

A CONCEPT DEVELOPMENT PLAN FOR THE UPGRADING OF VILLAGES IN KABUL NEW CITY – IN THE CASE OF KHOJA-GHAR VILLAGE –

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Abstract— Kabul the capital of Afghanistan with more than 4.5 million people is one of the fast growing cities in the Asia since interim administration took place. However, the Kabul city was planned for projected 2 million populations in 1978, the influx of returnees from neighbor countries and other provinces of Afghanistan (IDPs) caused high rate of artificial growth and finally slums increased. Due to overcome this problem and take measurements for the future urbanization process, in 2006 a new project under the name of Kabul New City (KNC) has established. There were already 54 villages existed in the area where the new city was planned, based on the strategy of KNC these villages needed to be preserved and improved.

This paper presents a concept development plan which was prepared for developing of a village under the boundary of KNC. The plan looks sustainable as it can establish a good harmony between rural and urban area and as well as can enhance the quality of life for the villagers. Moreover, this study will set a vision and criteria by which sustainable development shall proceed in other villages of Kabul New City.

Index Terms— Kabul New City, Villages, Urban-Rural Integration, Upgrading.

I. INTRODUCTION

The population of Kabul City, the capital of the Islamic Republic of Afghanistan was about 2 million in 1999; however it is more than 4 million at present, which is beyond the functioning capacity of the city. Increase of population is continuing with accelerating speed and it is prospected to reach 6.5 million in 2025. With the rapid increase of the population, typical urban problems such as lowering of ground water table, pollution of drinking water, air and soil, influx of illegal migrant represented by domestic refugees, traffic jam, deterioration of sanitation environment, etc. are became critical.

In 2006, the President of Afghanistan established an Independent Board for the development of a new city in Dehsabz and Barikab area of Kabul. The Board consisted of Senior Economic Advisor of the President, Minister of Urban Development, Minister of Agriculture, Irrigation and Livestock, Kabul Mayor, leading private sector representatives, urban planning specialists and an urban economist [1]. As a national priority, the Board formed the Dehsabz City Development Authority (DCDA) in late 2006 as its financial and

implementing body. The DCDA was tasked to pave the way through mostly private sector-led activities for the administration, design, documentation, marketing, implementation and maintenance of this exciting new economic hub for Afghanistan and the region.

Under these situations, the Government of Japan carried out the study for development of the Master Plan (MP) for the Kabul Metropolitan Area in the Islamic Republic of Afghanistan from March 2008 till August 2009 and formulated the Master Plan for the development of Kabul Metropolitan Area, which have been planned up to 2030.

In order to implement the MP smoothly and have support of the existing villages within the KNC Master Plan, DCDA decided to prepare a development plan for the villages that would be preserved and developed. Following figure shows the location of KNC in Kabul metropolitan area.

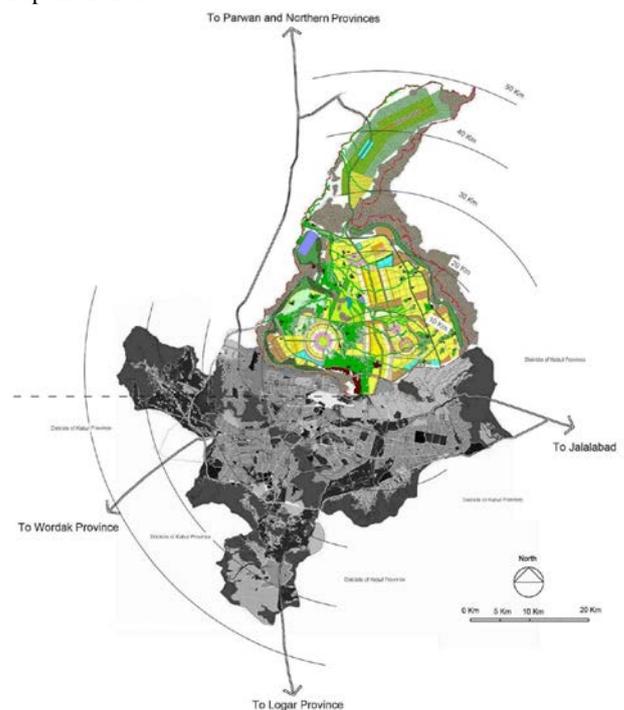


Figure 1. Kabul Metropolitan Master Plan, Location of the KNC Project

Totally there are 54 villages in KNC Master Plan but all may not be preserved; preservation plan and criteria for preservation would be developed separately [1].

DCDA encourages the development of an integrated plan that includes physical, economic and social development to improve villager's livelihood. The Plan assists to identify the community needs and priorities to plan effectively to develop preserved villages and use some of their resources to improve their villages in a sustainable way.

In Afghanistan the concept of urban village is a new experience. The idea of urban village in KNC (Kabul new city) introduced by development of this new city. Urban village, just as its name implies, refer to the villages which are located in cities. The term of urban village is also the expression of uncompleted urbanization under special social institution and social condition.

The serious consequences generated by development of rural villages blindly have been realized by more and more people. Under these circumstances the DCDA put forward the strategic goal of villages in KNC. They emphasized to boost the preparation of development plan for individual villages located in KNC to balance and maintain the benefits among different groups especially low-income group and villagers.

Location

The study area is known as Khoja-Ghar village and located in Dehsabz South with the land area of 48.1 ha. The village is bordered by Safi Mountains to the east, Phase (I) extension area to the west, Phase (I) extension area to the north, the foothill of the Hindu Kush and military zone to the south.

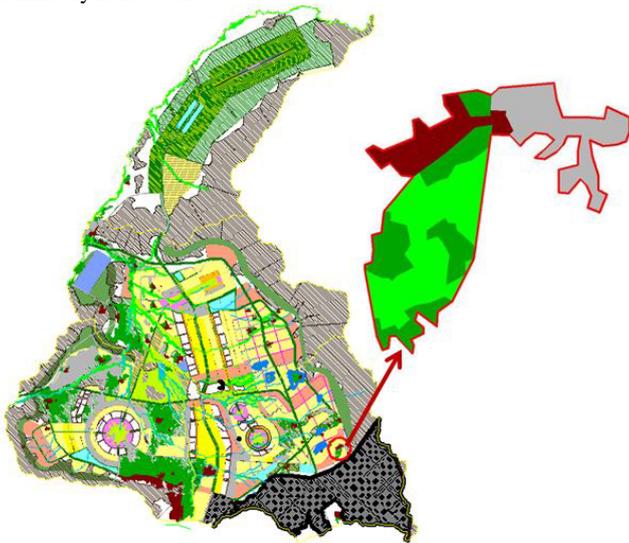


Figure 2. KNC Master Plan and location of the village

Purpose and Aim

Villages in KNC shall be a symbol of integrity of an afghan traditional culture in a modern city which should have equipped with all basic facilities and infrastructure with an improved quality of life. The purpose of this research is to provide development concept and guidance to assess, promote and achieve appropriate development in Kabul New City villages. From a big perspective the main objectives are mentioning as follow:

- To develop the existing villages in such a way to improve quality of life by providing physical and social infrastructure.
- To create harmony between urban (City) and rural area (Villages).

- To enhance physical connection of the village with city.
- To improve the existing condition according to the design principles.
- To improve and preserve culture heritage.
- To enhance the village market connectivity as part of the future economic growth of the New City.
- To provide mechanism in order to improve the production of agriculture and livestock.

II. METHODOLOGY

The methodology which has conducted in this research consists of the literature review regarding KNC master plan, village development plan, upgrading and some developmental methods for alleviating the slums. The KNC master plan main report have defined some principles for land development in Dehsabz and Barikaab area; preservation of existing villages was the main priority and strategy of KNC. In this regard we choose a village which was located near the Ph-I (Pilot Project), data's regarding the socio-economic and environmental condition of the village have collected and a concept development plan has prepared to maintain a good urban-rural complementarity and enhance quality of life for the villagers.

III. EXISTING PROFILE OF THE VILLAGE

Generally we can say that the village is a slum area according to their characteristics but the only issue which can differentiate villages with slum area is the identity of villages. All the villages which exist in KNC has identity, the people who are living in these villages have identity but in slums there is no identity for the area and the people who are living there; but according to sanitation, security and environmental challenges, we can say that villages and slums have the same characteristics. The current condition of the villages are not admirable because of poverty, poor quality of life, lack of infrastructure, shortage of public facilities and so on. A detailed study has been done on the existing condition of Khoja-Ghar village and some important component of the village profile including socio-economic, environmental and physical conditions have been explained as follow:

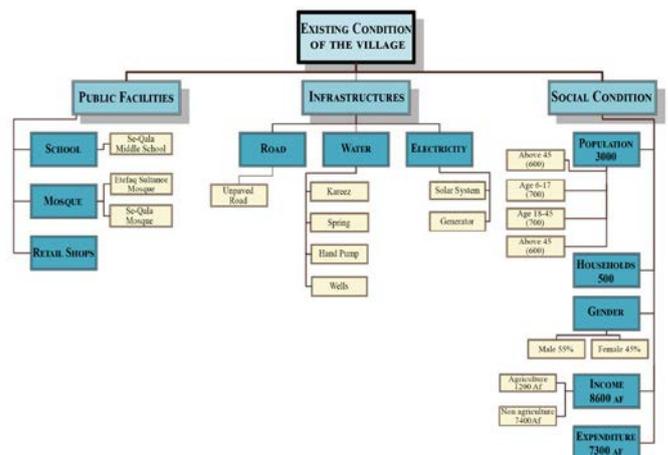


Figure 3. Existing Profile of the Village

Topography

The topographic map shows that the Khoja-Ghar village is in slope area close to the Safi Mountains. Topography descends from east toward the west with inclination of (7.1%) slope.

Moreover, there are large and small gullies which the surface water is passing through during the specific period of time in the year.

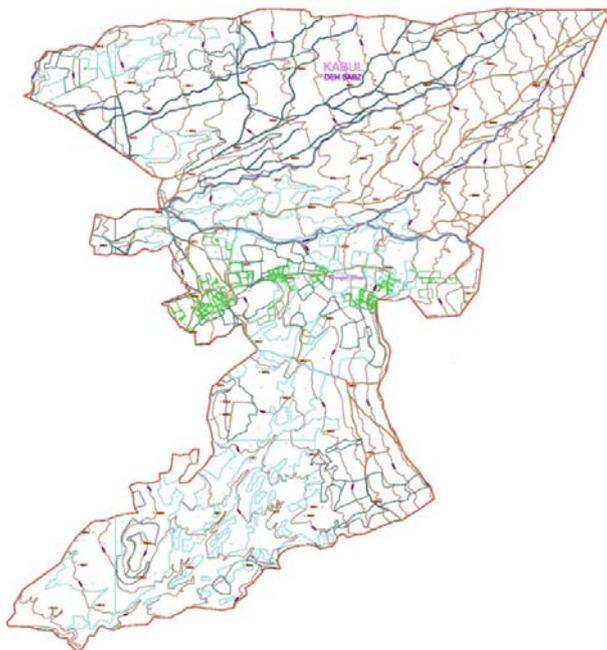


Figure 4. Village Topographic Map

Demography

According to baseline survey, the population of Khoja-Ghar village in 2009 was estimated about 3000 people. Later the DCDA and village team conducted a new survey on the village which shows approx. 3000-3500 population [2]. The following table shows the population structure, gender and age distribution of the aforementioned village.

Table 1. Household and population based on JICA base line survey

Household	Village area	Total Population	Population per household	Capita/ha
500	48	3000-3500	7-9	72.9

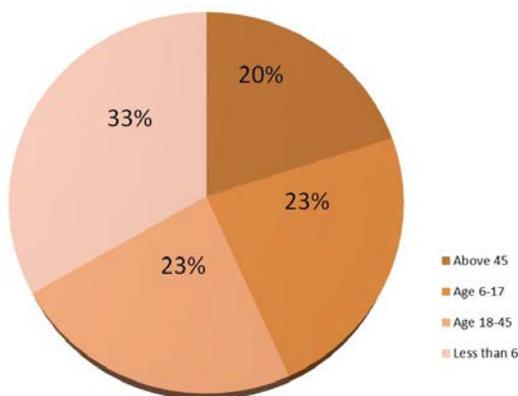


Figure 5. Population structure of the village

Villagers Occupation and Income

Majority residents of Khoja-Ghar village are involved in agriculture and vineyard. Standard of the living is low in the village, the average monthly income of a family is 8600 Afg and the average expenditure is 7300 Afg. The main agricultural products of Khoja-Ghar village are wheat, potato, grapes and melon and in livestock most of the residents are involved in cattle and poultry services.

The literacy rate of the village is in a very low level, majority of the residents are illiterate, and there is only one secondary school by the name of Se-Qala in the area.

Existing Land Use of the Village

All 54 villages which exist in KNC have the same housing typology and settlement pattern. According to the construction material, there are four types of houses in Khoja-Ghar village; majority of the houses are made of Mud-bricks with wooden beams, some houses are made of mixed-brick wooden flat roof with concrete floor and recently some concrete houses also have been made in this village.

Agriculture land has covered a vast portion of this village as most of the people are involved in livestock and agriculture. Following figure presents the existing land use of the village.

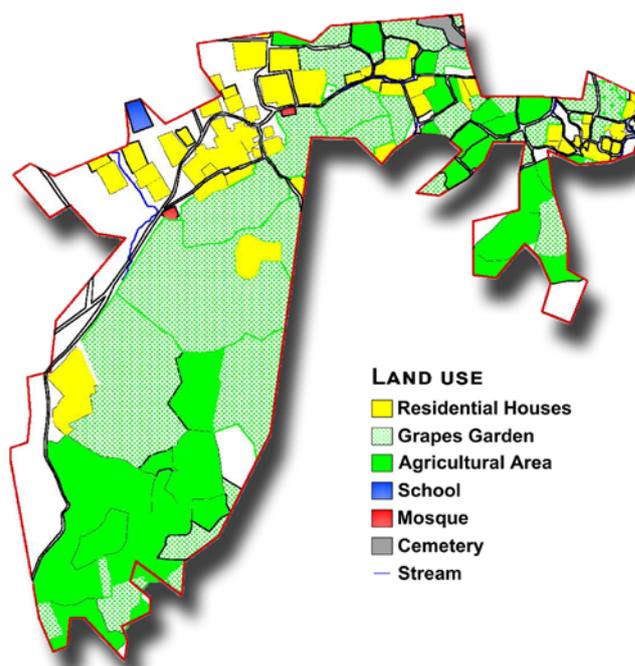


Figure 6. Existing land use of the village

Table 2. Existing land use specification of the area

Area	Existing Village Residential Area	Future Extension of Residential Area	Total Residential Area	Existing Agricultural Area	Future Extension of Agricultural Area	Total Agricultural Area	Total Area of Village
(Jirab)	35.7	86.04	121.74	61.9	57.15	119.05	240.7900
(Hactae)	7.1	17.2	24.348	12.4	11.4	23.81	48.1580

Drinking water

Generally there are 4 types of water resources available in KNC villages (wells, spring, hand pump and Karez). The underground

water level in KNC villages various from 20m to 50m, most of the karez have dried up and level of water has decreased.

The bellow table shows the main sources of drinking water, average fetching time and the consumers of water per capita per day in Khoja-Ghar village which is based on JICA base line survey:

Table 3. Drinking water in Khoja Ghar Village

Main Source Of Drinking Water	Number of Public wells	Average Distance From Houses (m)	Average Fetching Time (Time/Day/Family)	Average Quantity (Lit./Day/Family)	Average Quantity (Lit./Day/Cap)
Wells	15	85	7	280	40

Road Network

The Roads which exist in this village are in worst condition and residents are facing with the following problems:

- The roads are unpaved.
- Not having footpath, buffer green and carriage ways.
- Right-of-Way (ROW) of the roads are not adjusted according to the needs of the site.
- There are so many dead end roads, zigzag and irregular alleys.
- Lack of proper drainage channel.
- Poor accessibility from the residential area and poor connection to the main roads, commercial and agriculture areas.

Drainage and Sewerage System

In Khoja-Ghar village there is no any proper drainage and sewerage system, therefore lots of social and environmental challenges have been created. The toilets (local latrine) are in a very bad condition, lack of chamber cover and window mesh have caused that the alleys look bad with stinky smell which is certainly harmful to the health and as well as caused problems for the neighbors.

IV. DEVELOPMENT PLAN

A Village Development Plan (VDP) is a plan outlining the desired developments - according to the inhabitants - for the quality of life within the village and in the immediate surroundings.

One of the reasons that villages of KNC are preserving in master plan is to create the complementary between the city and villages. In pursuing a unique urbanization model, the Kabul urbanization should take advantages of the presence of rule and agriculture areas within city boundaries and existing villages in the new city areas; therefore, this idea has been recommended and taken in to consideration in the development process of Khoja-Ghar village.

On the other hand there should be a harmonic relation between village and city area, both village and city will take the mutual advantageous from each other. The concept of Khoja-Ghar village is strengthening the social cohesion between the village and city.

At the initial period the only services which we can provide for villagers, is to proceed upgrading method.

The term 'upgrading' refers to the measures to improve the quality of housing and provision of housing related infrastructure and services of the settlements that are considered to be slum or developed illegally [3]. Moreover, upgrading is a common concept, which basically means the provision of basic services to improve living

conditions in an existing settlement in a manner that does not result in major changes to the physical layout of a neighborhood; it also refers to any sector-based intervention that result in quantifiable improvement in the lives of people [4]. According to Cities Alliance (2009), it is a process through which informal areas are gradually improved, formalized and incorporated into the city itself through extending land, services and citizenship to informal dwellers. It involves providing or improving basic infrastructure and services: water supply and sanitation, electricity, drainage, and roads [5]. Following figure shows the road improvement which has been proposed for Khoja-Ghar village.

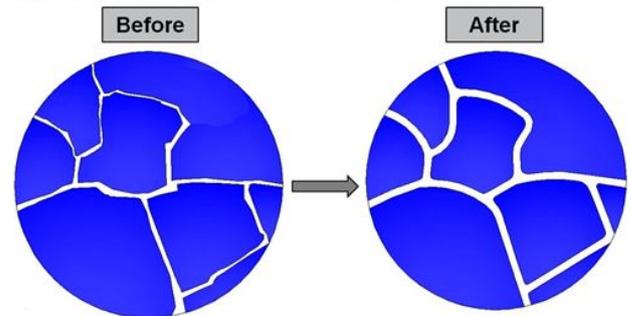
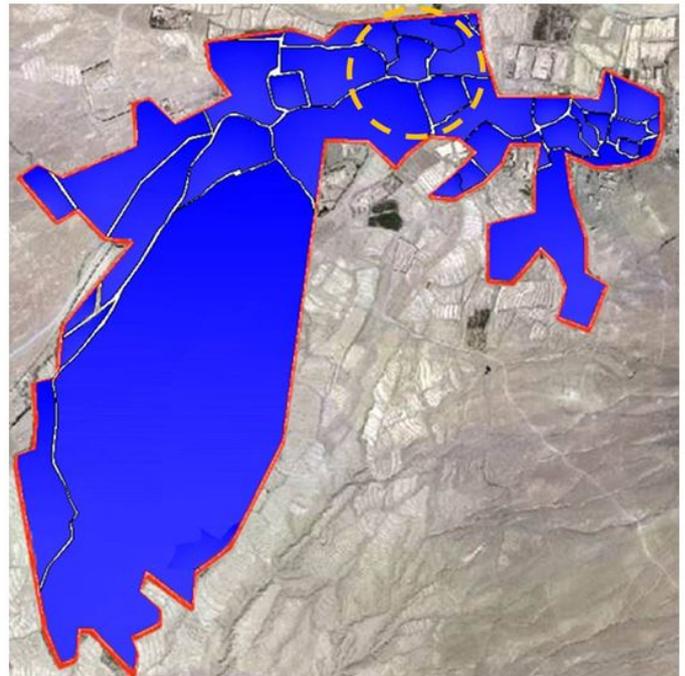


Figure 7. Road Improvement of the village

Some alleys and roads are straight and have not the problem of functionality but only needs to be improved; in the concept development plan we proposed to pave the roads and provide them with drainage system. A typical example of such improvement has shown in Figure. 8.



Figure 8. Road Improvement before and after the upgrading

Proposed Public Facilities

These public facilities are categorized in short, mid, and long term. Those public facilities which have been constructed by local materials, is recommended to be preserved with the same material to restore their originality and traditional architecture of Afghanistan.

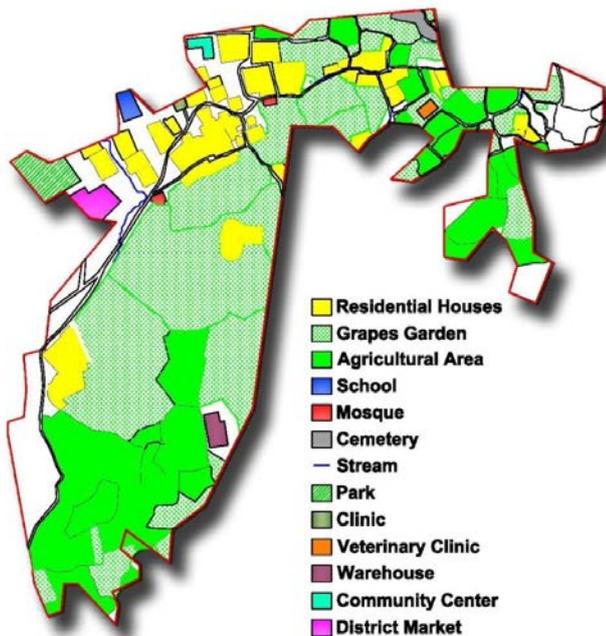


Figure 9. Proposed Public Facilities and Development plan

We cannot provide all public facilities for the villages in rural area but in order to maintain the complementarity between rural and urban area, we have endeavored at least to provide very basic and important social amenities such as (health center, veterinary clinic, park, commercial market and community center). Figure.9 shows the new public facilities which have proposed for Khoja-Ghar village. In the following we have explained about each individual public facility.

Park

Parks and recreational areas facilitate the social interactions that are critical for maintaining community cohesion and unity. Parks provide a meeting place where community members can develop social ties, and where healthy behavior is modeled and admired. People gather to share experiences, socialize and to build community bonds in common green spaces. These public commons are often the glue that holds the community together and the means to maintaining and improving future positive social interactions. A place has devoted for the park and playground in Khoja-Ghar village. In order to better maintain the accessibility radius between the villagers and the park according to the urban planning principles so some important points must be taken into consideration such as: It should be planned in the right location and should not be the remainder when other land uses have been provided. It should also be accessible, suitable, functional and usable and not merely an area included making up the required standards.



Figure 10. 3D of the proposed park

Clinic

In Khoja-Ghar village there is no any proper health facility for the villagers. Health center is a vital need to be taken into consideration in the village development plan. The bellow picture shows the proposed health center for the village. It's noteworthy to be mention that local materials are suggested to be used while building these facilities in order to minimize the project cost as well as to match with the environmental characteristic of the area.



Figure 11. 3D of the proposed clinic for the village

Commercial Area

Commercial areas in a city can take up about 5% of a city's land. It is used for commercial activities. These activities include the buying and selling of goods and services in retail businesses, wholesale buying and selling, financial establishments and wide variety of services that are broadly classified as "business".

In Khoja-Ghar Village in order that the villagers fulfill their weekly and monthly needs they have to travel long distances. According to the urban planning principles due to better make available the facilities and possibilities, three types of commercial areas must be taken into consideration in city (Local Commercial, District Commercial and Central Commercial) areas. Local commercial area is using for the daily purposes, district commercial is allocated for the weekly purposes and central commercial is for the monthly purposes in order to meet the people's needs. In Khoja-Ghar village the villagers only have access to local commercial shops and due to purchase their weekly and monthly necessities, they have to travel long distances even they need to come to cities. Due to overcome this problem, we have proposed a district market in a vacant spot near the village in order to solve the villager's problem and to meet the weekly necessity of the residents.



Figure 12. 3D of the proposed district market for the village

Veterinary Clinic

Agriculture and livestock have a significant role in economy and GDP of the country. In Afghanistan especially in the villages and rural areas, a vast majority of the people are involved in livestock and agriculture field. Livestock described the main income of villagers, they use from their milk, flesh, skin and even they produce and export dairy products for urban areas as well. But due to the non-existing and lack of veterinary clinics in rural areas, it caused that the annual mortality rate of Afghan livestock reach to a high number which have directly affected the income of the villagers and as well as the economy of the city. In Khoja-Ghar village as majority of the people are involved in farming and livestock so a vacant place near the agricultural lands has proposed for veterinary clinic (Fig.13).

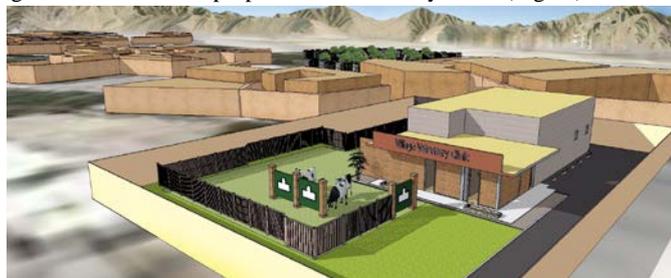


Figure 13. 3D of the proposed veterinary clinic for the village

Warehouse

As Afghanistan is an agricultural country and the vast majority of the Afghans are involved in agricultural related field, so the major occupancy of Dehsabz inhabitants are also agriculture. The economy and income of the villages which exist in Dehsabz area are based on agriculture and livestock. The major products of Khoja-Ghar village are grapes, apple, wheat and potato.

Lack of cold storages and infrastructure prevents many afghan exports from reaching to neighboring countries; many fresh goods will spoil by the time they reach to market. Cold Storage is a special kind of room, the temperature of, which is kept very low with the help of machines and precision instruments. Due to the quantity and quality of the major agricultural products and existing of 12.4 hectare agricultural land under the boundary of Khoja-Ghar village, the development plan recommend to build a warehouse in this village which will not only serve the agriculture land of the village, but can assist in providing services to surrounding agricultural land and neighboring villages as well.



Figure 14. 3D of the proposed warehouse (cold storage) for the village

Community Center

In cities we have districts but in villages we have Gozar which is headed by a wakil gozar also called Malik, who is usually an elder of the area. Gozars vary in size but they usually include 1000-1250 adjacent households, each gozar assembly can be divided into Community Development Councils (CDC).

Community Center is an important part of village which could be used as a communication tool between the people and government, as Afghanistan is an Islamic traditional country, the villagers will make use of the community center as problem solving, enhancing the development through community center, economic and cultural issues can be discussed within CDC's, beside cooperation of community in development projects in each sector such as agriculture, education, construction and etc also can be discussed in here in order to aware people from the advantages & disadvantages of the project and due to inform villagers from public participation in the projects, so existing of active CDC's are much important in village therefore, in Khoja-Ghar village a place in north part of the village has been selected for placing the community center.



Figure 15. 3D of the proposed community center

Cemetery

The cemetery in Khoja-Ghar village is located close to the residential areas which can create many problems by the other hand it has many negative impacts on groundwater and on atmosphere as well. According to the investigations in respect to the graveyards impact on environment, about more than 10 toxic gases has been generating from these cemeteries, which can be much harmful to the residents who are living nearby. Orientation, location and radius of accessibility are also too important which must be based on urban planning principles. In order to overcome these problems, the development plan suggests the following recommendations:

- Planting and greening of the cemetery in order to reduce the negative impacts of the environment.
- A boundary has been defined in the development plan which should be fenced by local material in order to prevent from the arbitrary expansion of cemetery.
- The development plan recommends the establishment of few drainage channels for the purpose of passing drain water to the main channel.



Figure 16. Cemetery layout before and after the improvement

Solid Waste Management

The level of solid waste generation is different in urban and rural areas because it depends on the socio-economy and cultural aspects and situation of people and area. In Villages we don't have production of toxic waste such as (chemical, bulbs, spray can, fertilizer and pesticide containers, batteries, glasses and etc.).

The major and important solid waste generation in villages have mentioned in bellow:

- Animal pests which are the main solid waste that produces in village, but again the villagers are using from it in agriculture field as fertilizer compost.

- The paper which produces as solid waste is generally using for heating and cooking in rural areas.
- As in village majority of Afghans are involved in livestock occupation (cattle and poultry) so the solid waste which produces from the food staffs, is again using for animals.

The very developed and modern solid waste managements are not applicable and sustainable for KNC villages because the amount of solid waste generation is less and the materials are also different compared to the cities. For villages, the best method which we can propose in respect to the solid waste management is the collection point system.

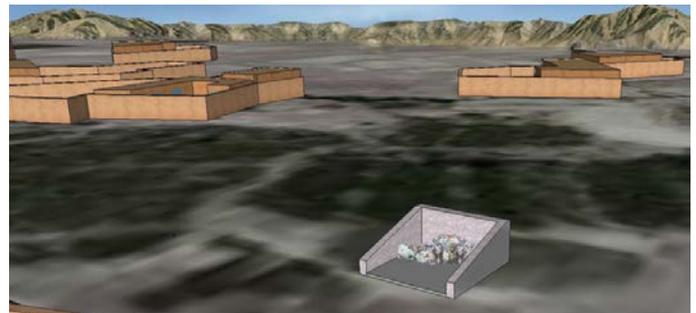


Figure 17. 3D of the proposed waste collection point

V. CONCLUSION

Based on programs and priorities fixed by DCDA, the 4th program envisages preserving and developing existing villages within KNC Master Plan. This development supports the villages in KNC, which is rich in heritage and unique in identity. These villages shall maintain a distinct regional architecture, cultural heritage, and ensure that their agriculture land would be as a part of green belt for the KNC. Villages and heritage are valued by all. For Villages, the development encourages the various land uses and emphasizes the importance of preserving and improving their traditional functions for the continued vitality of villages. Upgrading of rural villages and conversion to urban villages will not only benefit the villagers but the government also can make lots of profit from it. The international experiences show that the preservation of existing facilities and dwelling units are essential, the maximum use of the existing features has considered in this concept development plan. The aim of preparation of development plan is to be a catalyst for positive change and progress of the village in order to anticipate future needs on an objective bases.

This development plan introduces sustainable concept and framework which will guide the development of the village with the consistency of existing situation and consideration of update developmental recommendations.

This does not only help the government to achieve more with less resources, but also can help to prevent from the arbitrary expansion of the village and enhance quality of life for the residents. Therefore, upgrading low-income urban village neighborhoods can be seen as leading to social justice and inclusion as well as a direct application of rights-based development. Thus, upgrading helps governments to abide by globally agreed-upon objectives. At the same time, upgrading opens the door for a real partnership between residents and the government with channels to demand their rights, means to

improve their living conditions and a sense of belonging and social inclusion. Upgrading can contribute to rights-based development in the way it adheres to internationally-approved human rights related to shelter, access to clean water and sanitation as well as access to education and basic healthcare. Instead of leaving urban villages in their underserved conditions and state of urban village, upgrading secures human rights of basic needs and hence encourages villagers to undertake their civic duties in terms of adhering to the law and village systems.

Totally, there are 54 villages in KNC area and almost about 110,000 people are living there, destroying and rebuilding of these villages increase the homelessness and can certainly cause social unrest, by the other hand it is much costly as well.

Upgrading the infrastructure and providing minimum of services is easy for the authorities to provide with much lower costs for the whole development compared to pricey investing options in newer subdivisions [6]. Khoja-Ghar village has been taken as a second pilot project in village development program of KNC project; the concept development plan which has prepared for this village will surely enhance quality of life for the residents and create a sustainable urban-rural integration. The significant advantage of this development plan is that along with the progress of urban area and construction of new city; infrastructures, public facilities, commercial centers, agriculture and livestock of an urban village will also be developed and improved.

Social services such as transport connecting to new city and access to basic infrastructure will be also improved and foundation for higher income will be upgraded. In addition, supplemental relationship between new city and villages will be realized through promotion of employment, selling of agricultural products, processing and provision of place for rest and relaxation.

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