

Impact of Militancy on the Trade of *Pinus Gerardiana* Nuts (Chilghoza) in District North Waziristan Agency (Ex FATA)

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Abstract

The trade of *pinus gerardiana* nuts (Chilghoza) is critical for the economy and livelihoods of communities in District North Waziristan Agency, formerly FATA. Its commercial value supports local economies and provides employment, highlighting the importance of sustainable management and market access for these valuable non-timber forest products. This research investigates the effects of militancy on non-timber forest products (NTFPs) trade, particularly Chalghoza nuts, in District North Waziristan Agency, previously known as Federally Administered Tribal Areas (FATA). NTFPs play a crucial role in the livelihoods and economies of many communities globally. However, regions affected by militancy often face challenges disrupting NTFP trade, impacting local populations' livelihoods. The study employs quantitative analysis and qualitative case studies to explore the relationship between militancy and NTFPs, focusing on Chalghoza nuts. Data were collected from key stakeholders, including NTFPs and Chalghoza nuts collectors, traders, and government officials, during and after periods affected by terrorism and military operations. Twenty-seven plant species were identified as commercially important NTFPs, with Chalghoza nuts being the most significant due to their commercial value and support to the local economy. Findings indicate that women and youth predominantly collect NTFPs and Chalghoza nuts, while the market trade is controlled by older men. Most respondents were illiterate and untrained, relying on personal experiences and traditional methods for collection, transportation, and packing. The study highlights significant impacts of terrorism and military operations on Chalghoza nuts trade in North Waziristan Agency, FATA. The presence of terrorism creates instability, fear, and insecurity, leading to 32% unemployment among Chalghoza collectors/traders, with 14% shifting to other sectors. An inequitable profit gap was recorded among local collectors, middlemen, and traders, sometimes exceeding 200%. Military operations and militancy disrupt production, transportation, and market access, resulting in decreased productivity, increased costs, and reduced profit. Additionally, military operations cause collateral

damage, casualties, and destruction of Chalghoza market infrastructure and supply chains, exacerbating industry challenges. The study recommends conflict-sensitive resource management strategies prioritizing NTFP-dependent communities' security and welfare, ensuring safe access, sustainable harvesting, and equitable trade to uplift the rural economy.

Keywords: Impact, Militancy, Trade, *Pinus Gerardiana*, Nuts, North Waziristan.

Introduction

Pinus gerardiana, commonly known as Chilghoza pine is one of the important forest tree species in North Waziristan tribal district ex-FATA. This species plays an important role in both environment and the livelihood of peoples living adjacent to the forest in North Waziristan. The nuts of *Pinus Gerardiana* are very valuable assets in sense of trade and have high market value. Besides, it has a high nutritional value which attract local and international market. Chilghoza forests are mainly found in “Shawal” which are located on the boundary line of North and South Waziristan. Commonly forests provide two kind of products which is described as timber and non-timber forest products (NTFPs) (Ahmad et al., 2023). Similarly, Chilghoza forest in North Waziristan offers highly valuable timber used in different furniture and for construction purposes. It also gives us pine nuts (NTFP) as a food stuff. The local inhabitants of Shawal and Razmak valley of North Waziristan gets high return during harvesting season of Chilghoza and it is a main source of income for several families. But a huge adverse impact can be seen on trade of Chilghoza nuts as all other businesses are disturbed due to militancy in North Waziristan since 2013. Non-timber forest products (NTFPs) constitute a vast array of natural resources harvested from forests worldwide, encompassing everything from nuts, fruits, and mushrooms to various medicinal plants. These products play a pivotal role in the livelihoods and sustenance of millions of people, particularly those dwelling in and around forested regions (Khan et al., 2022). Among the diverse spectrum of NTFPs, chilghoza, commonly known as pine nuts, stands out not only for its economic importance but also for its ecological significance. However, this invaluable trade, like many others, is not immune to the impacts of militancy and conflict, which often infiltrate the heart of the world's forests. This thesis embarks on an exploratory journey to dissect the complex relationship between militancy and NTFP trade, with a special focus on the chilghoza trade and its intertwining implications for the trade in medicinal plants (Ali & Khan, 2021). Drawing from a comprehensive review of existing literature, this study endeavours to unravel the multifaceted dynamics at play when conflict and the forest converge. It seeks to illuminate the unique challenges faced by communities whose lives and livelihoods depend on these invaluable resources and proposes strategies to address the far-reaching implications of militancy on NTFP trade. Regarding the factors causing the price drop, is due to unstable situation in Afghanistan has had a very negative impact on imports and exports, in addition to the difficulty of accessing the pine forests of Shawal, Lataka and other areas of Waziristan after security forces imposed a travel ban following by terrorist attacks. Due to the presence of few buyers in the market, prices have dropped massively. In Pakistan, the largest pine nut market is located in the Old Frontier District (FR) of Bannu, now known as Wazir Division. This market is called Azad Mandi and supplies pine nuts worth one billion rupees to China, the Gulf and other international markets every year. Afghanistan is also a supplier of nuts to this market. Pine nut production in Waziristan is estimated to be at least 30,000 kg/ year (Anonymous, 2022). In Pakistan, coniferous forests are concentrated mainly in Khyber Pashtun Khwa (KPK), Azad Jammu and Kashmir (AJK), northern regions, Baluchistan and northern Punjab. They are found at altitudes between 1,000 and 4,000 meters. Areas like Mansehra, Dir, Swat, Malakand and Abbottabad districts of KPK and Rawalpindi district of Punjab are mainly areas covered by these forests (Fir (*Abies spp.*), deodar (*Cedrus deodara*) and

chir pine (*Pinus roxburghii*) are found in the highest, middle and lower regions. The hills of Baluchistan also have coniferous forests (Ahmad et al., 2012). Pakistan's forests, especially coniferous forests, reflect great contrasts in climate and geography and are under constant pressure from population growth, human activity and commercial exploitation for firewood and timber uses. (Anonymous. 2007). In addition to providing timber, their role is in protecting land on steep mountain slopes, providing firewood and non-timber products, medicinal plants, livestock grazing as well as service forests, including wildlife habitat, has been well recognized (Khan et al., 2009). In District North Waziristan Agency *Pinus gerardiana* forests are distributed in the whole Suleman Belt of mountains along the Afghanistan border. Besides their ecological role they provide useful NTFPs including chilghoza nuts. Local people depend on these NTFPs to earn their livelihood. Non-timber forest products, often overshadowed by the timber industry, are of prominent significance in both developing and developed economies. They serve as a vital source of sustenance and income for forest-dependent communities, contributing to food security, poverty alleviation, and cultural practices. NTFPs encompass a vast array of forest resources, including edible items like nuts, berries, and honey, as well as medicinal plants, resins, and handicraft materials (Taylor, D. A. 1999). These products often embody intricate interdependencies between ecosystems and local cultures, reflecting the delicate balance between environmental conservation and human well-being. The chilghoza, or pine nut, presents a compelling case study within the realm of NTFPs. Collected from the cones of pine trees, particularly the *Pinus gerardiana* species, chilghoza is cherished for its culinary and nutritional value. Rich in essential nutrients and healthy fats, these nuts have not only been a staple in local diets but have also gained international recognition as a gourmet delicacy. Beyond its gastronomic appeal, chilghoza has considerable economic importance for communities' as The scope of this research encompasses a comprehensive examination of the chilghoza trade while also considering its broader implications for NTFPs, particularly medicinal plants, in regions affected by militancy. It examines case studies from various conflict-affected areas to discern patterns and variations in the impacts of militancy on NTFP trade.

Study Objectives

This research has the following objectives;

1. Collect baseline information about Chilghoza nut trades, performance and challenges in District North Waziristan Agency (DNWA).
2. To assess how militancy disrupts the production, processing, and marketing of chilghoza and medicinal plants in DNWA.
3. To propose policy recommendations and interventions that could sustain the negative effects of militancy on NTFP trade and promote sustainable resource management in NWTD.

Literature Review

Belcher & Kusters (2004) Non-timber forest products represent a diverse array of resources harvested from forests and play multifaceted roles in society and ecosystems. Negi et al. (2018) concluded that NTFPs include food items such as fruits, nuts, honey, and mushrooms, as well as non-food products like resins, fibbers, and medicinal plants. NTFPs contribute significantly to rural livelihoods and local economies, particularly in developing countries (Arnold & Ruiz Pérez, 2001). In many cases, they provide a safety net during periods of economic uncertainty Sustainable NTFP harvesting practices can incentivize conservation by promoting responsible resource management and the protection of forest ecosystems. NTFPs often hold cultural and traditional importance for indigenous and local communities, forming an integral part of their identity and heritage properly managed NTFP extraction can support forest ecosystem health by maintaining

biodiversity, enhancing forest resilience, and reducing the pressure on timber resources. Chilghoza, derived primarily from the cones of *Pinus gerardiana* trees in the Himalayan and Central Asian regions, exemplifies the economic and ecological significance of NTFPs. Chilghoza is esteemed for its nutritional richness, containing essential nutrients, healthy fats, and proteins. Its distinctive flavour and texture make it a coveted ingredient in global cuisines. The chilghoza trade represents a vital income source for communities in pine forest regions. It generates employment opportunities, from harvesters to traders, contributing significantly to local economies. Belcher & Schreckenber (2007) investigated that Chilghoza is internationally traded, with high demand in countries such as India, Pakistan, China, and Afghanistan. Global demand has led to increased chilghoza production and trade. Unsustainable harvesting practices, driven by market demand, have raised concerns about the sustainability of chilghoza ecosystems. Overharvesting, coupled with habitat degradation, poses threats to long-term viability. Conflict and militancy in NTFP-producing regions introduce unique challenges to resource management and livelihoods. Militant groups may exploit NTFPs to fund their operations, leading to conflicts over access, control, and taxation. Militancy can result in environmental damage, including illegal logging, poaching, and habitat destruction, threatening both NTFPs and broader ecosystem health. Conflict disrupts NTFP supply chains, making it difficult for local communities and traders to access markets. Road closures, security checkpoints, and market instability hinder trade. Conflict adversely affects NTFP-dependent communities, leading to displacement, food insecurity, and compromised livelihoods. WFP, (2009) NTFP trade and sustainable resource management have been integrated into conflict resolution and peacebuilding efforts in some cases, contributing to stability and reconciliation. Studies examining the specific impacts of militancy on NTFP trade shed light on the challenges faced by communities in conflict zones. Conflict disrupts traditional NTFP markets, causing price fluctuations and volatility that affect both producers and consumers. Local economies may suffer from reduced market access (Kusters *et al.*, 2006). The presence of armed groups in NTFP-producing areas creates security risks for harvesters and traders, deterring individuals from engaging in resource extraction and trade (Scoones *et al.*, 1992). Conflict-related activities, such as illegal logging and resource exploitation, can lead to habitat destruction and resource depletion, threatening the long-term viability of NTFP trade. Bray *et al.*, (2006) examined the disruption of NTFP trade can result in food insecurity, displacement, and economic hardship for communities already struggling with the effects of conflict. Despite these challenges, some communities employ innovative coping strategies to sustain NTFP-based livelihoods, such as diversifying income sources, engaging in value-added processing, and forming cooperatives (Ros-Tonen, M. A., & Wiersum, 2003). Policymakers and development agencies have implemented various interventions to support NTFP-dependent communities in conflict-affected areas, including capacity-building, market access initiatives, and conflict-sensitive resource management (Upadhyay, M. 2008). While the existing literature provides valuable insights into the dynamics of NTFP trade and its interactions with militancy and conflict, several research gaps remain. Comprehensive comparative analyses of NTFP trade across multiple conflict-affected regions are limited, hindering our ability to draw broad conclusions about common challenges and best practices.

Material and Methods

Study Area

The current research was conducted in Tribal District of KPK, North Waziristan Agency. The study areas which were selected for data collection were Mirali, Miranshah and Razmak bazar of District North Waziristan Agency. North Waziristan District lies on 30.1575 N, and 71° 52'49 E, with an elevation of 122 m (Fig.1). The North Waziristan Agency is home to various types of

forests, covering a total area of 127,400 acres, including coniferous and scrub forests. These forests are classified as dry temperate forests according to (Champion *et al.*, 1965). The region benefits from summer monsoon rains and experiences snowfall ranging from 0.5 to 1.5 meters in the mountains, occurring from February to April. The majority of rainfall, around 75 mm, is received during the monsoon season, from late June to September, while winters have minimal rainfall. District North Waziristan Agency falls within the Sino-Japanese region, extending from Japan, Korea, and China to Upper Assam, Taiwan, West Nepal, Himachal Pradesh, and Koh-e-Sofid (Kurram N.W.F.P) up to Nuristan (East Afghanistan). The soil in this area is generally shallow and calcareous. District North Waziristan Agency is popular for the production of NTFPs, especially chilgoza nuts of this region are known worldwide due to its delicious taste.

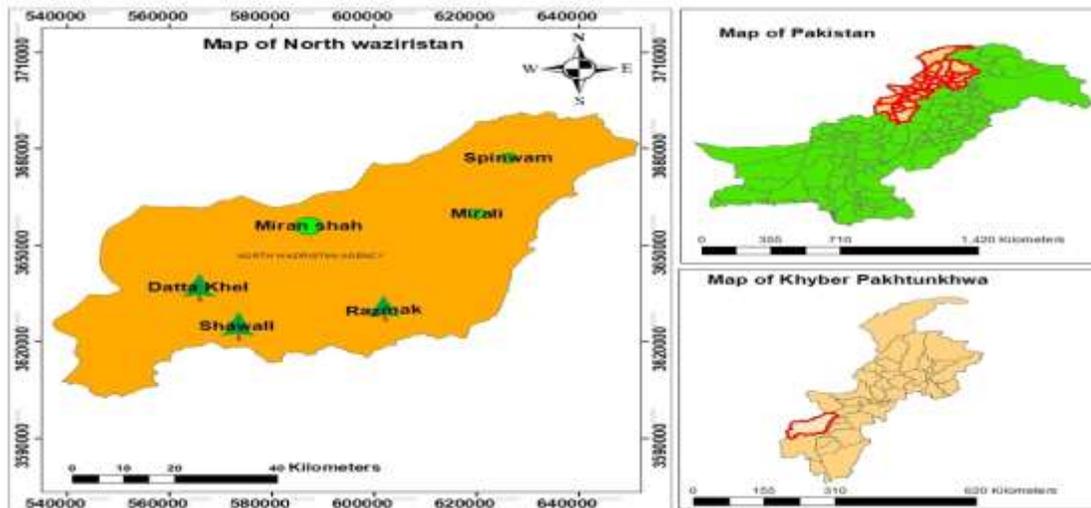


Figure 1: Map of the study area (District North Waziristan Agency)

Militancy at District North Waziristan Agency

Before the 9/11 attacks in 2001, North Waziristan, like other tribal regions, was relatively isolated from mainstream Pakistan. During the Afghan-Soviet War in the 1980s, the area became a base for Afghan mujahideen fighting against the Soviet forces, with support from the Pakistani government and intelligence agencies. After the Soviet withdrawal, the region remained a stronghold for militant groups. Following the 9/11 attacks and the subsequent U.S. invasion of Afghanistan, North Waziristan became a sanctuary for Taliban and al-Qaeda militants fleeing Afghanistan. Many militant leaders found refuge in this region due to the absence of strong government control. The area saw a surge in militancy, with several attacks on Pakistani security forces and attempts to establish Sharia law. The Pakistani military launched several operations in North Waziristan to curb militancy and establish state authority. One of the significant operations was Operation Zarb-e-Azb, initiated in 2014, aimed at eliminating terrorist sanctuaries in the tribal areas, including North Waziristan. The operation led to intense fighting and displacement of a significant portion of the local population. These military operations, combined with efforts to rehabilitate and reintegrate militants, have had some success in reducing the militant presence in the region. However, challenges persist, including the presence of sleeper cells, cross-border movement of militants, and socioeconomic issues that contribute to the recruitment of young people into militant groups.

Methodology

The research design for this study is characterized by mixed-methods approach, combining both qualitative and quantitative research methods. This approach enables a comprehensive exploration of the impacts of militancy on the chilgoza nuts trade and other non-timber forest products (NTFPs) in the study area.

Qualitative Data

The qualitative component of the research includes:

Sampling: A purposive sampling strategy is employed to select research participants. Participants are chosen based on their involvement in the chalghoza and NTFP trade and their past experiences in war and conflict. **Interviews:** Semi-structured interviews were conducted one-on-one with key informants. These interviews were conducted face-to-face when feasible, respecting local customs. In-depth interviews were conducted with key informants, including chilgoza harvesters, traders, community leaders, and local experts. These interviews provide insights into the challenges faced and the social and economic dynamics of NTFP trade in war and conflicts (Larkin, M & Flowers P et al 2021). **Focus Group Discussions:** FGDs were organized with groups of community members involved in NTFP trade. These discussions were held in community centres or villages, allowing participants to freely share their insights and experiences.

Quantitative Data

Quantitative data is essential for analysing the economic aspects of NTFP trade, including market trends, trade volumes, and price fluctuations. The quantitative component of the research includes: Surveys were managed to collect information's from chilgoza traders, local businesses, and other stakeholders involved in NTFP trade. These surveys collect quantitative data on trade volumes, prices, market access, and economic indicators. A structured questionnaire was developed to ensure consistency in data collection.

Ethical Considerations

Due to cultural and religious restrictions of interactions with women, indirect ways of interviews were followed through their family members. However, a few elder women were directly interviewed.

Data showing the information on the important Non-Timber Forest Products (NTFPs) of the study area

Sr. No.	Scientific Name	Common Name	Family Name	Local Name	Location in North Waziristan	Importance
1	<i>Morchella asculanta</i>	Mushroom (Gucchi)	Morchellaceae	-	Hilly and forested areas	Culinary and medicinal uses; rich in protein, vitamins, and minerals; potential immune-boosting and anti-inflammatory properties; economic significance for local communities.

Sr. No.	Scientific Name	Common Name	Family Name	Local Name	Location in North Waziristan	Importance
2	<i>Cannabis sativa</i>	Hemp/Marijuana	Cannabaceae	Bhang, Chars	Various areas	Psychoactive and medicinal effects; potential pain relief, anti-nausea, and appetite stimulation; use regulated due to legal concerns.
3	<i>Fagonia cretica</i>	Dhamasa	Zygophyllaceae	Dhamasa	Various areas	Used in traditional medicine for anti-inflammatory, analgesic, and antipyretic properties.
4	<i>Angelica salicifolia</i>	Afsanteen	Apiaceae	Afsanteen	Various areas	Traditional medicine for digestive and carminative effects; potential antimicrobial properties.
5	<i>Artemisia absinthium</i>	Wormwood	Asteraceae	-	Various areas	Traditional medicine for digestive disorders, fever, and inflammation; potential antimicrobial properties.
6	<i>Berberis lycium</i>	Barberry	Berberidaceae	-	Various areas	Berberine-rich plant used for digestion, treating diarrhea, and antimicrobial/anti-inflammatory properties.
7	<i>Withania somnifera</i>	Ashwagandha	Solanaceae	-	Various areas	Adaptogenic herb for stress relief, immune support, and anti-inflammatory effects; used in traditional Ayurvedic medicine.
8	<i>Carum carvi</i>	Caraway	Apiaceae	-	Various areas	Alleviates digestive issues like bloating and indigestion; caraway oil used for

Sr. No.	Scientific Name	Common Name	Family Name	Local Name	Location in North Waziristan	Importance
9	<i>Nigella sativa</i>	Black cumin	Ranunculaceae	-	Various areas	aromatic and digestive properties. Rich in antioxidants; used for potential anti-inflammatory, immune-boosting, and respiratory health benefits; also employed in culinary and traditional medicine. Supports digestion, relieves gastrointestinal discomfort, and traditionally used for soothing and carminative effects.
10	<i>Foeniculum vulgare</i>	Fennel	Apiaceae	-	Various areas	Supports digestion, relieves gastrointestinal discomfort, and traditionally used for soothing and carminative effects.
11	<i>Acorus calamus</i>	Sweet flag	Acoraceae	Various areas	Potential cognitive-enhancing properties, supports digestion, and may relieve flatulence.	
12	<i>Terminalia chebula</i>	Chebulic myrobalan	Combretaceae	Various areas	Used in Ayurvedic medicine as a laxative, digestive aid; believed to have antioxidant and anti-inflammatory effects.	
13	<i>Allium sativum</i>	Garlic	Amaryllidaceae	Various areas	Contains allicin with antibacterial, antifungal properties; supports cardiovascular health and immune system; traditional use for various ailments.	
14	<i>Mentha arvensis</i>	Wild mint	Lamiaceae	Various areas	Used for digestive and antispasmodic effects; mint tea consumed to soothe stomach discomfort.	
15	<i>Trachyspermum roxburghianum</i>	Ajwain	Apiaceae	Various areas	Alleviates indigestion, flatulence, and abdominal discomfort; believed to have antimicrobial properties.	
16	<i>Valeriana jatamansi</i>	Indian valerian	Caprifoliaceae	Various areas	Traditionally used as a calming herb to relieve anxiety, stress, and improve sleep quality.	

17	<i>Rauvolfia serpentina</i>	Indian snakeroot	Apocynaceae	Various areas	Contains reserpine; historically used to manage anxiety, hypertension, and as a tranquilizing agent.
18	<i>Zingiber officinale</i>	Ginger	Zingiberaceae	Various areas	Alleviates nausea, motion sickness, indigestion; contains gingerol with potential anti-inflammatory properties.
19	<i>Plectranthus amboinicus</i>	Indian borage	Lamiaceae	Various areas	Traditional use for respiratory conditions, coughs; potential anti-inflammatory and antioxidant properties.
20	<i>Pinus gerardiana</i>	Chilgoza	Pinaceae	Various areas	Chilgoza pine nuts are nutritious, rich in healthy fats; culinary uses as a traditional snack. Chilgoza pine trees are vital for stabilizing Himalayan ecosystems.
21	<i>Juglans regia</i>	Walnut	Juglandaceae	Various areas	Nutritious nuts rich in omega-3 fatty acids, antioxidants, and vitamins; culinary uses; wood is valuable for furniture and crafts.
22	Walnut Bark	Dandasa	Juglandaceae	Various areas	Used in traditional medicine for antimicrobial and astringent properties; may be applied topically to treat skin conditions.
23	<i>Quercus baloot</i>	Baloot Oak/Shah Baloot	Fagaceae	Various areas	Provides valuable wood resources, contributes to forest ecosystems, supports wildlife, and maintains ecological balance.

Types of Honey

1. **Wildflower Honey:** This type of honey is collected by bees from a variety of wildflowers in the region, resulting in a diverse flavor profile.
2. **Acacia Honey:** Bees gather nectar from Acacia trees, producing a distinct and often light-colored honey with a mild, sweet taste.
3. **Sidr Honey:** Sidr trees (*Ziziphus jujuba*), also known as bair trees, are a source of premium honey known for its unique flavor and medicinal properties.

Locations in North Waziristan

Honey production takes place in various areas throughout North Waziristan, including mountainous regions, forests, and plains. Common locations for honey production include valleys, such as the Shawal Valley and Degan, and areas with abundant floral diversity.

Importance of Honey

Honey production provides a source of income for local communities through the sale of honey and related products. Local thought that honey is a natural sweetener rich in vitamins, minerals, and antioxidants, serving as a valuable dietary component. Locals use honey as a traditional medicine for its potential healing properties, including wound care, cough and chest infections and soothing sore throats. Beside its medicinal and economic value honey has cultural and traditional significance in North Waziristan, often being used in religious ceremonies and hospitality.

Respondent's information

Different stockholders of the Non timber forests products (NTFPs) and Chalghoza nuts collectors, traders and agents were visited in the field and local markets of Mirali, Miranshah, and Razmak to gain enough knowledge about trade of NTFPs and Chalghoza nuts. During survey 92 local people, who were directly or indirectly involved in the trade were interviewed. These interviewers were of different ages and gender with different backgrounds of the residential status and education level. The results show that informants were belonging to different age group in which 30 to 40 years respondents were 25%, 40 to 60 year respondents were 50% and 20 to 30 years age group 25% (Table. 4.1). Results also show that out of 92 respondents 80% were male and 19% were females. They were mostly indirectly interviewed, however some old age women were directly interviewed and most of them were involved in collection of NTFPs and Chilgoza nuts (Fig.4.1).

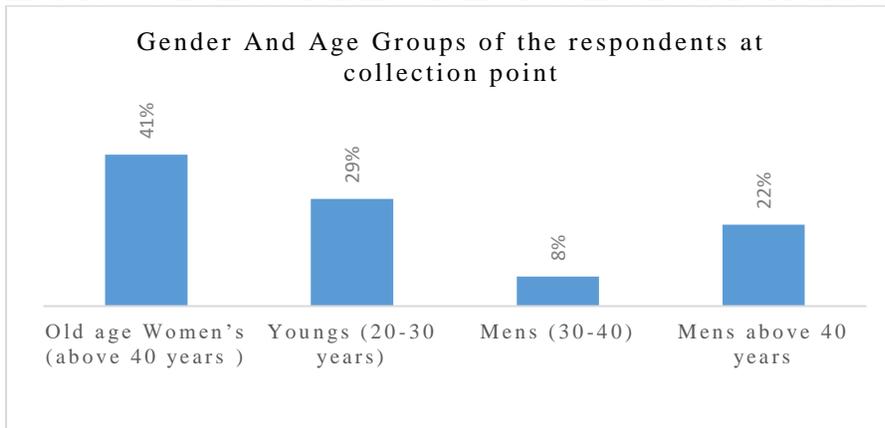


Fig.4.1 Gender and Age groups of the respondents

The results also highlighted that most of the traders were old age men (above 40 years) and no women were involved in the trade of NTFPs and chilgoza nuts (Fig.4.2).

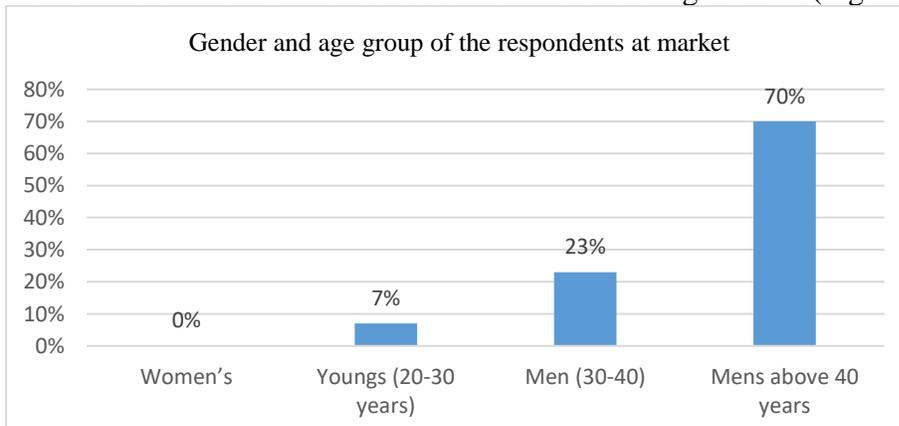


Fig.4.2 Gender and Age groups of the respondents at market place

The results indicate different education categories in which maximum merchants/collectors were illiterate with 55 % age, while 26% were either matriculate or middle pass, 13% were FA pass and only 6% were BA or master (Fig.4.3).

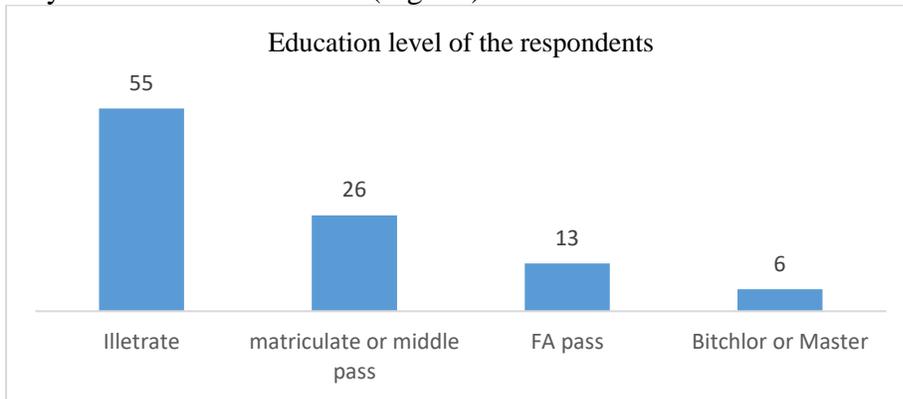


Fig.4.3 Education Level

Results show that 26% respondents were labors in the market or collecting chilgoza nuts, 24 % were owners of the forest area and 27 % were agent involved in the trade of NTFPs and chilgoza nuts at local level, 10 % were herbalist and 13% were shopkeepers or tradesmen involved in the export of NTFPs and chilgoza nuts (Fig.4.4).

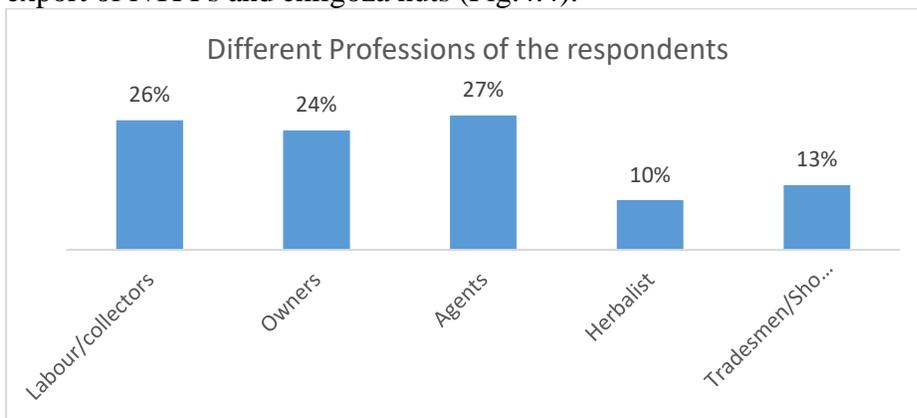


Figure 4.4: Categorization of respondents on the basis of their profession

Inequitable gap between local price and market price

Results disclose that in most of the cases the land owners' sale forest nuts to the contractors and they collect them via daily wages labouring. But about 44% of the co-owners collect chilgoza nuts and other NTFPs independently and they often have no choice but to sell their chilgoza nuts to the middlemen or traders at lower prices due to lack of access to direct markets or buyers. Results show a huge gap in prices offered to local collectors and the prices at which traders or buyers sell them in the market (Fig.4.5).

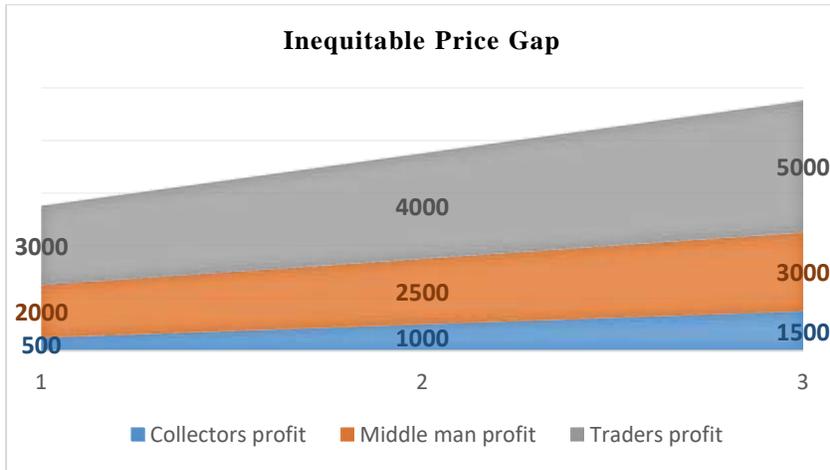


Fig.4.5 Inequitable price gap in the profit of collectors

Impact of military operation on livelihood of local population

Results show that Military operations have significant impacts on the trade and livelihood of local populations, affecting various segments of society differently. It is clear that Chilgoza traders, collectors, owners, and shopkeepers make up 70% portion of the local population, while there is also 30% of homeless and jobless individuals and 14% were those who have quite their jobs/business in this sectors and started other jobs. (Fig.4.6).

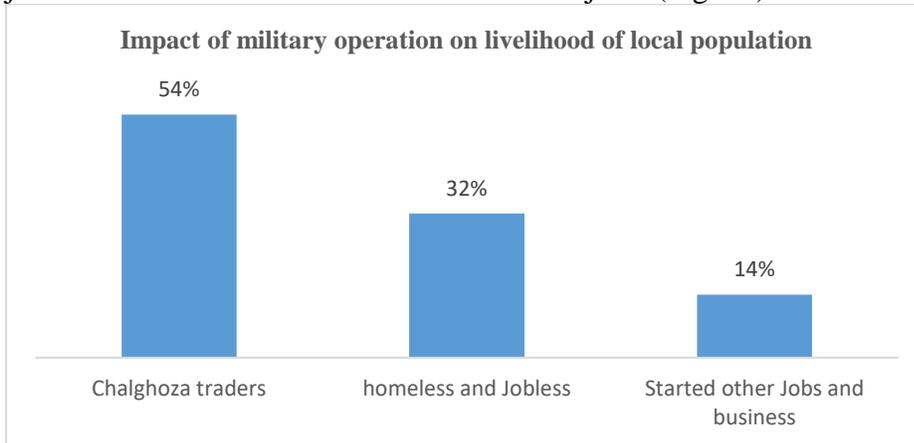


Figure 4.6: Impact of military operation on livelihood of local population

Trade constrains of chilgoza trade in North Waziristan

During interview, various constrains were identified about the trade / business of chilgoza and NTFPs at North Waziristan. Among them 11% responded have showed their grievances about lack of government facilities, 42% militancy and war, 25% have demanded army withdrawal, 11% have complained about taxes and 30% responded about the poor departmental policy and implementation. (Fig.4.7).

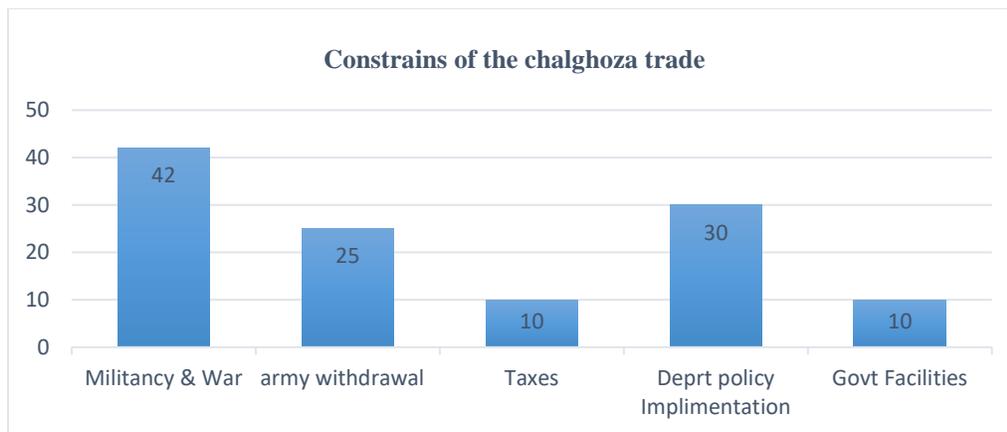


Figure 4.7: Trade constrains of chalghoza in North Waziristan

Economic Impacts

The economic impacts of militancy on the chalghoza trade were pronounced. Market disruptions, including road closures and security checkpoints, resulted in supply chain interruptions. Chalghoza prices fluctuated dramatically due to these disruptions, affecting both producers and consumers. Participants reported that militant groups in some regions imposed taxes or levies on chalghoza harvesters and traders, diverting a portion of their earnings. Results show a reduction in annual income from 2013 to 2022. As per our findings in 2010 the per-capita income from the trade of Chalghoza was 10,000, in 2013 it reached to 15000. During military operation in 2014 this income fall to 3000. The possible causes of its decline was curfew, where the harvesting was not possible. After relaxation in carfue in 2016, this amount raised to 15000. Due to poor security situation and carfue the annual income fall to 3000. In 2021, when with better security situation, the trade of chilghoza once again increased and per-capita income from Chalghoza reached to 16000 Rs. Per month. In 2022 again the situation gets worst, and the per-capita income again got decline (Fig.4.8).

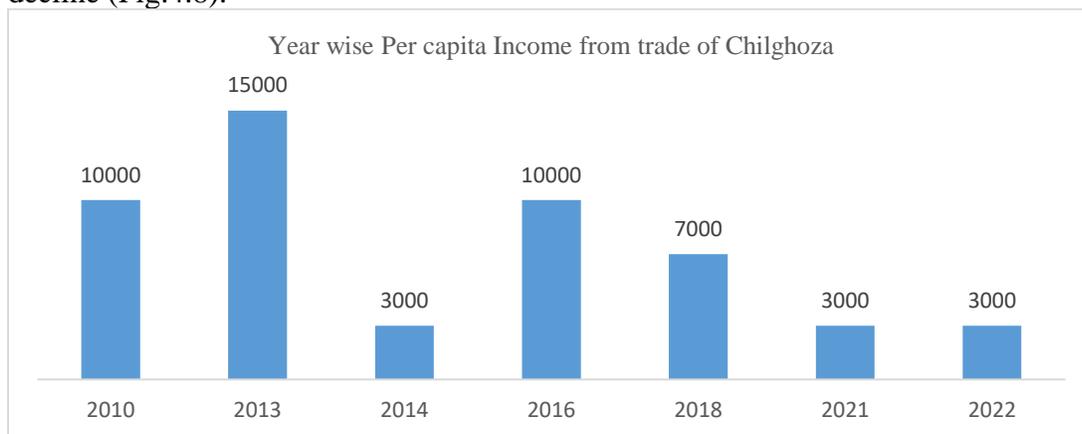


Figure 4.8: Economic Impacts on the trade of chilghoza in the study area

Security Risks

Security risks associated with militancy were a major concern for chalghoza harvesters and traders. Armed groups sometimes targeted NTFP collectors for extortion or conscripted them into their ranks. Participants recounted instances of violence and intimidation, which deterred individuals from engaging in chalghoza harvesting and trade. During interviewing local people informed about injuries and deaths of the Chilghoza traders and collectors. The correspondence said that 13

chilghoza collectors were injured and 8 were died due to land mine bomb blasts and drone attacks in 2016. In 2019, 11 people got severe injuries and 2 deaths. In 2023 a group of terrorist targeted a vehicle of chilghoza collectors in result 13 chilghoza collectors including driver were killed and 5 were injured (Fig.4.9).

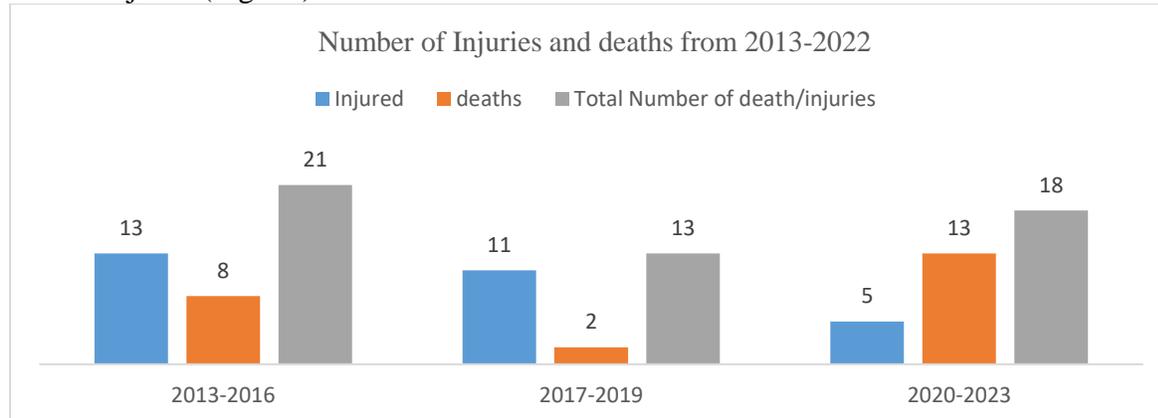


Figure 4.9: Number of Injuries and deaths from 2013-2022

Conclusion

The current study reveals significant challenges faced by the local collectors and traders of NTFPs and Chalghoza nuts in the study area. The presence of terrorism creates an environment of instability and insecurity, disrupting the production, transportation, and market access of chalghoza nuts. Additionally, military operations intended to combat terrorism often result in human loss/ casualties, collateral damage, leading to the destruction of Chalghoza and NTFPs market, infrastructure, and supply chains. These disruptions have adverse consequences for the local economy, livelihoods of farmers and traders, and regional food security. The decline in NTFPs and Chalghoza trade affects the income and sustainability of stakeholders involved, increase economic hardships in the region. Furthermore, the consequences of reduced trade have implications for the overall food security situation, as NTFPs and Chalghoza nuts are an important source of income for the local population. The research highlights the need for targeted strategies and interventions to mitigate the impact of terrorism and military operations on the study area. Existing initiatives implemented by governments, international organizations, and local communities are examined, providing valuable insights into their effectiveness. It is crucial for policymakers, security forces, and relevant stakeholders to work together to develop and implement measures that promote stability, support the recovery of the NTFPs industry, and ensure sustainable economic development in North Waziristan Agency, FATA. By understanding the complexities of this relationship, informed decisions can be made to address the challenges faced by the trade of pine nuts in the region. Future efforts should focus on rebuilding infrastructure, providing support to farmers and traders, enhancing security measures, and facilitating market access. These actions, accompanied by policy improvements and increased cooperation among stakeholders, can contribute to the revival of the NTFPs trade and promote the socio-economic well-being of the local communities in District North Waziristan Agency, (Ex FATA).

Recommendations

Followings are a few recommendations in light of the current study.

- Policymakers must adopt conflict-sensitive resource management strategies that prioritize the security and welfare of NTFP-dependent communities, ensuring their sustainable access to chalghoza and other NTFPs.

- Results of the current study show that collectors of the Chalghoza nuts were mostly women but they don't have any share or part in market trade, perhaps this was due to cultural resections, however the government should encourage gender equity in every field of life.
- Finding shows that the local collectors often have no choice but to sell their chilgoza nuts to the middlemen or traders at lower prices due to lack of access to direct markets or buyers. They do not meet with the actual profit thus government should establish collection points of local market in their local regions.
- The government should develop and secure trade routes to enable safe NTFP trade in the study area. This includes infrastructure improvements, like roads and market and mechanisms to prevent extortion or violence along trade routes.
- Government should train the local collectors of NTFPs about sustainable harvesting, processing and packing of the raw NTFPs and Chalghoza to avoid the loss of energy, resources and to enhance their resilience and sustainable resource management practices
- Integrating NTFP trade into broader conflict resolution initiatives can foster community stability and peace. Collaboration between conflict resolution experts and loya jarga and militants group is critical.
- This research opens the door to several avenues for future exploration to conduct in-depth case studies in specific conflict-affected regions to gain a deeper understanding of the unique challenges and adaptive strategies. There is need to evaluate the effectiveness of policies and interventions aimed at mitigating the impact of militancy on NTFP trade. This includes assessing the outcomes of initiatives such as secure trade routes and livelihood diversification programs. Investigations are critical to study gender equitable rights within NTFP-dependent communities, considering the differential impacts of militancy on men and women involved in chalghoza and NTFP trade. Understand the roles, vulnerabilities, and contributions of both genders.

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