

# Impact of Khat Production and Marketing on the Livelihood of Smallholder Households in Ethiopia

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## Abstract

Khat, Ethiopia's largest export cash crop, is the backbone of the Ethiopian economy. However, Ethiopia has not yet fully promoted its position as the utmost producer and exporter of khat in a global market because of its different policy discourses and illegal trade issues on khat production. The life of many smallholder households relies on khat production and its marketing in a country. Hence for thus, some information has been gathered on different aspects of khat with the objectives of reviewing khat's impacts on the livelihood of smallholder farmers, its production status, and marketing constraints in Ethiopia. To review these objectives, data from CSA, and different published materials on khat were used. According to the review, khat production has a positive impact on securing household food insecurity and improving the livelihood status of smallholder farmers, and the largest foreign exchange-earning cash crops. However, it is exploited almost in all parts of a country's government policy discourse on khat production and its trade legal issues, lack of infrastructure, zero access to extension services, zero tangible value addition, inadequate technology transfer, and research, and price volatility because of product perishability behavior are among major constraints threatened in khat production in Ethiopia. Its vulnerable and corrupted marketing system, zero market promotion and political dichotomy, long market chain, chronic market information, and unfair price were reported by different scholars as major problems of khat marketing in Ethiopia. From these probs: The government should analyze why and its impact on khat production discourse policy on the livelihood of smallholder households and overlook positive policy proclamation. Encouraging research and technology transfer to transform products into manufacturing industries, enhancing in-

frastructural and institutional facilities, and improving khat production product technologies through development, and khat production agribusiness industry transformation, institutionalizing its marketing arrangement and other related agronomic practices are among the major recommendations to forward so.

## Keywords

Khat, Production Status, Smallholder Livelihood Impact, Marketing Constraints

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## 1. Introduction

### 1.1. Background of the Study

Agriculture is one of the best prospect sectors for growth in Ethiopia. Recently, the government of Ethiopia (GOE) has embarked on a ten-year economic development plan (2021 - 2030) in which agriculture is of the top priority sectors [1]. The agriculture sector is projected to grow at 6.2 percent per annum over the next ten years. Ethiopia's development plan has laid out enhancing agricultural production and productivity as one of the major strategic pillars. In addition, the ten-year development plan aims to boost agricultural export revenues and substitute imports by reducing production costs [2]. To boost agricultural export revenue and substitute imports, the government should be focused on what resources that produced and demanded abundantly at a domestic and national market level.

The Eastern and Southern part of Ethiopia is generally known for their cash crop production, predominantly khat and coffee, and food crop is deficient in some areas [3]. Coffee and khat are largely grown in small agro-forestry and intercropped systems with grain and some horticultural crops. Both are the predominant cash crops in the area [4]. They are both used as commercial commodities and to some extent as local resources for subsistence (firewood, construction, soil protection, traditional medicine, etc.). Smallholder Farmers' budgets are predominantly relying on incomes generated by businesses based on the two commodities [3].

Moreover, some data and research show that khat is one of the largest Ethiopian primary commodity export cash crops among a country's agricultural goods exported in the domestic and nationwide market [5].

Khat is a natural stimulant from the khata-adulis plant found in the flowering evergreen tree or large shrubs which grow in east Africa and southern Arabia. Originating in Ethiopia, where the largest share comes from [6], this plant is known by different names such as QAT and GAT in Yemen, QAAD and GAAD in Somalia, and CHAT in Ethiopia. It is also known as JIMA in the in Afan Oromo language. Ethiopian Khat has different local names, such as Awoday,

Beleche Abomismar, Wondo, Kuda, Faqa, Gelemso, Ye'bahirdar, etc. [7].

Currently, Ethiopia is the leading khat producer in Africa and worldwide. In a country, more than twelve million smallholder farmers now grow khat, which offers higher and more consistent sale prices than other commodities [8] [9]. Most of the khat is produced in the Southern and South Eastern part of a country.

Ethiopia constitutes one and most of the major earnings from khat consumption within a country and its export [4]. In addition to this because khat industry is one of the leading agricultural sectors in Ethiopia and its industry constitutes 4% of the country's export earnings and shares 9.4% of total merchandise export [10]. Therefore, this review is targeted to review the impacts of khat production marketing on smallholder's farmer's livelihood in Ethiopia by dealing with a previous study using the following specific objectives.

### **1.2. The Objective of the Study**

To review khat production and marketing constraints (marketing) in Ethiopia.

To review khat production impacts on the livelihood of smallholder farmers in Ethiopia.

### **1.3. Significance the Study**

This review provides information on the khat production expansion status, its impacts on the livelihood of smallholder farmers, and marketing constraints in Ethiopia. The information is expected to have valuable input to help market participants to understand the impacts of khat on household livelihood, marketing and market constraints, and expansion of khat production in the country. The information generated in this review can help several organizations, including national and international research institutions, development organizations, traders, producers, policymakers, extension service providers, and government and non-governmental organizations.

## **2. Methodology**

An Empirical and systematic literature review (ESLR) is a tool used to manage diverse knowledge and identify research related to a predetermined topic [11]. In this study, ESLR is conducted to investigate the khat production status, its impacts on the livelihood status of smallholder households, and its marketing constraints in Ethiopia. Particularly, cases are searched where the term "khat" appeared concurrently in the title, abstract, or keywords of an article. Before conducting the ESLR, a review protocol is defined to ensure a transparent and high-quality research process, which is the characteristics that make a literature review critical, empirical, and systematic [12]. The review protocol also helps to minimize bias by conducting exhaustive literature searches. This includes three steps: the formulation of the review questions, the definition of the search strategy, and the specification of inclusion and exclusion criteria. This paper uses a

preferred reporting item for critical, empirical, and systematic reviews and meta-analysis (PRICESMA) approach to conduct ESLR. PRICESMA is an evidence-based minimum set of items that are used to guide the development process of systematic literature reviews and other meta-analyses [11].

### 3. Review of the Study

#### 3.1. Definition and Concepts

##### *Khat (Catha edulis) Definition:*

Khat is referred to the young and tender leaves and shoots of the khat tree (*Catha edulis*). It is an evergreen tree of the Celastraceae family, normally reaching 6 m in height, but in an equatorial climate, it might grow up to 25 m [13]. However, there is debate on whether a khat leaf is a drug plant or a stimulant plant. Many scholars are overviewed leafed consumption results in subjective, mental stimulation, increased physical endurance, increased self-esteem, and social interaction and it is commonly used as a recreational substance [14]. Until recently, this habit was confined to Arabian and East African countries because only fresh leaves are active [15].

But today, khat is consumed where ever because of its stimulation substantiality. Even though its leaves are consumed afresh in Arabian Peninsula and Eastern African countries because of its long market chain and inadequate transportation to reach none producers' country's consumers chewable leaf quality may change since of its timing perishability behavior. This is what makes flexible results in khat leaves pharmacology. Is it khat a drug? According to [16], there are three main alkaloids present in khat leaves: Cathinone (amino propriophenone), norepseudoephedrine (cathine), and norephedrine; small amounts of ethereal oil, sterols, and triterpenes, together with 5% protein which has *Cathus Edulis* Insignificant nutritional value.

And also, as [17], ascorbic acid is present in the khat leaves. Its leaves also contain tannin (7% - 14% by weight in dried leaves) and a minute amount of thiamin, niacin, riboflavin, iron, and amino acids. Apart from tannin, these substances are unlikely to contribute to the biological effect of khat. Cathinone is relatively unstable and decomposes within a few days of picking or if the leaf is dried into nor-pseudoephedrine and nor-ephedrine. Thus, only freshly picked leaves to have full efficacy. It also contains a small amount of fluoride. Nor-pseudoephedrine and norephedrine are slowly absorbed and then excreted. The researchers concluded that khat leaves are a natural amphetamine. And they are in doubt of khat leaves chemistry result flexibility because of its type and timing perishability. That being drug is subject to chronic use.

Is it drugs or not? And its drugs' behavioral pharmacology may hybridize by an option of adulterine with other vitamins and minerals. Are what forwarded for research in pharmaceutical science. A reviewer target is an object to improving smallholder khat producer farmers' livelihood that is now mounting cause for concern over the economic effects on a wide range of income diversification.

And a reviewer believes that even in this world doubt is need our country's research and policy on khat production. Since Ethiopia leads a khat production and huge economic gain country from it.

**Khat Consumer:** A person who consumes khat habitually (minimum of once a week) in bundles (one bundle = up to 500g edible leaf). It is not tested on occasion.

**Khat Producer:** A person who has khat tree plants and/or Khat shrubs planted on farms or backyards occupying a minimum of 2% of the household's land holding.

### 3.2. Khat Production Status in Ethiopia

The production of khat in Ethiopia has boomed over the last two decades, making the country the world's leading source. According to EU Agri-food Trade in 2021, khat is now one of Ethiopia's largest crops by area of cultivation, the country's second-largest export earner, and an essential source of income for millions of Ethiopian farmers. Consumption has also spread from the traditional khat heartlands in the eastern and southern regions of Ethiopia to most major cities [18]. Not only its consumption the gradual transformation from subsistence farming to a monoculture khat crop economy emerged in South Eastern Ethiopia is expanded to a different part of the country [19]. A significant expansion of that has appeared since the 1960s [20]. Nowadays, it is grown in almost all regions of the country. For example, there was no khat cultivation at the farm level in the South and North Gondar areas before. Nowadays, khat production is extensively practiced along the main asphalt road between Bahir Dar and Gondar cities of Northwestern Ethiopian highlands (own surveillance). A study conducted by [19] in the Dera district found that the prevalence of khat use is thirty-one percent. There are several shreds of evidence for the expansion of khat in Ethiopia. Extensive deforestation of the natural forest in the Wondo Genet environment is the result of human intervention for khat expansion [21]. Khat practice has increased over the years and recently the country has becomes the fastest-growing khat commodity [5] through its cultivation, consumption, and export extensively [4].

Similarly, it has a low impact on neighboring/intercropped crops, stabilization of SWC structures, alternative on-farm activities for substantial returns, vulnerability to drought tolerance, and increasing national revenue generated from the crop, production rate and total population who depend on khat is skyrocketing in Ethiopia now [22].

Even though khat production is discouraged because of some minor problems, such as it is adverse effects and attitude toward its consumption and marketing, the plant continues to be a chief cash crop in Ethiopia due to its high demand both in the domestic and foreign markets [23]. So now khat solely remains an economically important and potentially lucrative cash crop in Ethiopia [9]. This is although there is no attention given through research and develop-

ment by government or non-governmental organizations. Millions of people make their livelihood from the crop either through producing or through participating in its marketing activities.

### **3.3. Khat Production Impacts on the Livelihood of Smallholder Farmers in Ethiopia**

Khat production plays an essential role in improving welfare, income, food insecurity, food self-insufficiency production, and for wise use of agricultural land among different areas of smallholder farmers in Ethiopia. As many recent studies empirically investigate/analyze a positive relationship between khat production and smallholder farmers' livelihood in Ethiopia what being a good finding. [24], in their study entitled "khat production and household welfare among khat growers in Jimma Zone, Ethiopia". In this study, they assess the impacts of producing khat on smallholder khat-producer households. To meet this, different comparisons were made between the producers and non-producers. This study defines producers as those who produce khat. If the farmer produces khat greater than 0.5 hectares, that household is considered a khat producer. To assess the impact of producing khat on the welfare and/or livelihood of farmers they take the educational status of the family, The ability of the household to feed the family, The percentage of farmers having corrugated iron sheet roofed houses, the percentage of farmers having separate kitchens other than their living rooms for cooking and the percentage of farmers having separate structure for livestock other than the living room was used to assess the impact of agricultural export products on the housing conditions of the farmers. And the strategy used by the farmers to finance the household expenditures at times of food shortfalls and/or crop failure was also another parameter to assess its impact on the food security of the farmers.

To analyze these when the scholar's employed mean tests, regression analysis, and partial budgeting. The functional relationship between a quantitative dependent variable and one or more independent variables is the regression analysis shows that the proportion of the respondents from khat-growing households is more likely to own better housing (houses with a cement floor) than their counterparts from khat-growing families and the difference is highly statistically. The implication is that khat production is positively associated with well-being/living standards as measured by housing. And the probability of having a better house, house improvement, and household income have a significantly positive relationship with khat production. Which has khat growing household has better housing, house improving and better income.

As a whole, their result indicated that there was no clear-cut inference that could be drawn regarding the effect of khat production on the various economic and social outcomes considered. While khat production was found to be positively related to better living conditions as measured by housing improvement, it was the case with improvements in household income and housing quality as

measured by the type of floor. And khat producing households were generally found to be better in terms of food consumption (consumption of protein-rich food items such as meat, egg, and fish as well as in terms of overall dietary diversity. This is due to the immediate temporary effect in terms of increasing income temporarily. It shows a positive impact of khat production on the welfare of smallholder farmers.

In addition to these, other studies investigate khat production and livelihood improvement in different methods and measurements. Many studies [21] [25] positively indicated a relation between its product and household livelihood in different parts of Ethiopia. According to the survey results of [19] on “Challenges and Approaches to Ensuring Socio-economic Sustainability of Khat Crop Dependent Communities Amidst Diminishing International Markets: East Hararghe, Ethiopia,” among two hundred sample size on five districts of the zone. In Focus Among the contributing factors considered, the income-generating capacity of the khat crop (57% of respondents) is the highest available factor that contributed to the expansion of the khat crop economy. And the effect of khat production on food security and nutrition of farm households is less straightforward than the income effect, as it was discussed by [26] [27]. Whether increased income from khat production is translated into improved food security and nutritional status of households depends on several factors including expenditure behavior, gender relations, availability and prices of grain, etc. Also, scholars are in doubt that its production can result in the deterioration of food security and nutritional status of households in a situation where an expansion of khat production increases the prices of staples or where male-headed households mainly spend increased income on non-food items [28] [29]

Not only this [30], in his study of “Khat: Adaptive Community Resilience Strategy or Short-Sighted Money Maker? In North Wollo, Amhara Ethiopia”. The study tested the relationship between khat income and livestock, khat income and HFIAS (Household Food Insecurity Access Scale) score, and khat income and hectares of cultivated food crops through a simple Pearson correlation. For 200 sample households, the HFIAS score was not normally distributed, so he used the HFIAS category as the dependent variable, which made multinomial logistic regression analysis the most appropriate method of analysis. And a result is found that khat is positively and significantly associated with food security as measured through the HFIAS score. Further analysis in the form of logistic regression found khat producers were more likely to be only mildly food insecure or food secure than they were to be severely food insecure. This is the first time khat has been definitively associated with positive food security outcomes as measured through a valid standardized cross-cultural food security measure. However, his is corporate constraints as stated in line with this; which is yet if water withdrawals for intensive irrigation of khat go unchecked, the long-term viability of khat as a resilience strategy is questionable at best, as it will ultimately reduce the community’s ability to be responsive to future shocks, par-

ticularly from water shortages. Additionally, prohibitive regulatory mechanisms around khat consumption and the potentially severe negative health consequences of consumption might be viewed as potential vulnerability pathways, reducing resilience. The study summarized that khat has a potentially important short-term adaptive strategy for community resilience among smallholder farmers.

Paradoxes to this, there were many studies [5] [31]-[37] that correlate khat production with a negative effect on the health of humans, animals, and environmental ecosystems. But many of these researches were focused on khat product effects on consumers' side only and consumption effects.

### **3.4. Khat Product Marketing Constraints in Ethiopia**

Despite the largest export cash crop, strong income-generating crops domestically and it is even easy branding opportunity for trade specialization and diverse agroecology, and a favorable national agriculture ecosystem for khat development, the country, however, so far failed to fully publicize encouragement of its product and capitalize its potential through its policy. Khat policy ignorance and indirect discourse of production will be made thought for millions of people who rely their life on khat production [21] [38]. Thus, a matter of its policy ignorance and indirect discourse are what make the khat marketing system vulnerable.

Since the khat business generates large returns, many traders operate in rural farmers and purchase the product directly at the farm gate or small markets in the communities. While the negotiation power of smallholder farmers is often seen as an issue in food crop and fruit cultivation, the competition between khat brokers leads to a rise in the negotiation power of the farmers. Brokers transport the product to rural centers from where it is repacked and transported to urban wholesale markets in the Eastern part (Galemso, Ciro, Awadey, Dire Dewa/ to Finfinnee (Addis Abebe), and Southern-northern Jimma, welkite, Abba Sefera (wondogenat), Behr Der to Finfinnee (Addis Abebe) and on last it secondary or primary product will be exported to a foreign country [23]. In this above-stated chain even in one channel, there may be above three outlet actors. Which is khat marketing has long chain marketing problem.

Because of product perishability behavior, the effect of price volatility has been a direct factor in increasing rural poverty in rural communities; above 50% of khat producers' farmers by having cited khat price volatility as a leading risk factor for their food security [10]. Episodic pricing pressures on smallholders lead to some profit loss towards more immediately profitable zero-shade systems that can cash financial debt for food consumption purchases. However, this is having a profound impact on the degradation of khat producer's farmer's profitability, scales and farmers' ability to maintain natural assets and stable socio-economic conditions by using their knowledge and experience to avert risk without government extension is a good strategy which should be appreciated



(UNDP, 2012). Similarly, [3] [20] [27] [28] reported that khat producers are exposed to large fluctuations in market price. Poor access to the market, chronic market information, hiding the hand of the governmental cabinet in khat marketing, lack of institutional arrangement, long market chain, little market promotion, political dichotomy, and low-profit shares of farmers are also other khat marketing problems in Ethiopia [4] [7] [22] [39].

So, here from above the experience of the khat value chain in Ethiopia makes sense when analyzed as a complex system where shocks produced sudden and unpredictable outcomes, where interacting agents created a “cascade” that closed down the value chain, and where asymmetric power between value chain actors and nation-states prevented successful adaptation and striving to transform its product from primary product to industrial product is what play a major role to solve it constraints which happen because of its perishability in its marketing system to make khat market benefit and profits possess to producers (small-holder farmers).

#### **4. Conclusion and Recommendations**

This review provides an overview of khat production status, its impact on the livelihood of smallholder farmers, and marketing constraints in Ethiopia. Major concepts of this review demonstrate that, even though there is governmental policy discourse in-country, the khat production is dramatically expanded and it is trading/marketing system is still efficient and vibrant, operating effectively without interruption. It is continued to be a means of livelihood for many and generates revenue for the government. Khat production has a positive impact on securing household food insecurity, improve the livelihood status of smallholder farmers, and the largest foreign exchange earnings from its product at the country level; the government made little attempt to promote it and is yet silent to khat production policy remedy. As a whole, beyond the household and local perspective, khat cultivation also positively impacts the region and nation’s export performance. In terms of value, khat is the most important horticultural product, which outperforms exports of any crops in Ethiopia.

As constraints according to the review, government policy discourse, khat production and trade legal issues, lack of infrastructure, zero access to extension services, zero tangible value addition, inadequate technology transfer and research, and competition in khat price variability because of product perishability are among major constraints threatened production in Ethiopia. Price volatility, vulnerable and corrupted marketing systems, zero market promotion and political dichotomy, intermediate agents, chronic market information, and unfair price were reported to be the major problem of khat marketing in Ethiopia.

Depending on the review made, the following recommendation has been given. The government should analyze why and its impact on khat production discourse policy and overlook positive policy proclamations. Encouraging research and technology transfer to transform products into manufacturing industries,

enhancing infrastructural and institutional facilities, and improving khat production product technologies through development, and khat production agribusiness industry transformation, institutionalizing its marketing arrangement and other related agronomic practices are among the major recommendations to forward.

### Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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