Unsustainable Urban Sprawl In Hindu Kush Region- A Case Study Of Ghizer District Gilgit Baltistan-Pakistan

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ABSTRACT. Urbanization in developing countries is one of the major challenges. Pakistan has experienced one of the highest growth rate of urbanization in South Asia. The Northern part of the country called Gilgit Baltistan (GB) is experiencing increased commercialization, tourism and urbanization. With expected future economic activities due to completion of the China Pakistan Economic Corridor (CPEC), the urban influx of internally migrating people will further increase. The Land use in the region is under constant pressure, due to these changes. In this mixed method research, the Land Cover Land Use changes during last 40 years (1985-2019), economic valuation of the land in last 10 years and other important aspects of land dynamics have been

studied with the help of GIS maps, questionnaire survey and Focal Groups Discussions (FDGs).. Questionnaire survey was administered to 105 randomly selected respondents from the Gahkuch-Damas town of the district Ghizer, Pakistan as this part of the district is urbanizing more rapidly. This was also followed by Focus Group Discussions, with the local stakeholders. The results show highly unsustainable land use changes during the last 40 years. The prices of commercial land have increased many time, forcing the people to sell their land to the internal immigrants from other parts of the country and region. The livelihood of the people is becoming more unsustainable as the per household land and livestock has witnessed sharp decrease.

INTRODUCTION

The earth's terrestrial processes have been significantly modified by the land use and land cover changes over the years. The fast urbanization in the second half of the 20th century has caused highly undesirable impacts on the environment (Verburg &Overmars. 2007). The land use patterns are normally divided into eight distinct features that include density, continuity, concentration, clustering, centrality, nuclearity, mixed uses, and proximity. When one or more of these features assume high value, the phenomena of urbanization and urban sprawl is witnessed (Glaer et al. 2011). When uncontrolled, unplanned and uncoordinated growth of urban areas occurs, it is called urban sprawling (Noor and Rosni,2013). Over the last few decades, the urban sprawl in the developing countries has become more unsustainable (Aburas et al. 2018). The increased anthropogenic activities have led to negative impacts on various classes of the land use and land cover (Hamad et al. 2018). Urban sprawl is driven by both direct and underlying factors. Direct influences include settlement expansion, infrastructure development, and industrial growth, while underlying factors encompass economic conditions, technological advancements, policies, population growth, internal migration, conflicts, and natural influences (Samie et al., 2018).

Globally, urbanization has been on the rise, with approximately 55% of the world's population now residing in cities. This increasing urban concentration results in a range of complex and interrelated challenges, including air and noise pollution, urban flooding, social disparities, and political instability (Netzband et al., 2007). Consequently, urban sustainability has emerged as a crucial research focus to address these growing concerns (Bhutta, 2010).

Trends of Urbanization in Pakistan

Currently, 33% of Pakistan's population resides in urban areas, and this figure is projected to reach 50% by 2025, with an annual growth rate of 3%, making it the fastest urbanizing country in South Asia. As a result, Pakistan is on the brink of significant demographic transformations (Barki, 2011).Over the past two to three

decades, many major cities of Pakistan have witnessed rapid urban sprawl. Key contributing factors include the expansion of housing and infrastructure, migration, and internal displacement caused by terrorism. For instance, the urban area of Islamabad, the capital city, expanded by 87.31 sq. km between 1972 and 2009, leading to a decline in forest cover and other natural habitats (Butt et al., 2011). Liu et al. (2020) revealed that the impervious surfaces and urban areas increased by 273.10% and 426.21% during three decades (1990-2018).

Table 1 shows that urban population in Pakistan has increased from 17.7% to 36.4% during 1951-2017. This increase is more pronounced at Sind province, where the urban population has increased from 29% to 52% due to transmigration from rural areas of other parts of the province and country (Pakistan Bureau of Statistics, 2018).

Table 1. Change in of urban and rural population distribution in provinces of Pakistan during 1951-2017 (Pakistan Bureau of Statistics, 2018; NIP, 2006,2012)

Province	1951		1961		1972		1981		1998		2017	
Punjab	Pop Million	%	Pop Million	%	Pop Million	%	Pop Million	%	Pop Million	%	Pop Million	%
Urban	3.57	17.4	5.48	21.5	9.18	24.4	13.05	27.6	23.02	31.3	40.39	36.7
Rural	16.97	82.6	19.99	78.5	28.42	75.6	34.24	72.4	50.60	68.7	69.63	63.3
Sindh												
Urban	1.77	29.2	3.17	37.9	5.73	40.4	8.24	43.3	14.84	48.8	24.91	52.0
Rural	4.28	70.8	5.20	62.1	8.43	59.6	10.79	56.7	15.60	51.2	22.98	48.0
KP												
Urban	0.50	11.1	1.76	13.2	1.20	14.3	1.67	15.1	2.99	16.9	5.73	18.8
Rural	4.05	88.9	4.97	86.8	7.19	85.7	9.40	84.9	14.75	83.1	24.79	81.2
Baluchistan												
Urban	0.14	12.4	0.23	16.9	0.40	16.5	0.68	15.6	1.57	23.9	3.40	27.5
Rural	1.02	87.6	1.13	83.1	2.03	83.5	3.66	84.4	5.00	76.1	8.94	72.5
Pakistan												
Urban	5.99	17.7	9.65	23.1	16.59	25.4	23.84	28.3	43.04	32.5	75.58	36.4
Rural	27.75	82.3	32.23	76.9	48.72	74.6	60.41	71.7	89.32	67.5	132.19	63.6

Urbanization in Gigit Baltistan-Northern Pakistan

The Northern Pakistan Gilgit Baltistan (GB) is part of the Hindukush Himalaya (HKH) region. It is considered as gateway for the multibillion USD projects of China Pakistan Economic Corridor (CPEC). With the completion of these projects, the GB will be opened to economic activities, urbanization and commercialization. Husnain et al (2020) while exploring the dynamics of future spatial plans for urban areas of Pakistan, revealed that there are about 624 declared urban areas. Punjab province is having the highest number of 257, Sindh province 197, Khyber Pakhtunkhwa (KPK) province 62, Baluchistan province 61, Azad Jammu and Kashmir (AJ&K) 25, the merged former FATA 16 and Gilgit Baltistan has at least 5 declared urban areas in 2017. Only 179 out of 624 declared urban areas, has some sort of spatial plans, leaving more than 70% of the cities to grow without a spatial plan, which shows highly unplanned urbanization and urban sprawl. UN Habitat reported uncontrolled mushroom construction and urban sprawl along the peri-urban and urban areas of Gilgit and Hunza,

particularly besides the river beds (Pakistan National Report for Habitat-III,2015). The master plan of Gilgit City was prepared by IUCN in 2014, which incorporated Strategic Environmental Assessment (SEA) and Conceptual Master Plan (CMP) of Gilgit city. The CMP was based on the following interesting facts:

- Gilgit is poised to surpass Islamabad as the primary transit hub for tourism-related activities in northern Pakistan's mountainous region.
- It is expected to emerge as the economic center of the Gilgit-Baltistan (GB) province.
- The city will evolve into a key regional transit corridor, facilitating connectivity between Pakistan and China.
- A dynamic redistribution of rural and urban spaces within Gilgit will create a balanced synergy.
- Gilgit is set to become a leading hub for higher education in the GB region.

The rising internal migration will exert significant pressure on land use patterns in the area. Large scale Land use land Cover (LULC) changes lead to many problems like loss of biodiversity, environmental degradation and increase in emissions of greenhouse gases (Lambin et al 2003, Hersperger et al 2010, Mukete et al 2018). Extensive conversion of the barren and agricultural land to built-up land, has created severe challenges for the mountain regions of Himalaya and Hindukush region in many ways (Ahmad et al. 2018). The fast urban sprawl in parts of the GB is creating high pressure on the land cover land use changes. In this context, the district headquarter of Ghizer is subject to high pressures, due the migration of people from other parts of GB and KP province on one hand and fast commercialization of the region due to growing tourism on the other hand. This study has been motivated to mainly study the LULC changes in the Gahkuch Damas Town of district Ghizer during last 30 years (1986-2019).

1.3 Use of GIS Remote Sensing for Land Use Land Cover Changes

One of the key methods for assessing urbanization is analyzing Land Use and Land Cover (LULC) changes by using tools based on Geographic Information Systems (GIS) and Remote Sensing (RS). These tools provide an effective and timely evaluation of urban expansion at both spatial and temporal scales. In recent years, the application of GIS and RS has become widespread in urban sprawl studies.

For instance, Hamad R. (2020) investigated urban expansion in Kurdistan, Iraq, using GIS and RS and found that built-up areas increased nearly threefold from 4.5 km² to 14.93 km² between 1998 and 2018. Several researchers have also studied LULC changes in different regions, including Dhaka, Bangladesh (Dewan & Yamaguchi, 2009), Hangzhou, China (Jingsong et al., 2009), Komb Ombo Desert, Egypt (Faid & Abdulaziz, 2012), Izmir, Turkey (Hepcan et al., 2013), Mumbai, India (Faid, Moghadam & Helbich, 2013), and Islamabad, Pakistan (Hassan et al., 2016).

Additionally, GIS and RS have been utilized to examine urban sprawl in Puerto Rico and Delhi, India (Sebastián M. et al., 2007; Ranachadra et al., 2015). Urbanization hotspots in Europe were also analyzed by Daniel Arribas et al. (2011). Moreover, Multi-Criteria Evaluation (MCE) techniques were employed to assess urban expansion in An-Nummayimah City, Jordan, in the post-war period (Ann A.G. et al., 2020). In China, Jingwei Han (2020) used provincial panel data from 2001 to 2017 and found that most provinces were experiencing significant urban sprawl, exacerbated by government land financing policies.

MATERIAL AND METHODS

In this research, mixed mode of research was employed which incorporated analysis of GIS maps, questionnaire survey of the households and Focal Group Discussions. GIS maps for the 1985, 1995, 2005, 2015 and 2019 were analysed. Household questionnaire survey was administered to, respective communities in Ghizer (Kahkuch and Damas). Focal Group Discussion (FDGs) was held in the district headquarter Gahkuch to further validate the responses of the survey. The data about utilization of land and economic benefits was obtained in the selected villages of for last 10 years. A total of 105 responses from the households, were collected from the Gahkuch and Damas in Ghizer district. The study area has been shown in Fig 1, which also shows the altitude of various parts. The households were randomly selected from the studied areas.

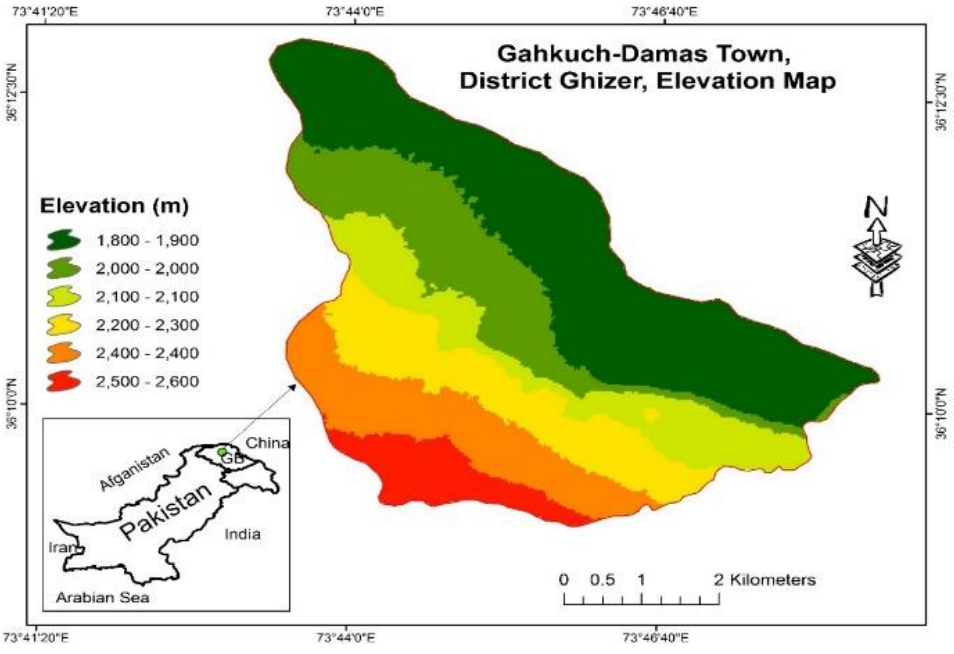


Figure 1. Location map of the Gahkuch Damas town of Ghizer district of Gilgit Baltistan Pakistan

RESULTS AND DISCUSSIONS

Analysis of GIS sentinel maps

The sentinel maps of the study area have been given in Fig 2. The changes in various forms of land have been given in Table 2 and graphically shown in Fig 3. The following LCLU changes have been observed from the analysis.

Area under River and Water body: This part has reduced slightly by 1.87% during the study period (1985-2019) and the area under river/water body is about 11-12% of the total catchment area. The area under the waterbodies in Ghizer district is located in deep ravine, where the construction of buildings is not possible and such areas are always under the threats of floods. Hence its nature of land use has not been changed to greater extent.

Built-up and Agricultural area: The under built-up land areas and agriculture land areas have shown substantial increase from 58% (1987) to 81% in 2019. The catchment area of the town remains about 3100 Ha. The bare rock part of the land has however reduced from 29% to 7.42%, which has been consumed mainly by the built up area. The relative gain and loss of the various types of LCLU changes has been given in Table 2. In the earlier study of Ishkoman valley in Ghizer district, it has been reported that the land areas under the settlements and agriculture has been increased from 1% to 3.1% during 2008-2018. But the areas under postures and forests reduced substantially from 18.7% to 5.1% in the meanwhile (K.Nabi et al 2019). The decline in the area under postures and forest is one of the major concerns in the HKH region, which is attributed to desertification due to decreased rainfalls, overgrazing and top soil erosion due to water and wind etc. (Sharma et al 2022, Wang et al, 2022).

Table 2. Four Decadal (1987 to 2019) Land Use and Land Cover Database Changes for District Ghizer (Gahkuch-Damas) Pakistan

Hectares	**Landscape pattern change from 1987 to 2019 in Gahkuch-Damas town**									
	1987		1995		2005		2015		2019	
	Ha	%	Ha	%	Ha	%	Ha	%	Ha	%
River/water body	400	12.90	323	10.42	344	11.10	300	9.68	342	11.03
Built Up Area/ Agriculture	1800	58.06	1907	61.52	1958	63.16	2235	72.10	2528	81.55
Bare Rock/Open	900	29.03	870	28.06	798	25.74	565	18.23	230	7.42
Total	3100	100	3100	100	3100	100	3100	100	3100	100

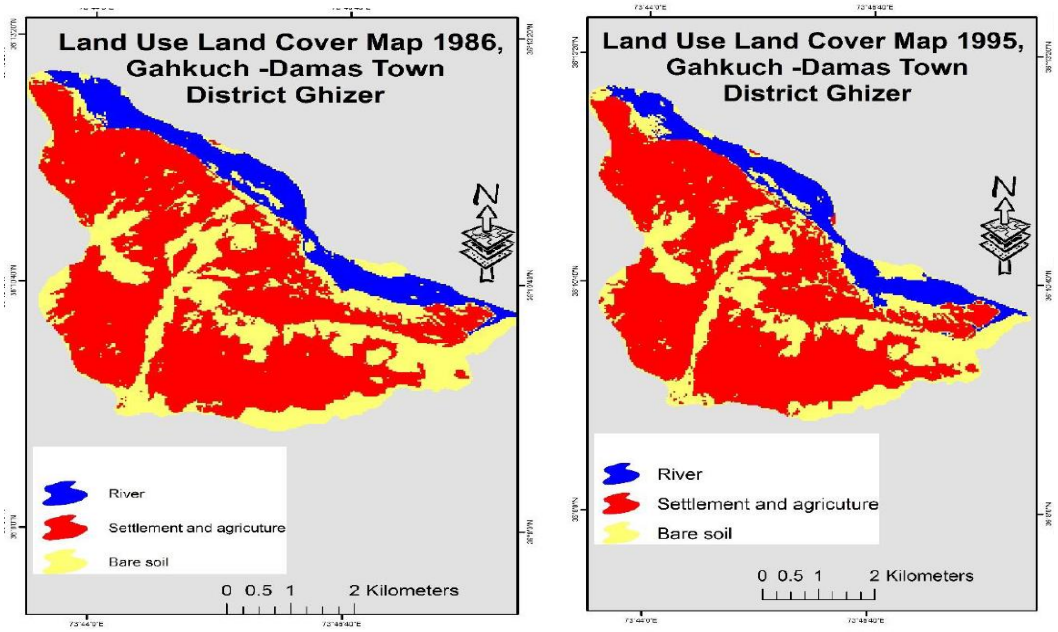


Fig 2a. GIS sentinel maps of the study area in 1986 and 1995

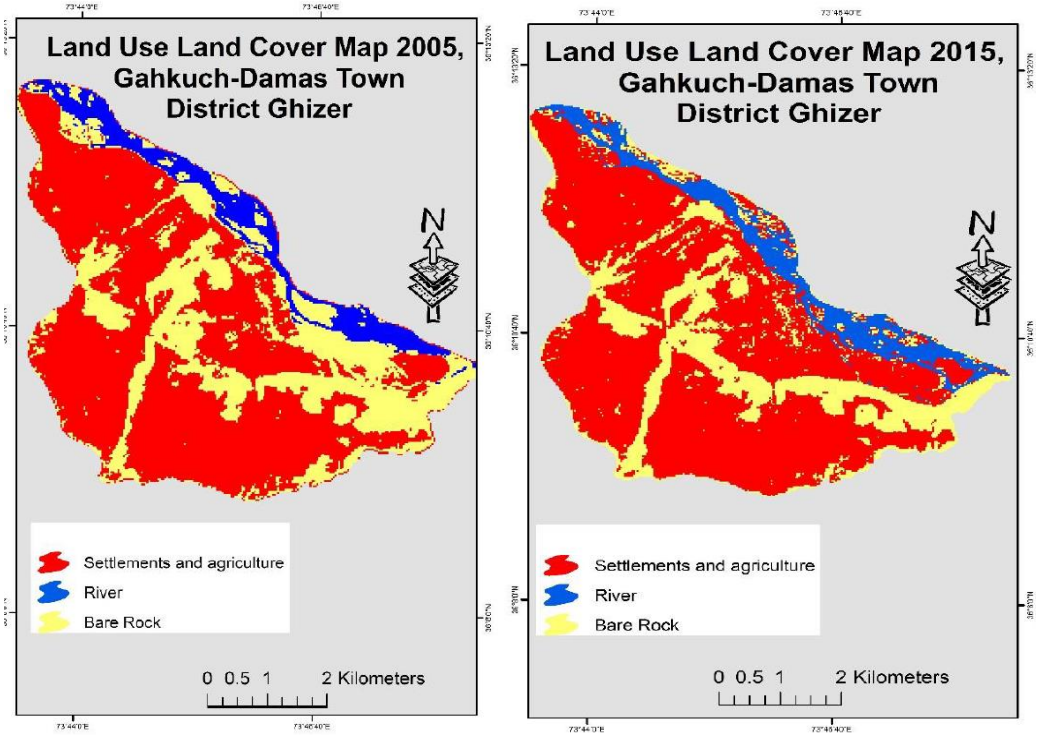


Fig 2b. GIS sentinel maps of the study area in 2005 and 2015

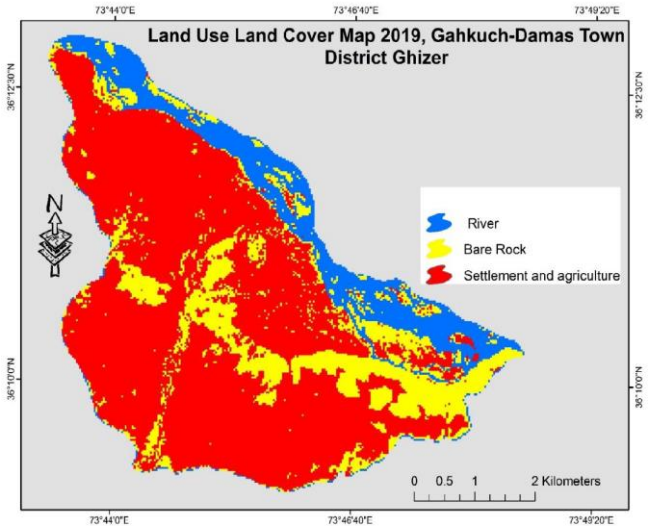


Fig 2c.GIS sentinel maps of the study area in 2019

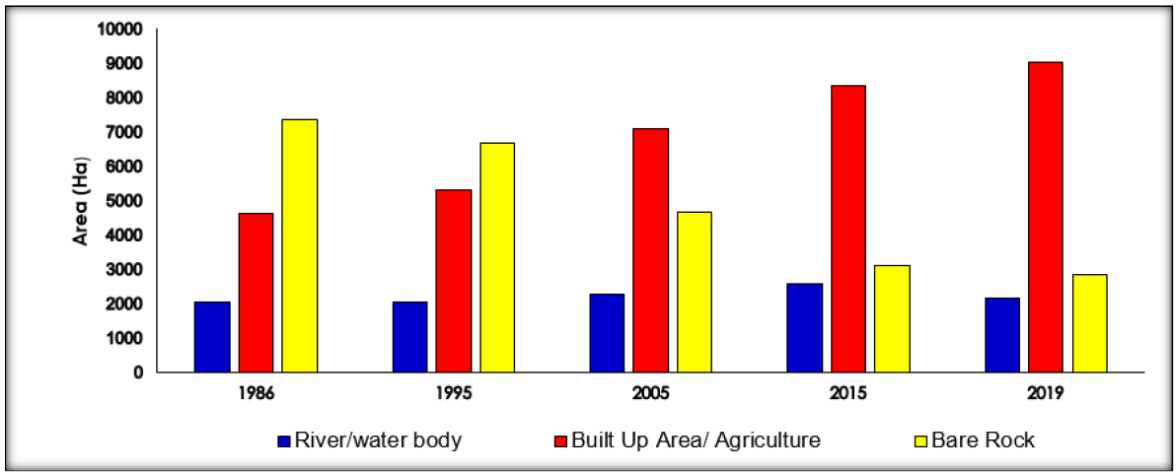


Fig3. LULC Changes in Kahkuch Damas (Ghizer district) of Gilgit Baltistan during 1986-2019

Change in the land sizes per household

The changes in landholding per house hold at present, 5 years back and 10 year back level, for various types of lands such as built up areas, cultivable areas, orchard land, commercial land and barren land has been given in Fig 4. This shows that due to population increase and change in the use of land, the landholding per household has been decreased in last 10 years. This decrease is more pronounced in last 10 years.

Table 3. Area and amount of change in different land use/cover categories in Gahkuch-Damas during 1987–2019

Land use/cover categories	1986		2019		Change 1986 - 2019	
	Ha	%	Ha	%	Ha	%
River/water body	400	12.90	342	11.03	-58	-1.87
Built Up Area/ Agriculture	1800	58.06	2528	81.55	728	23.49
Bare Rock	900	29.03	230	7.42	-670	-21.61

The landholding per family under various categories of land has shown decline mainly due to population increase and immigration of people from outside. The local people also sold their family land to immigrants from outside the district. The average land holding per household in Gilgit Baltistan Chitral (GBC) is 0.48 hectares which is four time less than the national average of 2.09 hectares. This land is not sufficient to create food security in the region (A.Hussain et al 2022). The low agricultural land holding per household, poor fertility of the land and use of subsistence agricultural methods lead to poor per hectare yield in the region. This creates no incentive for the local people to grow their own food and the food insecurity, as a result is increasing with every day. This has further worsened with the impacts of climate change in the form of flash flood, Glacial Lakes Outburst Floods (GLOFs), landslides etc. (Hashmi et al, 2021). The food subsidy provided by the federal Government on wheat and flour to the region also de-incentivize the local farmers for increasing their agricultural productivity and they instead prefer to convert their agricultural land to commercial land. The policy for subsidized food in the HKH region has led to loss of biodiversity (Mukerjee, 2019).

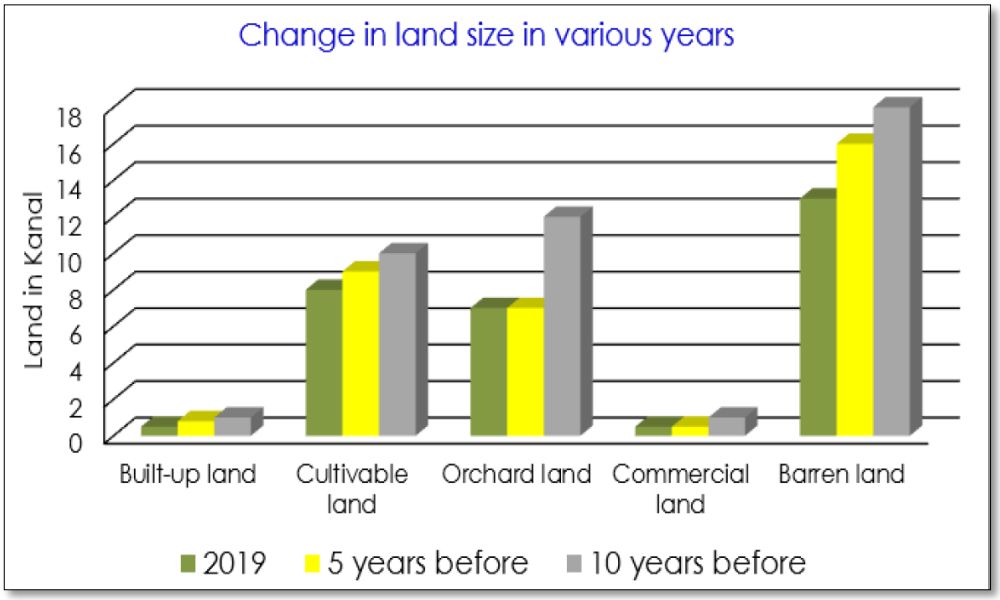


Fig4. The LCLU changes per household under various classes of land during last 10 years.

Changes in Land Valuation

The market value of the various classes of land was assessed through questionnaire survey and the mean value has been given in Fig 5; which shows that the price of commercial land has been increased by 2.5 times from Pak Rupees (PKR) 300,000 (1US$=PKR250) to PKR. 800,000 per kanal (. This increase in the prices, has motivated the local people to sell their land to the immigrants from other parts of the province and country. The orchard and cultivable land has not witnessed, any sizeable increase in the prices during last 10 years. A significant portion of the land has been utilized for the development of new residential and commercial structures, as depicted in Figure 5. Similar

patterns have been observed across other areas of the region. In Hunza, the growing number of both domestic and international tourists has intensified the demand for land-use changes, leading to a notable rise in land prices (Amjad A., 2021). Tourism has largely created negative impacts on the natural environments and social norms of the region, with more commercialization and change in the land use from agriculture to construction of new buildings and hotels etc. (Jehan et al 2023).

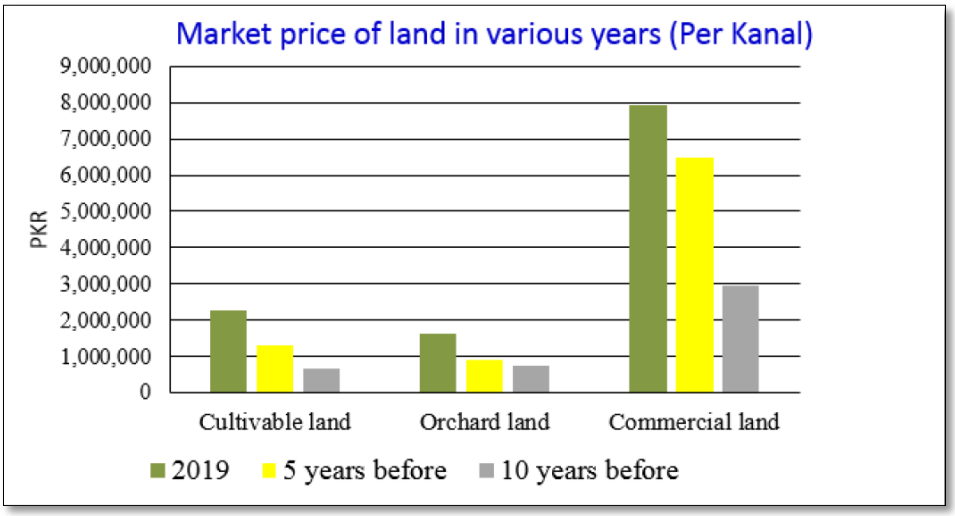
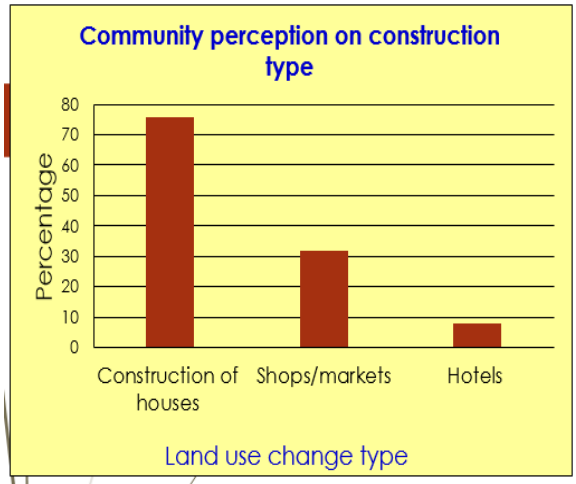
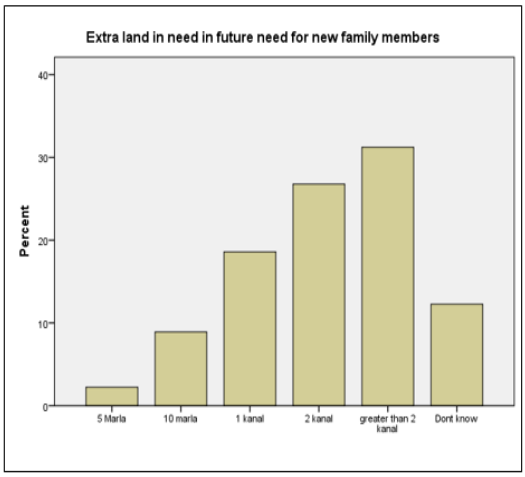
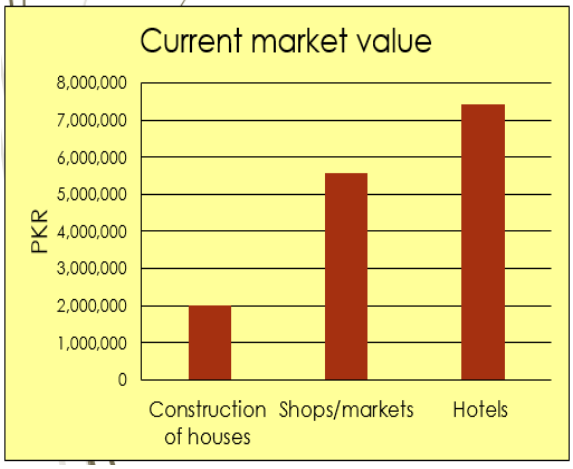


Fig 5. Changes in market value of various classes of land due to Land Cover Land Use changes.







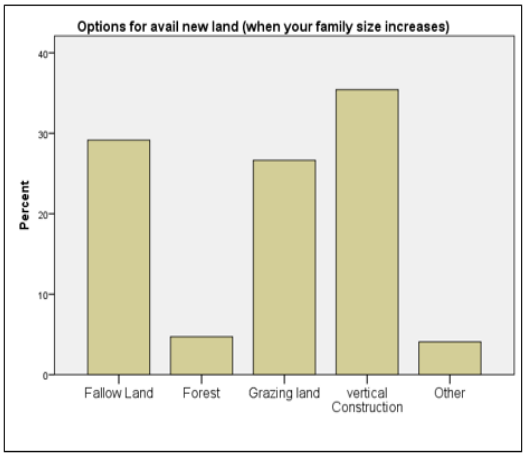


Fig 6. Land use change types, demand of extra land per household and current market value of the commercial land for various uses.

Fig 6 shows that majority of the people have responded that they will need about 2-3 kanals of land for their families. Similarly, they will prefer to use the follow and barren land for this extension of land.

Livelihood dynamics of the people. Agriculture and livestock have been the major sources of income and livelihood. However, in last 10 years, livestock per household has been decreased sharply as shown in Table 5. This is highly unsustainable as both the cultivable land and livestock per household have decreased, leading to low agricultural productivity and poor livelihood of the people. In earlier study by Perdeep (2001), the decrease in the cattle census has been reported. This trend is also continuing in the Ghizer district. At the same time, the climate changes in the region has led to high floods, degradation of range land and forests and agricultural land, which has further jeopardized the livelihood of people. This has forced about 11-23% of the local people to out-migration from the region across the HKH region (Abid et al,2016). The major environmental, sociocultural and economic challenges in HKH has created severe impacts on livelihoods, environmental conditions, and sustainability (Gioli, G. et al 2019). The loss in agricultural land has also created food insecurity in the mountain regions of Pakistan including Ghizer district (Golam R 2015).

Table 4. Change in average number of various types of livestock during last 10 years.

Type of livestock	Average Number of Livestock per family 2019	Market Value in 2019 (Pak Rupees-PKR) (1 US$= 280PKR	Average earning from livestock per family in last one year (2019)	Average Number of Livestock per family 10 years before
Cow	2	55507	45000	4
Goats	3	16822	33000	11
Sheep	5	9252	20000	13
Yaks	4	10000	100000	12

Results of the Focal Group Discussions at Gahkuch-Damas (Ghizer district)

Focal Group Discussion (FGD) plays an important role in the qualitative research, where Krueger and Casey (2000) place important questions before the experts (6-8) in the relevant field as per guidelines provided. Professional moderator was arranged for the FGD, who could engage the experts in positive discussion, as his role is very important for creating conducive environment for FGD (Hennink et al 2011). For efficacy of FGDs, it is recommended that other methods may also be used in combination with SDGs, to get a comprehensive perspective of the issues (William 2012).

Based on questionnaire survey, six important questions and concerns of the community were reported. This was further elaborated in the FDGs, held at

Gahkuch Ghizer. The observations under each question and concern have been given as follows.

Q.1 Land Cover Land Use (LCLU) trends in last 30/40 years. The following major responses were noted in the discussion.

- Agriculture land being converted for houses and construction of commercial centers and hotels. Such trends have also been witnessed in the high altitude regions of HKH such Thimphu Bhutan, where uncontrolled developments, policy changes and population growth has led to degradation of the land use and land cover (Sonaum et al 2021).

More education and employment in the public sectors, has forced the people to abandon their agriculture activities. The fertility of the lands also declined with growing the same crops for long time as no research support and soil testing facilities are available. In recent studies, the use of diversified crops and alternate water supply have been widely advocated for improving the food security in the mountain regions (Hussain et al 2020)

In some places like Gakhuch more commercial activities forced the people to convert agricultural land into commercial uses. However, this trend is not very prominent in other parts of the District Ghizer.

People from different parts of the district are also migrating to the district headquarter, creating pressures on the available land. No policy guidelines exist to check such trends. This trend has been observed across the HKH region (Rawat et al 2022).

Q.2 Land Prices projection and trends in last 2-3 decades

In last 20 years, 100 times increase in land price has occurred from PKR 35000 per Kanal to PKR 3.5 Million per Kanal, thereby recording 100 times increase during 2-3 decades.

Due to extensive erosion and cutting of soil by river due to non-availability of proper diversions and protection works, the available land is decreasing in some parts including Gakhuch.

Commercialization of the district headquarter is creating opportunities for local but unsustainable use of the land, is creating pressures on the land. Fruit orchards have increased as people are not interested in growing wheat due to its less attractive prices as flour is available on subsidized prices.

The availability of water both for agriculture and drinking is becoming a bigger challenge.

With the advent of CPEC and construction of Shandur Expressway by the present Government, the land prices are also likely to increase as tourism will be enhanced in the region. This has already been reported by Shamsa K (2022) that the locals are selling their lands to the Chinese entrepreneurs after CPEC at higher prices. The increase in land prices have been observed in other parts of HKH as well. The urbanization in most of the cities have created many challenges for the land.

Q.3 Migration (Inflow and outflow) of people and their impact on local land resource

The district headquarters attracting people from within the district, GB and country.

The increased migration due to growing tourism in future will lead to increase in the prices of land.

More tourism may bring better employment prospects for the people of the region, however the expected negative impacts may be carefully evaluated. Migration of people to higher altitude with the climate changes in the region have already created negative impacts on the flora and fauna (Satti et al 2023)

The social and culture values will be threatened with the increased tourism. Better town planning and urban planning is required for saving the lands from further deterioration (Chao et al 2023).

Q.4 Tourism and Opportunities for the local people and expected threats to Eco System.

Serious concerns were shared by the experts about the negative impacts of mass domestic tourism. The major attraction of the region is its wilderness which must be preserved while developing the region for tourism. Such tourism has both negative and positive impacts (Najam et al 2019).

High value international tourists cannot be attracted due to lack of facilities like access roads, trained human resources, proper guest houses and hotels etc. The power outages and lack of internet facilities also hamper to attract high quality tourists. There are high potentials of cultural and religious tourism in the region, which can bring more value addition (Anas et al 2021). External investors are taking benefits of tourism, to a greater extent. A policy for engaging the local people in these businesses must be developed. It was also observed that tourism readiness assessment of the region is required for different parts of the region.

The local committees must be formed to discourage the sale of lands to external people or some partnership model may be introduced. The region is threatened with issues like water availability, solid waste, sewerage etc. Province level legislation and policy making is required for land use land cover changes and sale of lands. In recent initiatives, the Government has banned the sale of land to outsiders.

Q.5 Strategies and Recommendations for the Government interventions for sustainable land use and tourism

Provincial level legislation required for external investment in the commercial and tourism activities. The existing issues related to the settlement of land, hamper large scale investment in the region. The present Government has initiated Land Reforms Strategy, which is under legislation process. It is expected that Land Settlement issues will be resolved through legislation in consultation with the communities. Mineral deposits of the region provide greater opportunities of socioeconomic development for the people (Makani, 2020). Mineral Exploration and exploitation must be covered under rules and legislation.

Town Planning and Urban Planning must be done in all parts of the region as at present, there is no organized town planning in the region. Local tradition and cultures must be conserved and made be part of the Tourism policy. As part of conservation strategy, cultural tourism needs to be promoted (Saranjam et al, 2022). Community involvement in the legislation and policy making must be encouraged, so that ownership of the community can be ensured.

CONCLUSIONS AND RECOMMENDATIONS

This study of Land Cover Land Use (LCLU) changes was motivated mainly due to growing trends of urbanization and unsustainable use of land in Ghizer district of Gilgit Baltistan (HKH region, which is fast urbanizing area. Mix method of data collection incorporating analysis of GIS remote sensing maps, questionnaire survey and Focal Group Discussions (FGDs) were used. Based on the analysis of the data, the following conclusions have been made:

The LCLU changes in the Ghizer district Gilgit Baltistan are unsustainable as the built up area is increasing at the cost of barren and agriculture lands. During last 40 years, the built up area has increased by about 23%. The barren land has been mostly consumed for construction of new houses, shops and hotel, thereby showing increasing trends of commercialization. This trend has been observed in all parts of the HKH region (Ayatullah et al 2021).

The landholding and livestock per household has been sharply reduced due to increase in population mainly. This has led to low productivity of land and or socioeconomic conditions of the majority of the people. In the long run, this has also threatened the food security of the region.

The market value of commercial land has increased 2-3 times in last 10 years, which has forced the land use for more commercial activities and sale of land to the people from other parts of the province and country. This needs to be checked through legislation and proper urban planning.

The Focal Group Discussion (FDG) has further validated the responses of the majority in the questionnaire survey. The summary is reproduced as follows:

On the question of the LULC changes in last 30-40 years, majority has declared commercialization, trends of employment in Government has led to reduced agricultural activities. They have recommended that Government must legislate for proper land use and town planning.

On the question of price increase of the land, the majority have responded high increase in the prices of land. With the construction of CPEC roads and Shandur Express way which will connect the Gilgit Baltistan with the KP province and Central Asia through Chitral and Wakhan Corridor, more economic activities will be generated, leading to more commercialization and sale of land to the immigrants.

People are migrating from different parts of the GB and country to the district Ghizer. The relatively less prices of non-commercial land is encouraging the

immigrants to purchase land from the locals, which is changing the ownership structure of the land. There is a need to develop the local land for commercial purposes on lease or partnership basis.

More tourism in the region will crop up but this will threaten the fragile ecosystem of the region, hence the concept of sustainable and ecotourism needs to be promoted, through involving the local stakeholders.

On the questions of sustainable land use, they have proposed for legislation and settlement of land record. The community readiness for tourism must be conducted and they may be involved in the policy making related to the land ownership and land use.

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