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Expertise

Regional and urban planning

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Planning policy and regulations

Regeneration and sustainability

Company

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Location

London, United Kingdom

Lahore, Pakistan

Figure 1 Panorama of Wazir Khan Mosque, Lahore, Pakistan.

¹<https://www.dawn.com/news/1719179/lahores-worst-air-quality-poses-health-hazards>

Prosperous Lahore – Creating A New Master Plan for One of the Future Megacities of the World

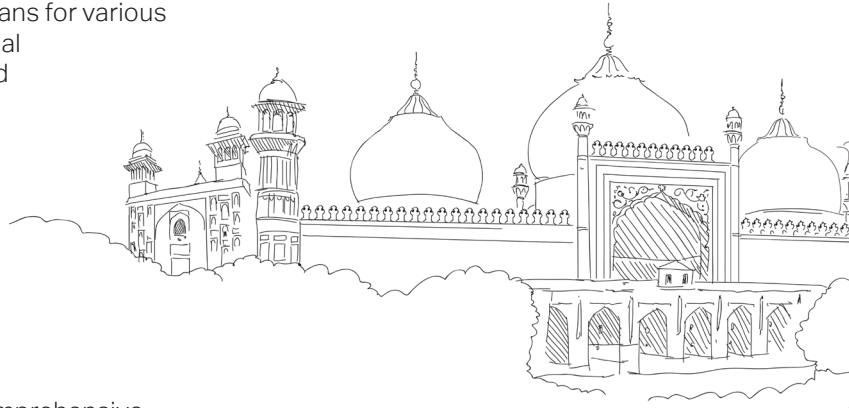
Pakistan's second largest city population wise, Lahore is known for its rich Mughal architectural heritage and widely considered the country's most important centre for health, education, and cultural sectors as well as a major growth centre that is currently experiencing rapid urbanisation and social transformation. However, Lahore also has the unenviable accolade of currently being the city with the world's worst air quality.¹ Increasing urban development over agricultural land, migration from rural areas, congestion, increased stress on already deficient utilities and infrastructure and depleted water table are just a few of the major issues threatening the vibrant and dynamic capital of the Punjab Province.





To resolve these challenges and chart a path towards inclusive and sustainable progress and prosperity, the Government of Punjab's Lahore Development Authority (LDA) launched an open tender process in 2020 and, as a result of that process, commissioned Dar to prepare a regional strategy for the Lahore Division and its population of over 21 million people. Formally known as the Master Plan for the Lahore Division 2050 (MPLD 2050), the regional strategy covers an area of 12,777 km² and looks ahead to serving a diverse population of over 37 million people by 2050. Moreover, Dar was tasked with preparing a master plan for Lahore City and another 45 master plans for various urban centres which have been identified by the regional master plan to accommodate the future population and economic development of the Division.

In order to deliver the MPLD 2050, Dar established a joint venture with the Lahore-based Asian Consulting Engineers – an independent leading consulting company that has, over the last 30 years, provided multidisciplinary services for numerous nationally significant projects in Pakistan. Our joint venture gives the project the benefit of both a global and a local outlook and level of expertise, framed within a comprehensive multidisciplinary approach.



Together, Dar and Asian Consulting Engineers began work on the MPLD 2050 in 2021. In line with the United Nations' Sustainable Development Goals and their theme of "better cities, better life," the MPLD2050 includes strategies and action plans for economic and infrastructure development, balanced urbanisation, reliable water supply, sustainable solid waste and wastewater management, and enhanced urban-rural connectivity.

Data collection to support regional and urban planning strategies

To kickstart this effort, Asian Consulting Engineers completed the most extensive land use survey ever conducted in the Lahore Division. The team interviewed 32,000 households throughout the Division in order to get updated information about demography, housing, social services, environment, transport, and cultural heritage and to provide a ground-level snapshot of life for residents. Extensive traffic counts, passenger interview surveys, and road-side surveys were also conducted to support future transportation modelling. Environment analysis took in pre-monsoon and post-monsoon data collected via primary surveys, which were then also reviewed in light of secondary data from relevant stakeholders.



“Prosperous Lahore – a centre of urbanity and civilisation”



تہذیب کا مرکز خوشحال لاہور

MPLD 2050 – Vision and guiding principles

Five pillars were developed to guide the vision for the MPLD 2050:



VIBRANT ENVIRONMENT

Ensure that the quality of Lahore's land, air, and water is compatible with the needs of a healthy life for its people – without compromising the value of the environment for generations to come.



SUSTAINABILITY

Reduce the Lahore Division's carbon footprint to zero, recycle nearly 100% of the division's waste, and nurture symbiotic relationships that will sustain the long-term development of the Division.



PRESERVED HERITAGE

Protect Lahore Division's embedded history, wisdom and values of justice, tolerance, equity and respect, that are the defining attributes of urbanity and civilisation.



BALANCED ECONOMY

Grow Lahore Division's economic activities within sustainable limits, based on need rather than greed and with a view towards prosperity and the well-being of citizens.



INCLUSIVENESS

Empower the people of Lahore Division to shape and influence the future of where they live, work, and play.

Guided by these principles and with a strong understanding of both the local context and the expectations of stakeholders, Dar proposed a regional plan for the Lahore Division, one that facilitates the region's economic growth and paves the path towards sustainability, resilience, and inclusivity.

Figure 2 Smoggy conditions in Lahore, Pakistan.
Editorial credit: A M Syed / Shutterstock.com

Figure 3 Public consultation event, Lahore.

Public engagement and data driven design

When tasked with master planning an area that's eight times the size of London (United Kingdom), how do you ensure significant buy-in from the many millions of citizen stakeholders? From the outset, the LDA defined 'inclusiveness' as a key pillar of the new master plan. The authority's decision to prioritise inclusiveness is also in line with the Pakistan Vision 2025, which sets out a clear intent to ensure all of the multi-cultural and multi-ethnic people of Pakistan are heard and given the opportunity to transform their quality of life. Therefore and in order to ensure that stakeholders across the Lahore Division are active participants in shaping the future of their cities and living spaces, Dar and Asian Consulting Engineers carried out extensive consultations with stakeholders, experts, and members of civil society.

Elsewhere, Dar launched a comprehensive and impactful consultation process to support the development of the master plan, especially in the context of Pakistan's ongoing and fast-paced development. Through open sessions, stakeholder meetings, public workshops, and electronic, print, and social media, Dar is coordinating and consulting with citizens, academics and students, builders, developers, elected representatives, professionals, civil society, and various other community members to collect and incorporate their feedback.

Another key element of the consultation process was the introduction of a digital participation and data analytics platform, Commonplace. This online tool aims to encourage and facilitate participation from as wide a range of users as possible. Members of the public can login to the platform via mobile or computer to view current updates in the design process and to record their concerns, impressions and preferences. Via the Commonplace tool, the public can suggest what they would like to see in the future of the area where they live, work or study, and access relevant project information. The platform also features integrated data gathering mechanisms such as questionnaires, polls and likes, to facilitate the process of drawing feedback from the proposals. Therefore, Commonplace can be an important contributor to Dar's data driven design approaches.

This online space was particularly relevant since Pakistan has one of the world's largest youth populations – with over 64% of its population below the age of 30. These youths are well versed in smartphones and social media and generally prefer to conduct their business in digital spaces. More broadly, the COVID-19 pandemic has also meant that digital participation is, in many cases, a preferred method of garnering feedback, minimising face-to-face contact. As such, the digital platform was one more way to reach more stakeholders across the Lahore Division.

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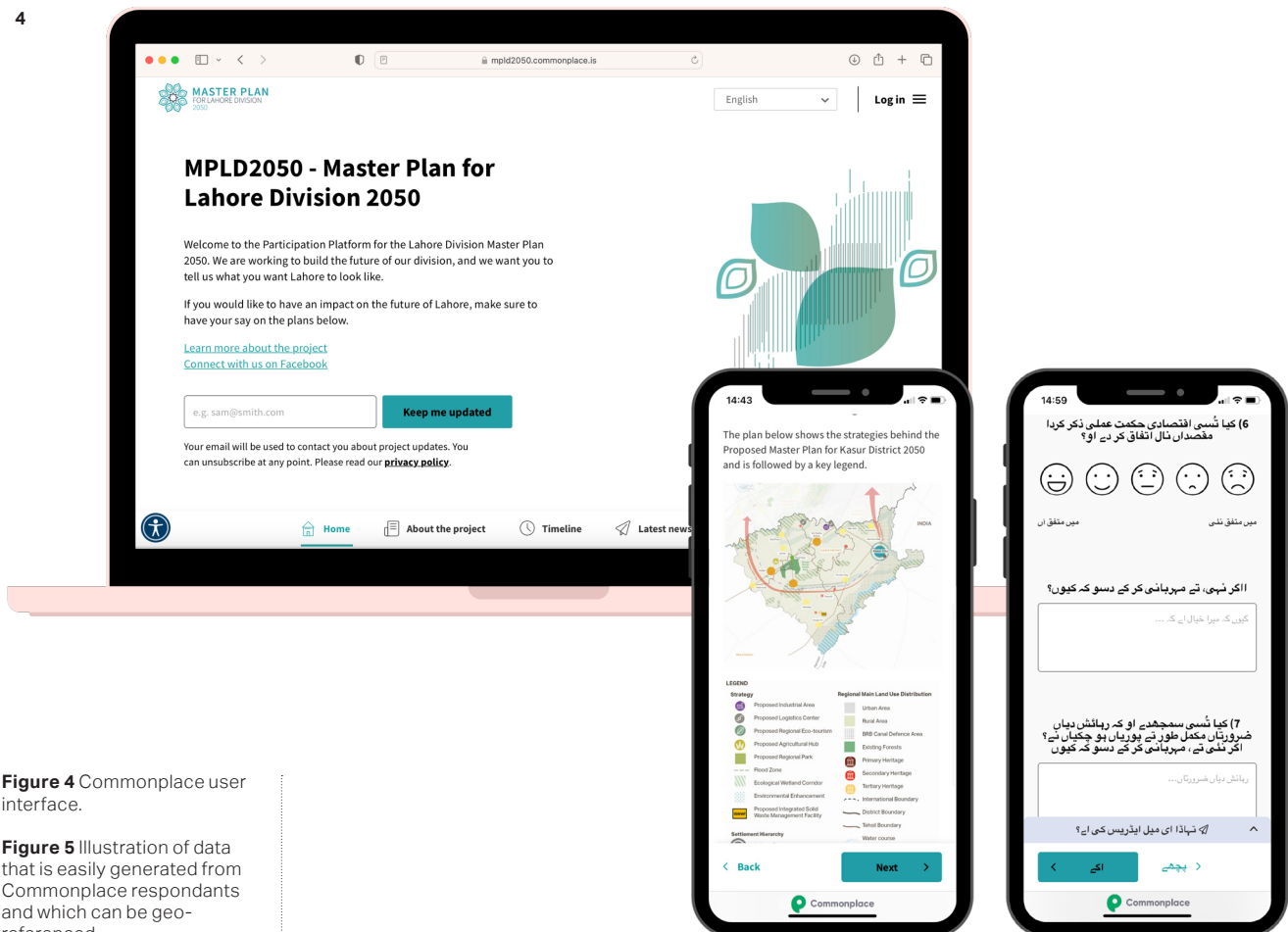
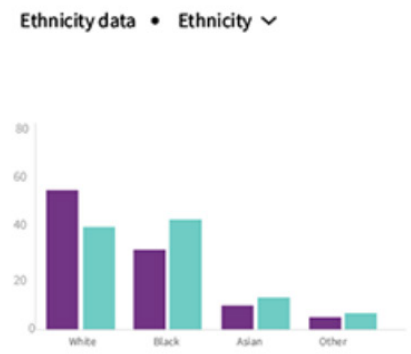
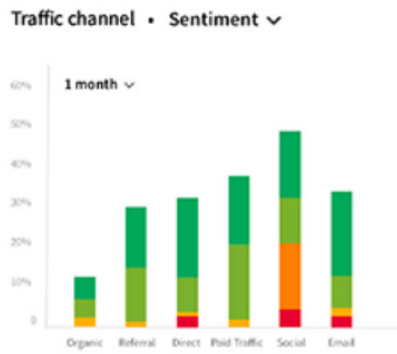
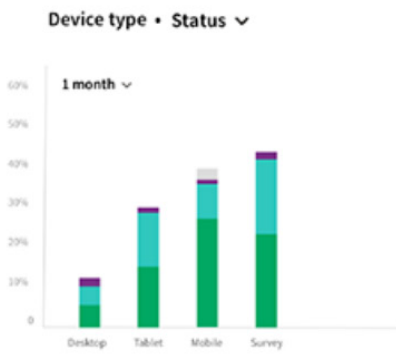
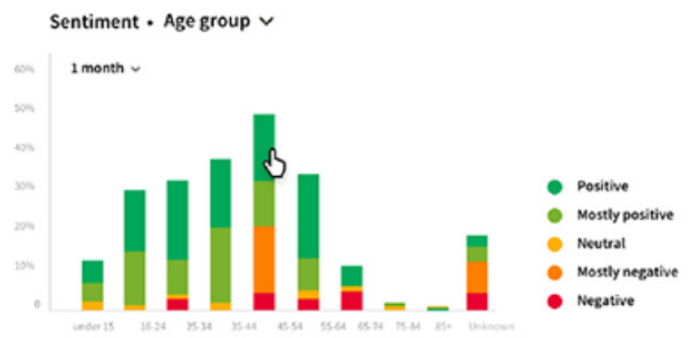
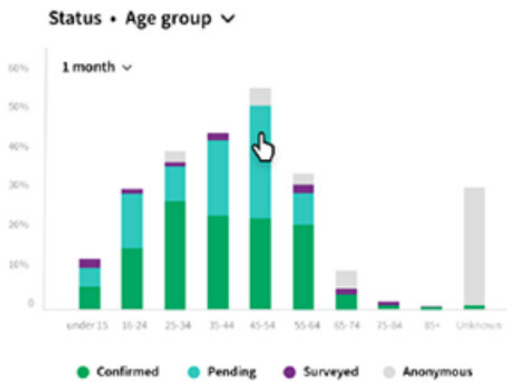
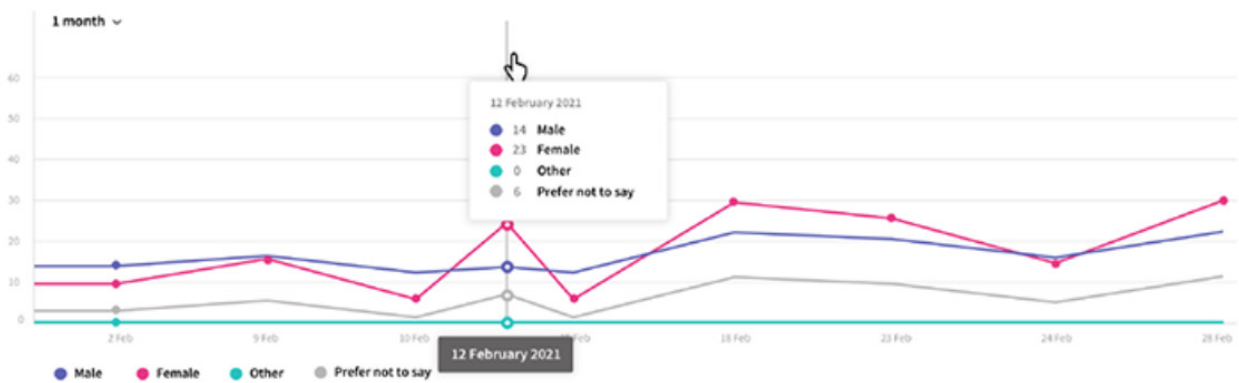


Figure 4 Commonplace user interface.

Figure 5 Illustration of data that is easily generated from Commonplace respondents and which can be geo-referenced.



Gender ▾



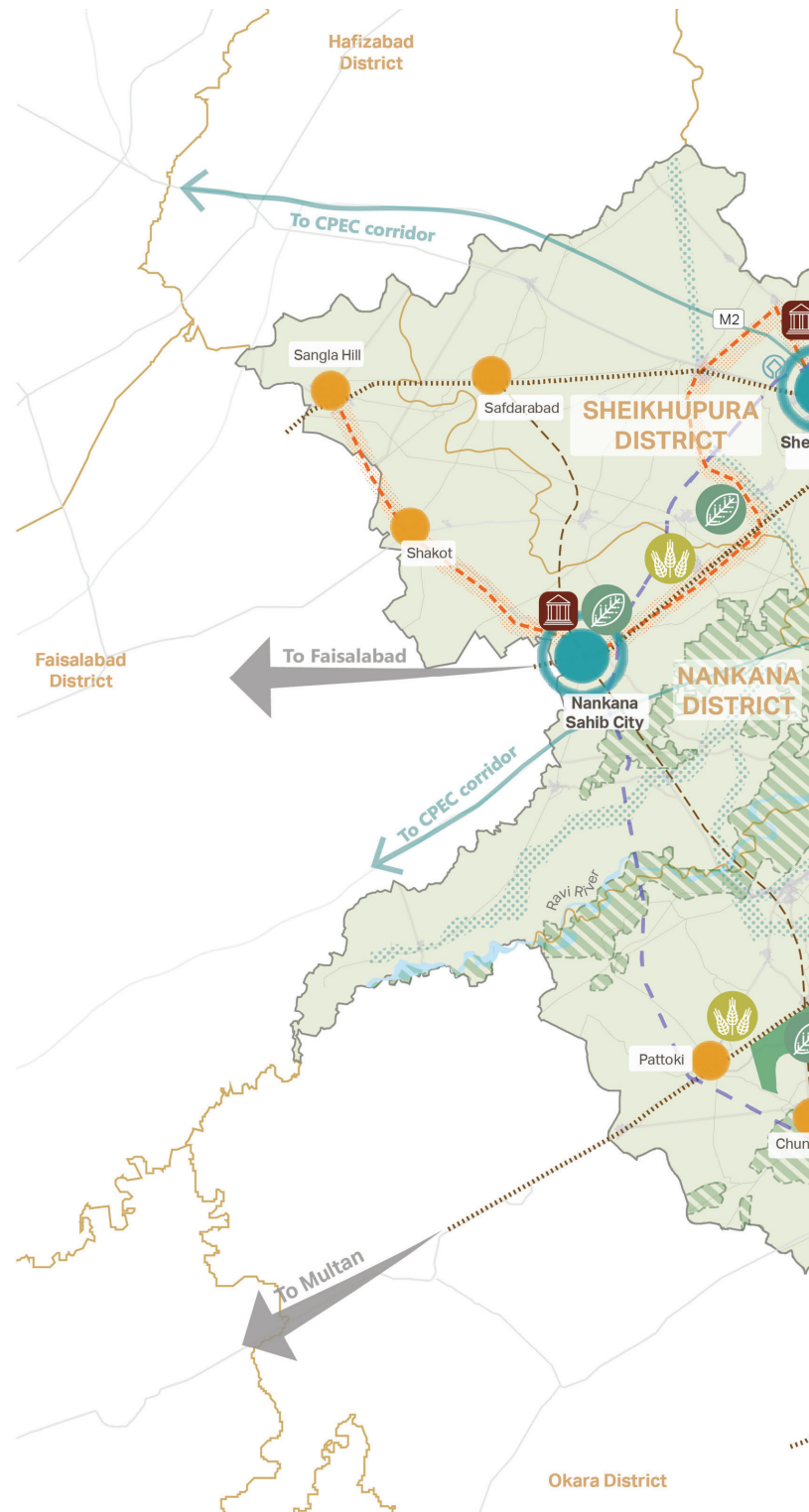
The proposed Regional Plan for the Lahore Division

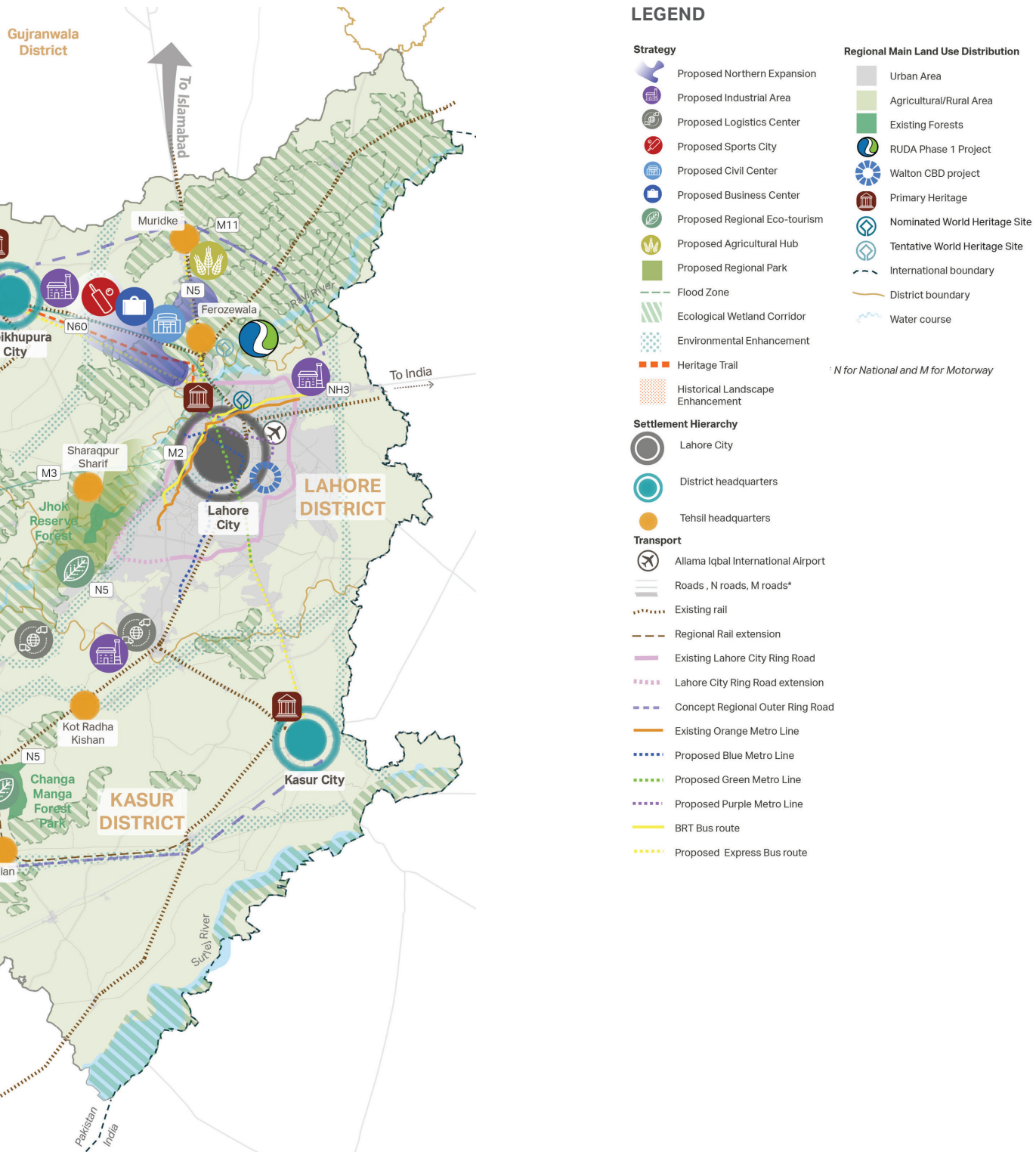
The Lahore Division is made up of four districts – Lahore, Sheikhupura, Kasur and Nankana Sahib – each with its own distinctive history and characteristics. Lahore City occupies most of its district and is a strong driver of growth. The outer districts are all characterised by fertile agricultural land; Sheikhupura is also a centre of industry, while Kasur and Nankana Sahib are predominately rural.

After analysing past trends, Dar projected that the population of the Division will increase from 21.3 million to 37.71 million by 2050. Lahore's contribution to this huge increase could reach 25 million if the city is left to develop in an unplanned way. Administrative boundaries established in the 1960s have encouraged the continued growth of Lahore City towards the south. Dar's strategy for the MPLD2050 now seeks to rebalance growth towards the north. Such a strategy aims to benefit from the shaping element of the River Ravi and the location of existing infrastructure, industrial land and economic linkages in Sheikhupura and beyond, including CPEC² and Gujranwala.

The key elements of the MPLD2050 Regional Strategy for Lahore Division include:

- A settlement hierarchy to guide the provision of community services.
- Residential land for 6.6 million new housing units with a variety of typologies and tenures.
- An economic development strategy to support the creation of 8 million additional jobs - emboldening SMEs, enabling the circular economy, and empowering youth, women, and people with disabilities (PWD).
- Industrial and logistics zoning, to drive efficiency and reduce pollution.
- An integrated transportation strategy developed using VISUM software, promoting the shift to public transport and active modes such as cycling and walking.
- A cultural heritage strategy to create historic districts, archaeology priority areas, and historic landscape areas.
- A tourism strategy to realise opportunities in cultural tourism, religious tourism, and rural tourism.
- A landscape and open space strategy to establish ecological wetland corridors and a regional park, as well as urban interventions supported by design guidelines.
- Agricultural hubs for enhanced food security.
- An environment strategy to embed key environmental principles and practices into both the plan and sectoral development.
- A solid waste management strategy.
- A wet utilities strategy to establish functioning stormwater and sewerage networks.
- A power strategy to support the transition to cleaner forms of energy.





Proposed Master Plan for Lahore District

Lahore City currently occupies approximately 53% of its district, with the rest set aside for agriculture. Over recent decades, the majority of permitted development under previous master plans has seen the city continually expand southwards, as this is the area under the remit of the Lahore Development Authority.

Figure 6 Regional strategy diagram (correct as of December 2022).

²The China-Pakistan Economic Corridor is a framework of regional connectivity, benefitting not only China and Pakistan but also Iran, Afghanistan, Central Asian Republic, and the region. <https://cpec.gov.pk/>

There are wildly variable densities within the city, with around 1300 ppha (persons per hectare) living in unplanned areas surrounding the historic walled city, but only 50 ppha living in gated communities that characterise most of the residential areas outside of the historic core. Along most major roads where key infrastructure is available, there is very low-density development. Such a reality offers an opportunity for increasing density while providing improvements in public transport.

As the current population increases, a key challenge has been to agree on a suitable target for Lahore’s maximum population, and how this might be accommodated within the city whilst also supporting necessary regeneration and neighbourhood development.

Dar’s solution was to create a series of phased planning policies to accommodate the projected population of Lahore District and economic requirements up to 2050. Phasing of these policies is absolutely critical, allowing the LDA to monitor the implementation of the master plan whilst limiting urban sprawl.

To commence immediately:

Policy 1:

- a) Infill on vacant land.
- b) Densification along public transport corridors and primary structure roads.
- c) Densification in planned areas and regeneration of informal settlements.

To commence after 2030:

Policy 2 and 3:

Development in the areas identified within the 2004 and 2016 master plan.

To commence after 2040:

Policy 4:

Limited additional horizontal expansion adjacent to existing urban areas.

Policy 5:

Development beyond Lahore District.

To address population growth after 2040, Policy 5 takes into consideration future development beyond Lahore District in the Ravi Urban Development Area (not part of this project) and proposes a “northern expansion area,” which takes advantage of strategic connections to Sheikhpura City and Islamabad further north. Dar’s proposals for the northern expansion area would accommodate the following functional uses:

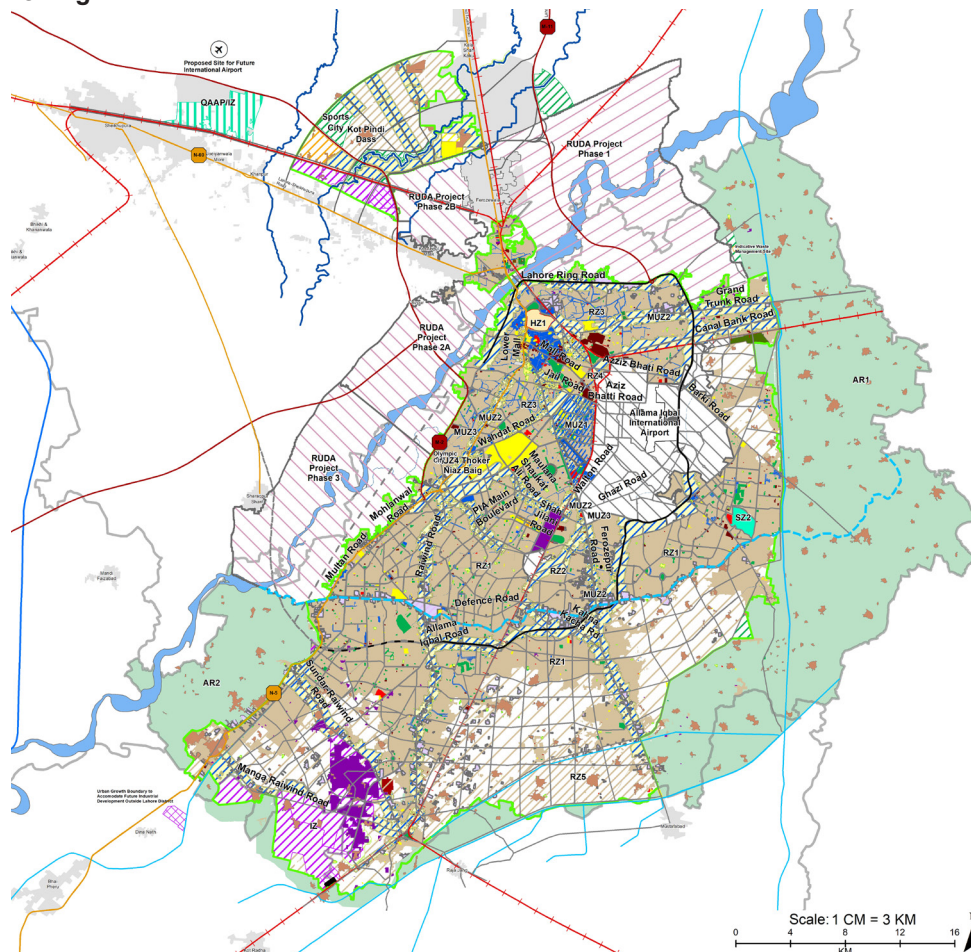


Proposed Lahore Land Use Zoning

LEGEND

Proposed Landuse 2050

- Residential
- Educational
- Green Buffer
- Industrial
- Institutional and governmental use
- Mixed Use
- Open Space \ Recreation \ Leisure/Sport
- Indicative Waste Management Site
- Freight and Logistics Facilities
- Special Development Zone
- Urban Growth Boundary / Periurban Boundary
- RUDA Phase 1
- RUDA Phases (2A-2B & 3)
- Walton CBD Mixed use Area
- Future New City Center

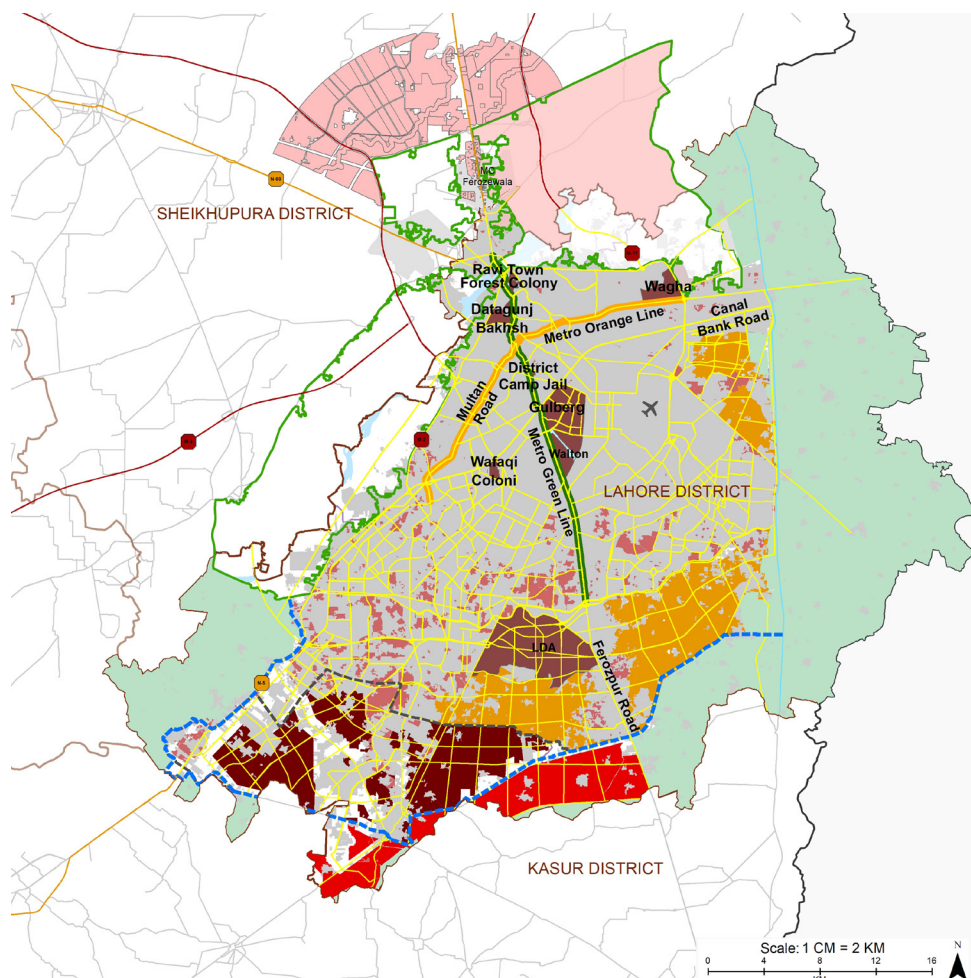


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Planning Policy Phasing

LEGEND

- 1A. Infill within Vacant Land
- 1Ba. Densification along Structure Roads
- 1Bb. Densification along Metro Green Line
- 1Bc. Densification along Metro Orange Line
- 1C. Densification within Planned Areas
- 2. 2016 Masterplan Developable Area
- 3. 2004 Masterplan Developable Area
- 4. Development Beyond Limits of 2004 & 2016 MPs
- 5. Development beyond Lahore District Boundary
- Agriculture
- RUDA Project Boundary



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MPLD 2050 – key initiatives and transformational projects.

MPLD2050 incorporates several key initiatives, which are major projects in their own right. As part of the strategy to enhance the poly-centric urban form of Lahore City and introduce appropriate areas of high density, the Gulberg City Centre will become the city's core business and commercial area. This will create a large number of jobs for the growing population, whilst also permitting mixed uses along the main Gulberg Boulevard, Jail Road, rail line, and Ferozpur Road. Key to the success of this strategy will be the integration of multiple public transport stations for better accessibility.

Dar's proposals also included transit-oriented development at key areas where mass transit can be integrated with local bus networks. A pilot project at Thorak Niaz Baig station will increase density within 500m of the station as shown in the figure below. Mixed uses, improved public realm, and enhanced walkability will further encourage people to live closer to key transit routes, thereby reducing car dependence.

Much of old Lahore is characterised by informal, unplanned, overly dense areas that lack structure, access to basic services and community facilities. A key aspect of the plan is to revive the notion of neighbourhood with the required community facilities and to promote walkability. MPLD2050 therefore applies the principles of neighbourhood development to foster regeneration for communities numbering approximately 10,000 people. A pilot neighbourhood will be restructured by improving access points, constructing thoroughfares, creating open space, and providing land for community facilities, local commercial activity and services to meet the day-to-day needs of and for the benefit of residents.

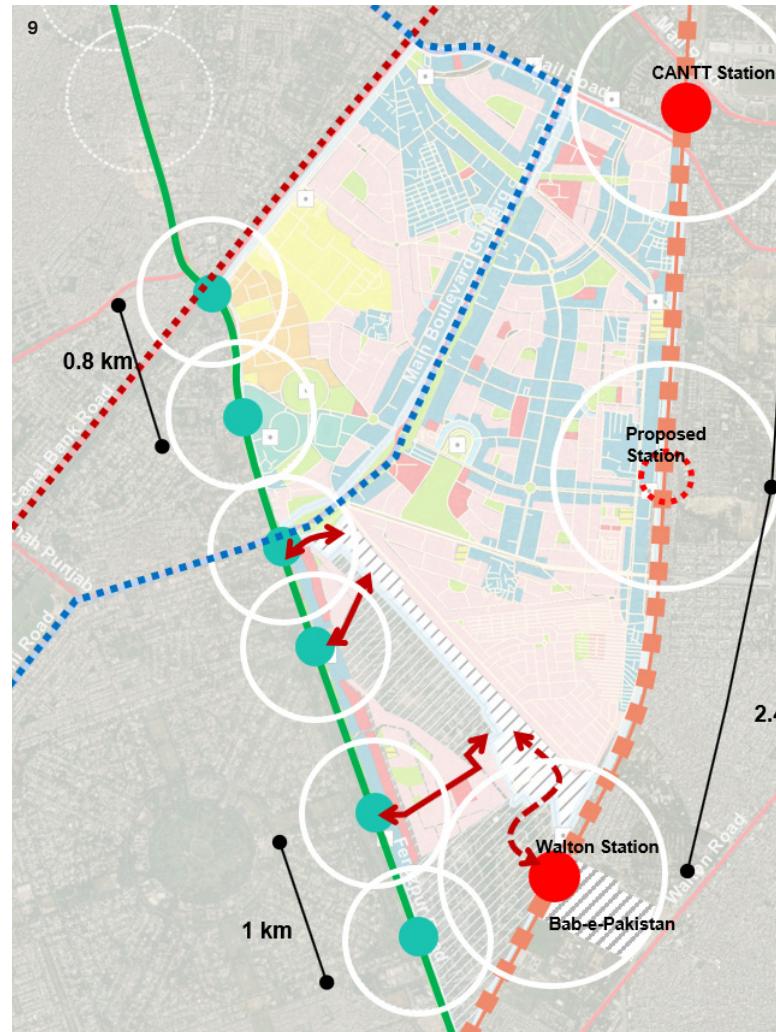
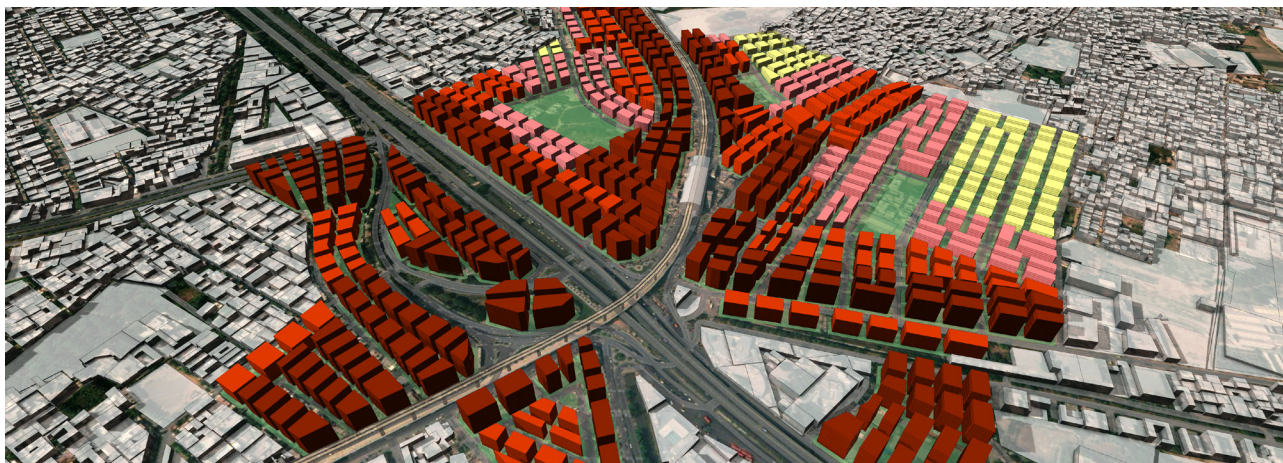


Figure 9 Gulberg connectivity - to mitigate future congestion resulting from the proposed Gulberg City Centre project, it is essential that this the area is integrated with significant public transport and connectivity enhancements.

Figure 10 Indicative visualisations of a pilot TOD development and neighbourhood densification scheme in central Lahore generated using City Engine, a parametric design tool that empowers designers and clients alike to review options for various design parameters such as setbacks, building and floor heights, plot coverage, FAR.

Figure 11 The application of proposed urban design guidelines to promote infill development and enhanced streetscapes.





Why is MPLD2050 so vital?

In October 2022, Dar commenced an extensive process to gain approval of the master plan. Dar and Asian presented the main regional, district and urban scale strategies at a series of public hearings in each of the four districts that make up the Division. Approximately 150 concerns were submitted to LDA, which have subsequently been considered and addressed. A final round of consultations and approvals were granted from key stakeholders, including with Pakistan's Environment Protection Agency and LDA's own management committees.

By the end of December 2022, the main approvals had been achieved, representing a major milestone in the delivery of this complex and politically sensitive project. By the end of February 2023, it is expected that Dar will have submitted the final versions of the master plan documents, for publication and implementation by our partners at LDA.

Dar's goal is to realise the LDA's vision for Lahore and its wider region for the next 30 years, to support regeneration and sustainable development with strategies, projects and programmes that can solve many of the fundamental issues communities are facing. Improved air and water quality, better access to housing with local services and connections with public transport, conserved heritage sites, improved public realm and reliable power supply are just some of the tangible benefits that MPLD2050 will help to deliver. Dar is honoured to have been tasked with delivering a master plan that enjoys wide support and is representative of the hopes and aspirations of the people of Lahore.

MPLD2050 has significantly increased Dar's experience in Pakistan and South Asian more generally. This is a challenging project environment with different language, culture and planning systems. Here Dar has adapted its wide international experience to the local needs of



Figure 12 The distinctive agricultural landscape of Sheikhupura District

a developing country, putting in place cross-cutting planning policies to promote sustainability. An example of this is the application of TOD principles to integrate needs to densify some areas, reduce congestion, increase access to and use of public transport, support regeneration, and promote high-quality walkable public realm.

There are many lessons learnt from the project that will inform future projects in Pakistan such as the need for close coordination with the client and local stakeholders, including engagement with the public, to develop adhoc solutions to local problems. This continuous consultation process allowed Dar to develop for project implementation. There were also lessons learnt from our joint venture with Asian Consulting Engineers, who's different but complementary knowledge and ways of working have made the project possible. ♦

