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Authors: Feyisa, Taye Hailu, and Aune, Jens B.

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Taye Hailu Feyisa and Jens B. Aune

Khat Expansion in the Ethiopian Highlands

Effects on the Farming System in Habro District

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Khat (*Catha edulis*) is a rapidly expanding perennial crop in the Ethiopian highlands, and it is Ethiopia's second largest export item. The leaves of the crop are used for their stimulating effect. The present

study was undertaken in Habro district in western Hararghie. *Khat* production in this district is rapidly replacing cereal production and to some extent coffee production. About 70% of farmers' income in the study area is currently obtained from *khat*. One important reason for the expansion of *khat* production is that the *khat*–maize intercropping system is 2.7 times more profitable per hectare than maize monocropping. *Khat* is also less risky to grow than cereals and coffee because it is less vulnerable to drought. Increased production leads to changes in livestock composition because oxen are far less needed for plowing in the *khat*-based system; moreover, availability of crop residues for fodder is reduced when *khat* expands. *Khat* growing farmers, therefore, give more emphasis to milk-producing animals such as cows and goats. It was found that *khat* producers also are consumers of *khat* and that *khat* consumption has become widespread in the nearby secondary school. *Khat* consumption negatively affects people's working capacity. Hence, unskilled *khat* consumers in urban areas are paid 7 birr (US\$0.84) per day, whereas non*khat* users are paid 10 birr (US\$1.22). Measures to control further *khat* expansion will need to address both supply and demand.

Keywords: *Khat*; intercropping; peasant associations; drug consumption; Ethiopian highlands.

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Introduction

Khat (*Catha edulis*) is an evergreen tree grown for the production of leaves that are used as a stimulant. It can reach 25 m in height when grown naturally (Klinge 1998), but it is kept under manageable height when grown as a cash crop and for home consumption. The economically important products are its young leaves and tender twigs, which are chewed for their stimulating effect. Major areas of production and consumption are East Africa, southwest Arabia, and Madagascar (Pantelis et al 1989). *Khat* grows on well-drained soil under broad climatic conditions and tolerates drought for sev-



FIGURE 1 Map of Ethiopia. (Map by Andreas Brodbeck)

eral months. In Ethiopia, *khat* performs well in the middle altitudes between 1500 and 2100 m. Unlike coffee or cereals, *khat* has no definite harvest time (Klinge 1998).

Khat is chewed for a stimulating effect that is similar to that of amphetamine. Fresh *khat* contains cathinone, which is listed as a Schedule I drug in the United States, in the same group as heroin and cocaine (Brooks 1997; DEA 2002). During maturation and decomposition of *khat*, cathinone is converted to cathine, a Schedule IV drug (legal). The habit of *khat* consumption is a deeply rooted social and cultural tradition in Yemen, Ethiopia, Somalia, and Djibouti (Getachew 1996; Klingele 1998). *Khat* consumption can produce alleviation of fatigue, promote excitation, increase confidence, and suppress sleep and hunger (Nasrulla 2000; Al-Kamel 2001). Like coffee and other beverages, *khat* plays an important role in the social life of people in most parts of Ethiopia in general and the Somali region in particular. A survey of 3200 respondents across Ethiopia showed that the use of *khat* has become popular among all segments of the population and in all parts of Ethiopia (Selassie and Gebre 1996). It plays a dominant role in celebrations, marriages, and business and political meetings. The use of *khat* was previously limited to producing areas, but has since spread to other parts of the country and beyond. *Khat* is now airfreighted and available in Europe, Canada, and the United States, following the migration routes of immigrants from East Africa and southern Arabia (Bali 1997). However, it is illegal to import *khat* into the United States and much of Europe (Brooks 1997).

The present article aims to show how khat expansion affects the overall farming system in Hararghie (eastern Ethiopia) and to highlight the economic and social effects of khat production and consumption. The study was conducted in Habro district (7°55'–9°33'N latitude and 40°01'–41°39'E longitude), an important khat producing area in Ethiopia (Figure 1). Habro has 148,530 inhabitants with a population density of 204.4 persons per km². The average annual rainfall ranges from 900 to 1200 mm.

Six Peasant Associations (PAs) in Habro district were identified as major khat-producing PAs, from which Malkaa and Ifa PA were randomly selected. In each of these 2 PAs, 30 households were randomly selected on the basis of a list of households. A survey of khat consumption was also undertaken among 439 students in the Gelemso secondary school. Qualitative data were collected from informal interviews with khat farmers, traders and users, and with district agriculture development staff.

Expansion of khat production in Ethiopia and Hararghie

Ethiopia is the world's largest producer of khat, which is the country's fastest growing export. About a third of

FIGURE 2 Intercropping of khat and sorghum. (Photo by Jens B. Aune)



the production is exported to Djibouti and Somalia, but the bulk of it is marketed and consumed within the country, mostly in the Somali administrative region (Green 1999). In 1998–1999, khat accounted for 13.4% of Ethiopia's export earnings and was the country's second largest export item that year (US Department of Commerce 2000). Although national data are lacking, the Ethiopian government collects huge revenues from the export taxation of khat. According to the west Hararghie finance office, export khat is taxed at 6 birr/kg, whereas khat consumed locally is taxed at 3 birr/kg. This level of export tax was also confirmed in a study by the US Embassy (2001). The price of khat fluctuates seasonally according to the quality and amount supplied. Khat exporters state that the farm gate price of export quality khat to Djibouti is 8–30 birr (US\$0.97–3.62) per kg, whereas that supplied to Jijiga is 3–7 birr (US\$0.36–0.85) per kg. The price of khat is higher in the dry periods than during the rainy season, from April to September, when the supply is abundant.

The government of Ethiopia neither encourages the cultivation of khat in any form nor takes any action against its cultivation, trade, and use. Currently, khat takes up 94,330 hectares of land nationwide, about one third of the area that is under coffee (Central Statistical Authority 2000). The bulk of the khat produced for export and for the domestic market is produced in Hararghie.

Studies in Hararghie (Getachew 1996) show that the production of khat from the end of the 19th century until the 1940s focused on satisfying local demand. Traditionally, khat was used by Muslims during prayers and other religious activities such as reading of the Koran.

According to the farmers, the oldest khat plantation in the households surveyed was planted in the 1920s, indicating that its use has a long tradition in Hararghie. However, khat cultivation as a cash crop began earlier in eastern Hararghie than in western Hararghie as a result of access to transportation and wider market opportunities. Cultivation as a cash crop in western Hararghie (particularly in Habro) began in the 1970s, according to the farmers.

Khat production has expanded since 1970 in the area surveyed. Khat was only cultivated on about 5 hectares of the land of the farmers surveyed before 1970, whereas today it is cultivated on 34 hectares of this land. In the period 1980–1990, about 70% of the farmers were cultivating khat, whereas today all the farmers surveyed are cultivating it. Currently very few farmers in the study area are nonkhat growers. Normally khat cuttings are first planted around the homestead and expand from there to the rest of the farmland. Khat occupies 55% of cultivated land in the 2 areas surveyed. Khat is mainly intercropped either with maize or sorghum (Figure 2).

Reasons for expansion of khat production

Both socioeconomic and agroecological reasons have contributed to khat expansion. The driving forces have probably been increased market opportunities and favorable prices. Production is mainly located close to the road network and on farms with irrigation facilities.

The profitability of khat production is considered by 78% of the farmers as the primary reason for the expansion of khat planting in the area (Table 1). The average income (59 farmers) from the intercropping system of khat and maize is 3465 birr/ha, of which khat accounts for 80%. Income from maize monocropping is only 1306 birr/ha. The income from the intercropping system is therefore 2.7 times higher than from the monocropping system. The high profitability of khat has also motivated farmers to hire labor for khat production. Another study in eastern Ethiopia found that particularly young farmers with small farms expand khat production (Stage and Rekve 1998). Other factors contributing to expansion include low risk and low labor inputs compared with cereal crops. Ownership of khat plots is also considered important when a man proposes marriage to a woman.

Decrease in the productivity of the land is the second most important reason why farmers expand khat production. Production has expanded particularly at the expense of annual cropping (maize, sorghum), but land under coffee has also been reduced. The major agroecological constraint of annual crops and coffee is drought, and khat serves as a good substitute for these crops because it is less vulnerable to drought. Other agroecological factors that have triggered the change from annual crops to khat, according to farmers, are lack of oxen for plowing, soil erosion, weed infestation, and the prevalence of pests and diseases. Lack of oxen was an important production constraint in the past because oxen were needed to plow the land in the cereal production system. Oxen are needed much less in the khat-based system because tillage is mainly done by hoeing. Farmers also lack the financial resources to purchase fertilizers necessary for growing cereals.

The planting of khat is also considered by farmers in the area as a way to ensure land entitlement because annual cropland is more affected by land redistribution than land under perennial crops. Khat producers can also more readily gain access to labor because they can offer khat to the workers. Credit is also more easily available for khat growers.

The effect of khat expansion on the farming system

As stated above, the expansion of khat production in the study area has been at the expense of annual crop-

TABLE 1 Farmers' ranking of different reasons for choosing to plant khat (number of farmers).

Reasons	Primary reason	Secondary reason
Economic value	45	13
Decrease in land productivity	8	23
Crops damaged by wildlife	2	1
Insecurity of tenure	2	2
Home consumption	1	13

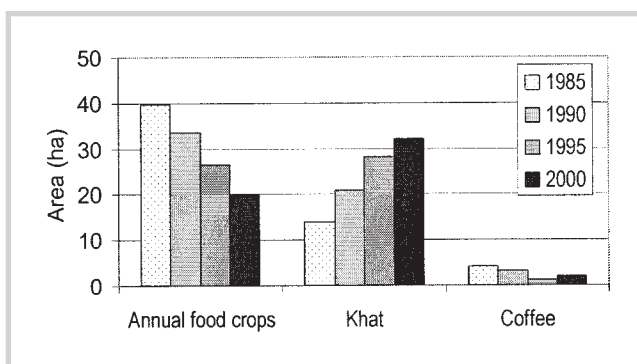


FIGURE 3 Trend of land use among the surveyed farmers.

land in particular (Figure 3). The area under coffee has changed much less. Khat occupies 55% of the cultivated area in the 2 PAs surveyed. Intercropping of khat with maize, and to some extent with sorghum, is practiced on 72% of the area under khat while a pure stand of khat is cultivated on the rest of the khat-producing area. The khat plant takes up the largest share of the land in the intercropping system, and the average maize yield when intercropped with khat is 775 kg/ha, whereas the average maize yield in monocropping is 1451 kg/ha. Even though khat suppresses the yield of maize, the intercropping system still accounts for 66% of cereal production in the area.

The expansion of khat production has also led to important changes in livestock composition. The reason for this change is that oxen are needed much less for plowing in the khat-based system. Availability of crop residues for fodder has also been reduced because khat occupies the larger share of the land. Fodder trees like *Erythrina abyssinica*, *Sesbania sesban*, and *Leucaena leucocephala* are also removed in khat fields. As a result of these changes, farmers have reduced the number of oxen in the households surveyed from 1.13 per household in 1985 to 0.71 in 2000. The number of cows per household has remained fairly constant, but there was a slight decrease from 1.05 in 1985 to 0.97 in 2000. The

number of goats, on the other hand, increased from 0.56 in 1985 to 0.97 in 2000. Farmers are inclined to maintain or increase milk-producing animals such as cows and goats. Goats fit well into the current farming system because they are less dependent on crop residues for feed, and they are relatively small animals with low fodder requirements.

The labor requirements for maize production are 50% lower in the khat intercropping system than in cereal monocropping. The reason is that agronomic operations in the intercropping system are undertaken for the purpose of growing khat, and the maize yield is an additional benefit.

Socioeconomic and social effects of the expansion of khat production

Khat production has become the major source of income in the district. The average annual household income from khat production is 1209 birr, which constitutes approximately 70% of a farmer's income. A consequence of khat expansion is that farmers need to buy cereals to meet their food requirements. The total average expenditure on food purchase per family is 490 birr/year. Each family has an average of 6.3 members.

Data from the present study do not allow the conclusion that khat growers in the district are better off than nonkhat growers, but the general impression is that khat growers have better houses, wear better

clothes, have better household equipment, and are in a better position to send their children to school. However, khat production has not solved the problem of food security in the district. The households' own production of food crops lasts an average of 7.3 months, whereas if purchased food is taken into consideration, households have enough food for 10.7 months. The survey showed that 51% of the households have enough food throughout the year.

Khat consumption negatively affects the working capacity of people because khat consumers show up late for work, take frequent rests, spend time chewing khat, and are generally more careless. This is also the reason why khat consumers are paid less than nonkhat users. Unskilled khat consumers in urban centers are paid 7 birr per day, whereas unskilled nonkhat users (migrants from Amhara) are paid 10 birr per day. Khat consumption is widespread among both males and females. All the male heads of the surveyed households consume khat, and 81% of the population above 15 years of age in the surveyed households uses khat. In the nearby secondary school (Gelemso), the survey showed that 88% of the female students and 96% of the male students use khat.

The consumption of khat has serious social consequences, and consumers spend a high portion of their income to purchase khat. Khat consumption is known to induce mild euphoria and excitement. Individuals become very talkative under the influence of the drug and may appear to be unrealistic and emotionally unstable (DEA 2001). Khat can also induce manic behavior and hyperactivity. From Somalia, it is reported that khat consumption promotes different types of criminal activities (Elmi et al 1987). However, there are also positive effects of khat production. In addition to income generation for farmers, employment is created in transport and trade concerned with khat (Figure 4).

Conclusions

Khat production is expanding rapidly in Hararghie, particularly at the expense of cereal crops. The reason for the expansion of khat production is that the profitability is 2.7 times higher than that for cereal production. Khat production is currently generating 70% of farmers' income. As a consequence of khat expansion, there is also less need for oxen for plowing. Hence, farmers reduce the number of oxen they have and increase the number of goats. It was also found that khat producers become users of khat and that khat consumption is widespread among both male and female students in the nearby secondary school.

The expansion of khat production in Ethiopia should be closely observed because further khat expansion harbors considerable social and economic risks. First, there is a risk to the Ethiopian economy because

FIGURE 4 Khat is an important source of income not only for farmers but also for those engaged in its transport. (Photo by Jens B. Aune)



its export earnings have, to some extent, become dependent on exporting a product that is banned in many countries. There is also a risk that if the khat market collapses because of overproduction, or if the production of khat fails for a year, a major famine in khat-producing areas could develop. Finally, the increased use of khat is worrisome, particularly among the younger generation.

It is difficult to find alternatives to khat production in Ethiopia because farmers have few alternative sources of income with similar profitability. Measures to

control khat will have to address both supply and demand (Selassie and Gebre 1996). Supply can be reduced by increasing taxation of khat, developing alternative sources of income for farmers, and improving land security. The demand for khat can be curbed by education and awareness programs about khat consumption and its negative consequences. The United Nations Office for Drug Control and Crime Prevention emphasizes the involvement of community-based organizations in mobilizing local populations against drug production and consumption (ODCCP 2001).

AUTHORS

Taye Hailu Feyisa and Jens B. Aune

Noragric, Agricultural University of Norway, PO Box 5001, 1432 Aas, Norway. tfeyisa@hotmail.com (T.H.F.) and jens.aune@noragric.nh.no (J.B.A.)

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