Opinions

Urban Planning & Development in Pakistan

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Before joining Massey University, he worked in Australia at Melbourne University, Monash University and Royal Melbourne Insitute of Technology University in a teaching and research capacity and Victorian Road Authority in a professional capacity.

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Part 1 Transport Planning

1. **Why does Dutch PM bike to his office but not our PM?**[1]

24 May, 2022

Imran Khan told Pakistan that the Dutch Prime Minister rode to his office by bike. However, he failed to follow the example of the Dutch PM, taking a helicopter from his Banigala home to the PM's Office. My question is not for Khan but to understand why the Dutch PM bikes to his office.

Any Pakistani who has visited the Netherlands knows that everybody cycles there. Young and old, rich and poor, migrants and native, urban and rural, men and women, commuters and schoolchildren, and also the Royal Family and the PM. Cycling is a routine activity that is not linked with status or lifestyle and does not carry any stigma.

The Dutch culture promotes humility — not placing yourself above others. Therefore, cycling is a way of signalling that you are like other people. Consequently, over 40% of trips in Amsterdam are by bike, whereas less than 5% of trips in Pakistani cities are by bicycle.
In Pakistan, we have a deep-rooted culture of showing off status and income through distinctive houses and mobility choices. Different models of cars are a symbol of wealth and power. Therefore, everyone aspires to have an expensive car in Pakistan regardless of their social, economic, political, ethnic and religious differences. Even, environmental NGOs and organisations that aim to promote the Sustainable Development Goals demand big, expensive cars.

In Pakistan, people have a mobility culture of cars and bigger cars. It is interesting that Pakistani people carry their mobility culture with them if they move to countries where a car symbolises an anti-environmental personality. Overseas Pakistanis are also buying more extensive and expensive cars (with personalised nameplates) in societies (including New Zealand) promoting walking, cycling and public transport for sustainability.

Pakistani cities were built for non-motorised transportation. Anyone who visits the inner city areas of Lahore, Rawalpindi and Peshawar can see the lively street culture. In contrast, car culture brought wide roads, big parking lots and low-density housing schemes in edge of the cities. Car-based culture promotes a specific lifestyle and made cycling a stigma and represent poverty. We lost the humility of the Dutch cities. The Dutch are rich people (over US$50,000 per capita income) compared with Pakistanis (US$1,200 per capita income), but they did not stop cycling even though they were rich enough to afford alternatives.

Beyond social norms, cycling in the Netherlands is the result of social movements, urban planning policies, funding mechanisms and research directly and indirectly promoted by the governments since 1970s. Dedicated bicycle paths and bike parks were constructed. Bike to school programmes were started so cycling habits became part of the next generation's mobility. Urban planning policies and cycling co-evolve, which means that new developments produce more cycling. Shopping centres were developed based on bikeable distances. Amsterdam now has coffee and burgers drive-through for cyclists. In fact, cycling minutes are the standard unit of time distance measurements: '10 minutes from the centre' in real estate advertisements means 10 minutes by bicycle. Each municipality hires a cycling officer to plan and implement policies. In 2018, I had the opportunity to attend the 2nd Cycling Research Board Conference in Amsterdam. I was amazed to meet over 60 Dutch post-PhD researchers and professors researching different aspects of cycling in their country. Through the efforts made in the last 50 years, cycling has helped the Dutch

[1] https://tribune.com.pk/story/2357962/why-does-dutch-pm-bike-to-his-office-but-not-our-pm

people improve their mental and physical health, to enhance sociability in public life and to reduce transport-related energy consumption and emissions.
It is rare to see milkmen and other tradespeople using bikes in Pakistani cities. However, cargo bikes are very common in the Netherlands. In fact, cargo bikes are mainly used by mothers with young children for daily activities. Most Dutch families have at least one or two bicycles available at their homes. They also use bicycles to access stations and other public transport. Pakistan can learn from the Netherlands by building a cycling network to connect with the BRT/Metro Buses and the Orange Train network.

In summary, Dutch culture has shaped cycling, and cycling has shaped Dutch culture. History shows that culture cannot be simply transplanted. The Dutch PM's cycling habit will not be simply transported by Imran Khan's speeches and General Ziaul Haq's cycle riding show. If we want to see the Pakistani PM biking in 2050 then we have to start a cultural shift now by formulating policies, allocating funding and acknowledging the common people of Pakistan who are riding bikes in such a risky, polluted and hostile environment. The UN Sustainable Development Goals demand that Pakistan should promote cycling as a respected, accepted and feasible transport form without making excuses about the weather, lack of space and perceived impracticality. The Dutch culture and cities are great examples to learn from.

2. The real cost of mobility in Pakistani cities[2]

11 September, 2018

The controversy over the cost of helicopter use vs car use and an audit of public transport projects in Punjab got media attention in the first few weeks of the Pakistan Tehreek-e-Insaf (PTI) government. Every citizen is interested to know the true cost of using different modes of transport, but I am not sure whether people know that lower class in Pakistan is subsidising rich and middle-class people's car and motorcycle usage.

The ownership and use of cars and motorcycles in Pakistani cities has increased dramatically over the last two decades. This is due to huge investment in intercity and urban road infrastructure (such as underpasses, flyovers, ring roads and motorways); car-friendly policies (such as car leasing, importation and taxation); and continued reduction in the cost of using cars (petrol price, the price of vehicles and free roads). There is no doubt that personal ownership of cars and motorcycles has increased the standard of living of the urban middle class by providing improved personal mobility and access to suburban housing, jobs, shopping and local tourism.

While the number and use of cars and motorcycles have increased, the number of trips made by public transport, cycling and walking has decreased over time. I grew up in Wah Cantonment in Punjab, where morning peak traffic was full of cycling and public transport passengers, which is rarely seen these days. There is a similar situation in other cities of the country.

Researchers categorise cost into the internal and external cost of transport. The internal or direct cost of transport can be seen as 'out of pocket' cost such as the cost of purchasing a vehicle, registration, regular maintenance, fuel, insurance, taxes and road user charges (toll taxes). External costs mainly includes the environmental (air, noise, water, waste, and soil pollution, climate change, land consumption) cost, social cost (road deaths and injuries, and time pollution) and economic cost (cost of congestion, technology and infrastructure). The true cost of using a car is too high, and is not paid by car users, but mainly spread all over society.

With the availability of data, many researchers have estimated the direct and indirect cost of using cars. It is estimated that cars are producing an external cost of 3-4% of GDP in European cities. Public transport users literally subsidise private transport users in terms of external cost. While we all know the higher quality of public transport in European cities, the external cost of using cars in Pakistan is probably much higher. It is important to calculate the true cost of using cars and motorcycles in Pakistan to get a clear picture.

Pakistan can learn from Chinese cities. Shanghai opened its first metro line in 1996, but has now built over 550 kms of metro train network in the city. The Chinese know that good quality public transport has the potential to bring economic growth and therefore they are continuously extending their metro system in all big-and medium-sized cities.

The Sustainable Development Goal (SDG) 11 emphasises making cities inclusive and sustainable. It sets 11 targets, including "access to safe, affordable, accessible and sustainable transport systems". This target can only be possible by preparing a National Urban Policy and setting up a National Transport Fund that supports strategic transport and housing projects in Pakistan's cities. According to the International Association of Public Transport (UITP), cities with a population of one million need to build a Bus Rapid Transit (BRT) system while cities with a population of

[2] https://tribune.com.pk/story/1799954/real-cost-mobility-pakistani-cities

three million or more people should build train-based metro systems. The proposed National Transport Fund should be used to build BRT and metro trains systems in 10 big cities of Pakistan. Although city development is a provincial matter after the 18th amendment, provinces don't have the technical and financial capacity to build mass transit projects and are looking to the federal government for policy guidelines and funding.

Good quality public transport is an essential instrument for regenerating Pakistani cities, which could lead the PM's ambition of building 50 million houses, boosting the national and local economy and establishing a genuine local government system in the country. Public transport, if carefully planned, can create jobs and stimulate inclusive growth in Pakistani cities, a step into Naya Pakistan.

3. Orange line is the green line[3]

11 June, 2014

The orange line is vital for Lahore's future transport and economic needs, and allocation of funding in 2014 Federal Budget should be welcome by professionals and the people of Lahore.

The Punjab government's ambitious plan to build Pakistan's first ever urban metro system – a 27 km elevated orange line in Lahore, has great potential to make Lahore a competitive low-carbon city of South Asia. Historically, Lahore has generally ranked well in South Asian economic, environmental (because of the city gardens) and cultural indexes. However, the city has been held back by its poor public transportation infrastructure resulting from a lack of investment over the last 65 years. This is reflected in statistics which show16 per cent of people go to work by public transport in Lahore as compared with 40 percent in Delhi and 60 percent in Mumbai.

Economically prosperous and low-carbon cities are those where journeys can easily be made using good quality bus and train networks. A Mayor of Bogota, Enrique Penalosa once said, 'a developed country is not a place where the poor have cars. It's where the rich use public transportation'. Cities in Europe, North America and Australia are aggressively investing either in rail-based public transport or Bus Rapid Transit (BRT) systems, similar to the Lahore and Islamabad Metro Bus projects.

Our neighbour, Delhi first opened its metro line in 2002, while Bangalore metro became functional in 2011. Metro lines are under construction in Mumbai, Chennai, Hyderabad and Jaipur while Ahmedabad, Kochi, and Lucknow are at advanced stages in the building of metro lines. As an alternative to rail based metro lines, nine Indian cities are now operating BRT, and BRT is under construction in four more cities.

In the Middle East, in Dubai driverless, fully automated red and green metro lines were opened between 2009 and 2011 and three further lines are planned. The oil resource-rich country Saudi Arabia has announced the building of a metro network in Riyadh, to facilitate a move away from carbon intensive transportation systems.

The boom in metro lines and BRT systems throughout the world compliments the recently released IPCC report which emphasises investment in good quality public transport, not only to reduce greenhouse gas emissions and transportation energy consumption, but also to promote a 21st century green economy. Building the orange line is therefore, very timely. If the orange line in Lahore would be run using solar energy, or another form of renewable energy, it would reduce emissions and air pollution, reduce our reliance on imported oil and dwindling natural gas resources, and boost the green economy.

The most important challenge for the orange line is long term financial sustainability. It is expected that initially both the Chinese and Pakistani governments will contribute to the construction costs. However, orange line operational costs, and the costs of further extensions to the metro system remain unclear. In my recent research, I have identified innovative funding sources that international cities have used to fund the construction, operation and expansion of metro lines. These funding sources include: beneficiaries paying for the development (via mechanisms such as smart taxes); polluter pays carbon funds (such as fuel taxes, parking charges, and emission charges), public transport operational funds, and private sector funds. These funding sources can be further

[3] Did not published by any newspaper

categorised as 40 different types of financial mechanisms that could be discussed in the context of the orange line.

Hong Kong is a good example of a city where new rail infrastructure has been built with funds generated from property development near rail stations – it is called the R + P (rail + property) model by Professor Robert Cervero from the University of California, Berkeley. The Hong Kong model has potential for application to the orange line. This model could not only provide long term financial sustainability, but, to a significant extent, also solve housing and business location problems in Lahore.

As a transport planning academic, I perceive the orange line as 'green line' - a window of opportunity to rediscover the green and prosperous city Lahore was historically known to be.

4. The BRT in Lahore: Excitements, fears and suggestions[4]

28 September, 2012

In the last few decades, over 120 cities in five continents have implemented the Bus Rapid Transit (BRT) projects, and many more are at various stages of planning and construction. However, the level of success of BRT depends on the design of the BRT system, the institutions responsible for managing the system, and the policies used to integrate BRT investment with land use and wider urban development. Therefore, the Lahore Metro Bus System or BRT deserves constructive discussion to ensure this project will be successful. This project has the potential to make long lasting positive or negative impacts, not only on Lahore, but also to set a direction for other cities in Pakistan.

Generally, BRT refers to large-scale bus-based public transport systems serving a city or corridor on dedicated bus lanes and ultimately attaining fast speeds by providing high frequency and high passenger carrying capacity vehicles. BRT is also associated with articulated buses, enhanced stations, smart-card based fare collection systems, intelligent transport systems and distinctive images. BRT is preferred to heavy rail and light rail investments due to service and infrastructure flexibility and low cost. The success of BRT lies in its' surface operation, which generate minimal infrastructure costs and higher levels of flexibility but it is not easy to provide dedicated bus lanes on existing roads for BRT because of competing demand from cars and other modes of transport (such as freight transport and motorcycles) for existing road space. However, the surface operation of BRT involves a combination of carrots (incentives for buses by reallocating road space) and sticks (disincentives for private vehicles by taking away road space).

Surface BRT systems are simple to integrate with pedestrians, feeder buses and adjacent land uses. In an example from a developing country, Curitiba in Brazil adopted a surface BRT system which was extensively integrated with feeder bus services and land uses to achieve sustainable urban development. Ottawa in Canada provides an example of a developed country with a reputation for operating one of the most extensive and efficient BRT systems primarily using surface bus lanes. Since intersections generally cause the most delays for surface BRT, bus priority signals and ITS techniques are deployed to reduce the delays at intersections. In such system, investment has been made in the operation of the BRT system rather than in the BRT infrastructure.

Surface BRT systems provide catalyst for land development as is well demonstrated in Curitiba. Property near BRT stations and corridors becomes desirable for redevelopment due to its proximity to the system with consequent saving in time spent for commuting. In Curitiba, land along BRT corridors is zoned for mixed use and high density development, promoting a linear urban growth area.

Throughout the world, almost all BRT infrastructure has been financed by national or provincial governments, managed by a dedicated BRT or transport authority within the city government. However, a wide range of public, public-private and private ownership models have been observed in BRT operational services. In particular, the customer directed services such as fare collection, station management, security, maintenance and ITS have been outsources to private companies.
BRT is a promising strategy for improving travel condition in Lahore. A BRT system will certainly have a positive impact on peoples' travel satisfaction in Lahore due to the high speed, reliability and comfort, that has been absent from the existing system for a long time. However, BRT in

[4] Imran, M. (2012) "The Metro Bus System or BRT in Lahore: Excitements, fears and suggestion" *Institute of Planners, Pakistan Newsletter*, Vol. 2, Issue 3, pp.13-18.

Lahore will be compromised by poor and inflexible designs (including the 9.6 km of bus flyovers, several bus underpasses and 34 pedestrian overhead bridges) which ultimately diminish BRTs superiority as a low cost and flexible solution over light or heavy rail.

The current design causes the wider urban problems of resettlement of large numbers of people and businesses as is evident from many newspaper reports. This resettlement damages existing social and economic networks with losses for many and few gains. This type of damage can be mitigated by conducting social and economic impact assessment studies of the project.

Detailed the Environmental Impact Assessment (EIA) studies should find ways to address visual pollution of bus flyovers, safety and security issues, and threats to sensitive heritage sites, caused by the current design. The current design will also provide generous road spaces for cars and motorcycles by eliminating buses and widening existing roads. This would encourage motorisation and high speeds for private vehicles' and cause road crashes, safety issues for pedestrians, and high pollution and transport energy consumption level. This issue should be addressed in an EIA report.

Overhead pedestrian bridges and elevated stations would make it inconvenient for people to access BRT services, and could cause extreme crowding problems during peak times. They would also cause problems in coordinating feeder services and transferring passengers from other services to the BRT. These problems can be minimised by providing electric escalators for pedestrians. However, a continuous electricity supply and proper maintenance would be required. Providing escalators would increase costs but would minimise inconvenience to pedestrians.

Efficient BRT systems do not require government operational subsidies and even in South American cities are running at a profit. However, due to the high construction and maintenance costs associated with BRT infrastructure in Lahore, it will probably charge high fares which will discourages use by lower income people, ultimately generating lower than expected ridership. To generate lower fares, the government would need to heavily subsidise the system. One solution to make BRT financially sustainable is to develop a network approach which ensures efficiency and superiority of public transport system throughout in Lahore.

The elevated sections of a BRT system in Lahore could negatively impact individual property values due to noise, air pollution from diesel engines, visual pollution, privacy, security and safety issues. These issues can only be addressed by changing the land use regulation of the LDA and CDG to favour bus based high density transit oriented development (TOD). The land use policy and regulations in Lahore should support BRT based high density TOD for growth around major stations and corridors, as happened in Curitiba. The research shows that private developers are willing to invest in land development on high quality transit corridors, particularly if local governments assemble and acquire land, and prepare a creative station or corridor Master plan. Therefore, it is important to develop a shared vision of the BRT corridor in Lahore and prepare an urban regeneration master plan for a BRT corridor. Local communities should be involved along with property developers, financial analyst, urban planners and architects to develop a business case for land development around each station. The high density TOD along a BRT corridor ultimately generates more ridership to sustain a BRT system. It will help to transform BRT corridor into a new and desirable high density residential and commercial area.

There is a great demand of BRT in other part of Lahore as well as other cities in Punjab. Therefore, it is important to overhaul planning and transport institutions to accommodate BRT projects in Punjab. A Punjab BRT Authority and one dedicated transport organisation Lahore Transport Authority (LTA) should be established by merging transport functions of several organisations.

The capacity of LDA/CDG should be developed to work collaboratively with the LTA make BRT based TOD happen.

I conclude that an appropriately designed BRT system offers high quality transport services, low costs and has a positive impact on socio-economic, environmental and land development. To maximise the benefit of the Metro Bus System in Lahore, a) undesirable impacts of BRT design should be addressed, b) BRT must be used as a tool to shape high density land use development and 3) the capacity of transport and land use institutions at provincial and city level should be developed.

5. A rapid transit system for Lahore?[5]

25 July, 2022

Urban planners, transport specialists, environmentalists, property developers and the common citizens of Lahore should welcome the city's first-ever Bus Rapid Transit (BRT) system, but with caution. Why?

Rapid urbanisation and a sharp increase in motorisation have resulted in serious traffic congestion in Lahore. Professor Vuchic Vukhan in his book Transportation for Livable Cities argues that congestion is a consequence of inappropriate policies and inadequate planning that failed to consider the long-term relationship that exists between a city and its transport network. Therefore, the solution to congestion problems demands a holistic approach to urban planning, beyond any single transport project.

Urbanisation is not necessarily a bad phenomenon. The important point to consider is the part of the city where population growth is occurring and where it is actually supposed to be occurring. Traditionally, Lahore manages population growth by developing hundreds of medium-to low-density housing schemes at the edge of the city. This type of population growth demands heavy investment in road infrastructure, which is evident from the construction of underpasses, flyovers and the Lahore Ring Road. These housing schemes and the road infrastructure make Lahore accessible to private vehicles only, which has subsequently led to a sharp increase in motorisation. The percentage of total trips made by private vehicles has doubled from 24 per cent in 1991 to 46 per cent in 2007.

On the other hand, the percentage of total trips made by public transport vehicles in Lahore have either remained constant or are declining, instead of mirroring the increase in population. This indicates that people do not find the available means of public transport an attractive way to travel. Therefore, in the presence of poor quality public transport, people belonging to the middle income group use either motorcycles or cars. There is an argument that public transport trips have not increased due to the aspiration of people to own private vehicles. This is true to an extent but the lack of investment in decent public transport in Lahore is the root cause behind people choosing not to make use of public transport. Therefore, the construction of the BRT should be warmly welcomed regardless of political biases.

However, investment in the BRT should be made in conjunction with new policies and zoning regulations for transit oriented development (TOD). TOD can help increase employment, housing density and mixed land usage along the BRT routes in general and the BRT stations in particular. This could attract private investment in new housing estates as happened in Hong Kong, Singapore and Dubai, which could in turn lead to the development of new population growth centres in Lahore. TOD is an approach that can link the BRT investment with 21st century housing development, ultimately achieving high economic growth, less transport energy consumption and better urban environment. Professor Robert Cervero in his book *Transit Metropolis*: *A Global Inquiry* argues that TOD leads to shorter travel distances, promotes walking, cycling and public transport, reduces traffic congestion and makes cities liveable.

What is required for linking the BRT investment with TOD policies is institutional strengthening at the local level — making the City District Government, Lahore functional and upgrading the Lahore Transport Company to the Lahore Transport Authority.

[5] https://tribune.com.pk/story/412943/a-rapid-transit-system-for-lahore

Part 2 Housing & Urban Growth

6. Five Million Houses: Where and How?[6]

12 October, 2018

Imran Khan's government announcement to build 5 million houses is timely and welcoming. However, the question is where to build these houses, how to build these houses, for whom to build these houses and its relationship with job destinations, social network and public transport availability?

Building mass housing, especially low-cost housing, is not a new political slogan in Pakistan. In the last 70 years, every political and military government made a huge claim in housing provision. The building and rebuilding of houses in Karachi and Lahore were overseen by the Improvement Trusts (later upgraded to Development Authorities, such as Karachi Development Authority (KDA), Lahore Development Authority (LDA)). These Trusts initially played an important role in regenerating the old cities (such as Shah Alam area in Lahore) after the chaos and destruction of partition. However, their predecessor, the Development Authorities provide the development arm of provincial and local governments by building suburban housing schemes, such as Samanabad, Shad Bagh, Township, Iqbal Town, Johar Town in Lahore. The Karachi provided mass houses in Korangi, Lyari and Malir to accommodate sharp population growth in the post-independence era. The scale of housing problems provides opportunity in Karachi to introduce alternative models of low-cost housing, such as the Khuda Ki Basti and Orangi Pilot Project.

The Zulifqar Ali Bhutto government came into power with the slogan of *roti, kapra and mukan* (food, clothes and house). This government built labour colonies and low-cost housing. Housing provision was important to the point of the Junejo government Five Point development strategy. His government regularised and later upgraded the Katachi Abadies (slums area) to relieve poor people. In the 1980s and 1990s, the government encouraged the Cooperative Housing Societies which created mushroom growth of site and services plots at the edge of the city. Nawaz and Shahbaz Sharif governments also initiated *Mera Gher* and *Ashiana* Housing in their tenure. People experienced the rapid growth of DHA and Bahria Town gated communities in the last twenty years. All these housing schemes took more than 20 years (sometimes 30 years) to attract people due to the distance away from the location of jobs and educational institutes.

Besides a number of housing schemes, Pakistan experimented building new cities and industrial towns after independence. Islamabad is one of these experiments which aimed to provide affordable housing to middle-class people. Sector-I and Sector-G were designed for low to middle-income people which is even unaffordable to the high-income group now. A recently failed experience of building a new town was Zulifqarabad in Sindh. All over the world, new cities are expensive to build and even harder to be populated due to the absence of an economic and social network.

History told us that building low-density housing schemes and new cities created more housing problems rather than solving housing issues. This is due to a project-based approach which promoted speculation rather than genuinely solving housing problems in Pakistan. Then the question is where and how to build 5 million houses. Worldwide, the Bus Rapid Transit (BRT) and metro train systems provide a catalyst for urban regeneration and land development. Property near BRT/metro stations and corridors become desirable for redevelopment due to their proximity to the transport system, jobs, educational institutes and health facilities. Hong Kong and

[6] https://dailytimes.com.pk/309197/five-million-houses-where-and-how/

Singapore are the best examples of building mass housing near the train stations, known as rail plus property model.

The recent development of the Metro Bus in Lahore, Rawalpindi-Islamabad, Multan and future BRT in Peshawar and Karachi provide opportunities to prepare land use policy and regulations that would encourage 20 to 30 stories of apartment buildings around BRT stations and alongside corridors. International developers are willing to invest in high-rise apartment buildings on high-quality transit corridors, particularly if governments assemble and acquire land for development. Pakistan can learn from Delhi, India where the close relationships between the metro train and property development are regenerating the city.

Pakistan needs a 21st-century approach to redevelop their cities and avoid mistakes of the past by building low-density housing and new towns near to nowhere. Housing is more than brick and mortar and needs capable institutions to carry this job. The Imran Khan (IK) government needs a comprehensive urban planning approach, and legal and financial systems to provide 5 million houses in Pakistani cities. The IK government should prepare a national urban policy which provides incentives and tools for building mass scale, affordable housing in all cities having over one lakh of population. The new local government acts should empower Mayors and their team to align national housing targets in their jurisdiction. More importantly, the IK government should evaluate and merge all organisations responsible directly or indirectly in the provision of housing before creating the new housing authority. A creative way of delivering affordable housing can become a vehicle for economic growth, foreign direct investment and new social contracts with the people of Pakistan promised in Naya Pakistan.

7. Co-Housing: A Solution?

21 November, 2023

Pakistan should devise local solutions to its unique problems to make economic and social progress. The supply and affordability of housing are some of the problems Pakistani cities face, which deserve an out-of-the-box solution.

Building mass-scale affordable housing has continually been a political slogan used by every political and military government in the last 75 years. However, this slogan has delivered very little on the ground. This is because of the limited application of urban planning as a transformative agent for making prosperous cities.

The practical purpose of urban planning is to formulate and implement land use regulations that provide housing for the majority of people, accelerate economic growth by allocating land for businesses and jobs, and improve the quality of life by protecting the environment. Pakistani cities have made some progress, especially the successful implementation of planning principles in DHAs, Bahria Town, and other housing schemes in various parts of the country. These gated communities have provided their residents with a better quality of life by targeting urban upper-middle-class communities. These gated communities are becoming increasingly popular in medium-sized cities in Pakistan and have spread all over the country.

One indicator of successful urban planning is that it can promote social, economic, and environmental justice in society by regulating and modernising development. However, DHAs and Bahira Town have become symbols of social and environmental injustice by disadvantaging lower socio-economic groups and consuming rich agricultural lands. DHAs and Bahira Town were not designed for poor people but raised high aspirations or unachievable expectations for them. The lower socioeconomic groups in the country have absolutely no choice of housing in our cities except to live in slums and substandard unplanned areas. Current urban planning practices serve the elite class, making them even more economically powerful while distributing the economic and environmental costs to lower socioeconomic groups. What is the solution?

First, we must admit that there is a complete disconnect between land or house ownership or transactions and planning regulations and rules in Pakistan. Worldwide, people can own the land but its use is defined by urban planning policies and regulations as per the city's 30-years spatial or master plans. We have to develop this link to stop powerful groups from taking advantage of their position by building housing schemes on rich agricultural land and further discriminating against disadvantaged groups.

Second, various families or people have lived and shared one house temporarily or permanently throughout our history. Worldwide, there is a trend to provide a legal basis for owning a room or portion of a house. Of course, there are sociocultural and management problems in multi-occupancy housing, but this approach provides a ladder for low-income groups to own a small property in the city. It also attracts local and foreign investors to build large and small properties within the purchasing power of local people. In recent years, the metropolitan cities of Pakistan have observed trends of building student accommodation/housing and hotels. If we provide a legal basis, student accommodation and hotel rooms and portions of houses could become legal property for lower-middle-class people.

Third, multi-occupancy housing should be part of a larger urban planning system that tightly controls the distribution of these developments in different parts of the city. Ideally, multi-

occupancy housing should be built alongside metropolitan bus and train routes so people can access transport for their daily routines. We could develop new rules for the management of such properties, especially if owned by more than five occupants. These management practices would provide jobs for hundreds of people in managing and maintaining buildings.

In short, existing urban planning practices in Pakistan are not a progressive arm of the government and need a transformative change in favour of lower socioeconomic groups. Multi-occupancy housing is one solution that has the ability to strengthen pro-poor urban planning in Pakistan, attract investment in Pakistani cities, make housing affordable for the lower-middle class and address the rapid trend of urbanisation the country is facing. This is just one solution where urban planning delivers outcomes that serve disadvantaged groups in our cities. Conventional urban planning wisdom can be improved by taking a pro-poor lens to make social and economic progress in Pakistan.

8. A Bus Pass for Lahore[7]

20 July, 2013

It was in the early 1990s when, as a teenager, I celebrated the inauguration of the first underpass on Jail Road in Lahore. I proudly showed this underpass to my cousins who were visiting from Islamabad, the planned capital city of Pakistan. I kick-started the motorcycle, and with other friends, enjoyed the thrill that speeding on the underpass provided for a young motorist. We had grown up watching the American television series CHiPs on Pakistan's state television channel, PTV. It exposed us to the multi-laned motorways of Los Angeles, and so, we thought of the underpass road project as a trademark of development. My education in an engineering university in Lahore had already deeply instilled in me a belief in roads as a marker of development. There, our lecturers had taught us that highways, motorways, underpasses and flyovers were fundamental for economic growth in a city like Lahore, a populous, crowded city of nearly 10 million people. They praised the vision of planners in the 1960s who proposed eight-lane, elevated and limited-access highways in Lahore, even though car ownership was negligible at that time. Today, 20 years after the building of the first underpass, the numbers of underpasses and flyovers in Lahore are in double digits. A multi-lane limited access ring road surrounds the city and connects to a modern motorway system. Yet, unlike what our lecturers told us, economic growth and development has become a nightmare for the city and its people. In fact, the investment in underpasses and flyovers has caused more economic, social, and environmental issues than any other investment in Lahore.

Although the British tradition of the Garden City and American City Beautiful movements—which address public health and overcrowding issues in post-industrial revolution cities in 1890s—influenced the creation of low-density housing schemes in Lahore such as Model Town in themid-1910s, and Samanabad and Gulberg in the mid 1950s, it would be fair to say that the overinvestment in roads accelerated the mushroom-like growth of low-density suburban housing schemes in the 1990s. These low-density, single-land-use, housing schemes developed on the fertile agricultural land surrounding the rapidly growing city, ultimately changing the ecology, including the food and vegetable and drainage system in Lahore. Today the city has become a fantastic machine for the consumption of nature by covering a 100 square mile area with concrete. Lahoris rarely hear the sounds of birds and struggle to obtain fresh vegetables and milk, even though they are situated in the food basket of Pakistan. Almost everyone in Lahore worries about the monsoon rains because the rain water usually runs into the majority of houses irrespective of whether they belong to the rich or the poor, simply because of the concrete jungle. This is the remarkable result of disturbing nature by our planners, developers and of course, our governments.

The vicious cycle of road investment and low-density style housing for the elite and upper middle class makes new development only accessible to cars. Because of the last decade's car leasing schemes and allegedly environment friendly and economical CNG fuel, vehicle ownership and the number of miles traveled has increased sharply in Lahore—and with it, congestion that destroys the urban environment. Lahoris travelling during peak hours must suffer traffic jams and long queues at the CNG filling stations. We should not forget that everyone in Lahore is spending a good proportion of their monthly income on transport and its associated energy use. The rising global energy prices and uncertain supply will draw more cash from our pockets.

These inefficient choices in transport investment and urban development not only make Lahore economically vulnerable and environmentally unsustainable but also divide communities. In 1997, I was a member of a team of local consultants that conducted the study for Lahore Master Plan. The study estimated that 80 percent of the people in Lahore live within a 7 kilometer radius,

[7] https://www.tanqeed.org/2013/08/a-bus-pass-for-lahore/

encompassing the Walled city to Canal Road, while the remaining 20 percent live on southern side of Canal Road. Given that those figures, it is incredible that all the road investment in the last two decades has either been on or beyond Canal Road. This means that all this transport investment serves only 20 percent of Lahore's population. This investment generates clear divisions between the rich and the poor, the powerful and the weak due to increases in property prices and transport costs in the city.

What, then, is the solution?

For a start, there ought to be investment in developing a comprehensive Lahore metro bus network. Last year, I was excited about the first ever investment in urban public transport in Lahore. The Lahore metro bus is an inspired idea originated in Curitiba, Brazil in early 1970s, but my fears are that the Punjab government will focus on infrastructure rather than services and governance. The infrastructure for the first route has already been completed, but people are frustrated because of the lack of services and network development. To make this investment successful, the Lahore Metro Bus system should be integrated with pedestrians, feeder buses and adjacent land uses such as GC and FC College Universities, provincial secretariat, General hospital and residences in Ichera, Muslim Town and Model Town.

This investment has the capacity to become a catalyst for land development alongside the bus corridor and stations. Generally, private developers are willing to invest in land development on high quality transit corridors, especially if the Lahore Development Authority (LDA) assembles and acquires land, and prepares a corridor master plan. This technique could provide the opportunity to develop a shared vision of the Metro Bus corridors in Lahore and produce re-urbanization for the area. This would provide for the housing and transport needs of 80 percent of the population living within the 7 kilometer radius, and also provide a chance to be creative in recreating the green city Lahore was once famous for. It is an exciting time in the history of Lahore. We have an opportunity to transform Lahore in the direction of a sustainable city, but that will require a transit system that benefits everyone rather than more underpasses and flyovers that work only for a few.

Part 3 Environmental Planning

9. Why is it difficult to sell climate change story of our flood?[8]

18 October, 2022

UN Secretary General António Guterres, US President Joe Biden, Angelina Jolie, as well as the Pakistan government are linking the Pakistani flood with climate change. But it is so difficult to sell the climate change story of the Pakistani flood to people in the Western world. Why?

Joan Didion wrote a famous book, *We tell ourselves stories in order to live*. Stories are powerful. Historically, stories have spread from philosophy and anthropology to politics and religion. Recently stories have conquered the world through public policies and business models.

People living overseas do not see positive stories about Pakistan in spite of our moral stand on Kashmir, sacrifices in the war on terror and now climate change miseries. Why?

Storytelling does not depend on language alone. Stories are also complemented by visual images, numbers, trust, democracy, transparency, reflectivity and creativity. All these components shape Pakistan as perceived by the West. We should ask ourselves whether our stories contribute to making this world better. By so doing, we contribute to creating a new perspective in the light of future climate change.

Are Pakistan's stories about the superfloods of 2010 and 2022? Do these superfloods require a rethink of Pakistan's existing development model? In the presence of scientific evidence and international support, why does the transition from the superfloods of 2010 to a sustainable future lack positive imagination?

For transitioning to a climate change future, Pakistan has to play a role in devising the future of the country and the world.

In 2008, Professor Nick Low of the University of Melbourne wrote: "Pakistan will suffer from climate change in a horrifying way. The Indus will first swell with the additional melt water. But once the ice has gone, the Indus will dry up. Unless global warming is contained below two degrees, Pakistan's future will be limited to not much more than 200 years .. Pakistanis are not to blame for climate change. Their impact per person is many times smaller than that of the developed economies. But Pakistan can no longer follow a fossil fulled path to development. That path is illusory and leads not to the satisfaction of wealth but to famine and disaster for Pakistan."

Since the 2010 superflood, we have failed to develop our stories and our role in devising future paths of development. The silence is such that government, industry, academia and society in Pakistan still find themselves locked in the carbon-intensive development model of building motorways, ring roads, promoting car-based gated communities and developing a consumer society. This model of development is a social and political force compelling everyone to choose a carbon-intensive lifestyle.

We cannot blame the developed world only for climate change miseries in Pakistan without addressing our own model of carbon-intensive development and its associated financial privileges for the elite. The automobile city of Islamabad and suburban satellites of DHA and Bahria Town

[8] https://tribune.com.pk/story/2382043/why-is-it-difficult-to-sell-climate-change-story-of-our-flood

in every city are a major causes of carbon emissions because such development drains natural resources from sand to water, from steel to cement. Looking at urbanisation trends, the carbon-intensive model is evidently unsustainable and weakens our story of blaming developed countries as the cause of climate change and the flooding in Pakistan.

The problem is not one of awareness, policy, funding and political stability. Breaking out of the existing pattern of development and instead devising and transitioning to a more sustainable path is difficult. We could blame IK, NS and Zardari, but the professional leadership is missing to imagine a Pakistani model of climate-sensitive development.

Pakistan, in large, has a problem of imagining both the problems and the solutions in every field. Pakistani governments and professionals present the environment and climate change as an interest of the rich West and fail to connect the causes to our own everyday behaviour of development and consumption. Images of our cities obscured by smog and air pollution, the 12-lane highways of Islamabad, farm houses and the crushed machine images of Margalla Hills and Hasan Abdal Hills show the world our development model, making it hard to sell our story of the West's moral responsibility when asking aid for flooding.

Pakistan has to clear its own skies, clean its own waterways, protect its local biodiversity and discourage urban sprawl and motorised traffic before selling its story of climate misery to the world. Pakistan has to try an alternative carbon-sensitive model of development by providing streets for people rather than cars, supporting apartment-style housing over bungalows and farm houses, supporting local businesses over malls, and supporting local food products over imported equivalents. The stories of the alternative model and our positive contribution to addressing climate change will send a powerful message to the world.

Pakistan's response to this flood and future climate change events should be to address its own behaviour first and then develop an alternative path that speaks for itself. Pakistan has to become an agent of change in devising climate-sensitive knowledge for developing countries. We have to demonstrate how the future influences how we act today. Our policies and projects should be built upon the foreseeable effects of climate change, connected to the social aspirations of the Pakistani people.

10. Climate change: a real threat to Pakistan[9]

3 March, 2022

The International Panel for Climate Change (IPCC) published a 3675-page report earlier this week which should not be ignored due to the hypes surrounding the Ukraine war and a no-trust vote against PM Imran Khan. The report titled 'Climate Change 2022: Impacts, Adaptation and Vulnerability' found that the scientific evidence has become stronger that all life on earth, including human civilisation, is vulnerable to a changing climate. But how?

Food production: There is new knowledge that climate change is affecting food webs. Changes in temperature, rainfall, and extreme weather have increased the frequency and affected agriculture production and patterns. The report referred to the flood damages to crops in Pakistan in 2010 which cost $4.5 billion. It is also estimated that 8-10% of today's farmland will become climatically unsuitable by 2100. This is very relevant to Pakistan which imports food products regularly from overseas to feed 220 million people in the country.

Water: Climate change will impact water quality and availability causing vulnerabilities to both rural and urban areas. The rural areas will suffer from a drought affecting food production and the livelihood of rural communities. On the other hand, the urban population suffer from water scarcity and heatwaves. The report found that the average mortality from floods, storms and droughts is 9 times higher in Pakistan and other highly vulnerable countries as compared to European countries. This is particularly alarming as various part of the country is suffering from water availability.

Coastal cities: People living in cities face higher risks of heat stress, reduced air quality, lack of water, and food shortages caused by climate change. However, this risk is severe in coastal cities such as Karachi due to the risk from coastal-specific climate hazards. The recent urban flooding in Karachi shows that flood-related vulnerabilities will be spread over rich and poor areas of the city.

There are some efforts in addressing climate change at the global and national levels. However, these efforts are too late and too little. It is clear now that minor, marginal, reactive or incremental changes won't be sufficient. We need urgent and more ambitious action and, at the same time, rapid and deep cuts in greenhouse gas emissions. The report found institutional and financial barriers that restrict cities from investing in new parks and green infrastructure to cool down during heatwaves.

What is the solution then? The IPCC report highlights a solutions framework called Climate Resilient Development or CRD.

CRD means cutting back greenhouse gas emissions and conserving biodiversity in energy, industry, health, water, food, urban development, housing and transport policies and practices, in fact everyday decision-making. Its means CRD cannot be achieved with a single action such as planting trees. In fact, it involves fundamental changes to how government and society function, including changes to underlying values, worldviews, ideologies, social structures, political and economic systems in the country. The report admits that the world has no single magic solution and each country has to devise its own path for CRD.

Looking at the climate change risk and vulnerability for Pakistan and the capacities of government, the whole nation should prioritise climate change understanding in their daily life. Therefore,

[9] https://tribune.com.pk/story/2346065/climate-change-a-real-threat-to-pakistan

adaptation to climate change for the government means transforming the policies we plan our cities, regions and infrastructure. Adaptation to climate change for society means reducing water usage, using healthy diets, asking for sustainable farming, using cycling and public transport and finding green and clean solutions for our houses.

We have to remember the scientific evidence is clear — climate change is a threat to human well-being and the health of the planet. Any further delay in concerted action at national, provincial and local levels will miss a rapidly closing window to secure a liveable future.

11. Climate change and our cities[10]

23 May, 2014

In the second week of April this year, the Intergovernmental Panel on Climate Change (IPCC) released its 5th Assessment report on climate change mitigation (http://www.mitigation2014.org/). Over 270 lead academics and scientists from 58 different countries were involved as volunteers in making a neutral assessment of scientific knowledge on mitigating climate change to help policy-makers make well informed decisions. For the first time the IPCC report acknowledges the role of cities in climate change by dedicating a chapter to 'Human Settlements, infrastructure and spatial planning'. This chapter reveals robust evidence, scientific agreement and key principles, that should be considered when making policies for Pakistani cities.

First, the scale and speed of urbanisation is extraordinary, not only in Pakistan, but also throughout the world - we should expect cities to expand twice as fast as urban population growth. Future urban population growth will take place in small to medium sized cities, requiring massive infrastructure (transport, water, sewerage etc.) investment. However, if traditional approaches to building infrastructure continue to be adopted, they will lead to lifestyle and consumption patterns that will generate high levels of carbon emissions, which will be hard to reduce later. This finding has interesting implications for Pakistan which has totally ignored its small to medium sized cities and focused entirely on carbon intensive transport infrastructure, such as interchanges, flyovers and underpasses, in Lahore, Islamabad and Karachi.

Second, greenhouse gas (GHG) emissions could be controlled by transforming cities into high-density, mixed land use spaces, improving connectivity and accessibility. According to IPCC report, "there is consistent evidence that co-locating higher residential densities with higher employment densities, coupled with significant public transport improvements, higher land use mixes, and other supportive demand management measures can lead to greater emissions savings in the long run". What this really means for Pakistani cities is constructing high rise apartment buildings on the major transport corridors of each city, along with investment in good quality public transport such as the Lahore and Rawalpindi/Islamabad Metro Bus networks.

Third, cities consume large amounts of energy and generate half of the world's carbon emissions. However, GHG emissions per person depend on the physical structure of a city and socio-economic factors. In Pakistan, people living in low-density housing schemes at the urban fringe consume more energy than the national average. Therefore, it is important to discourage housing at the edge of cities and instead encourage private investment in housing in inner to middle suburbs of Pakistani cities.

Fourth, investment in apartment buildings and high quality public transport requires the revision of CDA/LDA policies, bylaws and regulations. These authorities need to up-skill their professional staff, such as urban planners, architects, and civil engineers, so that they can understand new trends and technologies in city development, and prepare a climate action plan along with or incorporated within their traditional Master Plans. These plans should in the short-term focus on the energy efficiency of buildings and transport, and in the longer term, controlling urban sprawl and re-urbanising cities. As future urban growth will happen in small to medium sized cities, the government should establish development authorities in these cities, technically and financially capable of promoting low carbon growth, and with the skills to collaborate with other cities, provincial departments, federal ministries, NGOS and international aid agencies to achieve emission reduction targets.

[10] http://www.dailytimes.com.pk/opinion/23-May-2014/climate-change-and-our-cities

Finally, low carbon cities require sustained political will and funding commitments from provincial and federal governments. If they receive such commitments, a low carbon development path will improve air quality, provide health benefits and economic productivity for cities, and ultimately prosperity for Pakistan and its people.

12. Climate change and the 2010 flood[11]

28 March, 2011

One of my friends in Islamabad asked why, when he can afford to drive to work, would he use a bus or a wagon, or ride a bicycle in summer in Islamabad. He is absolutely right. Why would we make our lives difficult if we can afford to drive and there are plenty of roads and parking spaces available for use, at least in the case of Islamabad?

This view, however, overlooks an important aspect of car use, which is that it not only serves our mobility needs, but also shapes our environment. The 2010 floods in Pakistan demonstrates that each action we take while living in, say, Islamabad, Lahore or Karachi has a global impact on the natural environment. Therefore, it is no longer true, as the saying goes, that "the more things change, the more they remain the same". In the next 100 years, nothing is going to remain the same. Fundamental change in our natural environment, which is the very foundation of our economies and societies, is already forcing itself upon us and its devastating impact will increase, first in the developing countries and later in the developed world.

Climate change is now inevitable. The poor, living in developing countries, will be the first to pay, and will, unfortunately, pay the most. Climate change scientists and researchers were expecting the Indus to swell with the unprecedented monsoon rain and the melting of glaciers. However, they were unsure of how much additional water there would be. Now, the monsoon rains in the northern parts of Pakistan are described as being the heaviest in the last 80 years. Similarly, scientists and researchers agree that once the ice in the Himalayas has gone, the Indus will dry up. Therefore, Professor Nicholas Low of the University of Melbourne, in a recent publication, argues that unless global warming is contained below two degrees, Pakistan's future will be limited to not much more than 200 years.

Of course, people living in the flood affected areas in Pakistan are not to blame for climate change. Their impact per person is many times smaller than that of the developed world. They have not been producing greenhouse gas emissions from their cars, whilst their friends living in Islamabad, Lahore, Karachi and in the developed countries adopted a path to development that relied heavily on the use of fossil fuels. That path leads to flood and later famine for Pakistan and other developing countries in the future. Pakistan's 2010 flood sounds a call for the truth to be acknowledged that climate change is happening and that the entire world, especially developing countries, is ill-equipped to handle the resulting problems.

There is no doubt that Pakistan has governance problems like other developing countries. However, there is hope, notwithstanding the nine million acres of damaged crops, the loss of a couple of million houses and livestock, the displacement of 16 million people and the 2,000 people who died in this flood. Did the government or the arrival of US helicopters save the bulk of lives? The answer is no. People used their indigenous knowledge and skills, by using their *karahies* and *pateela* and *charpais*, to make boats to save their lives and those of their kids. What message does this give to the government, aid agencies and NGOs? That they must acknowledge that Pakistan needs help in developing the capacity to address climate change problems.

The causes of the flood put the responsibility on the middle-to-rich class of people who live in Islamabad, Lahore and Karachi to pay flood tax and, at the same time, spread hope and develop the capacity of local government and community institutions in Pakistan to promote indigenous solutions to fight climate change.

[11] https://tribune.com.pk/story/138948/climate-change-and-the-2010-flood

In Islamabad, attempts should be made to bring the climate change agenda to the forefront of our policies. Policies and actions that increase carbon dioxide emission, such as excessive use of cars and building more roads in urban areas, should be revisited.

13. CNG – a dark crisis ahead?[12]

30 October, 2012

What do the people of Pakistan and policy makers think about kilometres of queues of vehicles near CNG stations, killing of innocent children on CNG explosion in Gujrat, banning of CNG for big cars and the shutting down of the CNG Stations for short and long period. Is there any solution of CNG crises or dark crises is ahead?

The roots of CNG crises lie on contradictory energy and transport policies. But how?

Over the last two decades, transport policies for Karachi, Lahore, Islamabad and other large cities have been based on the exclusive investment on building wider and better roads. As a result, expressways, flyovers, underpasses, interchanges and ring roads have been built. Interestingly one of the justifications given for all those road projects was 'fuel saving'.

International research clearly shows that more roads correlate with increasing motorisation. Almost all Pakistani cities experience a rapid increase in motorisation resulting in increases in fuel consumption. In order to reduce fuel demand and counter increasing pollution by the transport sector, the government relies on two key policies: energy efficiency and alternative energy.

For energy efficiency, the government encourages improving the fuel efficiency of road transport vehicles in Pakistan by improved engine maintenance, vehicle maintenance, engine design and the creation of tune-up stations.

For alternative fuel, the government has been encouraging the use of CNG in automotive vehicles to reduce pressure on petroleum imports and to improve the environment. Currently, the CNG vehicles on the road in Pakistan make the CNG fleet the largest in Asia and the third largest in the world after Argentina and Brazil. Pakistan Millennium Development Goals set a target to convert 920,000 vehicles to CNG by 2015. Similarly, the Medium Term Development Framework (2005-10) and the 2005 National Energy Conservation Policy also placed emphasis on energy efficient vehicles and CNG convertible kits for cars.

These policies and initially cheaper prices of CNG encourage the use in personal vehicles. Overtime, the cheaper cost of CNG has been eroded by gas prices quickly following international oil prices. The rapid growth in car ownership and usage has offset CNG's 'cheaper and cleaner' gains, while poor regulations expose CNG safety issues. In the future, it is expected no or limited supply and the high prices of gas will potentially collapse Pakistan's transport systems if it were to be dependent on CNG.

What is the solution then? The Newman and Kenworthy book *Sustainability and Cities* identifies four factors: city design policies, urban transport policies, infrastructure investment and clean technology to lower urban transport energy consumption.

The city design determines the travel patterns of its residents. Separate (like Islamabad) or mixed (like inner Lahore) land use as well as low (bungalow style) and high-density (apartments) cities produce the opposite extreme in terms of amounts of travel, ultimately influencing transport energy consumption. Pakistani cities show a growing trend for promoting separate zoning, with low density private housing schemes at the fringe of the urban areas. This trend should be stopped

[12] Did not published by any newspaper

in support of re-urbanisation; otherwise the current trend will generate increasing travel distances and facilitate transport energy consumption.

The response to growing CNG demand must address the need to make changes in transport and infrastructure policies in favour of non-motorized and public transport modes. Pakistan has to learn from Singapore which has taken several measures such as restraining the growth of car ownership, traffic management, investment and priority to public transport and fuel pricing, in transport planning which seriously affected the country's pattern of transport energy consumption. By adopting these measures, it was estimated that Singapore's transport energy consumption will be 30% lower than if these measures were lacking.

Total road expenditure is an indicator for urban energy consumption. Hong Kong and Singapore spend one-third per capita on roads as compared to US cities, yet they have attained the same level of mobility and economy by consuming very low levels of energy. There are opportunities to redirect roads funding towards public transport as Pakistan's cities are still suitable for the promotion of non-motorized and public transport. The building of Bus Rapid Transport (BRT) or the Metro in Lahore would provide the opportunity to introduce alternative fuel buses to deal with the growing gas demand.

Most Pakistani cities still have a rail infrastructure mainly laid down by the British, which could be upgraded for urban transport like the Kowloon Canton Railway (KCR) in Hong Kong. Therefore, a policy is required to adopt efficient electric rail technology that has the potential to use renewable energy produced from wind, the sun, biomass and garbage.

It is time to realize that gas demand has been driven by the growth of personal cars. This demand could be reduced by adopting a holistic approach based on land use planning, sustainable transport policies and investment and introduction of new technology and fuels by developing public transport, otherwise CNG crisis will continue.

Part 3 Economy & Urban Planning

14. Urban planning for fostering economic growth[13]

7 October, 2021

The world witnessed how urban planning and development delivered economic growth in Hong Kong and Singapore in the 1980s and 1990s and in Dubai and Doha in the 2000s. These cities developed proactive, strategic and adequately resourced urban planning system that helped these cities to promote economic growth and productivity.

In contrast, the value of urban planning in accelerating economic growth has not been understood in Pakistan. Urban planning, after the independence, was limited to the development of Master Plans and did not integrate with land ownership, the sale and purchase of land and land usage.

Master Planning development such as DHA City and Bahria Town are considered examples of successful urban planning in Pakistan. Both housing societies make sure that house sales and purchases should be integrated with their zoning plans and regulations. This has helped them minimise the ownership disputes and changes in land use present in other parts of the cities where they are located. It has also helped them to ensure that the proper infrastructure, especially roads, commercial areas and public amenities, is in the right place and properly maintained.

In spite of criticism of DHA City and Bahria Town as gated communities built on rich agricultural areas, they provided a quality lifestyle for the middle and upper-middle class in major cities of Pakistan. These housing societies have transformed Pakistani cities and have played a crucial role in shaping high-quality urban development. If effective and proactive planning at the housing scheme level can contribute to the creation of successful places, then you can imagine what would happen if the whole city adopted urban planning approaches.

The question is why we failed to develop urban planning approaches at the city level. Many academics and researchers have pointed out that Pakistan failed to establish a democratically-led and professionally-managed local government system that recognises the potential of urban planning in delivering place-based economic growth. The current crisis in the supply and cost of housing, traffic congestion, pollution and waste in different parts of Pakistani cities demonstrate the urgent need for an effective local government system, promised by Prime Minister Imran Khan.

My economist friends argue that a self-regulating housing market (with or without local government) would be able to deliver development more rapidly. However, this has not proven to be the case, at least in Pakistan. In fact, market mechanisms without government-led strategic urban planning direction have led us to disintegrated and poorly planned housing schemes — the wrong direction at the metropolitan scale. In the absence of a politically supported local government system, development authorities such as CDA and LDA have limited abilities to ensure stable and continuous urban development that can fulfil local needs.

In Pakistan, the urban planning system not only lacks political support but also has limited capacities to develop strategic direction and practical tools to ensure that urban development is integrated with social and environmental realities. The current system is a project-based system and is building flyovers, elevated highways, providing one-off metro buses and approving haphazard housing schemes in poorly served locations. Therefore, the current system struggles to deliver widely shared economic, social and environmental goals and is counter-productive for the long-term planning of the city.

[13] https://tribune.com.pk/story/2323571/urban-planning-for-fostering-economic-growth

The current system has repeatedly failed to build the required number and range of houses instead of achieving the political ambitions shown by several Prime Ministers, including the incumbent, Imran Khan. There is an urgent need to take stock of the urban planning systems we have now and what they can deliver, and debate alternative planning futures that might produce better results. Two main things need to be done.

Firstly, federal and provincial governments need to prioritise the establishment of democratically elected and well-resourced local governments. These local governments need adequate powers and expertise to ensure that better outcomes are consistently delivered despite different political parties holding national and provincial governments.

Secondly, urban planning academics and practitioners in Pakistan need to talk much more about how better economic outcomes can be delivered in the country. This dialogue can be generated by establishing the 'State of Pakistani Cities dialogue' series to address the UN Sustainable Development Goal 11 of making cities sustainable and resilient.

We need much stronger leadership in urban planning from the public sector before we expect the private sector to start large-scale housing developments in Pakistani cities. We need serious reforms at the local government level to get the full benefits of urban planning that Dubai and Doha enjoy.

15. 100 billion trees to a green economy[14]

30 September, 2018

Can Imran Khan's government's goal to plant 10 billion trees change the future of Pakistan? Planting 10 billion trees will not only benefit the environment through improved air quality, temperature reduction and wider climate change benefits but also a step towards a green and healthy economic future. However, the critical question is how to achieve the transition to a comprehensive green economy while continuing to grow the income and standard of living of the people.

In August 2018, the New Zealand Productivity Commission released a 620-page report on the low-emission economy[15]. The report emphasis three key policies.

Substantial afforestation: The report emphasised the need for a high planting rate in rural and urban areas for the next 30 years. The PTI government's ten-billion-tree plan reflects thinking similar to that of the Productivity Commission. However, Pakistan will need to continue this policy for the next three decades regardless of changes of government. Therefore, it is important to develop a civic culture of tree planting. Every member of the family should be encouraged to plant a tree in each year, with the help of Schools and NGOs and local community groups. In Pakistan there is great potential for the planting of fruit trees. These trees would provide fruit to the local population, especially the poor, and also welcome birds inside the concrete jungle of urban areas. Green funds should be established to support nurseries to provide free plants to Schools and NGOs for plantation purposes.

Changes to the structure and methods of agricultural production: The Productivity Commission report emphasised changes in the way land and water consumed for agriculture were used. The Prime Minister's Dam Fund Appeal shows a critical link between the water and agriculture sectors in Pakistan. In the long term, Diamer Basha and Mohmand dams help to ensure a regular water supply for agriculture usage; there is an urgent need to focus on the demand management side of water to support agricultural transition. Pakistan needs investment in human capital to support creative agriculture practices that consume less water, and improve healthy food production. In the last five years, Massey University, New Zealand alone produced more than 70 Pakistani PhD graduates, mainly in agriculture-related fields (Thanks to HEC Scholarship scheme). However, it is time to utilise this human capital in moving to low-carbon agriculture production.

Transition to green fuel and materials: This is a third transformative policy the NZ Productivity Commission report has emphasised. The report recommended making a rapid and comprehensive switch from traditional vehicles to electric vehicles and devising new materials for building and industrial processes. Transport is Pakistan's largest sector and relies on imported fuel and the spending of foreign exchange. In the last two decades, motorisation has grown and with it the fuel importation bill. Electric vehicles provide a good opportunity to reduce foreign exchange, along with development of high quality public transport and cycling network. To encourage the uptake of electric vehicles, first, the government needs to invest in renewable energy to ensure a continuous supply of electricity for the vehicles. Second, it has to work closely with the automobile industry and the private sector to develop infrastructure for electric vehicles. Pakistani people responded to green fuel, especially CNG, quickly when the right pricing mechanism was adopted. In contrast to fuel, I have not seen any drastic change in material used for houses and commercial buildings in Pakistan. The building industry is relatively conservative, and the government is

[14] https://dailytimes.com.pk/304264/100-billion-trees-to-a-green-economy/

playing a minimal role in setting up the direction of construction industries. The government, in collaboration with the HEC, should provide funding to local universities to devise low-carbon material suitable for building in Pakistani cities. The PM Housing programme should adopt low-carbon building materials to develop momentum.

Successful economies are flexible and responsive to new technologies and trends rather than insisting on old practices and laws. Pakistan has existing environmental laws, policies and assessments, but they have not helped in achieving a low-carbon economy. A shift towards a green economy needs a transformative change in transport and energy systems, land and water consumption and agricultural practices in Pakistan. Imran Khan has an opportunity to set up new institutions and policies and a regulatory framework which could lead to new production methods and trends in businesses and transform the economy, leading to a prosperous future.

By planning to plant 100 billion trees Imran Khan introduced a long-term perspective into politics and policy making. The new Pakistan Economic Advisory Council should focus on the long-term perspective and bring all stakeholders together to design the governance architecture, policies and targets that provide a commitment to a green economic future.

16. Making Lahore & Pakistan Prosperous?[16]

31 July, 2013

In recent opinion articles in ET, Shahid Javed Burki focuses on Lahore potential to recover Pakistani economy. I do agree most of his arguments that Lahore should take responsibility for generating prosperity for its people and Pakistan in general to match that achieved by Dubai, Bangalore, Kuala Lumpur and Bangkok. But the question is how can that prosperity be generated first for Lahore and then for the Punjab and then for the nation?

The Newman and Kenworthy book *Sustainability and Cities* identifies three factors that build the prosperity of modern cities: economic diversity, transport priorities, and housing provision.

In developed countries, over 80% of national income is generated within their cities. The main reason behind this achievement is the diversity of economic forces that their cities can offer. The breadth of the urban economy relies heavily on knowledge economy based service industries. Currently, service industries makes up 53% of Punjab's economy and 42% of workforce are employed in this sector in Lahore. In the last decade the telecom, media and higher education revolution has made this possible. Modern restaurants, grocery chains, hospitals, fashion and multi-media industries in Lahore also make modest contribution.

However, the knowledge and creative economy should be systematically managed by the urban planners preparing the Lahore Metropolitan Economic Strategy (LMES) in the light of the Planning Commission 'framework of economic growth'. LMES should include the detailed policies and projects essential for generating and maintaining a vibrant and prosperous economy for everyone and every part of Lahore. LMES should be integrated with the national and the provincial urban policies, in order to gain maximum benefit from the dynamic engines of innovation present in Lahore. LMES should be focused on developing collaborative research projects with a range of universities and should, in collaboration with media, create a Lahore Urban Forum to generate debate about the future direction of development. A metropolitan economic strategy is so important that even smaller cities like Wellington in New Zealand are preparing them.

Prosperous, future looking cities rely on high quality walking, cycling and public transport to meet their residents' travel needs. Lahore has become the first city in Pakistan to develop good quality public transport, the Metrobus. This is a step in the right direction in improving public transport infrastructure and service quality. However, the provincial government should announce the next phase of the Metrobus in Lahore (especially on the Multan Road, Mall Road, Allama Iqbal Road and GT Road), bus priority lanes and signals and explore the opportunity to convert existing intercity railways into Lahore rail networks. I hope that the Punjab Metrobus Authority will prepare a public transport network plan so buses, vans and rickshaws can be coordinate within one network to meet peoples' travel needs. Lahore clearly needs a hierarchy of public transport modes which can carry both large and small numbers of passengers at different times of the day in a well-coordinated network.

A Metrobus based multi-modal public transport system in Lahore has the potential to play a catalytic role in regenerating the old and the British – real Lahore. Metrobus investment should be integrated with land use by making metro corridors the future growth areas for housing, retailing and office areas. This integration will incentivise the construction of high-rise buildings which will

[16] Imran, M. (2013) "Making Lahore Prosperous?", *Institute of Planners, Pakistan Newsletter*, Vol. 3, Issue2.

boost construction activity and ultimately be good for the Lahore economy. However, construction practices should be based on innovative practices such as green building codes, which have the potential to attract international capital and a new skilled workforce. The Metrobus and land use integration will also generate more walking trips and reduce peoples' reliance on CNG and petrol for transport. By planting more trees alongside the Metrobus and developing urban forestry (community and vegetable gardens, roof gardens and pocket parks), Lahore can improve the walking and cycling experience and the urban air quality in Lahore which is fundamental to bringing multi-national companies to the city. It will certainly develop a new and green image for Lahore which is fundamental in the development of prosperous cities.

In future, competition of prosperity will be with cities rather than countries. This competition can only be secure by an effective leadership. Shabaz Sharif has certainly had a positive influence on the development of Lahore. Lahore has shown leadership lead in building the first Metrobus route, and should also lead in developing a comprehensive economic strategy to promote the public transport network, green and compact buildings, and the mobilisation of community civic pride. The Motorbus initiative provides an opportunity to move Lahore towards being a dynamic, prosperous city.

Part 4 Future of Pakistani Cities

17. Reimagining, decolonising Pakistani cities[17]

1 September, 2022

Pakistan celebrates its 75th birthday this month, so we should reflect on the challenges in every field of life to devise a path for the future.

The urban development journey between 1947 and 2022 has seen slums, pollution of all kinds, traffic congestion, and crime. Pakistani cities are clearly segregated into poor and wealthy areas and are examples of inequality, unemployment, and youth hopelessness. When I graduated in 1996, I had to give an upper-class area as my address to get an interview. Many families move to wealthier areas when looking for *rishta* for their children. It is hard to get a job and even harder to get a *rishta* if you live in a low-status neighbourhood.

Decolonising urban planning can address these issues if we reflect on and dismantle the colonial institutional structure, outdated urban policies, and ad hoc funding mechanisms. What do colonising and decolonising mean in the context of urban planning?

Colonisation is the process of one group or one school of thought imposing their ideas about the world on another group. In the context of British India, European ideas about society, cities, and land were imposed on Indians and Pakistanis. Decolonisation is the process of removing these impositions, for which we need to understand how colonisation has impacted people in Pakistani cities.

Let me share my story as an example. My life revolved around playing with friends on the street, eating in their homes and many other interactions with neighbours, friends and relatives. As a child, I did not know the exact family links with the *Bajies* and *Bhaijan* living in our street, but my dreams were their dreams and my success was their success. This early experience of a caring and sharing community has helped define who I am today. Therefore, although I have lived overseas for nearly 25 years, I know I have an extended family that is not limited to one city in Pakistan, and all are welcome socially and professionally.

In contrast, my immediate family lived in master-planned gated communities, which are diverse, and predominantly rich or upper-middle class and educated communities reside there to have a "quality lifestyle" and status. These areas are planned according to modern town planning principles but demand traditional cultural norms to be sacrificed and modern norms to be learned. It is not normal to know, eat with or play with one's neighbours. Such modern urban planning principles have disregarded traditional Pakistani culture and have promoted individualism and individual success, sometimes at other people's expense.

These planned housing schemes were developed on the outskirts of cities where land was occupied under the Land Acquisition Act 1894. This Act allowed the state to acquire land for "public interest", a cruel and unjust law that considered elite interests as public interests. The government took local people's land and farms in the name of urban development for little or no compensation. Although this legislation was prepared and used by the British for 53 years, we have used it for the last 75 years to provide bungalow-style houses for the elite.

Modern planned housing schemes, even in Karachi, Lahore, and Peshawar, are also at the mercy of monsoon rains. This is because natural streams and creeks have been piped as per scientific and engineering knowledge. Whenever it rains, there is nowhere for the water to go, and the roads

[17] https://tribune.com.pk/story/2374104/reimagining-decolonising-pakistani-cities

become water channels. This piping seemingly small but impactful act of colonisation continues to affect our people in the climate change era. Decolonising will protect our homes from heavy rain through using indigenous knowledge and restoring our landscape. Knowing about these institutional structures, legislation, policies, and practices are an act of decolonisation. It helps us to understand how our cities got here and what we can do next.

Worldwide, cities address decolonisation by two approaches: the techno-rational approach and the change agent approach. The first focuses on technology-centric learning and uses data, computer modelling and AI to understand the strengths and weaknesses of policies, regulations, and planning. However, the other approach focuses on social and environmental justice and building sustainable communities. Both have some strengths and weaknesses, but the second has the potential to decolonise urban planning in Pakistani cities. It prioritises the local ethics of care, an emphasis on "we" instead of "I", and the interconnectedness of the planet, alongside tools for developing emotional and relational intelligence; co-designing and co-facilitating processes; and trust-building skills, which are urgently needed.

Decolonisation is a continuous fight to preserve our society, the way we want to live in our cities, and the environment. We want cities where our grandchildren can live in harmony with people and nature. For this, we need to influence policy and decision-makers with better civic sense and activism to achieve better urban planning outcomes that are inclusive of our own worldview.

18. Post Covid-19 urban planning[18]

7 July, 2020

The crisis of Covid-19 and its requirements for social distancing, staying at home and handwashing have re-established public health's link with urban planning. The early origins of the planning movement in the 19th century were in response to the poor health conditions in Europe's rapidly industrializing cities. By taking public health perspective, planners influenced town layouts, developed housing standards and established minimum open space requirements in new housing developments.

The global planning movement also influenced Pakistani cities. For example, modern urbanism in Lahore was advanced by the British Colonial government by building large-scale parks (such as the Lawrence Garden and Minto Park), institutional and educational buildings, and bungalow-style housing (such as GOR, Mayo Garden and Model Town), connected by a hierarchy of roads, including Mall Road. However, urban planning was limited to new areas and for rich people, which, unfortunately, still continues after a century.

The British colonial planning model was criticized by Sir Patrick Geddes,[19] a Scottish Professor of Town Planning, who published the report *Town Planning for Lahore* in 1917. He was sceptical about planning approaches that did not consider the social, cultural and spatial aspects of the low socio-economic population living in Lahore. Geddes argued for improvement of the existing cities through 'conservative surgery' rather than large-scale slum (Katchi Abadies) demolition, which was proposed by the British Colonial government and was even proposed by the PM's 5 Million Housing Programme in 2020. Geddes advocated the pressing need for planting fruit trees in urban areas and creating open spaces in dense urban areas for public health reasons. He argued for adopting multidisciplinary and people-centred approaches for urban planning and the development of Lahore. The current Covid-19 crisis prompts us to ask: how might Geddes' people- and environment-centred approaches of urban planning respond in the face of this health crisis?

Pakistani cities have shown resilience during the war against terror, economic uncertainly, housing unaffordability, a lack of transport facilities, lack of water and serious environmental pollution in the last few decades. During Covid-19, resilience has helped people live their lives regardless of confusion about the lockdown and smart lockdown policies. Pakistani people are waiting to return to a normal situation. Although a return to normal is appealing, we have to acknowledge that the majority of people were living in bad conditions in Pakistani cities even well before the Covid-19 crisis.

The Covid-19 crisis has been especially painful for low socio-economic people, both in terms of loss of income and lack of water and sanitary conditions in their houses and streets. Messages, such as staying at home, social distancing and handwashing are meaningless for their over-crowded houses and suburbs. In fact, the Covid-19 crisis exposed socio-economic inequalities and spatial inequities (the lifestyle of DHA and Bahria Town vs Ichra and Baghanpura) rampant in our cities. The absence of an effective local government system and privatization of housing and open spaces has left Pakistani cities unprepared to cope with a crisis. As 80% of people in our cities belong to low socio-economic cohorts and live in unplanned areas of cities, how can we ensure that these people are visible and are active in shaping their living areas and cities?

[18] https://dailytimes.com.pk/646439/post-covid-19-urban-planning/?fbclid=IwAR3xfDX37jt4gra8jZDBEJti9BWUR5N8GTyaBOD1ZpuBXFUIz7wpOeZJaII

Patrick Geddes's idea of developing street corner parks and growing fruit trees in each street can provide access to greenspace in low-income housing areas. It will complement the PM's billion trees programme as well, which ignored urban areas so far. The quality of our outdoor street environment and the right to decent housing have never been so important than during this time. For example, decent housing could be apartment-style dense housing, which has proven effective during Covid-19.

Patrick Geddes emphasized preserving the unique characteristics of Pakistani cities. Historically, streets are for walking and play. The street as a walking or play space is being rethought across many cities in the Covid-19 crisis. Pop-up cycle lanes have been a common urban response from Auckland to Melbourne. I myself played cricket in the streets of Lahore and Rawalpindi in the 1980s. With dramatic decreases in traffic, air and noise pollution, I am delighted to see how local children have reclaimed their previously traffic-dominated streets in 2020. In post-Covid planning, we should prioritise walking and cycling in a new sustainable mobility infrastructure and regenerate our streets for people and children.

The Covid-19 crisis provides an opportunity for new thinking in urban planning for a positive transformation in our cities. We should start talking about the relationships among cities, health, the environment and the well-being of our people. The time has come to ask whether the thoughtless planning exercises in the last 70 years supported by the international development organisations – deservedly obsolete and now superseded in developed countries – should also be put an end to in Pakistani cities. Reconnecting planning with public health goals, as advocated by Sir Patrick Geddes one century ago and UN Sustainable Development Goals in 2017, would seem to be a useful starting point for devising decolonising urban planning in Pakistan.

19. Kindness in politics and society[20]

9 September, 2023

Worldwide, people step up in politics to respond to areas of social and economic vulnerability in society. They appeal to people because they promise to bring equity and justice in their government, their policies and the funding provided to neglected communities. However, their practices of justice can be evaluated by exploring two international examples. Donald Trump, former President of the United States, promised Americans they would become prosperous by cutting taxes and bringing or creating manufacturing jobs in the country. Jacinda Ardern, former Prime Minister of New Zealand, promised to provide 100,000 affordable homes and free tertiary education and to alleviate child poverty in the country.

Like all politicians, both Trump and Ardern did not keep their promises and delivered little to their people. However, their narrative to address problems varied in the public sphere. Trump spread hate, bullying and agitation to motivate his supporters. In contrast, Ardern promoted empathy, compassion and kindness. She introduced the well-being budget, addressing the challenges of determining the quality of life beyond financial prosperity. Her empathy and kindness approach became a global icon of progressive politics.

Politicians in Pakistan often announce grand visions without having the power, resources and authority to implement those visions. They hope that someday, somehow, someone else will provide them with resources and power, and they become unkind to each other and their supporters. This approach might be wishful thinking, but throughout history, it has become self-deception.

Kindness has an important but undervalued role in politics and broader society for shaping the practice of justice. In contrast to compassion, kindness promotes actions to achieve the well-being of a vulnerable population. Kindness is too easily called good intentions, but it involves actions to minimise other people's suffering.

Professor John Forester from Cornell University categorised the application of kindness into four stages: (1) recognising the suffering of others, (2) identifying the sources producing their suffering, (3) recognising how we might actually influence and make a difference, and (4) developing our motivation to make that difference.

Let us apply the approach of kindness to Pakistan's current political and economic situation. First, we can begin by understanding the suffering of others around us. It is society's moral responsibility to develop compassion towards people suffering from floods, inflation and political unrest.

Second, we must decide what and who is responsible for producing vulnerability. This is difficult without a deep understanding of the country's political, social, economic and environmental history. The problems of debt, extreme poverty, air pollution, traffic congestion, food insecurity, bad health and substandard education can not be blamed on one political party, one organisation and one ethnic group. Many groups and people are responsible for public suffering in one way or another. This is because national and international elites – politicians, the establishment, the corporate sector, professionals and international development organisations – are in complex relationships with each other, and avoiding blaming and vilifying one group or organisation is important.

[20] https://en.humsub.com.pk/6174/op-ed_-kindness-in-politics-and-society/

Third, we all have to create a response that can make a difference in society. Of course, this depends on the context and issue and the availability of resources and mandates to take action. In each field, there is a vacuum of responsibility in Pakistan while we all fight for privileges. However, asking ourselves what we can do to make a difference in a specific situation would help the country. Finally, the action of kindness depends upon addressing the self-arrogance, self-privilege and self-centred objectives of politicians and wider society. We should promote choices for the common people who have few opportunities. The government should promote kindness to those who have become victims of economic chaos and political propaganda.

Kindness is relational and interactive and can only be spread through humble and down-to-earth behaviour, which I have learned from Jacinda Ardern and the New Zealand society at large. We have to come out of our political biases, cultural stereotypes, hateful language, conspiracy theories and privileged status and develop trust and positivity in society through empathy and kindness.
The four stages of kindness are important for spreading hope and positivity in Pakistan's current political and economic situation. We can get guidance from our social and religious values of relationality, responsibility and reciprocity to practice kindness and spread hope from politics to other professions and society in general.