



Universiteit
Leiden
The Netherlands

Is khat a social ill? Ethical argument about a stimulant among the learned Ethiopians

Dessie, G.

Citation

Dessie, G. (2013). *Is khat a social ill? Ethical argument about a stimulant among the learned Ethiopians*. African Studies Centre, Leiden. Retrieved from <https://hdl.handle.net/1887/20402>

Version: Not Applicable (or Unknown)

License:

Downloaded from: <https://hdl.handle.net/1887/20402>

Note: To cite this publication please use the final published version (if applicable).

African Studies Centre
Leiden, The Netherlands

Is khat a social ill?

Ethical arguments about a ‘stimulant’ among the learned Ethiopians

Gessesse Dessie

ASC Working Paper 108 / 2013



Khat market in Hayk Wello, Ethiopia [photo: Gessesse Dessie]

Acknowledgement

This publication is part of the IFS funded project S/3599-2. ASC Leiden fellowship facilitates the write-up of this paper. Sturtevant Robert from Peace Corps Volunteer Wondo Genet College of Forestry and Natural Resources, Ethiopia is acknowledged for editing the language.

About the author

Gessesse Dessie is a staff at Wondo Genet College of Forestry and Natural Resources Ethiopia. Currently he is a research fellow at United Nations University Institute for Natural Resources in Africa, Accra Ghana.

gessesse.dessie@gmail.com

dessie@inra.unu.edu

African Studies Centre
P.O. Box 9555
2300 RB Leiden
The Netherlands

Telephone +31-71-5273372
Fax +31-71-5273344
E-mail asc@ascleiden.nl
Website <http://www.ascleiden.nl>

© Gessesse Dessie, 2013

Abstract

This study focuses on the khat phenomenon by analyzing experiences and the thinking of learned Ethiopians towards this substance using a phenomenographic method. The educated bracket of Ethiopian society is exposed to chewing during the high school and university years. A significant number of them engage in chewing, mainly for intellectual stimulation and recreation. Khat is highly visible in the agricultural fields of rural landscapes in several regions and most urban areas. Khat enterprise impacts development through its association with food security, human health, institutions, income, social impact and policy. Despite its far reaching utility to a significant number of the Ethiopian population, khat is not free from social scourge. The most important question that drives the discourse hinges on how to characterize khat: beneficial or harmful, hence, right or wrong. Understanding this ethical dilemma among the learned Ethiopians can have strong implications, as they can exert influence over future khat policy.

Key words: Phenomenography, khat, ethics, policy, development

Introduction

In many parts of Ethiopia, khat (*Catha edulis*) has emerged from an obscure backyard bush/tree to an intensively cultivated, openly grown, high value crop. Khat is a plant of unique chemical compositions: a stimulant consumed by millions, a crop preferred by smallholder farmers, a commodity of high foreign currency source, and an agent of socio-economic and biophysical change (Kalix 1990; Basunaid & van Dongen 2008; Access 2010; Gebissa 2010). Today in Ethiopia, khat is consumed by all societal groups regardless of age, sex, affluence, class, education and occupation (Ayana & Mekonen 2004). Chewing the leaves is an effective way of extracting Cathinone: the chemical constituent of khat that produces an amphetamine-like stimulatory effect (Toennes et al. 2003; Widler et al. 1994).

Several publications have led the discourse on such issues as the social impact of khat chewing and khat abuse. With khat consumption spreading to many parts of Africa, Europe, North America, Asia and Australia, this makes it a global issue that instigates controversial debates. In most European and North American countries khat is illegal (Armstrong 2008). This is an ultimate measure that surmises the growing scepticism about khat in the western world. Various discourses and rhetoric fuelled such political measures including labelling khat as a drug; and according to Affinnih (2002), drugs are a “social cancer”. Khat dependence is associated with high morbidity and societal and economical costs (Manghi et al. 2009). Carrier (2008) reported that the khat debate is significantly influenced by global issues including the war on drugs, fear of Islamic terrorism, and the hegemony of the western economic development model.

Various literature sources give a variety of views of khat. The work of Hirst (1997) has labelled khat as an *adaptogene*, an herb which appears to increase the body's ability to adapt to stress and changing situations. This terminology gives khat three favourable traits: it is nontoxic in any reasonable amount, it benefits the body as a whole, and it restores natural homeostasis. Articles appearing in a special issue of the Substance Use and Misuse Journal argue that khat is being used as a scapegoat for a wide range of social and economic ills across the world (Beckerleg 2008). Others (e.g. Pennings et al. 2008) argue that despite khat's low addictive potential,

chronic use is associated with adverse effects, such as hypertension, heart rhythm disorders, insomnia and loss of appetite.

Consequently, interest in understanding the issues surrounding khat is growing through research, global conferences and publications, both scientific and popular (ESF 2009; Feyissa & Kelly 2008; Odenwald 2007; Warfa et al. 2007). Politically, some of these issues have already caused the legislatures in many western countries to enact laws to ban the sale or use of this substance. In addition to those who have already criminalized khat, countries that have been lenient in their drug control policies, such as the Netherlands, are in the process of outlawing the substance.

The premises that founded these laws are already being challenged socially, empirically and ethically. Regarding increasing consumption among the immigrant communities the laws justify to protect, studies have shown that they chew more in their adopted countries than in their home countries. With respect to proclaimed harm, comparatively, khat is least harmful among the popular drugs including alcohol and tobacco (Nutt et al. 2007). Major conclusions reached by some research that has fed these restrictive policies are being challenged (Warfa et al. 2007). Furthermore, prominent global leaders suggest a cautious but more relaxed approach to handling the khat issue, after they concluded that the global war on drugs has failed (GCDP 2011).

The khat issue has created an interesting and important discourse in the producing countries, particularly in Ethiopia (Gebissa 2004; Hailu 2005). No law exists in the country against khat (Gebissa 2008), it is the country's social consciousness that emphasizes the negative aspects of the plant. Discussions are often consumption-centred to point out the threats to human wellbeing, without considering its positive role in creating opportunities to learn, in helping in problem-solving skills, and in helping to maintain cultural identities (Dupont et al. 2005; Griffiths et al. 1997; Frye 1990). Such a reduced point of departure easily overlooks the multi-dimensionality of the phenomenon as khat expansion is the outcome of factors that motivates its cultivation and justifies its use (Anderson et al. 2007; Carrier 2007). As one drives the other,

they are indivisible, hence any policy or strategy towards khat must consider both sides of the issue.

Linking these issues can be accomplished by returning to a long existing ethical question: is khat harmful or beneficial, hence, right or wrong? Despite its implicit insertion in many khat related studies, an explicit ethical enquiry concerning khat has not been accomplished. The conceptions of khat have not been described and analyzed, particularly focusing on why people chew this plant, how its production expands, and how these activities influence the country's policy formulation process.

Public debate is influenced by genuine concern, personal belief, religious affiliation and political motivation. The well-educated or "learned" bracket of society is substantially exposed to the khat enterprise and consumption issue and can have a rational view of the debate because their opinions are probably more refined compared to the less-educated part of the population. Understanding how the learned members of society view khat can show just how influential this substance is to the population and guide the prescription of pragmatic management mechanisms. In the face of inconsistent research, it is difficult to strongly support claims from either side of the khat issue. Understanding ethical arguments can help shape the policy-making process. Therefore, the main objective of this research is to investigate the ethical discourse of khat among Ethiopia's learned, emphasizing comparative importance, consumption prevalence, and existing dominant discourses.

Conceptual framework

The dilemma among learned Ethiopians, whose opinions are influential, is whether khat should be considered harmful or useful. However, there are no solid conclusions and cause and consequence relationships are not strongly established between khat use and harmful effects. Two categories of knowledge rule the debate: 1) khat's economic benefit to farmers,

communities and the country, and 2) the undesirable human physical and mental health implications.

Ethics is concerned with what is morally good and bad, right and wrong. According to Singer (1985), its subject consists of the fundamental issues of practical decision making, and its major concerns include the nature of ultimate value and the standards by which human actions can be judged right or wrong. The ethical enquiry here is to define what drives the individual's choice to engage in the khat enterprise. Can the 'benefit' it renders to millions of producers and consumers make khat right? Or is it the rational judgement of its harmness level regardless of the human desire for benefit from khat that judges it? Or yet again, is the right or wrong of khat a referential analogy depending on how society judges other comparable substances? These questions hinge on two dominant ethical categories, namely utilitarianism and a rational morality. The fundamental aspect of utilitarianism states that the measure of right and wrong is the greatest happiness of the greatest number as opposed to a rational morality that insists that our actions possess moral worth only when we do our duty for its own sake (Singer 1985).

Is khat beneficial or harmful? The answer to this question shapes the khat debate. Similarly, how this plant is labelled and categorized forms different opinions. Is khat a narcotic drug or a stimulant? Opinions are divided between empirical findings and a person's philosophical stance. Whatever the answers, policy-influencing messages emerge. If khat is defined as a narcotic drug, there are negative legal, cultural and socioeconomic ramifications. If it is defined as a stimulant, it gets a neutral label, like that of coffee and tea. Since research has not unequivocally settled this issue, it is important to outline the debate's philosophical foundations especially when the global call for banning khat is growing in momentum.

Millions of Ethiopians, regardless of gender, religion, education, profession, philosophy and occupation, consume khat. People involved in the production and consumption processes have made a conscious choice to benefit from the khat enterprise and/or elation. This is a classic case of greater utility for the greater number (Figure 1). In general, moral measures are divided between utility and duty. The important discourse here is the ethical dilemma that attempts to

determine benefit or harm. However they decide, consumers make a conscious choice to engage in khat use and/or production. Choice can have two implications, depending on desire, determined by inclination or freedom of choice, based on autonomy and rationality.

Prevailing debates have been epitomized by three popular statements: 1) khat is replacing coffee production in Ethiopia; 2) khat undermines food security in the country; and 3) khat chewing creates social corrosion. These statements, considered empirically founded, contextually solid and free from interpretational flows, are explicitly negative. Before embarking on an analysis of these statements, one has to recognize the high likelihood of existing disputable data as well as the still-evolving research and knowledge that have founded them. Nonetheless, once the statements reach the mass media, the intellectual circles and the general public, the strength of their foundations deserve scrutiny.

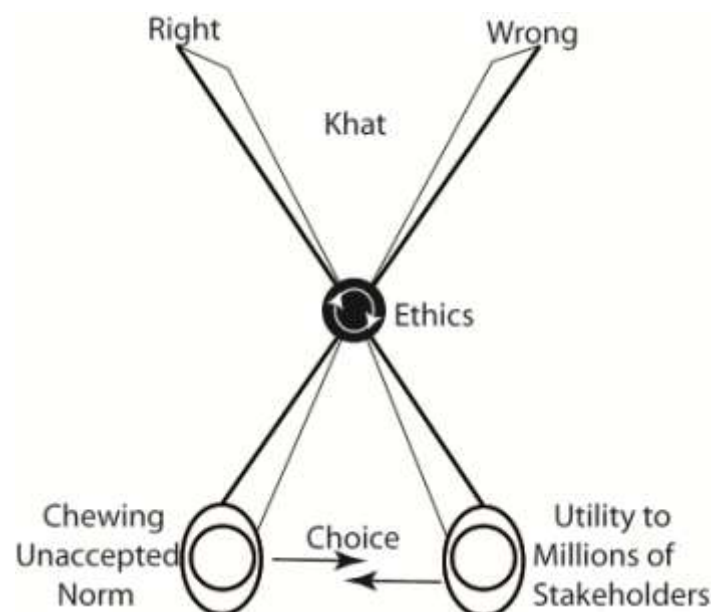


Figure 1: Conceptual Framework: the right or wrong of khat remain between opposing criteria of utility and norm which are the two major forms of ethical arguments (model by Gessesse Dessie)

Methods

This study focused on the khat phenomenon by analyzing the learned Ethiopian's knowledge of and experiences with this substance. Experiences include the visibility and prevalence of khat in general, the information they have obtained about it and their practice of consumption (chewing). The analysis describes the perception of khat based on the respondent's experiences. The researcher's experience was also used as a data source, as he was able to observe the khat enterprise (production, processing and consumption) and its visibility both in the rural and urban setting.

Responses were categorized or put in "outcome spaces" which were linked to one another and focused on development in general and human wellbeing in particular. Finally, meanings were sought in the outcome space in line with an ethical framework. This chosen phenomenographic method, to be thorough and complete, employed three data sources: an email survey, group discussions and an archival survey. Phenomenography (Marton 1986; Saljo 1996) is a research method that focuses on peoples' experience and perception about a phenomenon. This method emphasizes knowledge that emanates from human activities. Osman & Soderback (2011) have used this method to understand Somali immigrants' perceptions of khat use when living in Swedish society.

Email survey

The email survey was conducted between December 31, 2009 and April 30, 2010. Respondents were identified from 450 email addresses. The addresses were compiled from research networks, academic alumni groups, and the author's own links and friends contacts. The respondents represented a diverse disciplinary background with occupations ranging from prominent researchers, academic leaders, university lecturers, graduate students, consultants and NGO staff members. Some of the respondents were foreign expatriates who have worked in Ethiopia and know about khat. The survey questionnaire was sent twice to remind those who did not respond to the first inquiry.

Out of 451 sent emails, 42 emails bounced back and 127 emails were responded (31%). Respondent ages ranged from 23 to 69, with an average of 39 years. Gender, academic qualification and current occupation of the respondents are shown in Table 1.

Table 1: Extent and diversity of the respondents

N	Gender (%)		Academic qualification (%)			Current occupation (%)			
	M	F	BSc	MSc	PhD	Research	Academic	Other	Private
127	85.8	14.2	32.3	46.5	18.9	28.3	50.3	11.1	10.3

The questionnaire contained 12 sections including the respondent's biography, school, occupation, chewing status, frequency of chewing, reasons for chewing and opinions held about khat. It was structured so that respondents could easily provide answers in a limited period of time by providing them a continuum of possible responses, namely: strongly agree, agree, disagree, strongly disagree, and no opinion. Widely circulating opinions collected from workshops, public debates, news papers and radio/TV commentary were presented in a series of 20 questions. The questions were mixed, without any categorical arrangement, to be able to follow consistency of responses. In addition, open-ended questions were included, to give respondents a chance to freely express their opinions. This section was used to both follow-up on consistency of responses and to contextualize and seek meaning from the responses.

Group discussion

Several informal discussion sessions were held with colleagues, acquaintances and friends who are well-versed with khat issues. During these sessions no specific line of questioning was followed. In most cases, the discussion started with opinions about khat expansion in Ethiopia. Based on the responses, several issues were probed further. These included their ideas about the farmers' motivation to grow khat, why people chew and the various impacts from the production and consumption of the plant.

Archival survey

Government surveys, reports and tax records were compiled and analyzed. The Ethiopian agricultural sample survey bulletin was referenced for khat data. Gurage zone tax records (one of the most important khat producing zones in south central Ethiopia) were compiled from finance office archives. Export data was collected from the foreign trade office in Direedawa in Eastern Ethiopia.

Data analysis

Each email survey response was saved as a separate file, named after a code given to the respondent. The data was summarized using an Excel interactive worksheet. Answers were tallied in binary format and summarized using a simple arithmetic operation. Five worksheets were created containing respondents' email addresses, response tallies, respondents' classes and summary. The worksheets were linked so that as each response was tallied, the respondent was identified in the response class, and his/her opinion registered in the summary section.

Comments were collected using the respondent's identification code and saved in a Word document. Comments were input without grammatical or typographical correction. During the analysis, the comments were compared to answers to the structured questions to gain full meaning of the remarks. For analysis purposes, the classes were further grouped into percentages of agree, disagree, and no opinion, in the following way:

$$\text{Agree\%} = (A + SA)/R * 100$$

$$\text{Disagree\%} = (D + SD)/R * 100$$

$$\text{No opinion\%} = (NO/R) * 100$$

Where

A = agree, SA = strongly agree, D = disagree, SD = strongly disagree, NO = no opinion and R = number of respondents.

Results

To understand the perceptions of learned Ethiopians about the khat phenomenon, three issues were addressed: 1) visibility and importance, aerially and socioeconomically; 2) consumption prevalence among the learned; and 3) perceptions and dominant discourses.

Visibility and importance

According to the agricultural sample survey of Ethiopia 2008/2009, khat production involves a substantial number of farmers providing a significant amount of tax revenue and fetching a large amount of foreign currency. Table 2 shows that over 2 million farmers (3.1% of Ethiopian farmers) cultivate khat, allocating about 18% of their land area (assuming the average land holding in the high potential area of Ethiopia where khat grows is 0.4 ha). Analysis of CSA (2009) reveals that for each khat farmer, there are 1.4 coffee farmers and 1.7 enset farmers. With regards to area, for each khat hectare, there are 6 hectares of coffee and 1.7 hectares of enset. Enset (*Ensete ventricosum*), is one of the major staple foods in Ethiopia that sustain the livelihood of 8-10 million people and support high population densities (Brandit et al. 1997).

An estimated 297 million khat chewing sessions are going on in Ethiopia every year. This is equivalent to 3.6 sessions for each Ethiopian per year, with annual consumption of 5.3 kg per capita. While the government derives about 0.4 billion Birr from khat tax, consumers spend nearly 6 billion Birr to buy this product, which means that Ethiopian khat has a local value of about 6 billion birr annually.

Table 2: Khat production in Ethiopia: land area, farmers involved, consumers and revenues*

No	Measures	Unit	Source	Value
1	Area	Ha	EASS	163,227
2	Producers	Number of farmers	EASS	2,232,303
3	Land holding	Ha	(1)/(2)	0.073
4	Production	Kg/yr	EASS	136,802,729
5	Export	Kg/hr	DDFTO	22,667,000
6	Domestic consumption	Kg/yr	(4-5)	114,135,729
7	Dose/day	Kg	EST	0.4
8	Domestic consumers	Persons/year	(6)/(7)	285,339,323
9	Price/dose	Birr	EST	30
10	Tax/kg	Birr	ACPV	3
11	Total tax revenue	Birr/yr	(4)*(10)	410,408,187
12	Total export revenue	USD/yr	DDFTO	92,810,000
13	Expense of domestic consumers	Birr/yr	(8)*(9)*0.7	5,992,125,773

* The table contains data from the Ethiopian Agriculture Sample Survey (EASS), derived data shown by e.g. (1)/(2) quotient of value number 1 and value number 2 and estimated data marked by EST, DDFTO data from Diredawa Foreign Trade Office, while ACPV is the average check point value. It is estimated that about 70% of domestic khat is traded while the remaining 30% is consumed by the producers. It is important to interpret the figures carefully because 1) agriculture sample survey results have large error margins, 2) the price of khat varies substantially from place to place, and 3) the amount of khat consumption per day also varies considerably. Nonetheless, the figures give important indications about the status of khat in the country.

Khat is expanding rapidly in Ethiopia. Between 1998 and 2007 the export production increased 4-fold (from 5,670 to 22,667 tons) and the export value doubled. Domestically, khat growing zones collect high tax revenues. According to the Gurage zone finance bureau, between 1998 and 2007 over 13 million birr per year was collected from khat tax. The Diredawa foreign trade bureau reported that tax from Harar khat reached over 70 million birr during 2009 from 11 million birr ten years earlier.

In 2001/2002, over 8 million kilograms of khat was produced, of which 28% was used for household consumption and 67% for sale. Khat's cash crop status is confirmed with over US\$ 413 million earned from exporting 86,625 metric tons between 1990/1991 and 2003/2004. The state collected over US\$ 1.3 billion between 1980 and 2002 from khat taxes on domestic and export

trade. During the 1990s khat revenue averaged 1.7% of Ethiopia's GDP which was higher than the health expenditure of the country (Hailu 2005). In 2010, khat accounts for 10.5 % of the national export with over 209 million US\$ (Access 2010).

The above figures depict a strong presence of khat in the socio-ecologic landscapes of Ethiopia. Figure 2 accentuates the visibility of khat. The farming landscape from eastern Ethiopia shows that khat farms (seen in the top left-hand picture as dark green rows) are dominant. Khat trade is a vibrant activity, shown by the picture of a roadside market in Eastern Ethiopia. Khat employment also attracts children. In the bottom left picture, taken in south central Ethiopia, a child is engaged in khat-packaging work. Finally, khat is not only a daily sight, as the postal stamp shows; it is engraved in the philatelic history of the country.



Figure 2: Visibility of khat in Ethiopian rural landscapes, urban markets, childs' involvement and postal stamps [photos: Gessesse Dessie]

Consumption prevalence among the learned Ethiopians

Only 12.6% of the survey participants claimed that they never lived or went to school in a khat producing or marketing area. Thus, a large majority of the respondents (87.4%) were aware of khat before they completed their university education.

Regarding chewing, 55% had experienced khat at least some time in their life and 34% were still chewing. It was at secondary school and the university that most (56%) started chewing. Among the regular chewers, 10% had a daily habit, and the rest (90%) chewed at least once a week. The reason for chewing varied. Most (54%) reported that it was for help in studying, 41% reported recreational chewing, and 20% claimed that they chewed for both studying and recreation. For those who had completely stopped chewing, 50% claimed that they had lost interest, 33% referred to religious reasons, and 17% indicated health and financial reasons.

The prevalence of chewing among Ethiopia's educated is consistent with other studies, both in the country and elsewhere, among different social groups. Adugna et al. (1994) reported that 64.5% of secondary school male Muslim students in Agaro, Ethiopia, chewed khat frequently. Another secondary school study from Butajira, Ethiopia showed a 55.7% prevalence rate (Alem et al. 1999). University level studies show similar trends. About 22.3% of the medical students in Gonder University chewed khat (Zein 1988), 24.8% of Jimma university students were regular chewers (Mossie & Mekonen 2004) and 30.8% of Jimma University staff consumed khat frequently (Gelaw & Haile-Amlak 2004).

Prevalent chewing is not just an Ethiopian phenomenon. Studies from Yemen, Djibouti and Uganda have shown similar trends. About 80% of Yemenis between the age of 15 and 30 chewed khat on a daily basis (Basunaid et al. 2008). In Djibouti, 81.6% of men and 43.3% of women reported using khat at least once in their lifetime (Numan 2004). The use of khat in Uganda among law enforcement officials was 97.1%, followed by transporters (68.8%) and students (9.2%) (Ihunwo et al. 2004).

Perceptions and dominant discourses

Feedbacks from the structured interviews were aggregated into six categories: food, health, institutions, income, social relationships and policy. Multiple complementary questions formulate a category (see Table 3).

Food

As for food, land degradation, food production and food security are combined. Here the majority of respondents disagreed that khat landscapes are vulnerable to land degradation (50.8%) compared to those who agree (30.2%). Results pertaining to food production and food security seem contradictory. While 75.2% of the respondents agree that khat cultivation undermines food crops, only 29.6% agree that khat farmers are exposed to food insecurity. Answers to these two questions imply that reduction of one's own food production may not necessarily mean food insecurity for khat farmers. The most probable explanation for this dichotomy is that khat farmers - being richer (78.9% agree) than cereal crop farmers - can afford to purchase needed items and thus remain food secure. In this regard, the ethical argument is between the farmer's own production (food sovereignty) and food security through purchasing from others who produce food.

Table 3: Summarized opinion survey result

No	Opinion	Agree %	Disagree %	No -opinion %
1	There is lack of enough knowledge about advantage and disadvantage of khat among the general public	30.4	68.0	1.6
2	Landscapes dominated by khat farms are vulnerable to land degradation (e.g. soil erosion, biodiversity loss)	30.2	50.8	19.1
3	Khat cultivation undermines food crop production (e.g. took over cropland)	75.2	20.0	4.8
4	Khat farmers are exposed to food insecurity (food security = access to enough food for an active, healthy life)	29.6	59.2	11.2
5	Smallholder Khat farmers are poorer than smallholder cereal crop farmers	4.9	78.9	16.3
6	Khat production and trade create no significant employment opportunities	15.1	77.0	7.9
7	The khat production process is not managed by the farmers and traders	11.3	62.9	25.8
8	The majority of the income from khat (production and selling) is controlled by few individuals	40.8	35.2	24.0
9	The khat production process (cultivation and trade) degrades rural infrastructure	20.0	62.4	17.6
10	Khat income promotes conflicts among communities and individuals	32.0	43.2	24.8
11	Khat culture (production and consumption) weakens community-based institutions	49.6	34.2	16.3
12	Khat chewing has no social, cultural and spiritual values	24.8	68.0	7.2
13	During khat chewing time, brain activity slows down	13.7	46.0	40.3
14	Khat chewing time is a non-productive and wasted time	48.8	38.6	12.6
15	Khat chewing weakens the physical stamina and kills the motivation to work	54.0	33.3	12.7
16	The negative social impact of khat is more important than the foreign currency that it brings	63.2	26.4	10.4
17	Khat chewing leads to high alcohol consumption, which in turn increases the exposure to HIV and AIDS	62.4	20.0	17.6
18	Frequent khat chewing causes mental and physical diseases	66.7	10.3	23.0
19	Khat doesn't deserve designated government organizations for administration and research	21.0	66.9	12.1
20	Khat cultivation, trade and chewing are all wrong; hence, it is reasonable to ban khat	28.1	53.7	18.2

Human health

With respect to health, results concerning brain activity, khat-alcohol-HIV/AIDS links, and physical and mental diseases are combined. Physical and mental elation are often the reasons for chewing khat, which seem to have a strong relation with brain activity. Related to this, 46.0% of the respondents confirmed that brain activity is not slowed down by khat consumption. It is important to observe that a high number of respondents (40.3%) neither agreed nor disagreed to a possible link between the slowing down of brain activity and khat chewing.

One of the widely held associations is between khat and Aids. The results show that 62.4% agreed that khat use leads to high alcohol consumption, which in turn, leads to Aids. The association implies that chewers will often drink alcohol in order to break the after-chewing depression, which leads them to engage in unprotected sex. While it makes sense that there is an association between khat and Aids, the above explanation seems much too simple. Nonetheless, it is necessary to realize that there are claims of associations between khat and Aids which are yet to be unambiguously scrutinized.

The negative impact of khat consumption on human health has attracted a large amount of attention. The majority of the respondents (66.7%) agreed with the assertion that health issues are caused with frequent chewing (Table 3). The ethical argument links harm or benefit with scale of consumption and between occasional and habitual consumption.

Institutions

Khat, unlike other agricultural crops, does not benefit from a structured support for production, distribution and marketing. The interesting question is: how does the khat industry remain such an important commodity with such little institutional support? In answer to the question “who manages khat production?”, respondents agreed (62.9%) that it is the smallholder farmers and traders who do. Respondents are divided (49.6% agree and 34.2% disagree) whether khat weakens community institutions. One may argue that there has to be some kind of, at least, informal working institutional arrangement for khat to survive under no structural support.

Income

One of the most important justifications for maintaining the khat enterprise is the income it generates for those who engage in its production, processing and marketing. An obvious question to ask is: “are khat farmers better off than cereal crop farmers?” A large majority of the respondents (78.9%) felt that khat farmers are better off. Is there an equitable income distribution within the system? Do the benefits reach the majority of the people engage in khat enterprise, or is it only a few individuals who see (most of) the income? According to 40.8% (as

opposed to 35.2%) of the respondents, the majority of the income is controlled by only a few individuals.

Chewers obviously lose money as they buy khat without considering the cost-benefit analysis of their purchase. Respondents (48.8% agree and 38.6% disagree) claimed that khat chewing is non-productive and wasted time. Another moral question arises here: do the millions of khat consumers prescribe to spend their time in this non-productive activity?

Social and policy issues

Studies have shown that khat has a multi-scale social impact: global, national, community and individual. Respondents were asked about employment, rural infrastructure, conflicts and work motivations. With regards to employment, respondents agreed (77.0%) that khat creates employment opportunities. Rural infrastructure is not degraded (62.4%) by khat. With respect to conflict, khat income is not responsible (43.2%). Khat suppresses work motivation (54.0%).

Policy implications were addressed by four generalized enquiries: values of khat, foreign currency, state apparatus, and banning. To the statement “khat chewing has no social, cultural and spiritual values”, 68.0% of the respondents disagreed. When comparing negative social impact and foreign currency gain from export, 63.2% of the respondents agreed that the social impact is more important. Regarding the need of a state apparatus in the form of a government organization for khat administration and research, 66.9% of the respondents agreed. With regards to banning this substance, 53.7% agreed, 28.1% disagreed and 18.2% had no opinion.

Outcome spaces/Dichotomy of arguments

Perceptions of the khat phenomenon among the learned Ethiopians are aggregated to outline variables that have a direct or indirect link with development. Beside their collective implication to development these variables are linked to each other in such a way that cause and consequence relations exist at a minimum, and strong associations exist at best. Each outcome space has a two-ways convincing dichotomy (Table 4). This is one of the reasons why khat debates are emotionally charged and tend to defend perspectives.

Table 4: Dichotomy of arguments of the khat phenomenon

Outcome space	Against khat	Favouring khat
Food	Khat can compete with land for food crop production	Khat income can enable farmers to buy food
Health	Habitual use can have a negative impact on physical and mental health	There are millions of healthy chewers; habitual chewing may not be addiction
Institutions	Khat income distribution can be manipulated by few individuals	The khat enterprise operates without the support of state machinery
Income	Consumers and their family income drain due to buying khat	People on the production side benefit financially
Social	Habitual chewing can be a time-consuming engagement associated with un-productivity	The khat enterprise provides employment opportunities to a significant number of people
Policy	Difficult question between smallholders' income and consumers' health	Khat offers an alternative livelihood and a significant amount of foreign currency

The fluidity of the khat discourse can easily be seen in the responses to open-ended questions. The arguments emanate from questions that are emotionally formulated and yet cantered on the prevailing ethical arguments. The following questions caused negative arguments and one-sided answers to occur:

- How many hours of the working day are lost because of chewing?
- Can the country afford to use the fertile land for khat which could provide food crops?
- How many car accidents happen as a result of drivers lacking a cognitive and neuron-motor balance?
- How many people are forced to drink to break the insomnia and illusions effects?

In reply to these questions, respondents go as far as suggesting that the Ethiopian government needs laws limiting the production and consumption of khat, at the very least, or outright banning it at the best. One approach suggested to classify khat as a narcotic drug, implying criminalization of the substance.

Non-chewers responded negatively about khat. They didn't see why people chew in the first place or consider chewers undignified. For them, the after-chewing effect is not a normal state of mind and leads to abnormal behaviour including consumption of alcohol and unsafe sex practices. The negative impact of khat is mainly associated with frequent consumption. In reference to the high prevalence of chewing in the country, one respondent used this eloquent metaphor: "we should decolonize ourselves from khat".

The respondents who rationalize khat suggested a cautious approach of persuasive action to check the plant's rapidly expanding production and consumption. Some suggested that a comprehensive khat harm-benefit evaluation index be created that can guide chewers about the dose, timing, food to eat before and after chewing and precaution measures for human health issues.

Others suggested regulatory measures with regards to land use for khat, the need for empirical research, and the need for a government institution to address khat issues. Moreover, they called for the involvement of research and higher learning institutions in studying various aspects of khat, one of which is its pharmacological property. According to one individual, "khat is potentially the most abused of resources and misunderstood assets of a poor nation in terms of forging the goodwill to invest money, skill and time to learn about it and to properly utilize its benefits by minimizing its real or imagined harms".

Almost all the respondents commented on the social cost of khat chewing while recognizing the financial benefit to the producers and the country. One of the social costs addressed is that frequent khat chewing by youth, the dominant consumer, makes them less productive, at the least, and totally unproductive at the worst. Losing this productive force is a huge social cost for Ethiopia today with the potential loss of a generation in future. This argument is based on the assumption that most of the Ethiopian youth are involved in habitual khat chewing at a rate that has a detrimental effect on their abilities.

Discussion: prevailing ethical arguments

Educated people are expected to have acquired the ability of scientific deduction. This doesn't mean that their judgements are totally free from prejudice, which is a result of the education system they have passed through. The Ethiopian education system has its roots in religious schools of Christianity (Coptic orthodox) and Islam. The most dominant intellectuals of the state machinery of the country were Coptic orthodox doctrine oriented (Zewde 2002). It is likely that the ethical argument about khat among the learned Ethiopians is informed by this orientation.

The survey indicated that the habit of khat chewing begins mainly during university years. The culture continues after graduation with professionals from all sectors engaged in it. At the centre of the khat phenomenon (Figure 3), ethics addresses utility, prevalence and policy. The scale of utility, about people and environment, depends on the scale of prevalence, which is formed by the scale of the chewing habit and the market. The policy dimension, linking facts and discourses of utility and prevalence, hinges on ethical arguments.

However, opinions about khat vary and strong divisions exist in some places where khat is a daily sight to many. Khat touches the livelihood of millions of people in the country. It is clear that khat is well-positioned in the social-ecological landscapes of Ethiopia by the vast area it occupies, the large number of producers it employs, the millions of consumers who use the plant, and its socio-economic marvels.

Such an important national phenomenon, unlike other high-value agricultural crops, is subjected to ethical enquiry as illustrated by these comments by respondents: 1) "khat is economically powerful but socially evil"; 2) "I have tried not to be a friends with those who use khat; however, it is becoming difficult to do as many people have converted to khat chewers"; 3) "khat is a relaxing substance, yet we should decolonize ourselves from khat"; and 4) "chewers are morally corrupt".

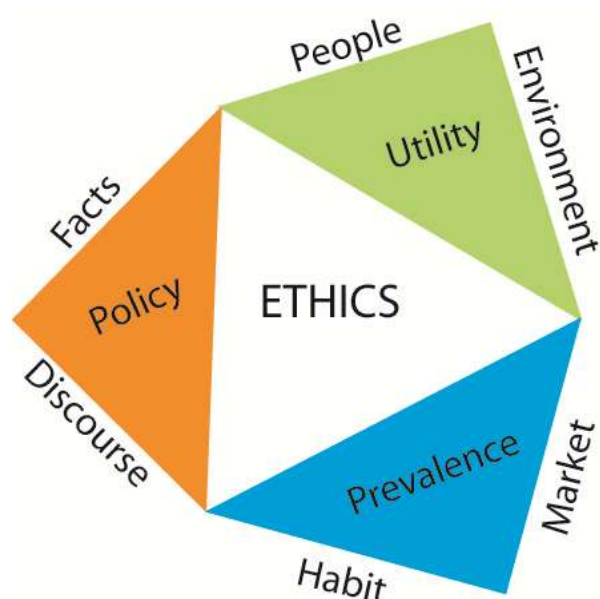


Figure 3: Ethics linking khat with utility, prevalence and policy drives (model by Gessesse Dessie)

The ethical question is not only an externally driven social issue, it is also an issue within the chewers themselves. Khat chewing can instigate guilt and self-contradictory notions among the users despite their free-will choice. Interestingly, respondents who chew khat do not want to be labelled as “chewers”. One respondent put it like this: “I chew khat once in a while but I don’t consider myself a chewer”. Another reported that “I never want my kids see me chew”. Another respondent declared that “I am proud not to have ever chewed khat in my life”. There are people who chose to chew khat openly in the streets, under shades and verandas, as opposed to people who do it behind closed doors. The choice of where to chew relates to self-image and dignity; hence, it is a self-imposed ethical censorship.

There are people who consider khat undignified. One respondent stated: “there is nothing pleasant about chewing khat for me”. It is not clear if this negativity has emerged from broadly circulating opinions or from the true nature of khat as a stimulant. If the latter is the case, why are more harmful drugs such as alcohol and tobacco not equally challenged? Breweries and cigarette companies in Ethiopia openly advertise their products. However, bottled water and soft drink companies whose products are sold in khat parlours do not want to advertise in such

venues. This anonymity applies not only to the mainstream commercial sector, it also applies to the state machinery. In the past, the respect accorded to khat among the elders was so high that the leaves must not be dropped below anyone's foot. If found on the ground, one has to lift it up, kiss it and then place it in an elevated position. This reverence is no different from food, according to Azeze (1998): if one finds a morsel of bread lying on the floor or some amount of grain scattered on the street, one is expected to collect it, kiss it and then put it in some corner so that pedestrians do not step on it unknowingly.

Another aspect of the moral issues surrounding khat is how the generations view and judge the other's use of the substance. An interesting example is a war of words that raged between Ethiopian's older and younger generations during the early 1990s. In his play staged in 1992, the renowned Ethiopian poet Tsegaye Gebremedhen criticized a certain group of young playwrights for their addiction to khat. His words are bitter and powerful: "unless they are whipped and cleared out of stages, Ethiopian theatrical art has no future" (Tsegaye Gebremedhen 1992). Among the many responses to the allegation, an angry and mocking piece was written by a young writer: "we owe you nothing! Stay away from our new-found pleasure" (Mesfin 2007). It is common knowledge that most writers, artists and musicians in Ethiopia operate under the khat influence, with the older ones accused of alcohol and tobacco abuse. One young Ethiopian writer summarized this in a satiric rhyme: "let us Ethiopian farmers, traders, students, parliament members, women chew to overcome the ominous depression" (Solomon 2009).

Temporal aspects of the moral questions can describe the purposes of khat during different time periods and their related possible ethical explanations. In the past, the proponents of khat narratives have been those who value the spiritual and healing benefit of the plant, while those who despised it linked khat with sorcery or blasphemy. Today's reasons appear more numerous and, assessing the pros and cons of each, involve complex analysis. Unlike the simple divide between the earlier narratives, today's issues include economic, health, food security, cultural, environmental and occupational aspects. These issues are further influenced by prevalent moral stances, scale of consumption, legality, and international relations.

The difference in the opinions during these two periods is most probably influenced by the expansion of khat to large quantities and an intensively cultivated crop. This sets judgment rationale from two perspectives, namely the production sector (farmers and other actors involved in the production process) and the consumption sector (chewers and traders who are involved in retailing khat). The perspectives from the consumers' side appear to be prominent, partly because there are many more consumers than producers and as a result their influence is more pronounced. Moreover, media, religion and social groups reinforce the argument from the consumers' perspective.

Prevailing ethical questions seem to emerge from non-contextual and generalized reasoning. Often, level of chewing frequency and amount of khat per each session is not mentioned instead scales like chronic khat chewers are used as references (Halback 1973; Penninges et al. 2008). There is lack of clear and empirically determined safe limit for khat ingestion without severe health risk. It is only Toennes et al. (2003) who suggested a safe limit (i.e. 45 mg) absorbed mean dose of cathinone without any severe adverse effect. What is often lacking is the empirical link between khat and the alleged consequence of cultivating and consuming it. One such example is the link between the amount of consumption and the degree of khat impact. Obviously, drugs/stimulants result in unwanted negative impacts and can be followed by long-term impacts when consumed excessively. This analogy can be tested on other major areas where khat opinions are formed, such as food security, environment, human health, economics and social cohesion.

With regards to food security, the dominant arguments emphasize physical replacement of cropland by khat farms. It is most probable that the comparative advantage of khat prioritizes khat production over food production. This, in turn, creates income disparity, food shortage, mono-cropping (which undermines plant diversity for subsistence), and higher prices for food crops in khat producing areas (Gebissa 2010). What seems to be overlooked here is the impact of the farmers' affluence level and the risk aversion strategy they implement, their attempt to protect their culture, their other means of income and their livelihood assets. The fact that khat farmers are better off than cereal cultivators should make it easier for them to cope with food-

related problems. Despite the argument that more land is taken over by khat, the high income from the crop is expected to improve their purchasing power for their family needs. Studies in Ethiopia have shown that households producing khat have a good food security status (Tefera et al. 2003; Anderson et al. 2007). The common argument is: why should raising khat be viewed any differently than growing other perennial high value cash crop? In either case the farmer is opting to get the highest possible income from his farmland.

In the wider social-ecological setting, where farmers are confronted with a dilemma of crop diversity within their prevailing capacity, e.g. the size of the land holding, the objective ranges between income maximization and sustainability. Under existing conditions, a large land holding offers good opportunities for the farmers to get more income, while at the same time, being relatively sustainable. Unless intensification, technologies and innovations are introduced, small land holdings push farmers to find other income sources. The level of crop diversity and financial stability diminishes with decreasing land holdings. On small land holdings, monocrops can be financially beneficial; however, they can also be risky if the crop is subject to species-specific damages such as attacks from insects or diseases.

Unlike other habit-causing substances, khat dependency/addiction is related to several aspects of consumers' lifestyles. What makes it unique is that chewers associate it with their occupation, recreational habit, culture and spiritual life. This situation indicates increased reasons for chewing and raises the frequency and quantity of chewing. Dominating every aspect of lifestyle, khat chewers develop acquired routines and new personalities. In this connection, one respondent gave an interesting analogy: "chewers know no A.M., their life starts in the P.M.". However inconvenient (and sometimes disgusting) it is for chewing - and it continuously takes more time to get high from it - chewers justify the activity's bonding and socialization power apart from other individual reasons for chewing.

Humans have shared a co-evolutionary relationship with psychotropic plant substances that is millions of years old. Psychotropic plant substances were as much a mundane, everyday item for past civilizations as they are for many people today (Sullivan & Hagen 2001). It is scientifically

unsound to maintain a single definition for all forms of drug addiction and/or habituation. A feature common to these conditions as well as to drug abuse in general is dependence, psychic or physical or both (Eddy et al. 1965). Drug addiction has a threefold nature: biology, psychiatry and social influence (Saah 2005). It is known that some people, under various circumstances, are vulnerable to khat addiction. Frustration, poverty and/or dislocation make people susceptible to khat (Rousseau et al. 1998). Poverty, political instability, social unrest and refugee problems contribute to the rapid spread of psychoactive substance use/abuse in Africa, particularly among the youth (Odejide 2006). Harmful effects of khat are related to excessive use, caused by adverse social conditions related to displacement and social marginalization (Fitzgerald 2009).

Concern about khat has already instigated banning. During the 1940s and 1950s, a series of khat banning laws were enacted in Kenya, Yemen, Djibouti and Somalia (Anderson & Carrier 2009; Huffnagel 1961). Negative publicity about khat in Ethiopia started a long time ago. One of the pioneer Amharic novels (Germachew 1946) branded khat a toxic plant with a devastating effect on chewers' health and their families. This conclusion agrees with reports that states that khat has potentials of reproductive, cardio vascular and neurological toxicities (Islam et al. 1990; Al-Meshal et al. 1985; Pantelis et al. 1989; Numan 2004). What is not often mentioned is the harm related with poor sanitation of khat. The work of Mahmoud (2000) revealed that fresh khat leaves can contain up to 44 fungi species belonging to 20 genera with possible threats to human health.

The values of khat have been shown in the legends of one of the prominent Wello (Ethiopia) oracles from over 150 years ago. In his prophecy Sheh Husen Gibril has given dual assessment regarding khat. On the one hand he venerated the plant as stimulant of the wise and on the other hand, he prophesizes its downfall due to involvement of the commoner in chewing, commercializing of it and the act of consuming it with tobacco smoking (Bogale 1994).

Unlike orthodox opinions, a pragmatic approach was chosen by the publication of the Gurage customary law (GPSO 1991). This law recognizes the social implication of chewing and the economic importance of khat. It outlined conditions where chewing is disallowed in full

recognition of religious differences. Chewing is prohibited in community-gathering places including farms, funerals, processions and community courts. However, Muslims are given leeway to exercise chewing if they find it necessary, e.g. during a funeral. Otherwise, those who breach this law are liable to financial fines. For the Wello Muslims in Ethiopia, khat is associated with healing, peace building, policing conflict resolution and spiritual guidance (Bogale 1994; Hassen 2008). In Yemeni and Somali communities, khat chewing sessions create opportunities of learning, improve problem-solving skills, and play a positive role in supporting the cultural identity (Dupont et al. 2005; Griffiths et al. 1997; Frye 1990).

Conclusion

Khat, a crop covering about 0.2% of the total area of Ethiopia, fetches 10.5% of the country's export value. During any one day, 3.6% of Ethiopia's adult population chews khat, with a 5.3 kg per capita annual consumption. As a result, it is highly visible in the social-ecological landscapes of Ethiopia. Khat discourses among the learned Ethiopians, 34% of whom are regular consumers, address several development variables: food, health, institution, income, social impact and policy. The discourses are dichotomized between benefit and harm of khat, despite the fact that empirical and contextual foundations in both directions are inconclusive. Defending either utility or dignity/rationality learned Ethiopians' discourses are not free from ethical dilemmas. A knowledge-based, pragmatic, culturally sensitive, and health-centered approach is needed for developing khat-related policy.

References

- Access. 2010. *Ethiopia export performance review*. October 2010, Access capital research. Addis Ababa.
- Adugna, T., Jira, C., Molla, T. 1994. Khat chewing among Agaro Secondary School Students, Agaro Southwestern Ethiopia. *Ethiopian Medical Journal*, 32.
- Affinnih, Y.H. 2002. Revisiting Sub-Saharan African countries' drug problems: Health, social, economic costs, and drug control policy. *Substance Use and Misuse* 37(3): 265-290.
- Alem, A., Kebede, D., Kullgren G. 1999. The prevalence and socio-demographic correlate of khat chewing in Butajira Ethiopia. *Acta Psychiatrica Scandinavica* 84-91.
- AL-Meshal, I.A., Tariq, M., Parmar, N.S., Ageel, A.M. 1985. Anti-inflammatory activity of the flavonoid fraction of khat (*Catha edulis* Forsk). *Agents and Actions* 17, 3/4.
- Anderson, D., Beckerleg., Hailu, D., Klein A. 2007. *The khat controversy stimulating the debate on drugs*. Oxford.
- Anderson, D., Carrier, N. 2009. Khat in Colonial Kenya: A history of prohibition and control. *Journal of African History* 50: 377-397.
- Armstrong E.G. 2008. Research note: Crime, chemicals, and culture: On the complexity of khat. *Journal of Drug Issues* 38(2): 631-648.
- Ayana, A.M., Mekonen, Z. 2004. Khat (*Catha edulis* Forsk) chewing, sociodemographic description and its effect on academic performance, Jimma University students 2002.
- Azeze, F. 1998. *Unheard Voices: Drought, famine and God in Ethiopian oral poetry*. Addis Ababa University Press, Addis Ababa, Ethiopia.
- Basunaid, S., van Dongen, M., Cleophas, T.J. 2008. Khat abuse in Yemen: a population-based survey. *Clinical Research and Regulatory Affairs* 25(2): 87-92.
- Beckerleg, S. 2008. Khat special edition introduction. *Substance Use and Misuse* 43: 746-761.
- Bogale, T.B. 1994. *Tenbite Sheh Husen Jibril. Desta yemtshaftena yetsehefet mesariawoch medeber* (in Amharic 1987 Ethiopian calender). Addis Ababa.
- Carrier, N.C.M. 2007. *Kenyan Khat: the social life of a stimulant*. Leiden.
- Carrier, N. 2008. Is Mirra a drug?: Categorizing Kenyan khat. *Substance Use & Misuse* 43: 803-818.
- CSA 2009. *Agricultural Sample Survey 2008-2009*. Central Statistical Agency, Ethiopia.
- Dupont, H., Kaplan C.D., Verbraeck, H.T., Braam, R.V., van de Wijngaart, G.V. 2005. Killing time. Drug and alcohol problems among asylum seekers in the Netherlands. *International Journal of Drug Policy* 16(1): 27-36.

- Eddy, N.B., Halbach, H., Isbell, H., Seevers, M. 1965. Drug dependence: its significance and characteristics. *Bulletin of the World Health Organization* 32: 721-733.
- ESF (European Science Foundation). 2009. The changing use and misuse of *Catha edulis* (Khat) in a changing world: tradition, trade and tragedy. Research recommendation, Conference 5-9 October 2009, Sweden.
- Feyissa, A.M., Kelly, J.P. 2008. A review of the neuropharmacological properties of khat. *Progress in Neuro-Psychopharmacology and Biological Psychiatry* 32 (5): 1147-1166.
- Fitzgerald, J. 2009. *Khat: a literature review*. Center for Culture, Ethnicity and Health, Australia.
- Frye, P.A. 1990. Form and function of North Yemeni Qat sessions. *The Southern Communication Journal* 55: 292-304
- GCDP (Global Commission on Drug Policy). 2011. *War on Drugs. Report of the global commission on drug policy*. www.gobalcommissiondrugs.org accessed February 15, 2012
- Gebissa, E. 2004. *Leaf of Allah: Khat and agricultural transformation in Harerge, Ethiopia, 1875-1991*. James Currey.
- Gebissa, E. 2008. Scourge of life or an economic lifeline? Public discourses on khat (*Catha edulis*) in Ethiopia. *Substance Use & Misuse* 43: 784-802.
- Gebissa, E. 2010. *Taking the place of food: Khat in Ethiopia*. The Red Sea Press Inc.
- Gelaw, Y., Haile-Amlak, A. 2004. Khat chewing and its socio-demographic Correlates among the staff of Jimma University. *Ethiopian Journal of Health and Development* 18(3): 179-184.
- Germachew, T. 1946. *Areaya. Lebewoled* (in Amharic 1939 Ethiopian calendar). Berhanena Selam Matemia Bet.
- GPSO 1991. *KITCHA. The Guraghe customary Law*. Guraghe People's Self-Help Development Organization. Addis Ababa.
- Griffiths, P., Gossop, M., Wickenden, S., Dunworth, J., Harris, K., Lloyd, C.A. 1997. Transcultural pattern of drug use: Qat (khat) in the UK. *British Journal of Psychiatry* 170(3): 281-284.
- Hailu, D. 2005. Supporting a nation: khat farming and livelihoods in Ethiopia. *Drug and Alcohol Today* 5(3): 22.
- Hassen, U. 2008. The role of the Abegar (Divine Father) in conflict resolution: the case of Northern Wello. In Adebo, T., Tsadik, H., editors, *Making peace in Ethiopia: five cases of traditional mechanisms for conflict resolution*. Addis Ababa.
- Hirst, M.M. 1997. The utilization of *Catha edulis* in the household economy of Xhosa farm inhabitants of the Bolo Reserve, Eastern Cape. *Journal of Contemporary African Studies* 15(1): 121-143.
- Huffnagel, H.F. 1961. *Agriculture in Ethiopia*. FAO, Rome

- Ihunwo, A.O., Kayanja, F.L.B., Amadi-Ihunwo, U.B. 2004. Use and perception of the psycostimulant, khat (*Catha edulis*) among three occupational groups in South Western Uganda. *East African Medical Journal* 8(9).
- Islam, M.W., Tariq, M., Ageel, A.M., El-Feraly, F.S. Al-Meshal, I.A., Ashraf, I. 1990. An evaluation of the male reproductive toxicity. *Toxicology* 60: 223-234.
- Kalix, P. 1990. Pharmacological properties of the stimulant khat. *Pharmacology and Therapeutics* 48: 397-416.
- Mahmoud, L.E. 2000. Mycotoxin producing potential of fungi associated with qat(*Catha edulis*) leaves in Yemen. *Folia Microbiol* 45 (5): 452-456.
- Manghi, R.A., Broers, B., Khan, R., Benguettat, D., Khazaal, Y., Zullino, D.F. 2009. Khat use: Lifestyle or addiction? *Journal of Psychoactive Drugs* 41(1): 1-10.
- Marton, F. 1986. Phenomenography: a research approach investigating different understandings of reality. *Journal of Thought* 21(2) 28-49.
- Mesfin, A. 2007. *Tebita Fiker, Yegetem Medble* (in Amharic 1999 Ethiopian calendar). Senedu Abebe Asatami. Addis Ababa.
- Mossie, A., Mekonen, Z. 2004. Khat (*Catha edulis* Forsk) chewing, sociodemographic description and its effect on academic performance, Jimma University Students 2002. *Ethiopian Medical Journal* 42.
- Numan, N. 2004. Exploration of adverse psychological symptoms in Yemeni Khat users by the symptoms checklist-90 (SCL-90). *Addiction* 99(1): 61-65.
- Nutt, D., King, L.A., Saulsbury, W., Blakemore, C. 2007. Development of a rational scale to assess the harm of drugs of potential misuse. *Health Policy* 369: 1047-1053.
- Odejide, A.O. 2006. Status of drug use/abuse in Africa: A review. *International Journal of Mental Health and Addiction* 4(2): 87-102.
- Odenwald, M. 2007. Chronic khat use and psychotic disorders: A review of the literature and future prospects. *Suchet* 53 (1): 9-22.
- Osman, F.A. & Soderback, M. 2011. Perceptions of the use of khat among Somali immigrants living in Swedish Society. *Scandinavian Journal of Public Health* 39: 212-219.
- Pantelis, C., Hindler, C., Taylor, J. 1989. Use and abuse of khat (*Catha edulis*): a review of the distribution, pharmacology, side effects and a description of psychosis attributed to khat chewing. *Psychological Medicine* 19: 657-668.
- Pennings, E.J.M, Opperhuizen, A., van Amsterdam, J.G.C. 2008. Risk assessment of khat use in the Netherlands: A review based on adverse health effects, prevalence, criminal involvement and public order. *Regulatory Toxicology and Pharmacology* 52(3): 199-207.

- Rousseau, C., Said, T.M., Gagne, M.J., Bibeau G. 1998. Between myth and madness: the emigration dream of leaving among young Somali refugees. *Culture, Medicine and Psychiatry* 22: 385-411.
- Saah, T. 2005. The evolutionary origins and significance of drug addiction. *Harm Reduction Journal* 2-8.
- Saljo, R. 1996. Minding action conceiving of the world versus participating in cultural practices. In: DallÁlba & Hasselgren, eds, *Reflections on phenomenography: towards a methodology?* Goteborg: Acta Universitatis Gothoburgensis.
- Singer, P. 1985. Ethics. In: *Encyclopedia Britannica*, Chicago, pp. 627-648.
- Solomon, M. 2009. *Ewneten seqeluat. Sene Getem* (in Amharic 2001 Ethiopian Calender). Addis Ababa.
- Sullivan, R.J., Hagen, E.H. 2001. Psychotropic substance-seeking: evolutionary pathology or adaptation? *Addiction* 97: 389-400.
- Tefera, T.L., Kirsten, J.F., Perret, S. 2003. Market incentives, farmers' response and a policy dilemma: a case study of chat production in the eastern Ethiopian highlands. *Arekon* 42(3).
- Toennes, S.W., Harder, S., Schramm, M., Niess, C., Kauert, G.F. 2003. Pharmacokinetics of cathinone, cathine and norephedrine after chewing of khat leaves. *British Journal of Pharmacology* 56: 125-130.
- Tsegaye Gebremedhen. 1992. *UU- TT* (Amharic play). Eureka Press, Addis Ababa.
- Warfa, N., Klein, A., Bhui, K., Leavey, G., Craigd, T., Alfred, S. 2007. Khat use and mental illness: a critical review. *Social Science & Medicine* 65: 309-318.
- Widler, P., Mathys, K., Brenneisen, R. 1994. Pharmacodynamics and drug action - Pharmacodynamics and pharmacolunetics of khat: a controlled study. *Clinical Pharmacology and Therapeutics* 55(5): 556-562.
- Zein, Z.A. 1988. Poly drug abuse among Ethiopian university students with particular reference to Khat (*Catha edulis*). *Journal of Tropical Medicine and Hygiene* 91: 71-75.
- Zewde, B. 2002. *Pioneers of change in Ethiopia: The reformist intellectuals of the early twentieth century*. James Currey, Oxford.