

Afghan Cities for Life

Respecting and protecting the environment for healthy and livable cities

Discussion Paper #6, February 2015

This discussion paper examines key environmental challenges facing Afghan cities, including services such as transport, water, and sanitation; natural resource management; and climate change and Disaster Risk Reduction (DRR). It demonstrates that the urban environment is not an optional 'add on' but cuts across all aspects of how to plan and manage Afghanistan's urbanisation process.



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Urban environment: more than trees and water

Understanding what is the urban environment and how it impacts the well-being and quality of life of urban Afghans is crucial to ensuring that environmental issues are properly accounted for and incorporated into urban planning and management. Originally the term 'urban environment' was narrowly defined to issues that are related to the management of water, air or land in cities. While this definition adequately captures important elements such as pollution and natural resource management, it does not capture the wide range of environment-related issues that impact city residents on a daily basis.

A broader and more useful definition includes the range of issues related to the current or future well-being of urban inhabitants and their environment. This definition accounts more broadly for issues that are both serious considerations now – such as transportation – as well as those that may develop into more critical considerations in the future – such as climate change. Three components of urban environment in Afghanistan can be identified: urban services, cities and the natural environment, and changing climate and DRR.

1. Urban Services – transportation, energy, water and sanitation

The services and facilities that are available to city inhabitants have a major impact on their quality of life and the functioning of the city. The way that these services are delivered and planned also have an impact on how the natural environment is degraded or maintained. Key services include transportation, energy, water, and sanitation.

The transport sector is a major element of how a city functions and the ability of inhabitants to move in a safe and efficient manner. Key transportation considerations include: the relative share of transport modalities (such as personal vehicles, shared or public transport, non-motorized vehicles and even walking); road conditions and connectivity; traffic and pedestrian safety; and costs to individuals (affordability). In most Afghan cities, road traffic is increasingly a problem, particularly as car ownership rates have risen dramatically over the past decade without commensurate improvements/expansion in road/street infrastructure.

Shared or public transportation such as buses, mini-buses and rickshaws remain very limited in terms of route options, accessibility and frequency. Consequently, a large percentage of urban Afghans rely on walking as their primary means of



Would you drink from this well?

Cities and their environment

The urban environment of cities is comprised of the **natural environment** in and around the city as well as the types of **services/infrastructure** allocated to the inhabitants of cities. A further important consideration of urban environment is the potential for **climate change** and the need for **disaster risk reduction**. All of the various elements depicted below need to be taken into consideration when planning for sustainable cities for all.



mobility, for example in Kabul, one-third of the population relies on walking as their primary mode of transportation.¹ A further important consideration in Afghanistan is that the majority of commuters – persons undertaking trips in a day – are youth, who are commuting to school and work. Women and girls are particularly disadvantaged. While it is not customary for women to drive cars or ride bicycles in Afghanistan, they have very few options for safe, efficient and frequent shared/public transport options.

The availability of energy sources and the types of energy available are important elements for households but also require planning at the community, city, and national levels to ensure that energy supply can meet demand. Reliance on non-renewable energy sources can also have a negative impact on degradation of environment, for example a reliance on fuelwood and charcoal can drive deforestation, as well as poor health since the use of solid fuels for cooking and heating can lead to severe urban pollution and adverse health effects, especially for women who ingest these fumes while preparing meals. In Afghanistan, while universal coverage is still to be attained, positive trends in coverage as well as a significant increase in solar and wind energy from 2005 to 2011 demonstrates a move towards increased energy coverage as well as sustainable energy sources.²

Water and sanitation services are also extremely important not only for the health and well-being of city inhabitants but also related to the health of the urban environment and issues related to urban pollution. Access to clean drinking water and adequate sanitation are basic human rights. An estimated 71% of urban households have access to improved water, and 29% improved sanitation.³ Taking into consideration sprawling urban areas and informal settlements, efforts to adequately plan for the growing population's water and sanitation needs are crucial to ensuring the quality of life for future generations.

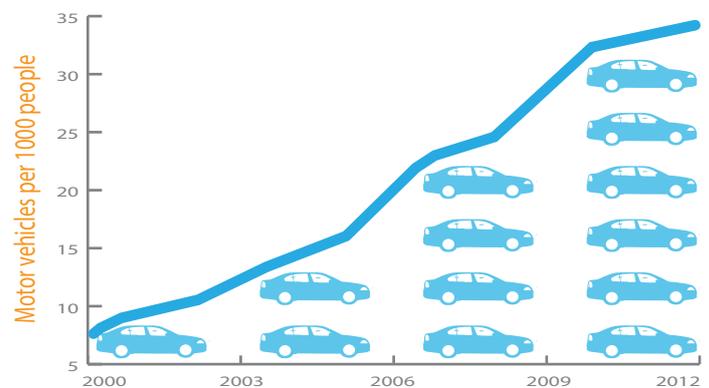
2. Cities and the Natural Environment

Although cities consist of largely built-up elements they are also closely linked to the natural environment. The degradation of the urban environment can have serious impacts on the health and well-being of residents as well as the resiliency of the natural environment to support the functions of the city. This degradation can impact the water, land and air both in the cities and in their surrounding areas. Degradation of water sources/reservoirs can be the result of chemicals, industrial pollution, poor sanitation and waste management, and agriculture.

While the causes of the degradation may have their origins in cities, they can have a negative impact on freshwater ecosystems and watersheds that extend beyond the municipal boundaries. Poor sanitation and waste management can also degrade the land and soil in cities. This degradation can be the result of inadequate sanitation services or poorly managed landfills and dumpsites. In major Afghan cities, such as Kabul, Herat, and Jalalabad, the collection and proper disposal of solid

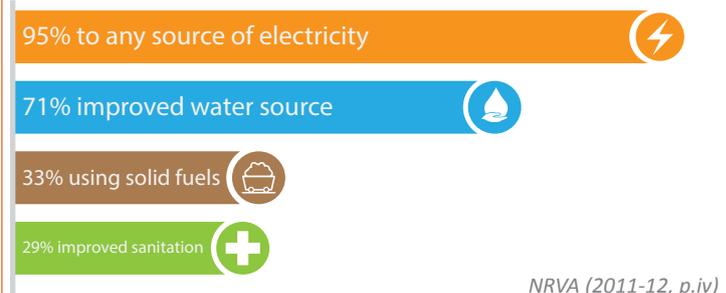
Driving up

Private vehicle ownership has risen dramatically since 2001, creating major transport problems in the nations' cities and limiting viable and reliable public transport options.⁴



Energy, water, sanitation in urban households

On average, urban households have the following access to basic services. While higher than in rural areas, much more needs to be done to increase access from this low base and ensure sustainable natural resource management.



Greening the gray: multiple benefits of urban green space

'Greening' cities – through tree planting and increasing park space – has more positive impacts that just improving the appearance of cities. Trees, grass, gardens and parks can form integral parts of existing ecosystems thereby promoting ecosystem services and providing additional environmental benefits. These multiple benefits of urban greening initiatives can include reducing air pollution, enhancing biodiversity, increasing recreational opportunities, reducing flood risks and providing relief on a warm day – both to individuals and the city as a whole by reducing the urban heat island effect.



1. RECS International Inc. Yachiyo Engineering Co., Ltd. (2011) Draft Kabul City Master Plan.
 2. Central Statistics Organization (2014), National Risk and Vulnerability Assessment 2011-12. Afghanistan Living Condition Survey. Kabul, CSO.
 3. Central Statistics Organization (2014), National Risk and Vulnerability Assessment 2011-12. Afghanistan Living Condition Survey. Kabul, CSO.page iv.

4. World Bank (2014), World Development Indicators online.

waste falls well short of the amount being produced, resulting in a situation in which solid waste is polluting the land and water ecosystems in those areas.⁵

Air pollution is also a major form of environmental degradation that can have serious health impacts on city occupants. Air pollution is generated by fossil fuels burned by the energy and transport sector, industrial emissions as well burning of solid fuels and waste for heating and cooking. This situation is exacerbated by deforestation and limited green space in and around cities because forests and green space can help improve air quality. In Kabul, according to a 2005-2006 United Nations Environment Programme (UNEP) report, 60 per cent of the population is exposed to elevated concentrations of particulate matter, nitrous oxides and sulphur dioxide.⁶

3. Changing Climate and Disaster Risk Reduction (DRR)

The fact that the climate is changing has been well documented and the latest report from the Intergovernmental Panel on Climate Change makes it clear that this will cause severe, widespread, and irreversible impacts.⁷ This changing climate will have an impact on the natural environment underpinning cities and adaptation measures will need to be undertaken to address these changes. In parallel, mitigation of carbon dioxide emissions is still necessary and can be crucial to limiting these severe impacts. Cities are responsible for 60% of all carbon dioxide emissions, mainly from the energy, transport and industrial sectors. Consequently cities have a major role to play in reducing emissions which can be achieved through improved transportation planning, including adequate shared and public transport options; policies and regulations to reduce industrial emissions; and increasing access to sustainable energy sources such as wind and solar.

As climate change has the potential to increase the frequency and severity of natural disasters, cities need to understand and plan for these increased risks. Many Afghan cities are already at risk for flooding, earthquakes, droughts and landslides and disaster management plans have currently assessed these risks and vulnerabilities. According to the National Disaster Management Plan (NDMP) for Afghanistan, 14 provinces have a high risk of drought, 9 provinces have a high risk of flooding and 9 provinces have a high risk of avalanche.⁸ However with both increased urbanization and changes in climate, there is the potential for increased prevalence and therefore natural disaster plans and climate change adaptation plans should be updated to recognize these increased threats and vulnerabilities.

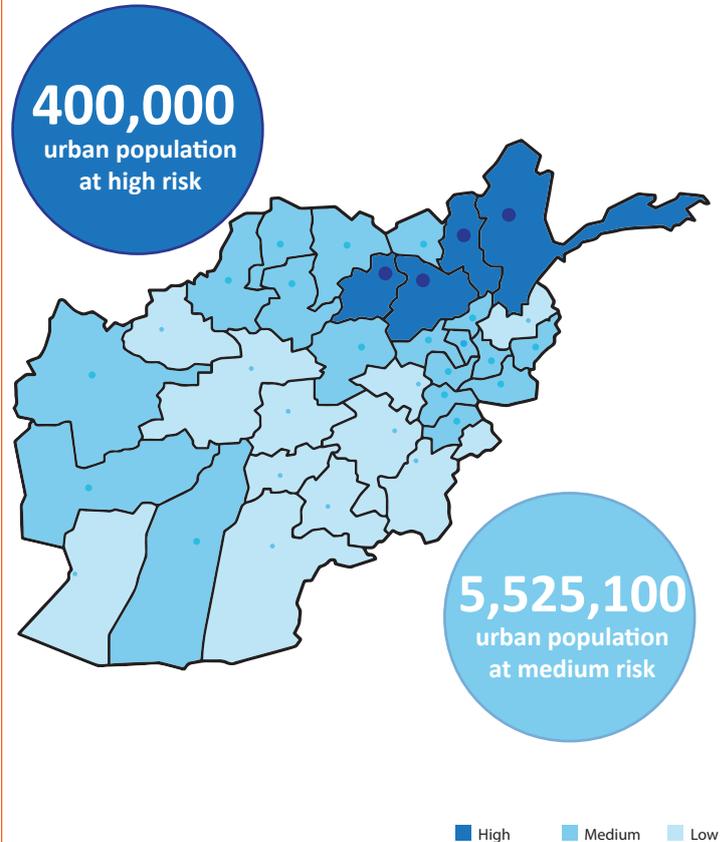
Disaster Risk Reduction and Climate Change Adaptation plans need to account for the variable climates and different impacts to specific regions and cities in Afghanistan and they also need to recognize the potential for increased impact on vulnerable communities such as internally displaced persons, refugees and female-headed households.



The burning of solid fuels in winter for heating creates major pollution problems for Afghan many cities

On shaky ground

Afghanistan lies on two main fault lines that have the potential to rupture and inflict massive damage. Lack of building standards, compliance, and enforcement of regulations mean the majority of buildings will not withstand even a moderate earthquake. When one strikes, there will be massive loss of life and undermine the urban development efforts to date.



5. Giovacchini, T. (2013) Land Reform in Afghanistan (The LARA Project) Jalalabad City Profile. Tetrattech ARD: USA.

6. United Nations Environment Programme and National Environment Protection Agency (2008) Afghanistan's Environment.

7. Intergovernmental Panel on Climate Change (2014) Climate Change 2014: Synthesis Report, p. 17

8. Department for Disaster Preparedness (2003) National Disaster Management Plan

9. Samuel Hall 2014, "A Study of poverty, Food Security and Resilience in Afghan Cities." For DRC and PIN; based on a study in five cities: Herat, Jalalabad, Kabul, Kandahar, and Mazar-e-Sharif.

Urban environment: not an 'add on' but part of 'ecosystem services'

The above discussion highlights that the urban environment is not an optional 'add on' to urban development. Rather, because cities exist in unison with their surrounding regions, as part of city-regions (as explained in Paper #4), it is important to take a comprehensive approach. The ecosystems surrounding cities provide what are known as 'ecosystem services', which include the products derived from ecosystems such as food and fuel as well as the regulating services such as air quality regulation, water quality regulation and climate regulation. These ecosystem services underpin the functionality of cities and the well-being of city inhabitants.

Green space, parks, rivers, agricultural lands and forests all exist within and beyond municipal boundaries and have important implications for recreation, air quality, reducing the impacts of natural disasters such as flooding, and food supply/security. For example, improving the linkages between urban areas and their surrounding regions could also have a positive impact on increasing the food security of urban households, a increasing problem with some studies suggesting that over 90% of urban households are food insecure.⁹

Green space within cities can also act as important corridors for biodiversity and natural habitats for bird, small mammal and plant species. Freshwater sources that flow through cities are

also connected to larger regions and may be important sources for both agricultural production and as a source of drinking water for city inhabitants.

Challenges and opportunities

Understanding and knowledge – including complete data – about urban environment issues is a major challenge to ensuring that urban environment is adequately addressed in urban planning and management. In addition, ensuring that all relevant organizations from both urban and environment sectors are engaged in the dialogue on identifying and addressing urban environment issues is extremely important. In Afghanistan, current urban sprawl and conditions of environmental degradation are a challenge to ensuring that cities are healthy and sustainable environments for current and future residents.

The fact that Afghanistan currently has a very low level of urbanization provides the opportunity to guide urban growth over the coming decades in an environmentally sensitive manner. Expansion and infill should be guided in a way that allocates for sustainable services, reduces environmental degradation and provides ample space for parks and other green areas. The planning and design of cities also have an important role to play in 'future-proofing' cities: building the resiliency of the infrastructure and people in urban areas today to cope with a changing climate in the future.

Ways forward

- For the transport sector, focus on mobility, not cars and roads. Work with private sector to expand shared transport options, and recognize that transportation planning in Afghan cities must account for gender differences in the use of transport, promoting safe, affordable and viable options for Afghan women and girls;
- Incorporate urban environment issues into urban planning including urban design and landscape that promote long-term solutions (i.e. the current tree-planting initiative in Kabul will contribute to improving local climate and air pollution over a long time period);
- Promote sustainable waste collection and disposal to reduce pollution and improve health;
- Improve knowledge and understanding on city-regions and undertake planning to nurture improved connectivity and environmental balance between cities and their surrounding regions;
- Raise awareness on climate change and disaster risks in urban areas and undertake mitigation efforts such as green spaces to reduce flooding along urban river basins, and improve (seismic) building codes and their enforcement;
- Explore examples of environmentally-friendly building practices in Afghanistan and the region, including solutions used by previous generations of Afghans drawing from a rich heritage of low-energy living.



The State of Afghan Cities 2014/15 Programme is a one-year programme supported by the Government of Australia and implemented in conjunction with the Government of Afghanistan, that aims to improve knowledge and information on urbanization in Afghanistan by undertaking a detailed review of all 34 provincial capitals. A detailed State of Afghan Cities 2014/15 Report will be published mid-2015.

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