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IS IT A DREAM OR REALITY OF FIVE MILLION HOUSING UNITS CONSTRUCTION IN PAKISTAN? A REVIEW OF HOUSE CONSTRUCTION APPROACHES AND MEASURES

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Abstract. Housing is one of the basic necessities of human beings. The rapid urbanization in Pakistan resulted in slums and informal housing. The government of Pakistan has launched a NAYA PAKISTAN HOUSING PROGRAM (NPHP) for constructing 5 million housing units for providing affordable housing to low-income people by the year 2023. This research study extensively reviewed literature on affordable housing policies and strategies in the world to identify the models for provision of affordable housing. A total 85 professional town planners having experience of five years or more were interviewed those are serving in government and private sectors. The cost and land required for the construction of 5 million housing units were calculated. The various successful best practices in Pakistan were explored such as Khuda ki Basti, Orangi Pilot Project, and Safiya Homes besides the international literature. Further, several strategies and policies are examined in this research that can be adopted by Naya Pakistan Housing

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Project to provide 5 million low-income housing units, based on expert opinion in the country. This research concluded that this project required finance of 12330.63 billion PKR with a total land area of 129017.85 acres for 5 million housing units in Pakistan. According to this figure, it can safely be concluded that it will remain a dream for low income people to even construct a 3 Marla house by availing the NPHP. It is recommended that the site and services model for this project is feasible and extensive subsidies should be given to the real estate developers by the Government. This research also suggested the concept of social housing for low income people of Pakistan. This research will be helpful for the policy makers, urban planners, and housing developers which will be directly contribute for the construction of 5 million housing units under the NPHP in the country.

Keywords: Affordable Housing; Low Income Housing; Five Million Housing Units; Naya Pakistan Housing Program; Pakistan

JEL Classification: H11, H24, R21

I. INTRODUCTION

In developing countries, the urban population is increasing rapidly due to urbanization and this leads to slums and informal housing construction to meet the ever-growing housing requirement. Globally, three basic needs of human beings (food, clothing, and shelter) are rights of every human being. However, shelter is the basic need that if fulfilled once then it would be enough for once in one's life. Article 25 of the United Nations Universal Declaration of Human Rights 1948 states as "everyone has the right to the standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing, and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control" (Ronald, 2014). Sustainable Development Goal 11 in its target 11.1 aims at the provision of safe, adequate, and affordable housing and basic urban services and the up-gradation of slums by 2030 (UN-Habitat, 2018).

Further, housing is an essential part of the economy. It has forward and backward associations with other parts of the economy like needs of the people, demand, and supply of land, services and infrastructure, building materials and technology, construction professions, labor, and

finance. These connections permit housing to act as a vital engine for poverty reduction and sustainable development in both economy and society (UN-Habitat, 2011). Thus, the housing sector is not a social need but also a tool to enhance economic activity and it can reduce the poverty.

Researchers defined the low income and affordable housing according to the setting and socio-economic status of that region. Low-income housing is defined as the units specified to be occupied by a group of society whose household income falls below a presets level. Affordable housing can be defined as the housing for those groups whose family income is in a particular ratio, evidently less, to the median household income of that area and that particular ratio is worked out by the housing authorities of the concerned area to make the housing affordable (Fariha et al., 2018). It can also be defined as housing for which the dweller pays up to 30% of his income for gross housing expense (Kalugina, 2016). Therefore, it can be categorized as a relationship between household income and household expenditure, when the ratio of expenditure to income is reasonable that is the housing affordability (Eshruq Labin et al., 2014). Department of Housing and Urban Development in the USA defined housing affordability as "families who pay more than 30% of their income for housing are considered cost-burdened and may have difficulty affording necessities such as food, clothing, transportation and medical care. This 30% figure is also called the rule of thumb for housing affordability" (Cai, 2017).

Eshruq Labin et al. (2014) said that various approaches have been identified for measuring housing affordability including housing price to income ratio (PIR), housing affordability index (HAI), monthly mortgage payment to income ratio, and a residual income approach. Cai (2017) identified the approaches of affordable housing such as the income ratio approach, family target approach, and residual income approach. The six components of affordable housing system has been explored such as (i) policy (ii) planning (iii) design (iv) delivery (v) finance (vi) partnership (Ronald, 2014). For this research, affordable housing is categorized as a person can afford 30% of his or her income for housing.

Housing affordability is a big challenge in developing countries. According to UN-Habitat, more than 1 billion people are living in slums

and informal settlements due to a lack of affordability and housing alternatives. Over the next 25 years, more than 2 billion people will be added to this demand for housing and infrastructure services (Un-Habitat, 2011). In Asia, the urban population will be doubled (almost 3.4 billion) and host 50.3% of the total urban population. Daily, the Asian cities will be required to accommodate 120,000 newly inhabitants which would need the construction of housing units at least 20,000 and this phenomenon would also insert pressure on the availability of land and provision of affordable housing in urban areas (Ronald, 2014). According to an estimate, 40% of land in Karachi and the most valuable land in Islamabad was encroached by illegal housing schemes. The trend of borrowing for the construction of houses is high in the USA almost 80% of people construct their houses by loans. In Malaysia, this percentage is 33%, India 11%, Bangladesh 3%, and in Pakistan is only 0.25%. The reason behind low borrowing for housing in Pakistan is also due to limited Islamic banking system in Pakistan.

Housing affordability and access to adequate land is a major problem in Pakistan. Total population of Pakistan is about 207.7 million with number of households 32.2 million (Pakistan Bureau of Statistics, 2017). Every year, the shortage of housing has been rapidly increasing by 270,000 housing units in Pakistan. The housing backlog was 7.5 million units which reached 10 million by the end of 2018 (Nenova, 2010). Two-third of the population is not able to afford housing without some kind of financial support and subsidy (Un-Habitat, 2011). The comparison of the housing shortage in the world is given in Table 1.

TABLE 1

Comparison of housing shortage in the selected Asian countries

Name of Country	**Housing Shortage**
Sri Lanka	Annual housing units demand is between 50,000 and 100,000
Indonesia	Needs 735,000 houses annually
Bangladesh	Has current urban housing shortage of 659,000 units
India	Has the current housing deficit of 40 million housing units
Malaysia	Needed 709,400 new housing units from 2006 to 2010
Philippines	The housing deficit was 3.75 million units between 2005 and 2010
Pakistan	Has the current housing shortage of 10 million

Source: Un-Habitat, 2011

To meet the demand government took an initiative in Pakistan for constructing five million houses in five years. It is a big challenge and therefore, this research looking into its feasibility and policy measures could be adopted to achieve the objective of this program.

II. REVIEW OF LITERATURE

There are two main strategies for the provision of affordable housing such as the universal approach and targeted approach. The universal approach has been applied in several countries containing Sweden, Netherlands, Denmark, and Singapore, to provide affordable and decent housing to the public. The most common targeted approach has been implemented in Malaysia, the US, European Union, and Canada. This approach is based on the postulation that the market acts as the main part in the provision of housing, several special programs should be implemented to address the requirement of low-income people omitted from the market distribution system (Asian Development Bank, 2009). The Governments of the USA, England, Malaysia, and Canada have been given several incentives to captivate private developers in the construction of affordable housing, incentives containing density bonuses, tax deductions, land grants, direct subsidies, land classification shifts from commercial to residential use (Asian Development Bank, 2009).

The land is the costly element of housing. Land reservation for a low-income group in housing scheme projects must be compulsory for making social housing viable and affordable. In India, National Urban Housing and Habitat Policy suggested that all housing scheme projects should have a minimum of 15% of the saleable residential area and Floor Area Ratio (FAR) for social housings projects (Government of India, 2007). The housing schemes should spread in several parts of the city and not at one location. There is a need to review FAR/FSI, density, ground coverage for enhancing the land. Mixed land use is needed to make slums viable. The Vijaywada Municipal Corporation joined hands with owners of the land and constructed 18,000 housing units by taking 40% of the total land, reserved for public use and housing for low-income groups (Ram & Needham, 2016).

Many countries in the world are providing affordable housing. In the United States, more than 500 inclusionary planning schemes are operating, in which several require developers to contain low-income housing as a part of development in a certain zone with a fixed percentage of housing units and floor space. California and San Francisco generated 150 – 250 affordable housing units annually (contribute 12% of the total housing supply of the city). The government has permitted additional density and financial contribution to ensure low-income housing (Gurran & Gilbert, 2018). In Scotland and England, 20% - 40% of new housing development will be reserved for low-income people. In England, the Town and Country Planning Act (1990) have the required type and amount of low-income housing to be provided (Hardy, 2004). With this provision in Act, it resulted in several kinds of affordable housing such as shared equity scheme, social housing, discounted house ownership, and affordable rental housing (20% less rent from the market). In the light of the above-mentioned section, 83,790 low-income housing units have been secured between 2005 to 2016, and only 9,640 new housing units were included between 2015 - 2016 (Gurran & Gilbert, 2018). In South Australia, the government declared in 2005, 15% of new housing development will be affordable (share of 17% of new housing supply by 2016) and in New South Wales, inclusionary planning schemes will only supply affordable rental housing. Four components of housing deficit in urban areas has been considered such as houseless population, household living in Katchi Abadies without utility services, living in dangerous and physically dilapidated housing units, and living in congestion which are socially unacceptable conditions (Ram & Needham, 2016).

The Indian government has set a target of constructing fifty million new housing units by 2022 under the Pradhan Mantri Awas Yojana (PMAY) scheme, of which thirty million are to be built in rural areas and the balance in cities. The PMAY scheme has four major components such as In-Situ redevelopment of slums, credit linked subsidy, affordable housing in partnership (AHP), and enhancement and construction of beneficiary led house (Government of India, 2015). The government had adopted the afore-mentioned components and the work is proceeding at a tardy pace. Against the target to build 20 million houses for the urban poor by 2022, only 0.41 million houses have been constructed as of the

end of December 2017, while work is underway on 1.56 million units. The Ministry plans to construct 2.6 million houses in 2018-19, 2.6 million in 2019-20, 3 million in 2020-21 and 2.98 million in 2021-22. However, targets look challenging given the slow progress till now. The facts revealed that only 0.149 million houses were constructed against the target of 3.26 million units during 2016 – 2017. Under the rural scheme, the construction of only 1.6 million houses has been completed. Experts said a significant pick-up in the implementation of both the schemes is required for the government to meet respective targets (Ministry of Housing & Urban Poverty Alleviation, Government of India, 2015).

Indicators of Low-Income Housing in the world

Several indicators of low income/affordable housing have been recommended by various countries. World Bank suggested 25 key indicators and 10 alternate indicators in the areas of housing affordability, finance, production, quality, and subsidies in 52 urban areas on 6 continents. Also, 10 regulatory and 10 alternate regulatory indicators collected data from a regulatory and institutional environment (Mayo & Stephens, 1992). These indicators are listed below:

Key Indicators are (1) new household formation (2) homelessness (3) housing investment (4) housing production (5) house price to income ratio (6) rent to income ratio (7) house price appreciation (8) permanent structures (9) floor area per person (10) water connection (11) unauthorized housing (12) journey to work (13) residential mobility (14) owner occupancy (15) vacancy rate (16) residential segregation (17) credit to value ratio (18) housing credit portfolio (19) housing subsidies (20) targeted subsidies (21) infrastructure expenditure per capita (22) land development multiplier (23) cost of construction (24) industrial concentration (25) skill ratio.

Alternate Indicators are (1) persons per room (2) households per housing unit (3) squatter (illegal) housing (4) new housing credit (5) mortgage to prime difference (6) mortgage to deposit difference (7) mortgage default rate (8) land concentration (9) construction time (10) import share of construction.

Regulatory Indicators are (1) coverage of land registration (2) restriction on the exchange of land (3) housing finance development (4) rental price distortion (5) involvement of public sector (6) permits delay (7) compliance (8) minimum size of plot (9) rate of effective property tax (10) squatter tolerance.

Alternate Regulatory Indicators are (1) customary land ownership (2) estate land ownership (3) rent control (4) extent of rent control (5) cement price distortion (6) ratio of saleable land (7) foreclosure delay (8) rental eviction delay (9) land development control (10) property tax receipts.

Various indicators for affordable housing units are referred such as (1) income on shelter (2) core housing need (3) substandard housing units (4) changing face of homelessness (5) vacancy rate (6) rental housing starts (7) monthly rent (Echenberg & Jensen, 2009). Indicators for affordable housing has been suggested such as (1) number of built rental housing units (2) number of housing units created by approaches and strategies (3) number of new subsidies housing units (4) number of renter household (5) number of housing units with various rent ranges (6) ratio of housing prices to median household income (7) ratio of average rental housing to medium household income (8) average age of housing units (9) average vacancy rate (10) social assistance gap (11) income gap (12) percentage change in monthly rent (13) gap between minimum wage monthly salary and salary needed to afford one-bed apartment (Berry et al., 2006).

Several indicators used to measure housing affordability including (1) income (2) unit of analysis (3) housing costs (4) non-housing costs (5) location factors (6) composition of household (7) time period of housing affordability (8) housing adequacy (9) choice of benchmarks (10) treatment of housing assistance (Cai, 2017). Eshruq Labin et al. (2014) suggested the affordable housing performance indicators which are (1) house price to income ratio (2) access to employment (3) access to public transport services (4) access to education facilities (5) access to health facilities (6) access to shopping facilities (7) access to leisure facilities (8) access to open green public facilities (9) access to child care services/hospitals (10) safety incidence crime (11) quality of housing (12) energy efficiency (13) land properties (14) new space. The above-

mentioned indicators can be very helpful for initiating the affordable housing program. In Pakistan, the decision makers and policymakers should gain benefits from these indicators for developing the 5 million housing units.

Affordable/Low-Income Housing Models in the World

In the world, several models of affordable and low-income housing have been implemented. Five models of low-income housing initiatives has been proposed such as (1) sites plus development plan and gradual implementation of services (2) site and services (3) up-gradation of existing settlement (4) development of new housing in new settlement (5) redevelopment of degraded existing structures (Nafuna, 2013). There are three models/approaches to provide homes for the extremely low-income community. Models and their cities of implementation are described in Table 2. Social housing is a big model of housing affordability, there are best implemented international practices are presented in Table 3.

TABLE 2

Models/Approaches to affordable housing

Sr. No.	Model / Approaches	City of Implementation	Country
1	Cross subsidization between higher and lower-income housing	Ohio, Oregon	United State of America
2	Operating ongoing and maintenance cost	Washington State, Seattle Washington	United State of America
3	Providing project or tenant-based rental assistance	Chicago, Washington DC, Louisiana, New Jersey, North Carolina	United State of America

Source: D'Cruz & Satterthwaite, 2005

TABLE 3

Practices of low-income housing in the world

The Dutch Model	The Dutch social rental sector has 31% of total housing. This model implies that the income that housing associations obtain from letting and selling houses is sufficient to cover their investments in new affordable housing, housing refurbishment, and neighborhood regeneration
Inclusionary Zoning (USA)	Inclusionary zoning requires affordable/low-income housings in three ways are (1) 15% of developed units must be affordable (2) off-site construction of affordable units (3) Cash-in-lieu into a housing fund
Density Bonus (USA & UK)	Density bonus gave benefits to affordable housing/social housing
Public-Private Partnership (Vienna)	The government of Vienna owns and manages 220,000 social housing units which were 25% of housing stock. While 200,000 social housing units were constructed by profit private developers in 1980

Source: United Nations, 2015

III. MATERIALS AND METHODS

The extensive literature was reviewed on affordable/low-income housing in the world. Also, models and approaches were studied to get knowledge about low-income housing in developing and developed countries. This research is qualitative and quantitative in nature. For this research, primary and secondary data were collected. Primary data collection including the cost of construction of house for 1 square feet and cost of the development works per Marla were asked from the housing developers and contractors which are working in big cities of Pakistan such as Lahore, Islamabad, Karachi, Multan, and Faisalabad. Primary data also collected to verify the viability of the Five Million Housing Program and for this purpose 85 professional town planners having experience of five years or more were interviewed those are serving in Development Authorities, Local Government, Housing Departments, and private firms in the country. The mostly town planners are working in government department (72.94%) and few are serving in private sector (27.06%). For interview purpose, snowball sampling technique was used and got responses of 85 town planners from 08 October, 2019 to 28 October, 2019.

The expert opinion covered the following aspects such as do you agree with down payment? Is it possible to pay remaining payment in 24 months? How much cost is affordable for low income housing unit? Are you satisfied with the performance of institutions that provides low income housing? What is better model for low income housing? Is rental housing a solution to fulfill social housing requirement? Are land speculations being a reason for shortage of housing? How private developer can help to contract 5 million housing units? How government or NGOs can help to fulfill the mission of 5 million housing units? Are public funds available for 5 million housing units? Is the vertical development best possible solution to meet the target? Is the construction of 5 million housing units fill the current housing backlog in the country?

Cost analysis was also performed by consulting the various developers in big cities of Pakistan to find out the average construction price per square feet in the country. Total land was estimated on the standard sizes of houses which are using in Pakistan. The best-implemented projects on affordable housing in Pakistan were explored such as Khuda ki Basti (KKB), Orangi Pilot Project (OPP), Safiya Homes, and interview was conducted with the officials about the mechanism of providing housing to low-income customers in different cities of Pakistan. The secondary data was collected from websites to take government mechanisms for implementing the 5 million housing program. Secondary data is also including the brochures related to the 5 million housing program which were published by the Government of Pakistan at different websites. Detailed calculations were carried out to estimate how much land and cost is required for this program. Policies are recommended for the successful implementation of the 5 million housing program.

IV. BEST PRACTICES OF AFFORDABLE/LOW INCOME HOUSING IN PAKISTAN

In Pakistan, we can see few good programs of low-income housing schemes such as the OPP, KKB, and Safiya Homes which were successfully implemented by using the concept of incremental development approach. These projects have engaged the community for the successful implementation for affordable housing in the country.

ORANGI PILOT PROJECT

Orangi town is the biggest katchi abadi consisting of a narrow streets system. This was suffering from unhygienic conditions due to open and dirty katcha drains. This drain system running in the middle of the streets caused dangerous diseases. The OPP was initially announced as a lane sewerage project in Orangi. After that, it becomes the biggest NGO in Pakistan which is working for the improvement of living conditions of the low-income people in the country. This project aims to improve the slums and katchi abadis on a self-help basis (Hasan, 2003). The salient features of OPP are listed below:

- This project was initiated as a lane sewerage system for the improvement of aatchi abadis and eradication of poverty.
- This project highlighted public awareness, community organization, and empowerment of low-income people.
- NGO took part into several other welfare programs like Micro Credit Scheme, Women Training and Research Training Institute.
- This project engaged number of volunteers from Daood Engineering College for surveys and community organization.
- This project involved foreign donor organizations to support OPP.

KHUDA KI BASTI PROJECT

This project was initiated by the Hyderabad Development Authority, Pakistan. It was a low-income site and services scheme announced in Gulshan-e-Shahbaz, Hyderabad. It was observed, the current site and services projects have proven unsuccessful to provide house to poor needy/homeless people. Thus, poor people were forced to spend their life in katchi abedies and slums. This project changed the existing system of provision of low-income housing. This project aimed to provide planned plots to the selected poor people rather than constructed housing units in planned and serviced housing schemes. The utility services, roads, and superstructure of the housing units were developed by the allottees of the plots on a self-help basis. Also, they presented the concept of incremental development of infrastructure services and the construction of housing units on a self-help basis when allottees can afford it easily. The KKB

program proved to be fruitful for the low-income community in the provision of planned and affordable housing. This program has been simulated at eight places to date one of them is comprising of Kala Shah Kaku near Lahore (Siddique, 2013). In 2013, 2800 low-income families (18000 people) obtained shelter through self-help and incremental development. The low-income families organized themselves to develop infrastructure incrementally without obtaining loans from conventional financial organizations. The salient features of KKB are given below:

- This project used the concept of incremental development approach of affordable housing for poor people.
- This project implemented innovative allotment criteria for plot allotment for poor people rather than balloting.
- The development of infrastructure services and construction of housing units carried out on a self-help basis by the allottees.
- This project involved the technical staff of the Hyderabad Development Authority for the development of a low-income housing scheme.
- This project highlighted the community organization and empowerment of low-income people.

SAFIYA HOMES

Safia Homes is a project of Ansaar Management Company (AMC), it is a social enterprise taking on the challenge of developing low-income housing in Pakistan. This enterprise started in 2008 with a dream of bringing real change to the housing sector by providing affordable, quality housing that is accessible to low-income people in the country. It is providing low-income incremental housing in different cities of Pakistan such as Faisalabad, Peshawar, Lahore, Kala Shah Kaku, Multan, and Muzaffargarh. They are working to providing more than 1500 housing units (mostly housing units provided) and flats in the above-mentioned cities. It is also worth mentioning that they introduce a low-cost modern village concept post-2010-floods in Punjab that is primarily driven by community support (https://www.safiyahomes.pk). The salient features of Safiya Homes are described below:

- This project used the concept of incremental development approach of affordable housing for poor people.
- This project engaged the community.
- This project involved international social investors, like Acumen and Places for People.
- Civil infrastructure includes the Roads, water supply, underground sewerage, electricity, parks, and graveyard.
- Social Infrastructure includes the education complex, health centers, centers of worship, community center(s), block development committee rooms, solid waste management system.

V. WHY 5 MILLION LOW-COST HOUSING UNITS IN PAKISTAN?

Although the Prime Minster of Pakistan has pledged to construct five million houses for his shelter fewer compatriots during his government's stipulated five-year tenure, the challenge is certainly a daunting one as the country has a housing backlog of almost 10 million units with demand growing at a rate of 0.7 million new units per year. In its November 27, 2017 report, "Lamudi," a Berlin-based online real estate marketplace with operations in 34 countries, had viewed: "By 2016, Pakistan's housing shortage had reached around 10 million units and is expected to grow every year by 0.7 million units. This is an alarming situation and needs to be dealt with immediately. Most of this shortage is due to lack of housing available for the lower-income strata and an underdeveloped mortgage finance market" (Arnott, 2008).

The planning, designing, and construction of 5 million housing units in the coming 5 years is a big task for the Government of Pakistan. This needs innovations in land identification, development, planning, designing, and construction. This is a sole opportunity to introduce up to date procedures like digital planning, benchmarking, spatial data infrastructure for land pooling, readjustment and land management, infill parcel development, mixed-use and compactness, compact development, accessible and efficient public transport system, one window approval process, smart and intelligent services system, e-property transactions and e-services, capacity buildings of institutions, coordination

mechanism, buildings bylaws and regulations, transparent land acquisition system, and control on rents.

NAYA PAKISTAN HOUSING PROGRAM

The Prime Minister of Pakistan has announced the "Naya Pakistan Housing Program" on 10 October 2018 in Islamabad. Under this program, the Government of Pakistan will construct 5 million affordable and low-cost housing units within 5 years for poor people in urban and rural areas of Pakistan through one window operation. These houses will be provided to the poor people with 15 to 20 years payment plan. This program not only highlighted the housing issues but also the creation of multiple jobs and encourage economic growth in the country. More than 40 construction industries will be engaged in this program. A new young entrepreneur class will emerge, and the government will provide essential skills and training under the umbrella of this program. Also, training institutions will be established for the training of unemployed youth. The government will provide land, facilitate, and eliminate bottlenecks. These housing units will be constructed through a public-private partnership, which facilitates with all basic amenities. The Prime Minister said that "*We want to build houses for those who ordinarily do not even dream of owning a house, as they fall in low-income group and barely manage to find a shelter*". The data of estate lands will be gathered and registered by land banks, the government will provide land for housing units to be undertaken by private sectors/developers and will monitor by a housing task force consists of seventeen members. Under this program, data of slums (katchi abadis) will also be collected.

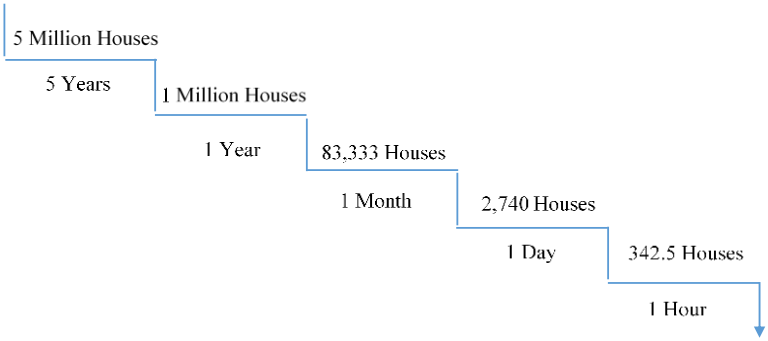
World Bank estimated that in 2009 Pakistan was facing a housing shortage of 7.57 million units and 6 million (79 %) of them were concentrated in the lower-middle-income and the lower-income group. Pakistan had 30 million housing units with a shortage of 10 million. From the annual demand of 700,000 housing units, the country constructs only 250,000 annually, with a backlog of 450,000 housing. If 5 million housing units program will be implemented to combat the shortage of housing in the country and this would able to solve half of the hosing problem in country (Nenova, 2010).

TENTATIVE BREAKUP OF FIVE MILLION HOUSING UNITS

The proposed breakup of five million housing units shows that 2740 houses will have to be constructed in a day (8 hours/day). This diagram shows that this is a very difficult task to construct five million houses under the current working mechanism of Government in a period of 5 years. Figure 1 shows that the construction of 5 million housing units is a dream, but effective planning and implementation can give positive indication towards the reality.

Figure 1

Tentative breakup of five million housing units



ADOPTIVE INDICATORS BY GOVERNMENT OF PAKISTAN

The Government has developed a registration form for the collection of data of people. Based on the data collected from the registration form, housing specifications containing site, design, and the price will be decided for the applicant. Several indicators were selected by the government such as profession, current residence, family gross income, preferred monthly payment plan, number of residents expected to live in a house, and the desired location of the house. Detail of indicators is presented in Table 4.

TABLE 4

Indicators of low-income housing adopted by Government

Indicators	**Sub-Indicator**	**Explanation**
Profession	Government Employee, Private Sector Employee, Self Employed, Farmer, Labor	Percentage of houses to be allocated to whom professional
Current residence	Joint Family Home, Rental Home, Katchi Abadi	Percentage of people living in which type of houses
Family gross income	<20,000 , 20,001- 40,000, 40.001 – 60,000, 60,001 – 80,000 , > 100,000	Which income class want to get low cost houses, and this referred towards the design
Preferred monthly payment plan	5,000 – 10,000, 10,001 – 15,000, 15,001 – 20,000	Percentage of people who want to choose what kind of monthly payment plan
Number of residents expected to live in a house	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, more than 10	Size of the household in corresponding to the house area
The desired location of the house	Faisalabad, Gilgit, Quetta, Muzaffarabad, Swat, Islamabad, Sukkur	What percentage of people required which location of the house in a city

Source: Punjab Housing and Town Planning Agency, 2018

The indicators identified for the evaluation and selection of people for the five million housing program are described in table 4. These indicators are generic in nature. The government will select the suitable people for this program by adopting the above-mentioned indicators. According to these indicators, the minimum monthly installment is 5,000, which is not affordable for low-income people whose monthly income less than 20,000. The indicators must be specific in nature for the selection of people. The ownership status of the current residence must be included as an indicator. To identify the actual beneficiaries of the low-income housing project, there is a need to conduct a detailed research study. The opinion of housing experts and practicing town planners should be incorporated to make this project implementable and successful. Also, it is recommended that government should follow the indicators suggested by the World Bank and other countries for

evaluation of eligible people and make the program affordable and viable for homeless people.

PROPOSED LAND USE BREAKUP OF 5 MILLION HOUSING UNITS

Pakistan is the world's 5th largest populated country and it has a shortage of housing and more specifically, the trend of low-cost housing. Real estate holds immense potential because of population density. The people of Pakistan are experiencing penury and therefore the housing is not very elaborate or accurately planned and cannot last very long build by them. Many people are homeless due to overpopulation. Social Housing is an immediate need for people of low income or with particular needs, provided by the Government or not-for-profit organizations. Therefore, for the purpose of demand of land for housing an estimate developed to guide the practitioners. The proposed land use breakup of the 5 million housing units which is same for all proposed sites in the country under NPHP is provided in Table 5.

TABLE 5

Proposed land-use breakup and estimated area for 5 million low-income housing units

Housing Unit Size	Area of Plot (sq ft)	Percentage	No. of Story*	Housing Units	Area (Acres)
3 Marla	675	33	2	1,650,000	15468.75
5 Marla	1125	18	2	900,000	14062.50
7 Marla	1575	12	2	600,000	13125.00
10 Marla	2250	7	2	350,000	10937.50
Apartments 3 Marla (2 bed rooms)	675	20	7	1,000,000	2678.57
Apartments 4 Marla (3 bed rooms)	900	10	7	500,000	1785.71
Total (45% of total land area)		100		5,000,000	58058.03
Roads, OS, PB, Commercial & Graveyard (55% of total land area)					70959.82
Grand Total (Area in Acres)					129017.85

* One floor will use for one household.

Table 5 is presenting the housing breakup according to different acceptable sizes for NPHP. It is estimated that 45% of the total land area

is reserved for residential use and 55% of the land will be used for commercial, public buildings, parks, institutions, graveyard, and roads. Vertical development is the need of the time otherwise land shortage and lack of agricultural land will be the main problems after a few decades. But Pakistani people don't accept such high-rise flats due to local culture and climate. Therefore, authors have proposed a maximum number of plots for housing units which are the best choice for people in Pakistan. Most of the population in Pakistan is low income, so this research proposed 81% for low-income people, and the remaining 19% are for middle-income groups to cut off the cost for low-income people. However, 30% apartments (ground + 6) are also proposed to offer a variety of dwellings for the applicants. And following the policy of the World Bank has a learning lesson for the developers as well as Government organizations.

"The evolution of the World Bank's housing policy through two decades can be divided into three stages. The first decade of Bank housing policy focused mainly on "sites and services" and slum-upgrading projects; the second gradually shifted the emphasis to housing finance development, and recently there has been a gradual shift to "housing policy development loans" (Arnott, 2008).

To accommodate the low-income people, maximum percentages are given to 3 Marla (675 sq. ft as one Marla is equal to the 225 sq. ft in Lahore and 272.25 sq.ft in many cities of Pakistan) plot which will be ground +1 story. One story will be used for one household. To make this five million housing initiative economically viable the concept of cross-subsidy is used. The plot size of more than 5 Marla is used to accommodate the middle-income class. The revenue collected from these plots will be used to provide subsidies to low-income people. To achieve the target of five million housing units, more than 129 thousand acres of land is required including 58058.03 acres land for residential units and remaining land for other amenities.

COST ANALYSIS

If average construction cost Rs. 2500/ft^2 (value obtained from survey) which is being charged in Lahore, Islamabad, Multan, Karachi and Faisalabad then there will be a requirement of 10524 billion Pakistani

rupees to construct only 5 million housing units. The breakup of cost is presented in table 6. As per surveys conducted with the developers of the housing schemes, the cost of development per Kanal (4500 sq. ft) is ranging from 1.5 -2.0 million in the big cities of the Pakistan. The calculated cost of development is presented in Table 7, if we are taking the average development cost to be 1.75 million per Kanal and it comes out to be 14.0 million for one acre.

TABLE 6

Cost analysis for 5 million housing units

Total Housing Unit	5,000,000				
Housing Unit Size	Area of Plot (ft^2)	Percentage	Housing Units	Total area (ft^2)	Cost (Billion)
3 Marla (675 sq ft)	675	33	1,650,000	1,113,750,000	2784.38
5 Marla (1125 sq ft)	1125	18	900,000	1,012,500,000	2025
7 Marla (1575 sq ft)	1575	12	600,000	945,000,000	1890
10 Marla (2250 sq ft)	2250	7	350,000	787,500,000	1575
Apartments (2 bed)	675	20	1,000,000	675,000,000	1350
Apartments (3 bed)	900	10	500,000	450,000,000	900
Total (45% of total land area)		100	5,000,000	4,983,750,000	10524.38

Table 6 describes the cost analysis for this program which is based on a standard rate of 2500/ft^2 in the current scenario prevailing in big cities of Pakistan. The total development cost of this program will be 1806 billion rupees (refer Table 7).

TABLE 7

Estimated total cost including development cost for 5 million housing units

Cost	Area (Acres)	Cost (Billion)
Cost of Development	129017.85	1806.25
Total Cost (5 Million Houses Units + Development)		12330.63

According to Government payment schedule for NPHP, the minimum down payment is 350,000 PKR (2188 USD) for the ground

floor and 330,000 (1875 USD) for the 1st floor of 3 Marla (20% of the total cost of plot) which is too much for a poor person to afford. It seems that this program designed for the poor or for the middle class who have already well-furnished homes their own. Now, we take an overview of about payment period of 18 Months for 3 Marla House. Cost of ground floor is 1,750,000 and 1,650,000 for 1st floor. Is it possible for low-income people to pay the remaining amount (excluded down payment) within 18 months which comes out to be PKR 77,778 /month if they do not want to take a loan on an interest rate of 09%? From the above discussion, it can safely be concluded that it will remain a dream for low income/middle income person to build or own a 3 Marla house of his own in the NAYA PAKISTAN HOUSING SCHEME, because it is very expensive and challenging for a middle or low-income person as minimum wage in Pakistan is 15,000 – 20,000 ($94-125) assuming the dollar rate of PKR 160. Keeping in view low income who can think of paying the afore-mentioned down payment and subsequent monthly income installments. It is estimated that total cost of the project is PKR 12330 billion (77 billion USD) if assumed that Government will use the state-owned land.

EXPERT OPINION FROM PROFESSIONAL TOWN PLANNERS

A total of 85 registered and practicing town planners are consulted through interviews, related to the applicability and evaluation of the five million housing program. The majority (72.94%) of the interviewed experts belongs to the government sector which are working (77% of total) in Lahore and remaining are from other major cities of Pakistan. Almost 53% respondents have professional experience of more than 15 years. The major findings of the interview with experts are elaborated as under:

Reduction in down payment

It is concluded from the opinion of the professional the down payment (20% of the total) for NPHP is not affordable to real low income people, but middle-low can afford the down payment fixed by the government for house. Almost 84% of the experts suggested that the down payment

should be reduced as per the low-income category people. It should be 5% - 7% of the total cost of the house.

Reduction in installment of total payment

It is very difficult to pay remaining amount to the low income within the period of two years for constructed house. 88.23% of the experts respond that the monthly installment should be a little higher than the monthly rental amount and it may be prolonged to 20-25 years. In the case of Government employees, the constructed house should be provided by deducting the housing allowance from their salaries.

Total cost of house should be accessible for poor

This research inferred that the majority of the expert (92.94% of the total) responded the cost of 3 Marla and 5 Marla fixed by the government is not affordable for low-income people in the country. They suggested that the government should provide housing units at about or even less than one million rupees in the case of Lahore. In small-towns, it should be about half a million and in rural areas of Pakistan, it should be around 0.25 – 0.3 million which should be in the access of low-income people. This could not be possible without subsidy then government must provide subsidy to the poor segment of population.

Introduction the concept of Social Housing

According to the professional, the concept of social housing must be introduced in the country, and in any case, it should not be converted into a routine housing business, i.e. sale on stamp paper or illegal occupation, utility services connection fees etc. may be reduced and provided on a priority basis. We need to change the social norms of house ownership in the country. People with large houses get prestige and respect in our society and if some hard worker and highly educated is living in a small house or low-income category scheme, normally de-privileged. Almost 92% participants suggested that needs to be changed as it has happened in Europe, such as in the Netherlands, about 60% of people were living in social housing without any ownership rights. The idea of social housing is missing in Pakistan and this should be adopted.

Best Model for Housing Project

Different models of affordable housing are in existence in the world such as site and services, incremental development etc. More than 87% of the experts recommended that the site and services model for the low-income housing which was implemented in Pakistan such as KKB. Experts further suggested that the afore-mentioned model is the best model to somehow achieve the target of 5 million housing units in the country.

Strict legislation/regulations Mechanism

Majority of the expert suggested that strict legislation mechanism is needed, and if someone fails to construct a house in a given time period, it must be taken over by the concerned authority and only 50% of the current market price be given back. By planning instruments, site and services scheme should be allowed only for high middle and high-income class with heavy taxation on sale of allotted plot. Otherwise, community housing/low-income housing should be promoted. The experts object to the name 'Low Income Housing' as low income gives a negative or degrading impact. It should be better to called 'Community Housing'.

Incentives/Bonus for Housing Developers

More than 89% experts suggested that private developers must be engaged with incentives or bonus by the government. With the general agreement for financing, the project for low-income groups can be launched. Through the change in legislation, in the blights zone of inner-city, regeneration projects / high rise may be initiated to avoid the horizontal spread of cities especially the big cities to promote the sustainable/compact development in the county. Islamic banking system should be promoted for providing the finance for low income housing units.

VI. CONCLUSION

Housing is one of the basic necessities of human beings. Access to low-income and affordable housing has become a major concern for low and middle-income households around the globe. Housing has become less

affordable for low income and middle-income people due to lack of housing policies. In Pakistan, owing to the increase in the urban population resulting in slums and informal housing. The Government of Pakistan has launched a NPHP for construction of 5 million housing units for providing affordable housing to low and middle-income people by the year 2023 in the country. This study sketched land use breakup including 45% for residential housing units and 55% for other amenities such as roads, public buildings, open spaces, commercial and graveyard. This research study estimated that more than 129 thousand Acres of land is required to achieve the target of 5 million housing units in the county. It is proposed 81% of residential units for low-income people, and the remaining 19% are reserved for middle-income groups to cut off the cost for low-income people. This research study also estimated the total cost of whole project, this project is required a total cost of 12330 billion PKR (77 billion USD) if assumed that Government will use the state-owned land. It is safely be concluded that it will remain a dream for low income/middle income person to build a 3 Marla or 5 Marla house under the umbrella of NPHP, because it is very expensive and challenging for a low and middle-income person as minimum wage in Pakistan is 15,000 – 20,000 PKR/month. It is finally inferred by seeing the cost and land requirement for 5 million housing units, this is a dream rather than reality.

Many countries such as USA, California, San Francisco, Scotland, England, South Australia, India, and Vienna are providing the affordable housing for low income people. These countries are using various approaches and models to provide affordable housing including cross subsidy, Dutch model, inclusionary zoning, density bones, public private partnership, and social housing. In Pakistan, few projects were also initiated to provide the affordable housing in the country such as OPP, KKB, and Safiya Homes by using the concept of sites and services, and incremental housing development. The above-mentioned practices are successfully practicable at their own level for providing the low income/affordable housing for the poor. In this research study, 85 experts were targeted to get the opinion for successful implication of 5 million housing units under the NPHP. Based on the expert's opinion, this study concluded that down payment, installment plan and total cost of even 3 Marla is not affordable for poor people in the country. It was also

suggested by experts that the different concept of affordable housing such as social housing, site and service, and incremental development to make the real execution of 5 million housing units by 2023. Density bonus and other incentives should be given to the housing developers for successful completion of this projects. This study suggested that strict legislation/regulation should be formulated for better implementation of this project.

VII. RECOMMENDATIONS

This research presented the following recommendations are as below:

- The institutions should boost the participation of the community (like OPP, KKB, and Safiya Home) and private sectors (like Vienna and India) for the successful implementation of 5 million housing units in the country.
- The role of private developers in the provision of affordable housing should be highlighted and the government should give the incentives for providing affordable housing under the umbrella of 5 million housing units like India and the United State of America. Density bones should be awarded to the developers for promoting the high-rise development in the country. Islamic mortgage financing system should be encouraged in the country for successful execution of 5 million housing units.
- Mostly, government servants are homeless in Pakistan. The Government should provide houses against their housing allowance in the country. This can be a part of the 5 million housing program. In this way, housing backlog will be reduced in Pakistan.
- The project cost of 5 million housing units is so high and huge land shall be required for successful implementation of this program. Therefore, the government should encourage the cross-subsidized model of affordable housing to achieve the target by 2023. This research suggested social and rental housing, site and services model should be promoted.

- According to the private housing rule in Pakistan, 20% of plots shall be reserved for low-income people. The government should impose a strong enforcement mechanism for this. Also, these 20% plots in newly approved housing schemes should be the part of NPHP. Strict legation/regulations should be formulate to execute the 5 million housing units program.

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