasingly volatile and unpredictable, with episodes of drought and erratic rainfall occurring with increasing frequency. Farmers argue that rainfall has become increasingly erratic, with both a greater unpredictability of occurrence and shorter periods of rainfall.

⁴ Oxfam, 2008 – “Climate Change and Poverty Impacts in Uganda”

Mr. Tony Mugoya the Executive Director of Uganda Coffee Farmers' Alliance reported that, extreme dry and hot spells affected coffee production. In the main coffee crop season of October 2009 to March 2010, there was prolonged drought. This severely reduced coffee volumes throughout the country. The most affected areas were those near the cattle corridor. Districts like Mpigi, Gomba, Mubende, Mityana, Luwero up to Masaka, and others, were seriously affected. Research⁵ conducted in these areas showed that 25% of all coffee farmers were adversely affected by this prolonged drought. This resulted in reduced coffee volumes throughout the country which can be evidenced by the UCDA production figures for 2009-2010 coffee year.

Mr. Kenedy Senoga the Chief Field Manager of the Hanns R. Neumann Stiftung Africa working with the Uganda Coffee Alliance in Mityana and Mubende, reported that in 2009 drought caused a loss of 44% in production! Another farmer Mr. Ezegyade Kawempe of Buyola village in Nyababale Bushenyi reported that the sunny periods used to last between 2-3 months but since five years ago the sunny period last 4 months now. He also reported hailstorms and strong winds were a new feature that they were not experiencing before. In Nzizi village Kingo- Kasana the farmers reported that 3 years ago rains used to come in March but they now come in May and for only one and half months. They asserted that the second rains had to come by 15th August of every year [Maria's Day] but they reached end of September with hardly any rains. They reported further that drought causes production loss to about 50%.

Shorter rainfall periods damage coffee production by preventing coffee trees from reaching full floriation, impacting on both quality and volume. Coffee production is highly dependent on specific rainfall distribution patterns (which vary by agro-ecological zone and coffee variety). Rainfall distribution directly controls effective floriation and cherry maturation which determine bean size (i.e. coffee quality). Rainfall distribution also determines the prevalence of disease (in particular fungal varieties) and the susceptibility of coffee trees to diseases and pests. Quality control measures (such as producers' ability to properly dry coffee) also become more problematic as rainfall variability increases.

- **Lack and Cost of Labour**

As early as 1930, because Buganda was the growth pole in the great lakes region with a focus on cotton and coffee production, it attracted more migrants from outside and within Uganda than any other region. Migrants skilled in cultivation were attracted to Buganda whereas those skilled in livestock herding scattered in all parts of Uganda where cattle were to be found – in northern, eastern, western and parts of Buganda. On balance more workers came from Rwanda and Burundi and were dominated by males.

10 years ago the 10 coffee producing districts in Buganda were responsible for 76% of the coffee produced in the country as evidenced in the table in section 4.1 above. Majority of these farmers depended on migrant labour mainly from Western Uganda, Rwanda and Burundi. The children of these farmers went to school and only assisted [rather on limited way] during holidays which were mostly off season anyway apart from December/January holidays.

In the last 15 years, the migrant labour has been receding due to peace in Rwanda and Burundi and better opportunities near home for most labourers from Western Uganda. The Baganda as a people are not accustomed to hard labour work and prefer to do trade and commerce. The

⁵ Research was conducted by Uganda Coffee Farmers' Alliance field staff.

children who grew up on these farms used to see their parents hire labour and because they were never initiated in getting involved in hard labour, they have shunned it.

The other challenge with labour availability is the fact that most coffee farms are owned by smallholders. In Uganda, 94% of all crop production is attributed to smallholders (small scale) farmers; who mainly use family labour. This has posed a great challenge to those farmers with medium to large shambas. The labour is most needed during the harvest time. In Central Uganda (Mityana and Mubende), 75% of all coffee households have an average of 5-8 people; and majority (3-6) of these people are school going children.

• **Population Growth and Land Shortage**

According to the United Nations (2009) population estimates, Uganda's population – using the median variant – grew from 5, 158,000 in 1950 to 33,797,000 in 2010. With 77 percent of its population was under the age of 30 in 2005 and with an annual population growth rate of 3.2 percent, the impact of ongoing high population growth has stayed virtually the same since 1975. Consistently high fertility rates in Uganda for decades have produced the youngest age structure in the world⁶. Uganda's population is currently growing by about one million people per year, and the continually larger size of youth cohorts reaching reproductive age ensures that given the force of demographic momentum, Uganda will see high rates of population growth for decades to come.

If fertility stays constant at the current rate of 6.7 children per woman, Uganda's population would quadruple by 2045; even if it falls below five children per woman, Uganda's population will nearly double again by 2025, to 53 million⁷. After that, depending on the source of the forecasts, Uganda might have between 92 and 130 million inhabitants. In terms of land density, this would mean an increase of 350 percent, from 122 inhabitants per square kilometer to a possible 551 inhabitants per square kilometer

Uganda is culturally typical of most East African countries. Ugandans value large families, polygamy is legal and fairly common, and 80% of the country is involved in agriculture. Curiously, the total fertility rates (the average number of children born to each woman) in neighbouring, culturally similar countries like Kenya and Tanzania, have gone down in recent years, to 4.91 and 4.97 respectively, but Uganda's TFR was 7.1 in 2000, leading to a population growth rate of 3.30% per year⁸.

⁶ Uganda has the youngest age structure in the world as measured by Population Action International. PAI's measure assesses a country's progress along the demographic transition, determined by the share of its population younger than age 30 and the share older than age 60. For more details, see Leahy, Engelman, Vogel, Haddock and Preston 2007.

⁷ United Nations Population Division 2009.

⁸ Klasen, Stephan

Table 1: Demographic Projections for Uganda 2000-2050

| | Population ('000) | Pop. Growth | Population Density | TFR | Dependency Rate | Pop. Aged 15-64 | Growth 15-64 | Pop. Aged 5-19 |
|------|-------------------|-------------|--------------------|------|-----------------|-----------------|--------------|----------------|
| 2000 | 23487 | 3.30% | 100 | 7.10 | 110 | 11164 | 3.16% | 9504 |
| 2005 | 27623 | 3.62% | 117 | 6.78 | 112 | 13044 | 3.67% | 11167 |
| 2010 | 32996 | 3.58% | 140 | 6.37 | 111 | 15621 | 3.88% | 13467 |
| 2015 | 39335 | 3.46% | 167 | 5.93 | 108 | 18894 | 4.06% | 16167 |
| 2020 | 46634 | 3.31% | 198 | 5.43 | 102 | 23051 | 4.00% | 19115 |
| 2025 | 54883 | 3.11% | 233 | 4.87 | 96 | 28051 | 3.86% | 22143 |
| 2030 | 63953 | 2.84% | 271 | 4.27 | 89 | 33894 | 3.64% | 25287 |
| 2035 | 73550 | 2.53% | 312 | 3.70 | 82 | 40522 | 3.38% | 28395 |
| 2040 | 83344 | 2.27% | 353 | 3.24 | 74 | 47844 | 3.12% | 31096 |
| 2045 | 93250 | 2.06% | 395 | 2.90 | 67 | 55801 | 2.79% | 33051 |
| 2050 | 103248 | | 438 | | 61 | 64039 | | 34326 |

Source: (Klassen, Stephen)

Such explosive population growth has led to serious repercussions when it comes to land fragmentation and shortage of farming land. In the Ugandan ministry of finance's Second Participatory Poverty Assessment Report, they surveyed Ugandan opinions on what they found to be causes of poverty around them. 33% of Ugandans reported "Large Families/Many Dependents" as a reason for poverty. **47% listed "Land Shortage"** as a cause of poverty. 13% said infertile soils. We suppose that land scarcity is such a big problem because they are not able to farm the much depleted land, and good land has become scarce (Republic of Uganda, The 2002).

Population densities are high in Bugisu and Busoga which are coffee growing areas. These areas are faced by land fragmentation due to the inheritance cultures of dividing land among siblings especially on Customary Land. Polygamy is a big practice in Uganda and is aggravating the problem of land fragmentation.

- **Diversionsary Farming Enterprises**

Coffee production and land under coffee has been lost to diversionsary farming enterprises that keep coming up now and then. Coffee farmers are sometimes duped into switching from coffee to new crops with promoters purporting that they will give quicker and better returns.

In the Buganda and Busoga, farmers switched to planting vanilla, chilies and up land rice most recently. During the vanilla boom, farmers practically uprooted coffee and planted vanilla. Others resorted to "quick" money crops like maize and beans although they never fared well either. While diversification can benefit producers it may also present a risk to them when misleading or incorrect market information influences farmers to migrate to alternative crop production. In Uganda the case of vanilla, in which a rapid increase in supply caused the export price to crash, serves as an interesting example. Vanilla bean prices peaked in 2003 in response to production disruptions in Madagascar, causing many coffee farmers to invest in the (laborious) process of Vanilla production (with production increasing from 303 to 845 tonnes between 2000 and 2004 (UEPB,2005⁹). In 2009 prices collapsed by almost 90%, as Madagascar's industry recovered and Costa Rica, India, Papua New Guinea and Colombia significantly increased their production. (New Vision, 2009¹⁰). Maize prices have continued

⁹ Uganda Exporter Promotion Board 2005, Vanilla product profile no.9, Uganda Export Promotion Board Kampala

¹⁰ New Vision, *Vanilla Gate Prices Hit by International Speculation*, New Vision, New Vision webjournal, January 7th 2009

to disappoint farmers whenever the neighbouring countries have a bumper crop, prices plummet to below cost of production.

The risk generated by farmers migrating from coffee to other commodities is that it has exacerbated the decline in Ugandan coffee production. Furthermore, coffee is a permanent crop that helps soil protection, supports a balanced ecosystem, and, given the low use of synthetic chemicals in countries like Uganda, causes limited environmental contamination. When producers are diverted to other crops that are promoted to be more “profitable”, their shift from coffee has caused the stagnation in coffee production and land, labour and other factors of production shift away from coffee. This scenario has significantly increased environmental contamination and has had a critical impact on the economic, environmental and social benefits generated by the sector.

- **Prolonged Price Depression**

The sharp fall in coffee prices at the turn of the century/millennium resulted in many coffee farmers abandoning their coffee fields in search for other alternatives. This was aggravated by the spread of Coffee Wilt Disease (CWD) which wiped out many coffee trees. Because of the then low prices, coffee farmers did not even bother to minimize the effect of CWD. This led to a significant decline in coffee volumes.

In early 2000 the ICO Robusta Indicator fell below 50 cts/lb and did not regain that level until late 2005. The lowest level was reached October 1st, 2001 at just 23.23 cts/lb ex dock! In 2001/02 the average price FOT for Uganda Robusta was just below 18 cts/lb. It currently stands at over 90 cts/lb. The ICO’s Other Milds Arabica Indicator fell equally sharply, from 111 cts/lb early 2000 to 56.40, also in October 2001 but currently stands at 200cts/lb.

This challenge would have been mitigated with improving productivity and raising yields, there is no practicable protection against this kind of price fall. However, farmers just abandoned the coffee and others up rooted it and planted other crop they perceived to be more profitable. During this long sustained low price period that went on for about 5 years – a lot of land and resources migrated from coffee to other enterprises and only a percentage was recovered by coffee in 2005 when prices started heading north.

- **Absence of Youth in Coffee Production**

The sustainability of coffee production is threatened by the fact the youth generally have shunned coffee production. Rural-urban migration especially affecting rural youth has reduced the labour availability in coffee farms/shambas. The youth are especially interested in white and blue collar jobs. The youth are also mainly engaged in petty trade like motorcycle taxi [boda boda] transport business for males and shop keeping and women hair saloons for females and most others are just idle and disorderly.

The UCDA baseline survey on farmers’ characteristics and tree profiles in the 20 coffee production campaign districts done in 2008 showed that only 6% of the farmers were 30 years and below (youth) while close to 21% of were 31-40 years, 21% were between 51-60 years and 14% were 61-70 years.

This is a worrying situation as the percentage of the elderly (above 70 years) of 9% as opposed to the youth. Given the fact that 75% of Ugandan population is below 30 years and most youth migrating to town; this has greatly deprived the coffee industry much needed labour and succession.

- **Lack of Medium to Large Coffee Farms**

In Uganda the custom is to divide land among children and this has resulted in progressively smaller farms and threatens the economic viability of the farmers (average farm holding sizes in Uganda now range from 0.5 to 2.5 hectares, with coffee intercropped within that area (UCDA, webpage). With over half of Uganda's population under the age of 15 and with an average of 6-10 dependants per household¹¹, this problem has the potential to progressively worsen. Some farmers have had 20 coffee trees for the last 20 years! Additionally, as noted earlier small farms are also much less likely than large farms to receive on-farm extension services / technical assistance.

Uganda does not have medium to large coffee producers who can enjoy the economies of scale in coffee production. This is a very big problem to productivity and production.

- **Gender Issues**

The culture in most coffee growing areas especially in Uganda is that men are in charge of Cash Crops while women are in charge of Food Crops. This is due to the social role of men as providers of money for their families while Women are seen as providers of Food for their families. However, because men in coffee farming communities nowadays engage in other income-generating activities like animal rearing and small scale businesses; women have become deeply involved in coffee growing. The challenge is that it is mostly men who sell coffee and determine how the money is used; women are hardly involved in decision making over the use of coffee money. This has reduced the interest of women in coffee growing especially those who are married.

National Union of Coffee Agribusiness Enterprises [NUCAFE] implemented a gender equity project entitled "Enhancing equity in decision making in coffee farming households in Uganda" with funding from ASPSP Danida, in the districts of Nebbi, Masaka, Bushenyi and Kapchorwa in 2008/09.

From the findings during farmers' interactions, women were seen to be more involved in several stages of production for example tilling, pruning, harvesting and drying. However, when it came to making decisions on how to spend the earnings it was only a man's decision. Coffee is still seen to be a man's crop and income from the crop benefits more a man than a woman.

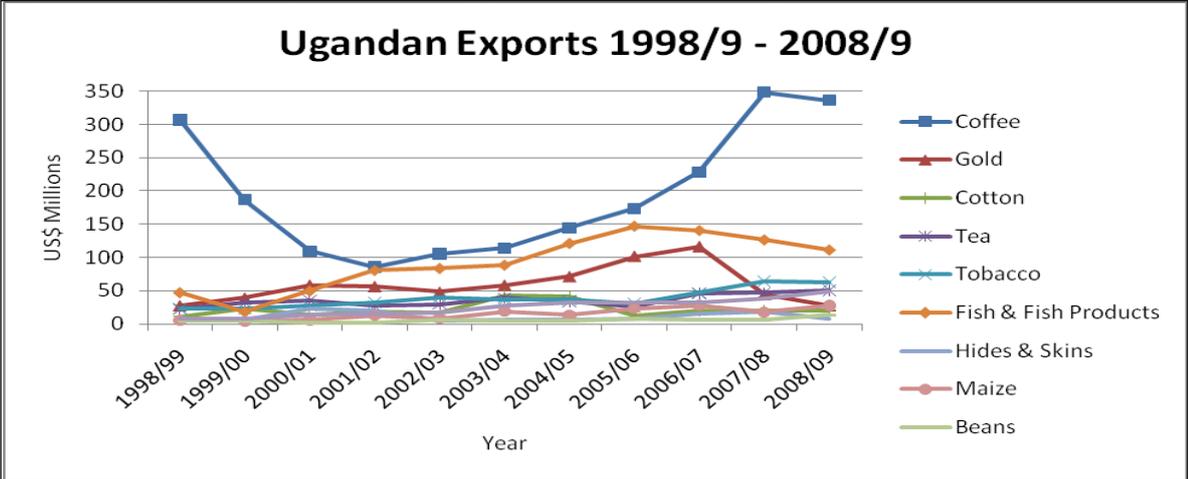
Scenarios of marrying additional wives, high sales of alcohol during the coffee boom are a reality. Many women resort to selling some coffee without a man's consent to meet domestic needs and this is referred to as "stealing" by men who are aware of the practice. This comes with a lot of consequences like domestic violence, family breakups and affects productivity and production because coffee striped [milked] and is abandoned by women who perceive that after all they do, only the man gains the benefit.

- **Lack of Political Support and too Much Politicking**

¹¹ Uganda Bureau of Statistics (website, Sept 10) - document: [TP4: Projected mid-year Population \('000\) for 5 year age groups, 2009 – 2011](#)

As can be seen in the figure in section 2.0 while significant growth in non-coffee exports, over the past decade, has reduced Uganda’s historical reliance on coffee for export earnings, Uganda is still heavily reliant on coffee export earnings. The discovery of oil and the increase in exports of cut flowers, tea and tobacco; coffee seems to have gone off the political agenda or at least has found competition for support from government. For the last 5 years [for example] the Uganda Coffee Development Authority [UCDA] has been applying to government for funds to buy more coffee seedlings and strengthen the function of coffee research but none of these requests have received a favourable response. Nursery coffee operators are demanding in excess of 1 billion shillings in unpaid money for the seedling they supplied to farmers on the instructions of UCDA. They are over 12 million seedlings with nursery operators but they are no funds to buy them to have them supplied to farmers who want them to plant.

This lack of government support to the sector, especially in production; has derailed the consolidation and scaling up of the production coffee campaign in the country. To acerbate the situation, politicians tell farmers not to buy coffee seedling from nursery operators because they [government] will give them free seedlings which is not true. This misinformation by politician politicking is another big problem in the coffee production drive.



• **Lack of a Coffee Industry Champion and Road Map**

The coffee industry in Uganda is littered with several initiatives giving small bursts of efforts. These efforts are not leveraged or supported to create bigger ripples and have a sustained impact. Uganda – the leading exporter of coffee in Africa and second coffee producer in Africa does not have a coffee strategy/road map. UCDA the government regulatory and development agency is “shy” of taking up the leadership role of the industry. Uganda’s leading export commodity, coffee’s strategic importance and scale necessitates a well coordinated and consistent sector strategy, but this is currently not in place.

The most prominent attempt at industry coordination appears to be the Uganda Coffee Production Campaign¹², with participation from leading actors in the sector including UCDA, Ministry of Agriculture Animal Industry and Fisheries [MAAIF], private-sector representatives, producers and NGOs. Although the Campaign has fostered multi-stakeholder collaboration around one clearly identified goal (i.e. an increase in Ugandan coffee production), stakeholders appear to question its effectiveness, with some suggesting it has

¹² The campaign’s stated objective is to increase the annual production of exportable coffee to 4.5 million bags by 2015, a 50% increase over current export levels.

been constrained by a lack of funding to implement the prioritized activities. Lack of an industry champion is part of the reason why coffee productivity and production has stalled.

- **A Dysfunctional Coffee Research System**

Coffee research in Uganda is dysfunctional and in a dire state on all fronts. Administratively coffee research is a program under NaCCRI competing hopelessly with so many crops for already stretched resources and is heavily constrained by insufficient funding, inadequate facilities and terribly understaffed with only 4 technical staff; all over 50 years of age. The current state of coffee research cannot respond to the immediate industry demands of production of adequate improved coffee seedlings, the eminent threats of diseases like the twig borer and drought resistant varieties and the future requirements of improved productivity that need to guarantee the competitiveness of Uganda as a coffee origin.

The very limited resources and scope of the research and extension services are a critical constraint for the Ugandan coffee sector. There is clear evidence of a failure of research being implemented / applied on-the-ground via the Ugandan agricultural extension services. Insufficient coordination and lack of strategic planning between research and extension adversely impacts the industry, hampering national coffee production targets from being achieved by failing to effectively protect the industry from major risks, or assist the industry in effectively managing pest, disease and now climate change risks which arise. This issue reflects another significant problem related to Uganda's coffee research: insufficient data on production, yields, disease and pest infestation, success rates of new plantings, and weather variability. A baseline sample survey was published in December 2009¹³, but the lack of a comprehensive and continuous data collection system is severely constraining the ability of the industry to monitor problems affecting the sector, develop appropriate responses, evaluate the effectiveness of responses and implement remedial actions accordingly. This in turn has led to past massive disease outbreaks, inadequate farm management with resultant low yields and poor quality control practices.

Currently due to the drastic weather changes farmers are asking for both wilt resistant and drought resistant varieties of seedlings but the responses are not coming through. Productivity will continue to be affected by weather /climate, disease and pests threats and effects for as long as research is non respondent as its today.

To rest this point, it's worth noting that part of the limited success of the coffee replanting program was the source of seedlings. Many seedlings were from non registered/certified nurseries and either died young or the mature trees never bore many beans because they were fake seedlings. This affected the coffee yield and production of the replanted trees.

Conclusions

Good agricultural practices or extension and agronomic services [GAP] and coffee disease and pests control; are not the only factors responsible for a good coffee productivity [yield] and production in Uganda. The paper clearly discusses and illustrates the other factors affecting

¹³ Baseline Survey Report of the Coffee Production Campaign Districts: Farmers' Characteristics and Tree Profiles. UCDA. December 2009 (this survey was a precursor to establishing the Production Campaign and is meant to complement the Agricultural Census led by Uganda Bureau of Statistics (UBOS) and Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) being completed this year. The baseline study used a sample of 800 farmers (40 farmers in each of the Campaign's 20 target districts) so, although very useful, it does not replace the need for a constant data gathering and management system for the entire sector.

coffee productivity and production in Uganda. Some factors like climate change are new phenomenon – most significant in the last 6-8 years. Others like gender and labour have been around but have escalated.

Urbanisation and industrialisation have been slow but steady in eating up coffee land and the evidence is overwhelming in the original districts of Mukono and Mpigi [Wakiso]. Furthermore, the lack of a champion for the industry is a continual challenge. This paper has generated more questions than answers but what is most important the paper has been able to empirically identify and discuss the factors that are causing coffee productivity and production stagnation.

What is important to take is that, for coffee productivity and production to respond better the strategy must go beyond delivering better GAP and disease control to addressing the issues identified to have a wholesome approach. Coffee has to be brought back on the national political agenda to receive the appropriate funding and support; a champion must be identified for the industry, new areas must be identified and supported to grow coffee to recover land lost to urbanisation and industrialisation, irrigation must be part of GAP to address the devastating effects of drought, programs to get the youth back in coffee production must be designed and implemented, medium and larger coffee farmers must be supported with incentives like in other coffee producing countries, gender issues have to be addressed to establish equity to ensure sustainability in coffee production and productivity.