

## Urbanization and Urban Patterns: the Islamabad Experience

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### Abstract

The dynamics of fast urbanization are examined in this paper, with an emphasis on the primary factors that contribute to accelerated urban growth, environmental disruption, and changes in urban pattern. This study was conducted to determine how Islamabad, the nation's capital, has changed as a result of urbanization and urban sprawl. This is because after 1990 onward major changes have been made in the Master Plan due to which Islamabad has experienced accelerated unauthorized growth in all directions and in rural as well as urban area. A qualitative approach based on in-depth interviews conducted face-to-face with local authority members, such as architects, planners, and planning specialists, is employed for this purpose. The planning officers who have got retired from the authority have also been included in the study. In addition, a thorough document analysis is used in this study to present the history of urban development. The results show that ICT Zoning Plan, multiple organizations, lack of institutional framework, lack of proper planning policies, inadequate planning control tools, are the driving forces in addition to the rapid population growth and migration from other cities. It is proposed that the Master plan of Islamabad and related policies for its implementation be reviewed immediately with workable institutional set-up in the Islamabad region in order to regulate unplanned urban growth and to ensure sustainable urban development of the country's capital.

**Keywords:** driving forces; urbanization; environmental disruption; structure of the city; ICT Zoning Plan; Multiple Organizations; Institutional framework; planning control tools

### Introduction

The process of human migration from rural to urban areas is known as urbanization (Goryakin et al., 2017). and entails shifting of land use from agriculture to non-agriculture (LiGerui, LeiYalin, YaoHujun, WuSanmang, 2017). In general, urbanization is regarded as the foundation for the advancement of human civilization (Peter Christensen, 2016) and has had a significant impact on society. The world's population is congregating in cities (UN-Habitat, 2016). The medium and small cities with fewer than one million inhabitants are the fastest growing urban centers, accounting for 59 percent of the world's urban population (UN-Habitat, 2016). Until 2018, cities sheltered more than 55% of the global population. This proportion is expected to reach 68% by 2050 (United Nations, 2019).

Unplanned and unmanaged urbanization may result in increased inequality, a proliferation of slums, and disastrous effects on climate change (UN-Habitat, 2016). Climate change, exclusion and rising inequality, rising insecurity, and an increase in international migration are among the emerging urban issues. Cities continue to be plagued by a widespread fear of crime and violence (UN-Habitat, 2016). Many of the big cities across the globe have been labeled as dysfunctional, owing to urban degradation caused by urbanization, traffic congestion, and rising socioeconomic inequalities (Aziz et al., 2015).

Climate change is already exacerbating and compounding existing inequalities, vulnerabilities, and socioeconomic development challenges in many urban areas, emphasizing the need for proactive climate change adaptation. The frequency and intensity of urban floods are already increasing due to higher and more intense rainfall, as well as poor drainage and degraded or destroyed waterways in urban areas. Floods are expected to become more common as climate change continues. Similarly, droughts affect rural food production, which affects the urban population, particularly poorer and marginalized communities (UN-Habitat, 2014).

Rapid urbanization occurs when rural areas lack economic growth and urban job creation (Al Jarah et al., 2019). As a result, many rural residents will choose to migrate to cities in search of better job opportunities. Due to the rapid increase in urban population, there is a shortage of affordable housing, land speculation, traffic congestion, and environmental degradation in large urban areas especially in developing countries (Al Buainain, 1999). Furthermore, the urban growth pattern began to change towards more uncontrolled growth (Rizzo, 2014). Due to numerous institutional, technical, legal, and socioeconomic issues, local government agencies in charge of urban planning and development are unable to meet the challenges of urban development.

Qatar's population has more than doubled from 750,000 to 1.7 million people as a result of economic growth associated with the discovery of oil, resulting in the highest GDP per capita in the world and migration inflow. The country's urban patterns began to shift towards more uncontrolled growth (Rizzo, 2014). In the absence of a national planning framework, the implementation of large-scale projects has contributed to Doha's urban primacy (Agatino Rizzo, 2013), resulting in increased traffic congestion, localized environmental impacts, affordable housing shortages, and land value inflation (Al Buainain, 1999).

For Pakistan, urbanization is both an opportunity and a challenge. Economic growth draws people from rural areas to cities, and from smaller urban centers to larger urban centers. As a result, the population of urban areas grows rapidly. Rapid economic growth is linked to urbanization (Hussain, 2014). No country has attained high-income levels without vibrant cities (Hussain, 2014). These benefits, however, are neither guaranteed nor automatic, and are entirely reliant on how urbanization is managed. By investing in institutions, infrastructure, and incentives, China has successfully managed both rapid growth and the rate of urbanization. Some African countries, on the other hand, have experienced urbanization without growth. The current urbanization pattern is unsustainable because it has overburdened urban infrastructure while also causing a slew of environmental issues. It has polluted the air, water, and land, has accelerated deforestation, and has contributed to climate change (Murrawat, 2022). Our current infrastructure is incapable of accommodating a large population swarming to cities. As a result, nearly every city in the country is confronted with serious waste management, sanitation, and sewerage issues (Murrawat, 2022).

The urbanization is both an opportunity and a challenge for Pakistan (Murrawat, 2022). The urban centers are the engines of economic growth and prosperity as cities generate 55 percent of the country's GDP (Murrawat, 2022). However, 'diseconomies' occur in Pakistan due to congestion and scarcity; premiums paid by migrants for land, housing, water, and transportation (indicative of dysfunctional governance institutions); and exploitative mafias backed by political parties. Half of the urban population lives in

awful slums. Urbanization's productivity gains have eluded us; in fact, this is 'messy urbanization'(Hussain, 2016).

Urbanization in Islamabad-Rawalpindi metropolitan region is taking place at a higher pace than the National Urbanization rate. The Greater Islamabad–Rawalpindi metropolitan region is the country's 3<sup>rd</sup>-largest metropolitan area with a population of more than 4 million. Islamabad's population has exponentially increased since 1960. Islamabad had a population of only 118 thousand people in 1961. In 1972, the population was 237.5 thousand, 520.2 thousand in 1992, 1.22 million in 1997, and more than 2 million in 2017. People from all over the country flocked to the capital, hoping to benefit from its development in terms of employment, living conditions, and education(Liu et al., 2021). Islamabad, ethnically is the most diverse metropolis in the country with communities representing all of the country's major ethnic groups (UN-Habitat, 2014).

Islamabad was the fastest growing city between 1981 and 1998, with an intercensal annual growth rate of 6%, followed by Quetta with an annual growth rate of 4%, and Karachi, Rawalpindi, Faisalabad, and Gujranwala with annual growth rates ranging from 3.5 to 3.8 percent(Karim, 2018). The population of Islamabad has increased from 805,000 in 1998 to 2,006,000 inhabitants in 2017. The rate of urbanization is 4.91%.

In Islamabad, the Urban and Rural population is based on the urban and rural boundaries earmarked in the Master Plan of Islamabad. The major part of the rural area has been planned and developed by the private housing societies and the DHA i.e., partly Zone-4 and complete Zone-5, although have acquired urban characteristics, however, have still been considered rural. Due to this discrepancy, the rural population has increased from 0.276 million to 0.999 million.

So far, a substantial body of research on rapid urban growth exists, which recognizes the significance of the factors underlying urban sprawl; however, few of these studies are about Pakistan, and particularly Islamabad. However, a review of the relevant literature revealed that quantitative techniques such as remote sensing, geographic information systems, and landscape pattern analysis have been utilized in research on urbanization and urban sprawl. Recently, GIS technique and associated analytical software have been used in Monitoring and prediction of urban expansion in Istanbul Metropolitan City (Dereli, 2018), the dynamics of urban expansion and land use/land cover changes in Mekelle City of Ethiopia (Fenta, 2017), Dynamics of land use and land cover change in Islamabad, Pakistan (Hassan et al., 2016), Remote sensing of urban growth and landscape pattern changes in Chongming Island in Shanghai China (Shen et al., 2017), Spatio-temporal variation analysis of landscape pattern response to land use change in Xuzhou City, China (Xi et al., 2018).

However, empirical studies using a qualitative technique to understand urban sprawl patterns and the links between changes in the city structure of developing countries have been found to be insufficient, in the context of institutional framework of the city. Some theories about urbanization, urban sprawl, and city structure should employ a qualitative approach to gather first-hand information on the reasons for, causes of, and effects of urban sprawl in developing countries, particularly Islamabad. To achieve the study objectives, a qualitative method based on face-to-face interviews with experts in the CDA's master planning directorate, experts working in the field of planning, and academic institutions was used. Furthermore, the qualitative approach will help examine how Islamabad's institutional framework

influences urban sprawl. As a result, the primary goal of this research is to investigate urbanization and urban sprawl issues, as well as how they influenced city structure in the context of Islamabad's institutional framework.

We investigate the causes, effects, and driving forces of urban sprawl, as well as rapid development and city structure transformation, in this study. We also look at the main forces that drove Islamabad's rapid urbanization, as well as the effects of these changes on the city's structure and pattern.

### **Methodology**

The qualitative research methodology was used to gather data. Exploring human behavior in its natural environments, such as the social, cultural, and political climate in which it exists, is made possible by the qualitative case study. There are many methods that could be used to conduct this investigation, including interviews, historical research, case studies, and ethnography. Numerous research methods, including the analysis of face-to-face interviews like in this study, could be used in qualitative studies. The authors in the current study agreed to interview 45 participants to create a workable data set. The professionally educated and experienced persons were selected for interview to collect the data about urbanization in Islamabad and the factors responsible for haphazard development and urban sprawl in Islamabad. A semi-structured technique was used. Each interview began with the interviewer introducing and explaining to the participant the purpose of the interview and how the survey data will be used. The goal was to ensure that participants understood how urbanization and urban sprawl issues affect city structure in Islamabad. After explaining and updating the participant about the current development scenario, processes going on, problems faced by the inhabitants, the process of urban growth and the emerging pattern of the city following questions were asked to the interviewees, one by one, and responses were recorded carefully:

- 1 *What are the factors behind rapid urbanization in Islamabad?*
- 2 *What are the causes of urban sprawl in the city?*
- 3 *What are the major factors which brought a significant change in the city structure?*
- 4 *What are the consequences of urban sprawl in the city?*
- 5 *What are reasons of slow planned development in Islamabad*

Since all the participants were qualified and experienced the questions were asked in English language, however, the response received was a mix of English and in Urdu language (National language). The response received were grouped into themes using content analysis. The above were the main questions but during discussion more questions were raised depending on the real-life experience and interest of the participant. During interview the priority order of the factors identified by the respondents were also discussed depending on the importance of the factor in the opinion of the respondent.

Face-to-face interviews with CDA planners, experts, architects, and environmentalists were used to collect detailed data for this study. Appointments were made through phone calls and visits to officials' offices. The participants were assured that their personal information would be kept private. As a result, their names are not designated as unique. During the interviews, notes and main points were highlighted. To achieve the study objectives, the data was analyzed and interpreted.

Out of 45 volunteers who took part in the interview, the participant with the least education was a graduate degree holder (BSc), while the participant with the highest level of education was a doctoral degree holder (PhD). This means that all of the participants have the necessary educational background in the field of this study. The researcher believed that the participant's responses to the questions were realistic and honest. Furthermore, because they all hold relevant positions of authority in the area under investigation, they frequently shared their personal experiences. The interview was conducted at a time and location that was deemed convenient for the participants. The maximum interview time was 45-60 minutes.

The evidence discovered through content analysis is carefully examined in order to identify the data categories that describe the incidents. The goal of the content analysis is to use a grouping strategy to gain insights into the frequency and patterns of factors that influence the scenario under consideration. Based on responses to similar questions, the data was organized into rational categories. The reason for this is that the open-ended questions posed to interview participants were mostly the same for all respondents. Important themes emerged from the data through the process of frequently comparing the data and categories during and after the data collection process.

Sr. #	Factor	Response
1	National Highways and Inter-district Roads	12%
2	Complicated land development procedures	22%
3	Leapfrogging Pattern of development	10%
4	Fragmented Development in Islamabad Park Area	12%
5	Non-implementation of the Master Plan 1960	13%
6	Weak Enforcement/Absence of Urban Sprawl Controlling policies	15%
7	Multiple Organizations/Institutional Framework	7%
8	Political interference	9%

## Result and discussion

### The pattern of Development of Islamabad and its Surrounding

The Metropolitan Plan of Islamabad-Rawalpindi divides the city into three major parts i.e., Islamabad Urban Area, 220 sq. km. Islamabad Park area is 220 sq. km. and Rawalpindi City area (220 sq. km.). The rest of the area was rural within the Metropolitan area and provide a buffer around the city, 466 sq. km. Islamabad Park was recommended to be gradually acquired and utilized for large-scale research institutions, for agricultural use to provide food to the urban area of Islamabad, and to augment the groundwater. In this way the whole of the Metropolitan area was divided into three clearly separated and defined areas in such a manner as to avoid any unfavorable intermingling of functions in the future (Figure 1)(Doxiadis Associates, 1960a)



Figure 1: Master Plan of the Metropolitan Area

### Islamabad Capital Territory Zoning Plan 1992

The development of Islamabad was going on according to the Master Plan 1960 and first systematic review of the Master Plan was at its concluding stage when in 1992 a Zonation Plan was approved by the Government according to which the Islamabad Capital Territory (906 sq. km, 225,000 acres) was divided into five zones (Figure 2). Urban area comprising of 72 Sectors was divided into two Zones i.e., Zone-I and Zone-II. Zone-I (54,958 acres) comprising of approximately 65 Sectors upto Grand Trunk Road (G.T. Road), is the main urban area of Islamabad to be planned and developed by the Capital Development Authority (CDA). In this Zone each modular Sector covers approximately 4 sq. km. The urban area beyond G. T. Road upto the western boundary of the Capital and north of Kashmir Highway has been earmarked as Zone-II (9804 acres). Margalla Hills in between Urban area and upto northern boundary of the Capital including Rawal Lake and Shakarparian area has been earmarked as Zone-III (50,393 acres). Murree Road on the north eastern side of the capital beyond Quadi-e-Azam University area upto the capital limit on the eastern side is the boundary between Zone-III and Zone-IV. Islamabad Park and the rural area on its eastern side upto the eastern boundary of the Capital has been earmarked as Zone-IV (69,814 acres). The southern part of the capital comprising of Lohi Behr, Humak and Rawat, etc. has been earmarked as Zone-V (39,029 acres). Zone-II and Zone-V have been designated for private housing projects to be monitored by the CDA as per the Modalities and Procedures framed under ICT Zoning Regulation 1992 (Islamabad Capital Territory (Zoning) Regulation 1992, 1992).

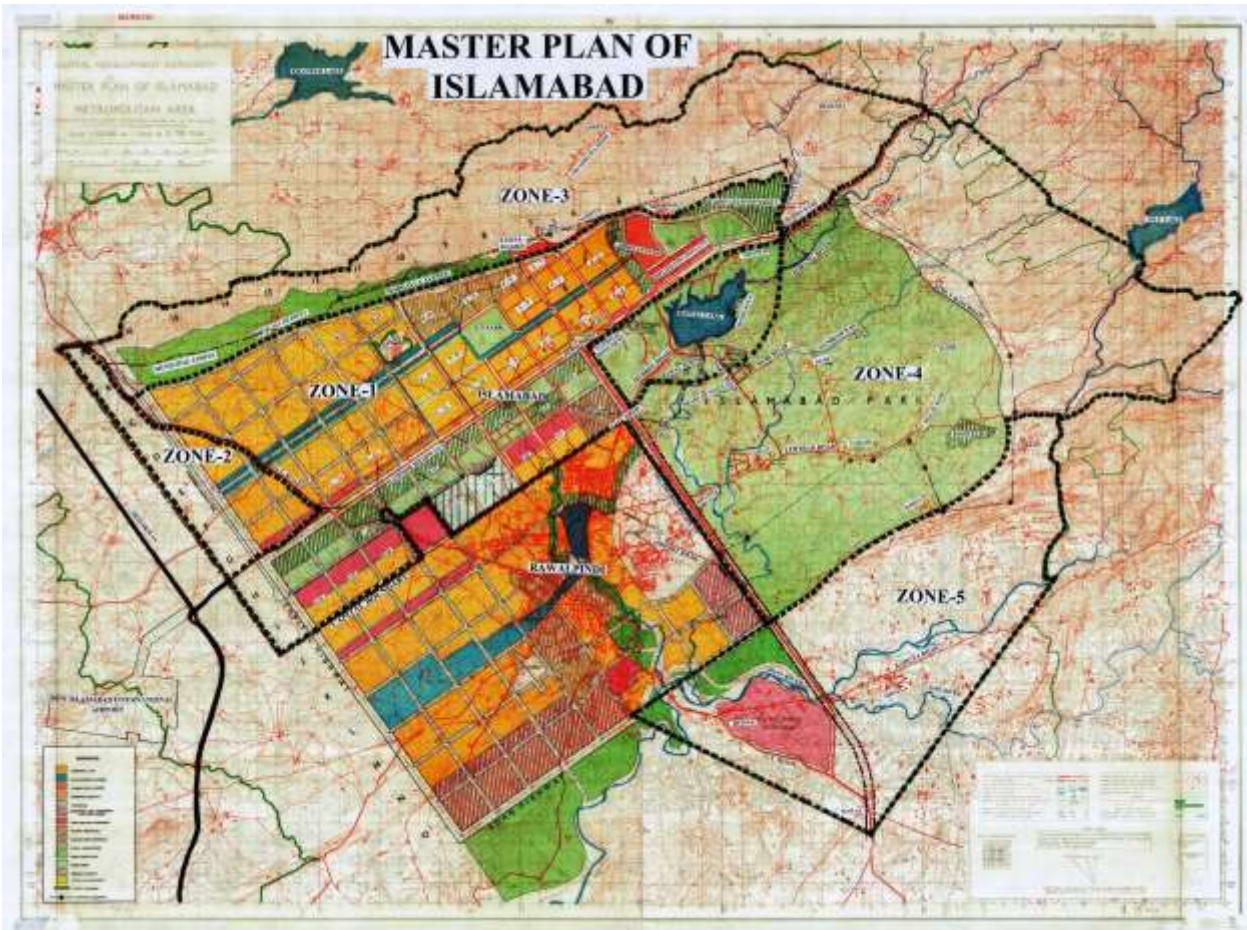


Figure 2: Islamabad Master Plan showing Five Zones of the ICT

### **Zone-I and Zone-II**

The focus of the CDA was development of urban area of Islamabad i.e., 220 sq. km which is (approx.) 25% of the total area of the Islamabad Capital Territory (ICT) i.e., 906 sq. km. Due to absence of vision, goals and objectives even this focus of CDA also diluted with the passage of time and now even the urban sectors like Sector G-12, Sector H-13 which is next to the National University of Sciences and Technology (NUST) experiencing unauthorized construction without any control of CDA. Due to various reasons massive unauthorized construction activity is in progress without any control of CDA. CDA has been exercising its control over about 50% of the urban area i.e., approximately 40 urban sectors out of total 65 planned urban sectors in the Zone-I of Islamabad. Zone II has been earmarked for private corporations and cooperative housing societies, which also have to deal with land appropriation issues from native landowners. Much of western Islamabad will most likely develop from existing villages, resembling the "organic growth" of Rawalpindi vilified by Doxiadis (Matthew Hull S., 2008). The future lanes and streets of Zone II will almost certainly follow the banks and footpaths that have divided the region's agricultural fields for centuries (Matthew Hull S., 2009). In rural area of Islamabad CDA's partial control is limited to the schemes planned and developed by CDA i.e., Model Villages and Agro-farming schemes that too is very weak.

### **Zone-III, Margalla Hills National Park (MHNP)**

The Margalla Hills National Park (MHNP) initially suffered due to indiscriminate development of stone quarrying and crushing sites and controversial siting of a large Cement plant. The stone quarrying and crushing has been stopped in most part of the MHNP except the area close to the Taxila. However, now the MHNP have been invaded by the illegal housing schemes specifically opposite to the Sector D-12, and its existing villages like Shah Allah Ditta, Saidpur, Nurpur, etc. has been sprawling with fast pace. The development of hotels, and restaurants in MHNP (PirSohawa) has also attracted unauthorized residential development in the MHNP area.

To plan for future urbanization understanding of existing urban growth pattern is important, this would also be useful in developing guidelines to improve the monitoring of urban expansion. The principal pattern of urban area of Islamabad (Zone-I and Zone-II) is grid-iron pattern. The Grid iron pattern is being followed in Zone-I with some adjustments. Haphazard and irregular pattern has been observed in the un-regulated and un-controlled areas which emerged in the immediate surrounding of Islamabad like Banni Gala, BahraKahu, Iqbal Town, Burma Town, Sohan, Shah Allah Ditta, Noorpur Shahan, etc. However, the un-authorized buildings developed along the main roads like I.J. Principal Road, Islamabad Highway, Murree Road, Lehrar Road, Park Road, etc., is in linear form. The private housing schemes in Zone-II, Zone-IV and Zone-V are being developed in a planned manner but in fragmented form because of lack of detail Master Plan of Zone-IV and Zone-V. In Zone-II also the private housing schemes have not been following the Grid-iron pattern, although before launching of ICT Zonation Plan it was part of urban area of Islamabad. The existing villages in the surrounding of Islamabad have also been expanding fast in haphazard manner like Tarlai, Farash, etc.

The current city pattern is perplexing because it consists of a rigid grid-iron pattern and a haphazard irregular pattern. Four main types of patterns could be distinguished in the Islamabad Capital Territory, i.e., Grid-iron, linear, Regular, and haphazard & irregular pattern. It can be concluded that Islamabad's Master Plan has failed to accommodate the city's rapid and unexpected growth.

#### **Zone-IV, Islamabad Park Area**

Because of its proximity to the Administrative area; the major employment area of the capital city, but also due to the fact of having good roads originally intended to promote its agricultural development was initially invaded by speculative development. The whole extent of the Park Area was presenting a scene of inappropriate and environmentally harmful residential development and large-scale acquisitions, activities which were in conflict with the spirit of the Master Plan. Instead of controlling this undesirable phenomenon CDA following this market trend prepared sub-zoning of this area during 2010-11 and got approval of the competent authority to open part of this area for public sector housing schemes (Amendments in ICT (Zoning) Regulations, 1992 of Zone-4, 2014) in contradiction to the principles of the Master Plan 1960. However, later on, at its own CDA, allowed private housing schemes in this zone. A number of housing schemes have been launched in this Zone i.e., Bahria Enclave, Park View Housing Scheme, etc., in the private sector and Park Enclave were launched in public sector. Unfortunately, this has been going on without having overall Master Plan of this area (Zone-IV).

The catchment area of Rawal Lake; a major source of drinking water for the inhabitants of Rawalpindi has been affected due to above speculative development. Besides individual building activity, large housing societies have also moved in and are in the process of bulldozing and developing cheap hilly sites thus triggering a process of land erosion and gradual siltation of the Rawal Lake. Moreover, this



unplanned and piecemeal development disregards the need for proper sewerage and drainage, with the result that all impurities eventually find their way into the Rawal lake.

Zone-IV of the ICT, which include the Park Area, covers an area of 283 sq. km, has attained highest rate of spatial growth in the ICT. Population of this zone has increased constantly, estimated to reach 460,000 inhabitants in the year 2007 as compared to 188,000 of 1998 and 81,000 of 1972 (Adeel, 2010). This Zone is one of the main sources of vegetable supply for the Metropolitan area and carries strong potential for subsurface aquifer recharge which has an estimated capacity of 2 Billion m<sup>3</sup> fresh water (Adeel, 2010). Islamabad rural area is facing the problems of unplanned construction and expansion in rural areas, especially Zone-IV. The major problem is that the spatial expansion is taking place in violation to the original Master Plan of Islamabad. In the Master Plan 1960 Park Area has been reserved as rural area of the territory, for holding national institutions & recreational facilities, without damaging its natural environment. But the ongoing construction and expansion is damaging the natural resources and the planned growth of the area (Adeel, 2010).

### **Zone-V**

Zone-V has been earmarked for private housing schemes in addition to the existing schemes of CDA i.e., Industrial Triangle Kahuta Road, Model Town Humak, Poultry and Vegetable scheme, etc. A number of private housing schemes have been approved by CDA in this Zone. Islamabad Highway, G. T. Road, Kahuta Road, and Japan road are the main roads passing through the Zone in addition to the Main railway line and dividing it into 5-6 major parts. Soan River and Ling River also pass through the Zone. Mixed type of development i.e., industrial, residential, commercial, educational, etc. is going on in this zone. All the development has been taking place without having Master Plan of this Zone. Fortunately, major part of this Zone has been utilized by the DHA for their housing project.

### **Rawalpindi**

Sixty-three years back, Rawalpindi was growing haphazardly, with no distinction between transport arteries, intermixing of functions, congestion, and a lack of simple overall unity (Matthew Hull S., 2009). Doxiadis recommended to forestall and effectively control the dangers that might arise through haphazard development otherwise they might easily become disastrous for Rawalpindi itself, as well as for the Capital (Doxiadis Associates, 1960b). Therefore, he included Rawalpindi in the Metropolitan plan and programme and gave a balanced and coordinated plan which could not be implemented due to various reasons. As a result, Rawalpindi has been growing without any plan and this negatively affects the Islamabad urban area itself (Botka, 1995). Rawalpindi without any plan to guide its development, had reached 2.1 million inhabitants by 2017 and has started spilling over into the surrounding rural Zila Council areas. Large irregularly developed areas have sprung up and many more areas have been committed to development without any effective control from the city authorities resulting in an unacceptable quality of environment and making the long-term development of the Rawalpindi, as well as of Islamabad, more and more problematic. Therefore, there is an urgent need for a new planning framework preferably in the form of a wider metropolitan development plan (Botka, 1995).

Due to the shortage of housing buildable land in Rawalpindi, the people of Rawalpindi tend to build houses in rural areas of Islamabad along Islamabad Highway and Lehtrar Road. Large towns have emerged by the name of Burma Town, Iqbal Town, etc. on the eastern side of Islamabad Highway in Islamabad Park. Sohan Town has also emerged near Faizabad junction on the south-eastern side with narrow streets and smaller plots. BahraKahu is another large settlement that emerged in a haphazard

manner without any proper road network, and utility infrastructure network. It has emerged as an independent township on Murree Road with mainly residential and commercial land uses. However, the relevant departments have established educational institutions in the town and some of the health facilities at a small scale have been established by the private sector, but mainly the inhabitants of BahraKahuare dependent on the educational and health infrastructure of Islamabad. Private Land developers have developed housing schemes/land subdivisions in the area without any approval of CDA and without observing any Land Use Standards.

## Major Factors Responsible for Sprawl in Islamabad

### 1. National Highway and Inter-district Roads

Ribbon development is most common in urbanized areas, and these areas also experience fastest growth rates. As a result, ribbon development continues to be a key morphology in which the urbanization process takes shape. The term "ribbon development" refers to a particular type of urban sprawl that is created by the linear growth of primarily residential areas along major thoroughfares, occasionally intermingled with other uses, and frequently broken up by undeveloped areas (Verbeek et al., 2014). Mostly along major roadways, urban sprawl took place. Sprawl occurs on the periphery of cities as radial development or development astride highways with elongated urban growth (Al Jarah et al., 2019). In Islamabad urban sprawl mainly occurred astride main roads where the land was owned by private individuals. The primary causes of sprawl in Islamabad are a lack of a well-defined land policy, weak law enforcement, and inadequate regulatory tools. As a result, Islamabad has suffered from unbalanced and unsustainable development.

Before launching of Islamabad these roads were not important from urban sprawl point of view. However, since the creation of Islamabad, potential has grown along these highways as they approach the metropolitan center of Islamabad, particularly GT Road and Murree Road. The urban sprawl is more along roads due to the following reasons:

1. Existing national and inter district roads have been passing though the Capital site like Grand Trunk Road (G.T. Road), Murree Road, I.J. Principal Road, Lehtrar Road, Kahuta Road, etc.
2. The Right-of-way of these national and inter district roads in not wide enough
3. All the land along these roads is owned by private individuals
4. No control on land use along these roads

After launching of Islamabad Master Plan two more roads have been added in the urban sprawl arena like Islamabad Highway and Park Road. Islamabad Highway was a dividing artery between Rawalpindi and Islamabad (Matthew Hull S., 2009). However, this could not stop spread of urban sprawl into Islamabad Park area. With the passage of time this trend is growing and pressure on all these roads in increasing. Land values along these roads also increasing day by day due to commercial use of buildings along these roads. Islamabad highway which was considered a boundary between Rawalpindi and Islamabad but a lot of development has taken place along Islamabad Highway on Rawalpindi side. Rather haphazard residential and commercial development has taken place across Islamabad Highway and townships have emerged in the rural area of Islamabad.

### Development along Roads

The 3-4 storey commercial buildings along the roads i.e., Islamabad Highway, I. J. Principal Road, Lehtrar Road, Murree Road and houses in the township have been constructed without any approval of CDA and without observing any Building Bye laws. There is no land use control, no building control exercise by CDA or Union Council in the area. These buildings are hazardous because these have been constructed without approval of Building Plans from the CDA. The people residing in the township mostly have their jobs in Islamabad except the people who are busy in providing commercial, educational and health facilities in the area. Subdivision schemes are being launched most of these are unapproved and without any Master Plan of the area relying on the existing road network i.e., Lehtrar Road, Park Road, Kuri Road, etc.

The organization has faced challenges such as the continued spread of informal settlements, low-quality services, increases in the cost of land and housing, road congestion, and agricultural land deterioration. The situation is exacerbated by a scarcity of skilled, qualified human resources, a severe lack of funding, and a lack of technological capacity.

## **2. Complicated land development procedures**

Doxiadis' vision of unhindered expansion has been confined to the 11 series of sectors (Matthew Hull S., 2009). The CDA has been unable to take possession of the land in the west because the villagers have rejected the compensation packages on offer, which are based on 1958 land values adjusted for inflation, a negligible fraction of the land's current value (Matthew Hull S., 2009). The element of corruption in Land Directorate in acquisition of land cannot be ruled out. The list of property holders entitled to compensation for expropriated land and structures is tempered in collaboration with CDA officials. The villagers fabricate documents, including a large number of false but authorized lists, demolition certificates, and review orders. These documents greatly increased the number of claims for compensation for built structures, earning the villagers (and their CDA colleagues) many times what they would have received legally (Matthew Hull S., 2009).

Complicated land development procedures cause long delays, land speculation, and illegal development around Islamabad (Botka, 1995). Capital Development Authority had launched last sector in 1990. No new sector could be launched in urban area of Islamabad due to paucity of developable land and lengthy litigations in the process of land expropriation. Present procedures of land expropriation and development result in very long delays – frequently further extended due to court litigation. Due to short supply of developable land the prices of land risen to unjustifiable levels and gradually makes Islamabad accessible to only the very rich. The original land owners receive very little compensation unless they build illegal structures on their land to claim a better rate of expropriation (Botka, 1995). Compared with the expropriation prices paid to the original owners, the developed plots are about a hundred times more expensive when transferred to the selected beneficiaries, and their value can rise a further five to seven times when they are eventually offered on the open market. This artificially high cost of land is very important because of its social dimensions: Islamabad cannot become an urban center increasingly accessible to only the very rich. Policies with other approaches to land development and pricing are

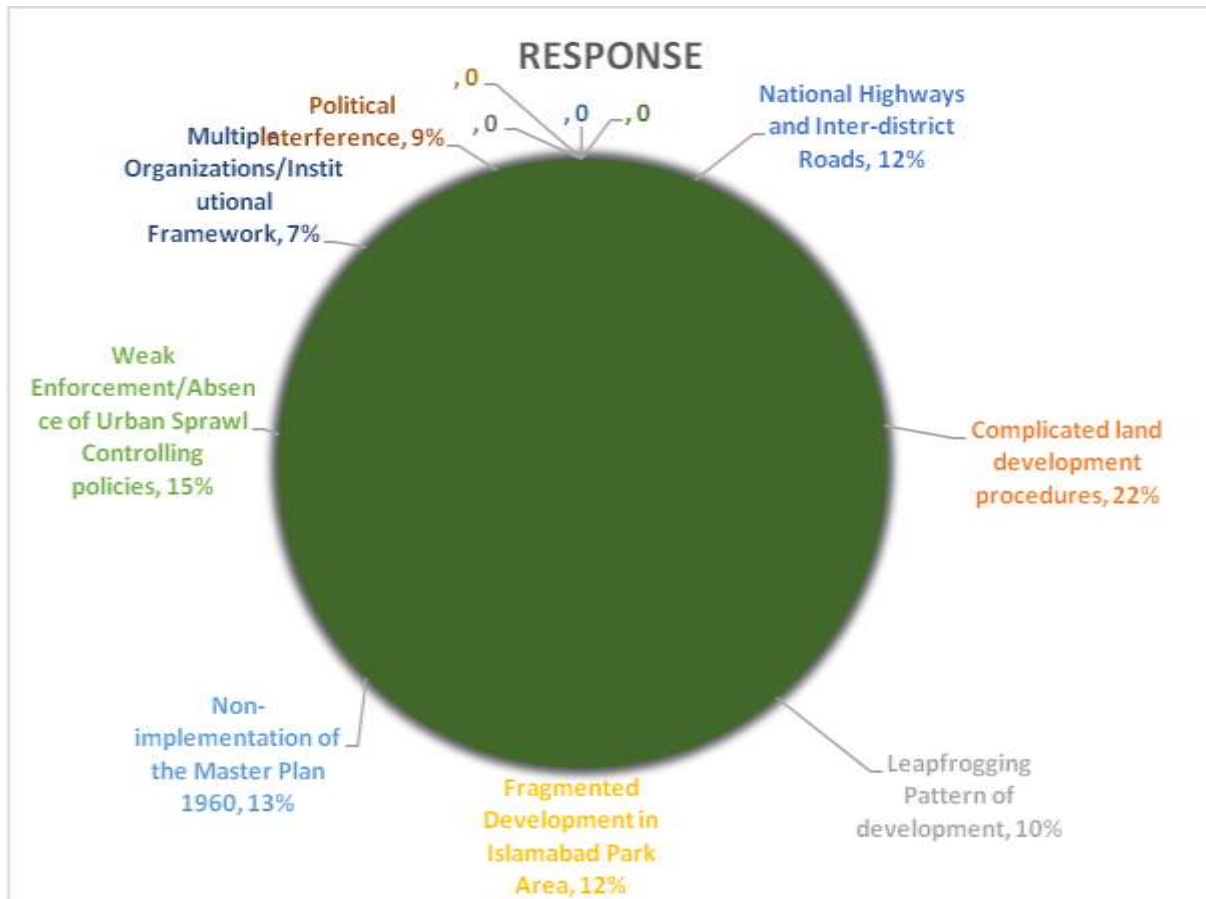


Figure 3: Responses received regarding causes and consequences of urban sprawl in Islamabad

necessary so as to make the city accessible to all social strata and to restore the equilibrium which is gradually being lost (Botka, 1995).

Because land is so expensive, or simply not available, poor sections of society are turning to squatting while the wealthier ones are buying and illegally developing land just outside the Master Plan limits. Much of this undesirable development is taking place within the Islamabad Park Area and in other locations with good access roads, frequently in complete disregard of the serious environmental consequences.

Instead of developing the stalled sectors, i.e., Sector I-12, I-15, I-16 and E-12 CDA has launched a new housing project in Zone-IV of the ICT by the name of 'Park Enclave' and by the name of 'Margalla Retreat' in Sector E-11 (northern strip). Both the projects are for elite class of Islamabad.

The layout plan of some of the urban sectors have been approved, most of the residential plots of these sectors have been allotted to general public through balloting i.e., Sector E-12, Sector I-12, Sector I-16, etc., but development of these sectors could not be undertaken due to misappropriation of funds in other projects. Now when the resources are available through auction of residential commercial plots in various parts of the city, the main source of revenue of CDA, instead of undertaking development of these sectors to meet the long-lasting demand of the allottees of residential plots in these sectors and developing the

water reservoirs recommended in the Master Plan i.e., Charah Dam, Lohi Behr Dam to improve the drinking water situation in the city, CDA has been utilizing its resources in development of road infrastructure, underpasses and fly-overs etc. The individuals who have been allotted plots in Sector E-12 have been waiting for the last about 32 years for having possession of the plot to undertake construction of their houses. This is manifestation of lack of vision, goals and objectives, lack of priorities, therefore this huge investment in mega infrastructure projects. No attention is being given to increase supply of housing and better supply of drinking water, etc.

There were 19.3 million housing units in Pakistan, and the additional annual requirement was 0.57 million houses, against supply of around 0.30 million houses. Thus, creating annual housing shortage of 0.27 million houses (Zafar Iqbal Zafar, 2022). Failure of public sector organizations like CDA, RDA etc., to provide adequate affordable housing to its inhabitants result in creation of slums and squatter settlements within the urban area and illegal land sub-divisions in the rural-urban fringe of the city. 50% of the country's population find its abode in slums and squatter settlements (Zafar Iqbal Zafar, 2022). Auction of residential plots by CDA also resulted in high land values in the urban area of Islamabad.

Private Sector has been meeting the housing needs of higher income group and to some extent middle income group. Poor segment of the population lacks access to planned plots, private sector housing projects mostly cover high-income and middle-income groups due to profit making approach, poor segment of the society are not accommodated in the private land subdivisions. Current private housing schemes do not provide affordable plots for low-income households.

Land and property values in the center of the town are generally higher as compared to away from center where gradually these land values become comparatively lower as one go away from the center of the town. The land values become lowest in the rural agricultural areas. Increase in value of land and property in Urban area, high-rents, act as barriers for the poor segment of the society to have access to the planned plots. High land prices within the urban area of Islamabad coupled with weak control of CDA has resulted in uncontrolled development around Islamabad -which led to serious environmental problems in the region. Lower-middle and middle-income groups don't have access to planned plots in Islamabad urban area, planned plots are not affordable to the poor segment of the society, therefore they resort to the illegal housing schemes in the rural-urban fringe of the city.

### **3. Leapfrogging Pattern of Development**

Instead of developing urban sectors of Islamabad in continuity of existing built-up area of Islamabad CDA has been developing residential scheme in Zone-IV of the ICT which would result in haphazard uncontrolled growth in the surrounding of the residential scheme. This is being done in violation of the basic concept of the Master Plan of Islamabad 1960. Instead of developing stalled sectors which were launched long time back i.e., Sector E-12, I-12, etc., CDA has allocated funds for the development of Sectors C-14, C-15 and C-16 which are far from the existing built-up area of the city. Leap-frogging development raises the cost of service provision while decreasing efficiency in their utilization. Moreover, leap-frog development would produce haphazard development in the western part of the city in the surrounding of these sectors. Development of Sectors far away from the existing built-up area of the city like Sector I-14, I-15, I-16, C-14, C-15, C-16, would induce unauthorized growth in the surrounding of these sectors. Leapfrogging causes haphazard development patterns that consume a lot of land and require a lot of money for infrastructure development.

## 4. Fragmented Development

As per the recommendations of the Master Plan 1960, Islamabad Park having an area of 220 sq. km. was to be acquired for i) use for agricultural purposes, ii) for allotment to Large Research Institutions, and for iii) Recreational Projects, but only 12,000 acres (49 sq. km) could be acquired which is about 22% of the total area of the Islamabad Park. The rest of the area of the Islamabad Park is owned by private individuals/general public. In late seventies CDA has developed Model villages and Agro-farming schemes utilizing the CDA's acquired area in the Islamabad Park. Recently, CDA has allotted land to private educational institutions and for a hospital to be funded by the King of a friendly Arab country. However, the total land acquired by the CDA in Zone-IV has not yet been utilized. There is no proper mechanism for the protection of CDA's acquired land in Zone-IV of the ICT. It has been observed that land owning agencies do not spend a few rupees on the protection of their precious land and eventually face a loss of billions of rupees (Zafar Iqbal Zafar, 2022). Now CDA has developed housing project by the name of 'Park Enclave' and has also issued NOC for private housing schemes like 'Bahria Enclave', 'Park View Housing', and many other private housing schemes. A number of private housing schemes have emerged in Zone-IV without approval of the CDA which is the monitoring agency. The development of housing projects in Zone-IV has been done in violation of the original concept of the Master Plan (1960). Moreover, this is being done in a haphazard manner without developing a Master Plan of the area. No utility infrastructure exists in this area except some road network like Park Road, Kuri Road and Lehtrar Road, etc. The Islamabad Park has been occupied by illegal construction (Javed, 2014).

Zone-IV being planned and developed by private and public sector without having detailed Master Plan of the area. The total area of Zone-IV is approximately 70,000 acres, 32% of the total area of the ICT, but practically it is being allowed to develop haphazardly without any plan and infrastructure network. NOCs have been issued by the CDA to private housing schemes, even CDA itself has launched Housing Project by the name of 'Park Enclave' utilizing CDAs acquired land and the existing Road infrastructure of Zone-IV.

Master Plans are policy tools used to manage urban growth. These are intended to coordinate the timing and location of urban growth and development in order to create appropriate urban centers (Alnsour, 2016). Zone-IV has been subdivided into sub-zones and residential and commercial development has been allowed in some of the sub-zones against the provisions of the Master Plan 1960. Zone-IV lacks planned road network and utility infrastructure network. Presently, there are only three major roads i.e., Park Road, Lehtrar Road, Kuri Road and a network of revenue roads. The Islamabad Highway and the Murree Road make western and northern boundary of the Zone respectively. Zone-IV lacks water supply network, sewerage network and plan for the Sewerage Treatment Plant (STP). It has poor education and health infrastructure that too to support the rural population but it lacks overall plan of education and health facilities.

Zone-V of the ICT (39,000 acres), earmarked for private housing schemes, also being developed without having Master Plan. It is traversed by three major roads i.e., Islamabad Highway, Grand Trunk Road and Kahuta Road and main Railway line. Swan River almost divide the Zone longitudinally into two parts. A number of private housing schemes have been approved by CDA in this Zone since 1992. Industrial area has also been developed by the CDA in between Swan River and Kahuta Road in addition to CDA's planned Poultry and Vegetable schemes. A number of unauthorized commercial and business development has occurred along the G. T. Road along with multi-storey buildings.

Zone-IV converted to residential development against the provision of the Master Plan, conceptual violations of the Master Plan i.e., hierarchy of commercial centers violated, Master Plan violations, deviations got approval from the Cabinet, Violations of Master Plan by CDA Shifting of Markaz Uses in residential areas in F-6/1, Health Services Directorate in F-11/4, International and National Restaurant Chains in Class-III Centers, Office of Private Housing Scheme in Class-III Center, Entire Class-III Center in G-7/4 converted to another activity depriving the residents from the day to day commercial needs.

Growth management refers to policies and regulations that control and guide urban growth and development (Garba, 2004). Managing urban growth necessitates decentralization in order to make decision-making transparent and accountable (Alnsour, 2016).

## **5. Non-Implementation of the Master Plan**

### **Imbalance in the hierarchy of commercial areas**

Initially due to slow development in the Central Business District (CBD) of the capital, which is commonly known as Blue area, more investments were observed in the Class V centers (the marakaz) like Melody Market, Super Market, Jinnah Super Market. This has created an imbalance in the hierarchy of commercial areas. Recently, in Class V centers existing facilities of neighborhood level have been replaced by city-wide facilities like a shopping mall in F-7 Markaz has been developed by a private individual after demolishing existing Health Center facility which was being operated by the CDA. Some facilities of Class-V Center level have been located in the residential sub-sector like F-6/1. This has further deteriorated by the approval of some activities in Class-III centers which were supposed to be located in CBD of Islamabad like location of a fast-food restaurant in Rana Market and Office of a Housing Society in Class-III Center in G-10/2, Islamabad. During late eighties the commercial activities were allowed in the Industrial and Trading Center along G-Sectors. This has created a confusion and appears to be a deliberate attempt to break pattern and hierarchy of facilities prescribed by M/s Doxiadis Associates in the Master Plan of Islamabad. It will take several years to correct this disequilibrium.

Layout plan of the Sectors and construction of buildings in the Sectors E-8, E-9, E-10 are contrary to Islamabad's Master Plan. In these Sectors the layout pattern prescribed in the Master Plan has not been followed. Dry Port has been established by Pakistan Railways in the Right-of-way of Sector H-9/I-9, 5-Star Hotel has been constructed i.e., Grand Hyatt in the Right-of-way of Sri Nagar Highway, Sunday Bazar (Itwar Bazar) has been established in Right-of-Way of Sri Nagar Highway, Illegal Mosques, graveyards in the Right-of-Way of Highways, and Roads, etc.

Master Plan has not been implemented in letter and spirit. Cherah Dam and Lohi Behr Dam has not been developed as per the recommendations of the Master Plan 1960. Had these been developed as per the recommendations of the Master Plan there would not have been any shortage of water in the capital. Two Highways Soan Highway and Capital Highway have not been developed, Railway Station in Sector I-8 has not been developed as per the Master Plan of Islamabad. Graveyards have not been developed as per the provisions of the Master Plan. Model villages have been developed in Islamabad Park Area (Now Zone-IV of the ICT) which have accelerated the urban sprawl on the surrounding of these Model villages.

Two reviews of the Master Plan have been undertaken i.e., one by the team built in-house in 1986-91, and the other through consultants in 2006-2008, both could not fetch approval of the competent authority. The CDA initiated the first systematic review of the Master Plan for Islamabad in 1986 (Botka, 1995). Most of

the review was completed using in-house expertise. The Master Plan review effort was completed by the end of 1991 and led to a series of important decisions which were promptly translated into practical action (UNDP/UNCHS, 1991). All important aspects were thoroughly examined by the Govt. departments that were represented on the permanent Steering Committee. A panel of experts from Pakistan and abroad was setup to advise the Planning Department and comment on the work done and a number of high-level review meetings took place throughout the first half of 1991. This very active and involved process led to the Revised Master Plan which was finally adopted in August 1991 (Botka, 1995).

During 1960-1990 Islamabad developed as per the Master Plan of Islamabad up to the extent of series 12 and all easily developable land was utilized (Botka, 1995).

Lack of public participation in the development of detailed Master Plans and decision-making, Public participation in the development of detailed master plans provides opportunities for the organization to make appropriate development decisions (Alnsour, 2016). There is lack of debate, seminars, workshops on planning issues, no mechanism or platform of public communication with institutions except the newspapers and the media. The inhabitants of Islamabad are not well organized, and lack Social Welfare Organizations (SWOs), Community-based Organizations (CBOs) for positive criticism of CDA/Govt. policies and development actions. Poor communication between inhabitants and the CDA result in unrealistic decisions. Citizens are not part of the decision-making process.

## **6. Weak Enforcement/Weak Watch and Ward System,**

Inadequate coordination between planning departments, and a lack of enforcement have contributed to a situation in which market forces have taken precedence over land-use planning, favoring real-estate-led development over other land uses such as urban agriculture (Allen, 2014).

In almost every sector, dense slums of construction workers, city sweepers, and domestic servants crowded alongside undeveloped gullies and green spaces (Matthew Hull S., 2009). As informed by CDA there were 11 squatter settlements in Islamabad in 1996 with a population of about 15,000 inhabitants. The number of squatter settlements has increased to 41 with a population of about 80,000 inhabitants. There are four Katchi Abadies in Sector G-7, almost each sub-sector has one Katchi abadi with one in Markaz G-7. Now they are constructing double storey residential buildings in these abadies. This undesirable phenomenon has been happening, inter alia, due to the fact that these areas, purposefully left open along nullahs as lung space of the city, are not being looked after by the CDA. It is learnt that in early phases the CDA union facilitated occupation of land in these abadies to increase their vote bank. There is invasion of commercial activities in the residential buildings i.e., shops, restaurants, furniture showrooms, schools, clinics, etc. creating a lot of traffic problems. Due to this the rent of residential buildings has gone up, out of reach of middle-income group. In case CDA take action against these non-conforming buildings they jointly approach the Court and take stay order. One such stay order, taken by the owners of restaurants, was vacated by the Court after a long period of more than a decade. The sponsors of the private housing schemes deviate from the approved layout plan of the scheme i.e., reduce number and size of open spaces, reduce size of schools, public buildings, convert graveyard to residential and commercial plots, reduce width of nullahs but CDA could not take timely and effective action against the sponsors due to ineffective enforcement mechanism. There are a number of illegal land subdivisions in Zone-2, Zone-3, Zone-4 and Zone-5, of Islamabad. There is encroachment of natural streams narrowing their natural width and blocking the flow of rainy water due to which there is risk of flooding upstream and loss of life and property. One such sad incidence has happened in 2022 in Sector E-11,



Islamabad. All these incidences are the manifestation of weak enforcement of bye-laws and weak enforcement mechanism of CDA. Agro-farming schemes have been developed by the CDA in Islamabad Park Area which have been converted over the time to large residential Bungalows. The increase in permissible covered area of the Agro-farms and decrease in size of Agro-farm area (2.5 acre) has encouraged non-conforming activities in Agro-farms instead of permissible farming activities.

CDA has acquired large junk of land in Zone-IV of the ICT but did not take over possession of the land from the original land owners, they were allowed to stay there till the land is required by CDA but now they are not vacating the land and demanding more compensation at the present market rate of the land. The CDA's acquired land has not been protected from encroachments due to which it has been encroached by the land grabbers. Zoo-cum-Botanical Garden area in Islamabad Park has been slowly eaten up by the surrounding private housing schemes. Sometimes back it was decided to erect boundary pillars around the CDA's acquired land but that could not be materialized. Major Environmental problems are arising due to the illegal invasion of sensitive areas, such as the Rawal Lake catchment area and parts of the Margalla Hills National Park (Botka, 1995). The high rate of urbanization has resulted in fast expansion of suburban centers, with narrow and irregular street pattern, high density, lack of open spaces, low quality of education and health services, etc. Building Control is being exercised in Zone-1 and on the plots allotted by CDA. No building control is exercised by CDA in rural areas of Islamabad except CDA's own schemes. Building Control in private housing schemes has recently been initiated after about 27 years of approval of the ICT Zoning Plan. Prior to this the sponsors of the private schemes approve building plans and issue Completion Certificates of the buildings in their respective scheme and earned a lot of revenue.

The enforcement mechanism of CDA is ineffective, one of the reasons is because Enforcement Directorate works under non-technical division of CDA. It should be under the control of head of Planning Wing instead of head of Administration Wing. Due to this aspect the coordination between planning and enforcement directorate took a longer time and quick enforcement action is not possible.

## **7. Multiple Organizations**

There is multitude of administrative units within the limits of Islamabad/Rawalpindi metropolitan area. Besides the Capital Development Authority and the Islamabad Capital Territory Administration (ICTA), there are twelve Union Councils with strong political powers, Rawalpindi Metropolitan Corporation (RMC), Two Cantonment Boards and the Rawalpindi Development Authority, surrounding rural areas represented by the Zila Council as well as the five Tehsils wholly or partly falling within the wider area of Islamabad/Rawalpindi metropolitan area. This wider area is under the jurisdiction of three different Governments, namely the Federal Government, the Government of the Province of Punjab and the Government of the Khyber Pakhtunkhwa (Botka, 1995). CDA has been working in urban sectors of the Zone-1, engage in planning and development of these sectors, Metropolitan Corporation Islamabad (MCI) has been maintaining the municipal services of Zone-1, Federal Govt. Housing Authority (FGHA) has been developing two urban Sectors in Zone-1, i.e., Sector G-13 & Sector G-14 and two more urban Sectors i.e., Sector F-14 & F-15 are in the pipeline. ICT Administration has been providing small scale water supply and sanitation schemes along with developing rural access roads in Zone-III, Zone-IV and Zone-V of the ICT. Defense Housing Authority (DHA) Islamabad has been implementing its housing project in Zone-V of the ICT. Rawalpindi Cantonment Board (RCB) has been claiming jurisdiction on a large area of Islamabad including H-12, H-13, Sorain, etc. The prevailing institutional challenge is how to

coordinate action among such a diverse set of actors while keeping in mind the associated regulations and ordinances that guide the agencies' activities.

The institutional framework for managing growth in Islamabad lacks a clear definition of the roles of agencies involved in urban growth management. The institutional structure is characterized by operational independence and fragmented participation in development activities. Multiple agencies with conflict of area jurisdiction, overlapping of functions, varying goals and objectives have been working in the Islamabad region. This aspect has also encouraged the haphazard growth in the city.

Federal government policies are formulated without a thorough examination of their impact on local area spatial development. As a result, some policies have exacerbated or created urban issues. In 2007, Pakistan's then-Prime Minister announced gas connection to the BahraKahu area. In BahraKahu natural atmosphere has been destroyed due to unplanned and haphazard urbanization (Javed, 2014). The human and animal waste and solid waste of BahraKahu is going into the Rawal Lake which is the source of drinking water for the inhabitants of Rawalpindi. Due to a lack of coordination with the CDA, this policy fueled urban expansion, encouraged land speculation, and contributed to Islamabad's sprawl. The city's management of development is also hampered by a lack of coordination among the various participating agencies (Garba, 2004). There is a lack of coordination between the agency in charge of city development and the agency in charge of rural areas. The end result of this lack of coordination is wasteful spending, duplication of activities and general inefficiency in resource utilization.(Garba, 2004). The relationship between the Islamabad Capital Territory Administration (ICTA) and the CDA has frequently been strained. There has been little collaboration between the two organizations, and the ICT Chief Commissioner and the CDA chairman have frequently disagreed. The ICTA frequently refuses CDA requests for police assistance. The ICTA also undermines the CDA's regulatory efforts by issuing so-called No Objection Certificates (NOCs), which are documents that resemble permission for activities that the CDA forbids. Because the two organizations' chains of command converge only at the level of the prime minister, such disagreements frequently go unresolved(Matthew Hull S., 2008).

Local management agencies also lack the necessary resources to effectively manage a city of the size of Islamabad. The agencies also lack the trained and skilled personnel required to support an active management regime.

Institutional structures for management had to be developed in tandem with the growth process (Garba, 2004). Unfortunately, the organizational structure of CDA could not be improved along with spatial expansion of the city. For the last about 20 years there is no improvement in the organization structure of CDA especially the formation dealing with planning affairs

There are a number of administrative units in the wider area of Islamabad and no effective coordination of development exist (Botka, 1995). There is lack of coordination between CDA and various other public sector organizations working in Islamabad and its region like DHAI, Federal Govt. Housing Authority, ICT Administration, RDA, RCB etc. This has proved detrimental to the planned growth of the city and encouraged haphazard growth and urban sprawl in Islamabad and the region. DHAI has been planning and developing development projects in Zone-V of the ICT without any Coordination and consultation with CDA. Cantonment Board Rawalpindi (CBR) has been claiming its jurisdiction on H-12, H-13 Sectors and surrounding areas.

The areas where coordination is required are, inter alia, management of metropolitan and regional traffic, common efforts at a more effective provision of utilities, a coordinated approach to illegal and irregular development, pollution control and environmental protection, development of sanitary land fill sites, etc.

There is poor coordination among various formations of CDA especially Urban Planning, Regional Planning Master Planning directorates with Lands Directorate, Building Control Directorate, Estate Management Directorate and Enforcement Directorate, this also has resulted in haphazard growth of the city.

## **8. Political Interference**

Since the value of land in the restricted areas is low due to restraint on the use of land, there is tendency of the political representatives and influential to purchase land in such areas, build bungalows on large piece of land, and then get the restrictions lifted using political pressure, like the Banni Gala area in Islamabad. Influential developers also like to purchase land in such restricted areas and then pressurize the authority to lift the restrictions then they announce their housing project in this area, like ICT Zoning Regulations 1992, sub-zonation of Zone-IV of the ICT. Some property dealers have become part of the government and the majority of the members of the Parliament are supported/sponsored by the property dealers/qabza mafia (Zafar Iqbal Zafar, 2022).

Provision of facilities in restricted areas, for example directive of the Prime Minister of Pakistan to provide gas facility to the residents of BahraKahuarea; a town which emerged in Zone-III and Zone-IV of the ICT, on the periphery of Islamabad, has boosted un-authorized construction activity in the area. Provision of Education and Health facilities in restricted areas by the respective government departments in collaboration with CDA has further augmented the unauthorized construction activity in the area. NOC issued by the CDA for establishment of a private educational institution in Banni Gala area also speed up the urban sprawl in Banni Gala area, which is the catchment area of Rawal Lake.

Development of Korang Road linking Banni Gala area with Murree Road also boosted urban sprawl in the area, NOC for a Petrol Pump on Simly Dam Road which has ROW of 66 ft and has been developed for the maintenance of Water Mains coming from Simly Dam, boosted the urban Sprawl. NOC of Prime Minister's residence in Bani Gala area, this has also accelerated the urban sprawl in the Banni Gala area, upstream Koran River which is the major feeder of Rawal Lake.

Frequent changes in political setup at Federal level result in changes in administrative setup of CDA, the head of the organization appointed for a short period cannot make/review or implement policies and plans. Stability of political setup in the government and continuity of policies is a major factor to implement the plans and timely completion of the development projects (Zafar Iqbal Zafar, 2022). All Standing Committees of the Parliament take interest in Private Housing Schemes due to their vested interest, no discussion on the issues and problems of CDA.

During 2008-2013 a number of appointments were made on political pressure, without following the set procedures, rules and regulations, even MBBS doctors were appointed on daily wages basis. Incompetent, less qualified and having less experience persons were hired, not fulfilling job conditions prescribed in the CDA Service Regulations without competition and later on regularized against sanctioned posts. Transfers within CDA and promotions to higher posts were done under political pressure. Staff used to

obtain Stay Order from Labour Court against the posting transfer orders. Postings on lucrative posts in CDA are done on the pressure of Labour Union i.e., CBA (Collective Bargaining Agent).

### Conclusions

Islamabad conceive as an adequate model of a planned city has been converted to unplanned and haphazard city due to uncoordinated actions of CDA. Islamabad evolved as a planned city only for twenty-five years after its inception i.e., upto 1985 but now the share of unplanned is increasingly becoming dominant. Now Islamabad is growing as an uncoordinated action of various nascent organizations. The unique concept of the Doxiadis became a fractional part of the development surrounded by galaxy of haphazard and unplanned growth of the city. It has become an amalgam of modernity and tradition. Some people think that planned city did not match the socio-cultural values of the inhabitants but the current scenario reflects real picture of Pakistan. It appears that the decision making in CDA is guided by a group of people who are always busy in protecting their own vested interest. They are no more serious in implementing the Master Plan 1960. They are fully contented with what they are doing is best, they cannot see into the future, cannot assess the impact of their wrong and confused decisions. During the last 63 years they used to take decisions following a dictatorial style of decision making. They are revising the master plan, amending it, twisting it to get more and more personal gains. They are successful in creating the hybrid development which is a mix of planned and haphazard development creating a feeling of confusion and despair. After sixty-three years the idea of unidirectional growth converted to multi-directional growth. The infinite growth of the planned city towards southwest has been blocked. The commercial and business activity have been proliferating astride all major roads and highways approaching the capital city. The expected revenue from sale of commercial plots of Blue Area would diminish gradually. Now the game is in the hands of private land owners and big investors/developers. All stakeholders should be consulted in a democratic way to make the plan and policy of the CDA to achieve sustainable development. They can't see the problems of the city.

Unattended unauthorized construction is going on in all the zones of the ICT with varying pace and magnitude. Illegal housing schemes and land subdivisions are emerging without any notice of the Authority. As per a survey conducted in 2015, 110 illegal land subdivision schemes were identified within ICT. KatchiAbadies has also been increasing in number and size. All the human waste and solid waste of the KatchiAbadies is going directly into the nullahs (natural streams). The Natural streams are being encroached narrowing their width in urban as well as rural areas. Narrowing down the width of nullahs (natural streams) would cause flooding upstream. Sensitive areas are being encroached without any regard to the environment. Huge cutting of hills upstream Korang River not only disturb the natural environment but also cause siltation in the Rawal Lake reducing its storage capacity. Huge illegal construction is going on in the Margalla Hills National Park. Due to these factors the environment of the capital is degrading day by day. All this is the manifestation of weak control of CDA. A lot of corruption is there in CDA in all the directorates resulting in compromise on the Rules and Regulations. There is a need of Review of the Master Plan immediately based on the deteriorating existing situation. The gravity of the existing situation be assessed through detail analysis of the processes going on after in depth analysis of the existing situation.

From the above it can be concluded that CDA could not implement the Master Plan of Islamabad in letter and spirit. Moreover, CDA could not manage the city growth according to the Master Plan of Islamabad. After 1992 majority of CDA's actions and policies are in fact benefitting the private developers and land grabbers. Almost all decisions are being taken to please the private developers arbitrarily without any

analysis and without studying their impacts. Housing Schemes are being approved, NOCs for individual building projects are being issued in Zone-IV of the ICT without having its overall Master Plan. Development without Master Plan is like inviting trouble in future. The area once built in a haphazard manner with narrow streets cannot be rectified in future. No clear-cut policy has been formulated by CDA regarding any sector of development i.e., Water, Sanitation, housing, KatchiAbadies, transportation, safety and convenience, etc.

Minor changes made in the Master Plan in the early period of its implementation caught momentum with the passage of time and increase in number and magnitude in such a manner that the original concept of the Master Plan has been destroyed completely, except the grid-iron pattern. All the planning principles have been breached by the CDA itself and good characteristics of the plan vanished with the passage of time. This strange attitude of CDA has threatened the sustainability of the development of the city. All the negative factors which were present in Karachi in 1960 due to which capital was shifted can now be felt in Islamabad.

### **Recommendations**

Due to the increase in the number of administrative units, the large size of the area, and the economic and political strength it represents, there is a need for coordination of development at the metropolitan and regional scale (Botka, 1995). A new planning framework, preferably in the form of a larger metropolitan development plan, is urgently needed (Botka, 1995). The management of large cities should be solely the responsibility of Metropolitan Governments led by an elected Mayor. These Metropolitan Governments should have sole control over Master Planning, Land Allocation and Use, Public Transportation, Housing, Infrastructure Development, Parks and Amenities, Water, Sewerage, and Solid Waste Disposal. KatchiAbadies and slums, inadequate municipal services, significant infrastructure gaps, and poor and expensive transport would continue to exist in the absence of these governing mechanisms. All planning and development organizations working in the Islamabad/Rawalpindi Metropolitan area should be brought under the Metropolitan government's Master Planning discipline. They will be able to carry out municipal functions within their respective jurisdictions while adhering to the Master Plan's rules, norms, and standards (Hussain, 2014). The sanctity and observance of the Master Plan may be a binding on all the organizations working in the region. The issue arises when plans are reduced to pieces of paper and execution is more about deviance than adherence to the plan. Because of rampant corruption, malpractices, nepotism, and favoritism in the Building Control Authorities, enforcement of bylaws, rules, and zoning laws is rare (Hussain, 2014).

Administrative Area is the only and the most important center of employment of Islamabad. Islamabad requires secondary employment center to evenly distribute the employment. This would help in resolving the traffic issues in the morning and evening peak hours. Competent and professional individuals with experience in urban development must be hired to run the regulatory authorities' business. In CDA plans are made manually due to which the condition of layout plans/drawings is very poor. No computerization in planning decision making, lacks AutoCAD experts and GIS Specialists. Modern tools are not being utilized for decision making by the authority like Satellite Images, GPS, Total Station, etc. Layout plans of Sectors have not yet been computerized/digitized, Estate Management record is yet to be computerized, Land Information System (LIS) has not yet been developed, poor record keeping of CDA's acquired land and properties, Record keeping system is outdated, lacks data base of employees, etc.

Managing urban growth requires decentralization to make decision making process transparent and accountable (Alnsour, 2016). Public-private partnership should be promoted to enhance the supply of

affordable housing (Zafar, 2022). Enforcement mechanism may be reviewed to make it quick and effective. Notification of Urban areas may be reviewed keeping in view the characteristics of the areas. Mechanism be evolved to protect CDA's acquired land. Mechanism be evolved to protect the CDA's open land along the nullahs (streams).

To reduce the housing backlog in Islamabad, the stalled sectors of CDA may be developed immediately. Development Control mechanism of CDA needs to be reformed. Margalla Hills may be saved from encroachments. Mechanism be drawn to protect the CDA's acquired land. Skilled manpower be hired equipped with necessary regulatory tools and be tasked to control unauthorized construction. Courts be requested not to issue Stay Orders against demolition of illegal structures/encroachments along nullahs and on CDA land.

New techniques/methods be adopted for land appropriation, the techniques being followed by other development agencies in the region may also be reviewed. Lands directorate of CDA may be absolves of the function of acquisition of Land due to rampant corruption in the directorate or the directorate be abolished as now it cannot acquire land for CDA with the current policy, fairly and transparently, due to corrupt practices which have become their innate characteristics. Leapfrogging pattern of development be shunned and development of sectors be carried out in a planned sequence. Coordination with other agencies be reviewed. Grid-iron pattern may be strictly followed in Zone-I and Zone-II of the ICT as per the Master Plan of Islamabad so as to avoid haphazard development in the Zones. Moreover, in this way the Grid-iron pattern can be extended beyond CDA limits implementing Doxiadis plan of Dynapolis. Private Housing Societies be forced to follow the Grid-iron pattern in case of failure severe penalties be imposed on the sponsors of the schemes.

Hierarchy of facilities education, health, road network, commercial areas, open spaces, etc., recommended by Doxiadis in the Master Plan may be adhered to. The characteristics of the Zone-IV may be restored as per the original Master Plan of Islamabad and it may be saved from becoming haphazard part of the city. The commercialization of Industrial and Trading Center be withdrawn and its original character as per the Master Plan be restored. Departure from Master Plan concepts may be avoided. Right-of-ways of roads and highways may be protected from any type of encroachment specifically graveyards and fake Mazars.

Old mosques may be demolished after acquisition of land. Reconstruction of old mosque may not be allowed in planned sectors.

The role of pressure groups in the administrative affairs may be minimized so that the culture of sifarish (intercession) and rishwat (bribe) can be eliminated (Matthew Hull S., 2009) and the tag on CDA of most corrupt government division in the country can be removed (Matthew Hull S., 2008).

Public participation may be ensured in the decision making and policy making to achieve transparency. Commercial activities be confined to only planned commercial areas according to the hierarchy recommended by Doxiadis in the Master Plan of Islamabad. Proliferation of commercial activities in the residential areas, industrial areas and open spaces be discouraged. Commercialization of open spaces may be curbed. Non-conforming activities may be eliminated from residential and industrial areas.

Further NOCs for private housing schemes and for construction of individual buildings in Zone-IV be immediately stopped till the Master Plan of the Zone is approved by the competent authority.

It is learnt that the private housing schemes developed along Simly Dam Road, in collusion with supervisory staff of Water Division, CDA, has illegal water connections from Water mains coming from the Simly Dam. Non-development budget be brought under control. Haj scheme for employees may be reviewed and it should be attached to the work performance of the employee.

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