

Preliminary Social and Environmental Assessment of Zulfiqarabad: a new Coastal Mega City Project in Pakistan

By

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Introduction

- Rapid Urbanization
- Proliferation of megacities
- Megacities – Problems and potentials
- Global concern for safer cities ([world map](#))

Nevertheless,

- New cities are being built in vulnerable regions
 - **Zulfiqarabad** is a similar kind of development proposed in the coastal region of Pakistan

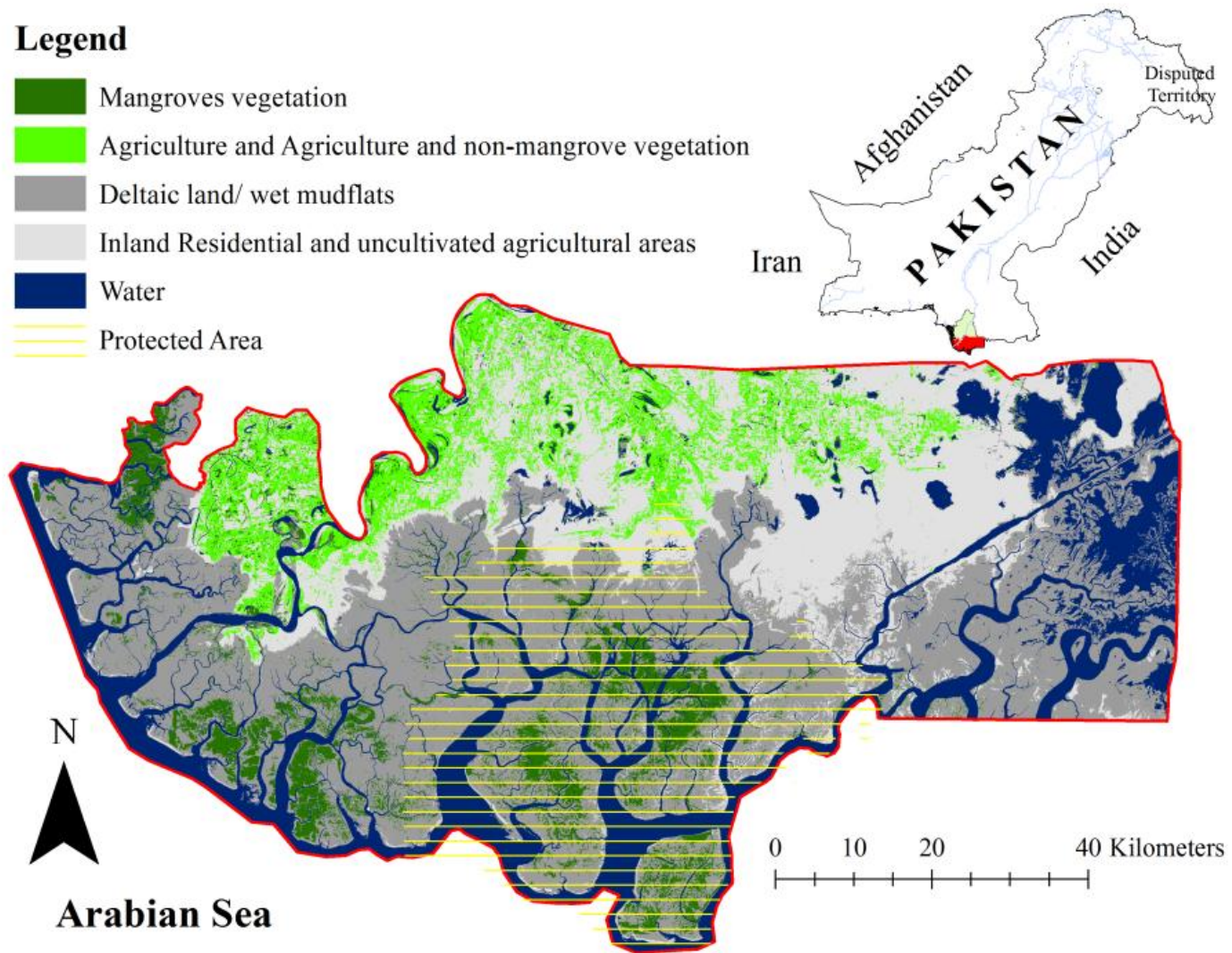
Methodology

- Existing Land Cover analysis based on the Landsat satellite imagery
- Hazard/Disaster Profile based on Literature Review
- Occupational profile based on primary information collection
- Analysis of Land Property Rights based on the government statistics

Existing Land Cover of Zulfiqarabad Site

Legend

- Mangroves vegetation
- Agriculture and Agriculture and non-mangrove vegetation
- Deltaic land/ wet mudflats
- Inland Residential and uncultivated agricultural areas
- Water
- Protected Area



Existing Land Cover of Zulfiqarabad Site

Major Land Cover/Land Use	Entire Site		Protected	
	Area (ha)	% ^a	Area (ha)	% ^b
Mangroves vegetation	54,708	7.20	26,726	48.85
Agriculture and non-mangrove vegetation	66,688	8.77	1,088	1.63
Deltaic land/ wet mudflats	305,870	40.25	114,987	37.59
Inland Residential and uncultivated agricultural areas	182,675	24.04	14,355	7.86
Water	150,053	19.74	47,426	31.61
Total	759,995	100	204,581	26.92^a

a. Percentage of Total

b. Percentage of land Cover Class under Protected Areas category

Some recent natural hazards and disasters in the coastal region

Hazard	Disaster
Cyclone TC – 02A, May 19, 1999 Category 3 hurricane	– The Cyclone had Landfall near Keti Bandar and caused widespread and destruction in 160 km coastline of Sindh Province. It caused 56 breaches in tidal link, wiped away 73 settlements ¹ , collapsed 75,000 houses and damaged 59,000 houses ² . At least 168 people and 10,000 livestock died ^{1, 2} , inundated 0.16 Million ha of farmlands ² , destroyed 1,800 boats while partially damaged 642 boats ¹ . The Loss to infrastructure and fishing assets of local communities exceeded PKR 1,000 Million ¹
Bhuj Earthquake, January 26, 2001 (7.9 Mw on Richter scale)	– Negligible human loss along Sindh coast but the quake devastated areas within 300 km radius from the epicenter ³ . The aerial distance between epicenter ⁴ and Zulfiqarabad was less than 150 km. Reportedly ⁵ 20,000 persons died, about 166,000 injured of whom 20,700 sustained serious injuries and 247 persons were missing. Livestock deaths also exceed 20,000 cattle ⁵ . Affected 21 districts where 800 villages destroyed, about 187,000 houses collapsed and 500,000 houses partially damaged ⁵ . Together with these losses, thousands of schools, about 750 km of national highway and severe damages to telecommunication networks were estimated at INR 214,620 Million ⁵ .
Cyclone Yemyin, June 21-26, 2007causing severe floods	– Caused 460 deaths in Baluchistan, 89 deaths in Karachi and 38 deaths in Thatta and Badin ⁶ . Reportedly in Keti Bandar ⁷ , three persons died while a dozen were injured while 750 totally collapsed while 1,050 houses were partially damaged. Besides 26 boats were destroyed and 174 were damaged ⁷ . An estimated population of 22,424 living in 2,822 households ⁷ in the northern part of Zulfiqarabad site

Sources: (NDMA, 2007b)¹, (F. Q. Khan & Nomani, 2002)², (M. A. Khan et al., 2002)³, (Indian Metrological Department in Malik, Nakata, & Sato, 2001)⁴, (Ministry of Agriculture, Government of India in CESNED, 2001)⁵, (NDMA, 2007a)⁶ (WWF-Pakistan, undated)⁷

Occupational Structure of the local communities

Occupation	Dependent population (N=343)	
	Primary	Secondary
Marine fishery	54.23	26.53
Livestock herding	12.24	7.87
Boat driving	4.08	–
Crop cultivation	16.91	12.24
Formal jobs (Govt, NGO and Private sectors)	6.12	–
Daily wage labor (other than marine fishing)	3.21	–
Other occupations	3.21	2.62
No Occupation	–	50.73
Total	100	100

Figures in the table are the percentages

Land property Right on the proposed site

Name of sub district	Area of sub district ¹	Land Category Area in hectares (%)					
		Public purposes	Private land	Private land T.O issued	Running grants	State Land	Other Land
Keti Bandar	61,885	2,969 (4.80)	14,952 (24.16)	2,340 (3.78)	4,967 (8.03)	37,253 (60.20)	162 (0.26)
Kharo Chan	92,366	2,834 (3.07)	5,766 (6.24)	1,643 (1.78)	3,876 (4.20)	79,154 (85.70)	–
Shah Bandar	295,453	3,583 (1.21)	20,205 (6.84)	17,208 (5.82)	11,987 (4.06)	239,605 (81.10)	5,547 (1.88)
Jati	266,880	12,268 (4.60)	12,457 (4.67)	28,571 (10.71)	17,749 (6.65)	190,325 (71.31)	–
Total²	716,584	21,654 (3.02)	53,380 (7.44)	49,762 (6.94)	38,579 (5.38)	546,337 (76.24)	5,709 (0.80)

Source: (ZDA, 2011)

1. Area as per the land register which is different from the total geographical area of the sub district
2. A small difference of 1,165 hecters bringing about a difference of 0.16% is due to typos in the records of the District Revenue Officer Thatta

Discussions and Policy Implication

- Zulfiqarabad is a looming threat to environmentally important mangroves areas
- Location of the megacity is prone to the modest frequency of earthquakes and cyclones.
- Local occupations depend on local resources such as land, sea and mangroves.

Discussions and Policy Implication

- Although, the government is the major land holding entity on Zulfiqarabad site, most of the ‘available land’ has already been declared as protected mangrove areas.
- Preliminary findings urge for cautious consideration to the proposed location of the megacity and proposes more rigorous in-depth EIAs as a basis for reconsidering the project.

Thanks