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Get Ready for Global Warming and Air Pollution: Towards the Climate Change Refugees and Subsidence Coastal Areas of Bangladesh

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Abstract

Bangladesh is a low lying highly density populated and vulnerable due to climate change that has continuously changing. Temperature, carbon emission and sea level have significantly increased globally that impact developing countries and Bangladesh is one the victim for climate change refugees. There are 35 Million people representing 29% of population live in 19 coastal districts of Bangladesh. 1 m sea level rise will impact 17% of Bangladesh will be submerged and around 20 million people will be climate change refugees on Bangladesh (Bachelet M, 2021). In 2021, around 10 million people are displaced due to climate change. On the other hand, according to the Air quality Index 2021, Bangladesh USAIQ-161 was the highest polluted country in 2021 compared to Chad, Pakistan, Tajikistan, India, and Nepal. Air pollution increases the economic cost, reduce life expectancy rate, affected children 3-14 years' old and pregnant women and kills a large number of human lives. The main causes of air pollution is anthropogenic like burning of fossil, coal, brick kilns, a huge motor vehicular emissions that increase the global warming and consequences of increase level rise that lead to increase the climate change refugees in Bangladesh. This paper will uncover the relation among the global warming, carbon emission and sea level rises are the consequences of the climate change refugees of Bangladesh.

Keywords: Climate Change Refugees, Global warming, Sea level, CO_2 emission, Displace, Vulnerable, Bangladesh

Background of Study

Climate change is a natural orbital process but at present it has changed to human responsibilities. Bangladesh is a low lying delta revering country along with 720 square km of long coastal area consists of 19 coastal districts Jessore, Narail, Gopalganj, Shariatpur, Chandpur, Satkhira, Khulna, Bagerhat, Pirozpur, Jhalakati, Barguna, Barisal, Patuakhali, Bhola, Lakshmipur, Noakhali, Feni, Chittagong, and Cox's Bazar and

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almost 80 percent is flood plains areas that extremely vulnerability to the climate changes. Environment transform is not just for heavy rain, drought, strong cyclone, floods but also unpredictable weather pattern that exaggerated physical, psychological health and finally expelled from home land to other areas as refugees. Warm, early or late summer, cyclone, flood, no rain or heavy rain are the consequences of temperature and sea level rise (Butzengeiger et.al. 2004). Bangladesh's average annual temperatures are expected to raise 1.0^0C to 1.5^0C by 2050 even the preventive measures are taken according to the Paris climate change agreement 2015. If preventive measures will not take a part then it will rises to 1.0^0C to 2.5^0C (World Bank 2018). The correlation between the temperature of hydrologic contributions and sea level rise is expected 75-190 cm from 1990 to 2100 (Vermeer.M.2009). However, there are 18 million climate change refugees in South Asia in 2020 that will be 40 million in 2030 and 62.9 million in 2050 (Sarkar S. 2020). Global warming may force to 150 million climate change refugees to move from home land to other areas within 40 years (EJF). Natural disaster always paying high price in Asia and there are 20 million of people will be refugees from their own home by 2050 and 1.2 billion people worldwide (World Economic Forum 2022), in addition 30 million will be added alone from Maldives for 1.5 meter rise the sea level.

By 2050, Bangladesh is expected the temperature will increase1.4^oC and rainfall will increase 74 millimeters annually (Future climate Change 2022). Sea level rise significantly that estimated 0.44-0.7mm) by the year 2021(Steven J. Davis et.al 2018) and there are 900,000 people will refugees due to this temperature rise lead to rise in sea level. Bangladesh is extremely vulnerable for sea level rise (World Bank 2000) reported that sea level rise 10 cm, 25 cm and 1m by 2020, 2050and 2100 and affects 2%, 4% and 17.5% of the total land respectively (Sarwar M.D 2005)

In Bangladesh, 1265 person live per sq km (World Population 2022) and has massive growth with population boom. The push factors are lack of opportunities, salinity, natural disaster, climate change poverty, ethnic discrimination are the main cause the people migrate from rural to urban slums. Each and every year 300,000 to 400,000 climate change refugees stimulated to Dhaka to look up their financial projection (Reazul Ahsan, Karuppnan S, 2011).These landless, catastrophe affected poor unemployed climate change refugees come and make the illegal shanty houses in a dumped land like Khas or government land adjoin with public road, rail station, bus station and near to the industrial areas in urban. In the last slum Census 2014 (Bangladesh Bureau of statistics-BBS) found there are 13,935 total urban slums in 2014 at Dhaka but 2991 was in 1997. There were 22, 32,114 slum dwellers floating people in 2014 that were 6.33% in total and male female ratio is 33.26% to 34.68 %. There

are 52.48% slum inhabitant collect the water from tube well, 45.21% drink tap water 2.12% (BBS- 2014).

There are 500,000 people move every year for environmental issues like destroying crops, rice fields, water pushed and no longer earn a living in the rural areas. A group of majority of the people is move toward to Dhaka end up into the slums and estimated 3.5 million climate change refugees around 40% of Dhaka city (Climate Change wire 2020).

Literacy Review

Devis, Lewis (2018), mentioned the net carbon emission is caused by mainly human activities and that lead to the global temperature. However, emphasized for the electrification and produce power generating renewable energy sources to reduce the global temperature.

Reazul, Kuruppannan,S (2011), shows increase global temperature plays a significant impact on the physical environment and activities. The people can shifted the area due to salinity of the agricultural field that turn down the production and makes them climate change refugees shifted from rural to the urban areas.

Warrick & Ahmad (1996), pointed out the role of greenhouse effect for climate change in globally. The concentration of the greenhouse gases like CO, CO2, Methane gas, NO2 and Chlorofluorocarbons are the causes of global temperature and consequences of rise in sea level.

Hansen, Ruedy et.al (2007), this paper investigated for the human made intrusion of climate change is the causes for the rise in sea level. This paper has used the data from 1880-2003 for greenhouse impact to the sea level and consequences has extremely troublesome.

Sarwar, Wallman (2005), emphasized that the increase sea level affected much specially for the coastal and flood plain areas in Bangladesh. Due to rise in sea level the option for the coastal and flood plain areas communities and normal surroundings has highly exaggerated that also creates the problem for food security and malnutrition.

Kyle, Davis (2018) shows the climate change is the causes for vulnerability for the coastal habitability and that also adverse impact on the efficiency for the local people. There are 0.9 million directly affected and force to move from homeland to other places for survival.

Agarwala, Ota et.at (2003), mentioned the climate change pretense the noteworthy jeopardy and vulnerability for the coastal community of Bangladesh. There is 30-70% areas normally flooded during the rainy season in every year. But increase the salinity water is the most harmful for the community because it has destroyed the traditional life style even destroyed the food security.

There are two types of pollutants natural and anthropogenic pollutants. The air pollution for the outdoor and indoor like households are high and it has the measure health consequences in Bangladesh. The sources of air pollution mainly man made like fossil fuel, coal, wood burning, open burning of agricultural residues, carbon emission from motor vehicles and industries, cooking fuel and methane gas are the main cause (Khandker, Ahmad 2022).

The main problems of air pollution in and around Dhaka city take place due to rapid growth and development, construction, lack of infrastructure, fast growth in transport, unauthorized brick kilns and the lack of traffic control management and fitness less vehicles are causes to high emissions and pollution described (Haque.et.al.2017).

In Bangladesh the death tolls are high comparison between 2017 and 2019 and it has increased the burden for Bangladesh that was the ninth among the top 10 countries with the highest level of outdoor (PM 2.5) ambient particulate Matter that is awfully small at 2.5 micrometers in diameters or less which is the harmful to the people mentioned. (AQLI-2020).

The Sundorban based project Echo village Project in Bangladesh (2015-2020) is reflect that the coastal region of Bangladesh is the vulnerable for the global climate change due to its geographic location. To save the single biggest Mangrove forest in the World, the balance ecosystem is the important and this natural safeguard provides livelihood and support almost 3.5 million people of coastal of Bangladesh (BEDS 2020).

Methodology

For this study the problems are indulgence as a regression analysis job for the finest model application. The simple regression model and the correlation coefficient model has applied for analysis the data. There are two phases used to analysis the data for the first phase, input independent variable was Temperature and Sea level was the dependent variable.

In the 2nd Phase, CO2 was the independent variable and sea level was the dependant variable. To find out the relationship among Temperature, CO2 emission and Sea level used the simple regression model. However, the same ways find out the relationship between the Sea Level rises and the Number of the Climate Change refugees. (The data collection from the different sources from the BBS, World Bank and Different Studies regards on the relative issues)

Linear equation $Y = \beta_0 + \beta_1 X + ei$, here β_0, and $\beta 1$ are the coefficients of the linear regression model, Y and X are variables. The two model has used for explanation.

Model 1: $Y_1 = \beta_0 + \beta_1 X_1 + e_1$ and Model $Y_2 = \beta_0 + \beta_2 X_2 + e_2$, where $Y_1 = f(X_1)$ and $Y_2 = f(X_2)$, If $Y = Y_1 = Y_2$ = real level. Single Regression Model, $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + e$.

Ways of analysis for employed SPSS version-16, Excel, MS word.

Objective of the Study

The study is based on the following objectives:

i) To show the relationship among rise carbon emission (CO2) temperature and air pollution causes to rise sea level.

ii) To find out the relationship between the rise in sea level and climate change refugees.

Discussion

Sea level means the average height of the earth's costal water body. The thermal extension grounds for the muggy for the ocean and dissolving glaciers and ice piece of the earth. The Sea level is lifting up for both for natural and human being activities. Earth's orbit grounds for solar radiations that add to the warm and ice melting for consequences and submerged the land and people force to the refugees. However, the modern global temperate increasing absolutely for the human causes produces CO2 emission and other greenhouse gases are added value to the Earth's atmosphere escort to humid (Muhit, Islam 2013).

Increasing warmth and it expands to the Ocean and exaggerated to the coastal areas of Bangladesh, (R.A. Warrick, et.at 1996). There are 75% of CO2 emission caused by the human from 1980, like burning fossil fuel, testing weapons, construction and others activities (Ruedy, Miller at.al 2007) and the remainder is the deforestation, burning agriculture residuals and land related issues. There are 0.2 tons of CO2 emission is producing each and every year of Bangladesh highest in USA 20 tons, (NAPA, 2009)

In 2020 Sea level put a new testimony to as 91.3 mm high from 1993 and it is accelerating 3.6 mm every year from 2006 to 2015 (R. Lindsey,2020. However, global temperature also expecting $3.3^{O}C$ to $4.9^{0}C$ of 21th century this is the 2-6 times faster than the present rate (Kausher 1993).

It is a fact that less developed and developing counties are the victims for climate change. CO2 emissions are produced 1.6 tons on an average by the developing countries but industrial world and USA along producing 4.00tons and 20.00 tons respectively. The Organization for Economic Co-operation and Development (OCED) countries 15% populations producing 44% of total CO2 emission in the world whereas USA solely 23% CO2 emission producing to the earth and Bangladesh is

contributing 0.06% (Warrick at el 1993) but most vulnerable for climate change.

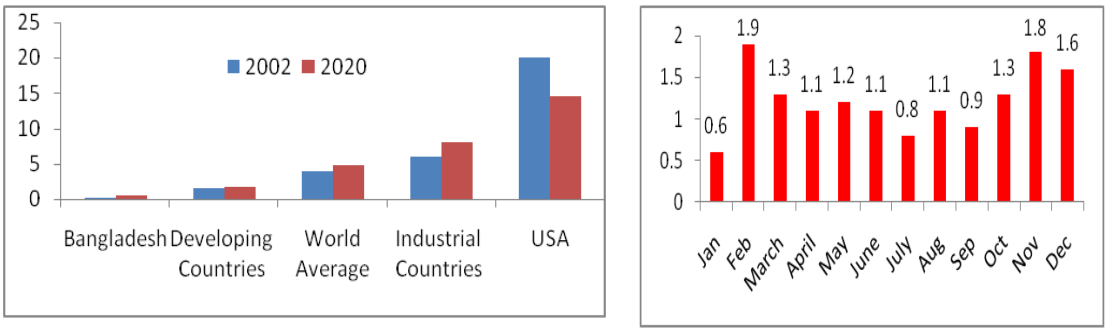


Figure 01: Per capita Carbon Emission (Left side) Source (Source: NAPA, 2002 and 2020) and (right side) Change of the mean of monthly temperature (^{0}C) of Bangladesh from 1901 to 2019.

(Source: NAPA, 2002 and 2020 and (right side) Change of the mean of monthly temperature (^{0}C) of Bangladesh from 1901 to 2019.

The CO2 emission and Temperature are the highly correlated to the increase in Sea level. Bangladesh sea level rise 10cm it will lost 2% of land means 2,500 km^2 will be under the water, 25 cm means 4% of land 6300 km^2 will under the water in 2050, 1m causes for 17.5% of land (25,000km^2) land and coastal areas people will be refugees (Sarwar,Wallman 2005). There are17 million will climate change refuges for 1.5 m raise the Sea level (World Bank 2000).

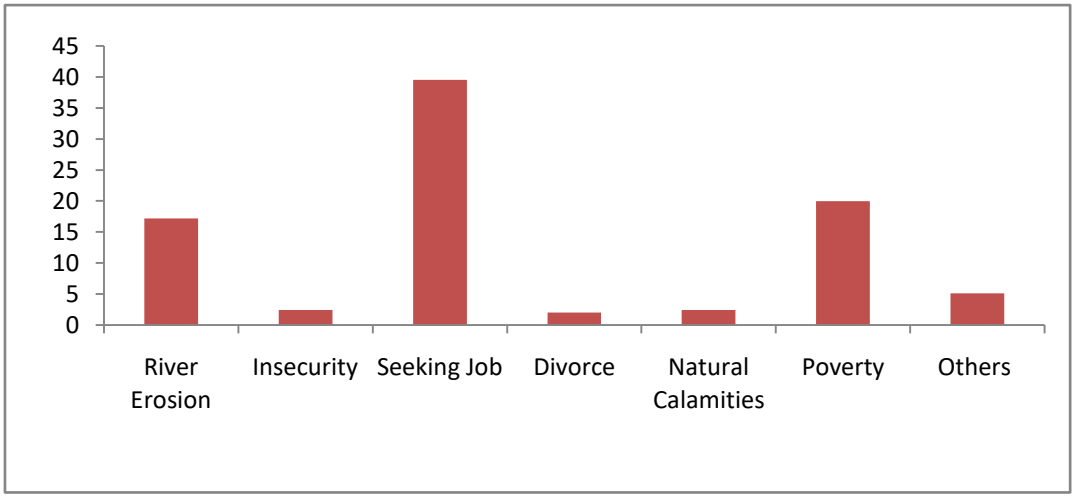


Figure: 01: *Consequences of Migration for Climate Change Refugees*

Table 01: Carbon Emissions, Annual Temperature and Average Sea Level Rise

Year	Temperature (Mean ^{0}C)	CO2 Emission (µm)	Sea Level (mm)
2001	33.1	0.20	131
2002	34.1	0.21	163

2003	36.12	0.21	164
2004	33.00	0.22	191
2005	37.70	0.24	127
2006	36.6	0.26	167
2007	36.7	0.27	146
2008	33.00	0.29	147
2009	35.14	0.31	135
2010	37.78	0.34	246
2011	36.30	0.37	178
2012	36.34	0.38	218
2013	36.12	0.40	253
2014	36.34	0.41	215
2015	36.67	0.46	195
2016	36.11	0.47	278
2017	36.12	0.49	291
2018	35.60	0.51	304
2019	40.00	0.53	318
2020	41.20	0.57	331
2021	41.30	0.96	334.3

Source: *World Bank 2020 and cumulative value of increasing trend.*

Air Pollution

Heat waves often lead to poor air quality. The extreme heat and stagnant air during a heat wave increase the amount of ozone pollution and particulate pollution. Drought conditions can also occur during a heat wave, meaning that soils are very dry. The environmental damage is a universal concern; some pollutants are detrimental but other risk over large geographic regions. The main sources of air pollution are natural and anthropogenic pollutants. This man made anthropogenic pollutants are the greater risks to environment. Man made pollutions includes burning fossil, brick kiln, coal, wood, open burning, agricultural waste, the emission from vehicles, large construction, power generation and industries, household cooking etc. The natural causes wind blow dust, sea spray, forest fire, earth quake, cyclone, flood etc (WHO 2018).

A research report said (William 2020) that the brick kilns, surface dust, vehicles emissions and construction have 85% contribute of the air

pollution in Bangladesh. However, plastic metals industries, landfills industries, ship breaking industries are also create a significant impact for air pollution of Bangladesh.

Motor Vehicles

The Bangladesh Road Transport Authority mentioned that there are 1.78 million registered motor vehicles in Dhaka city in 2021, excluded fitness less vehicles that increase a significant amount of CO into the air. Moreover, the maximum numbers of vehicles old and lack of proper maintenance. In additional, infected fuel, lack of knowledge of maintained and management, unauthorized overloaded vehicles damage roads and various types of problem as well as a big contribute for air pollution. There are (31-50)% of $PM_{2.5}$ fine particulate produced alone from the transport sector (Begum et.al.,2010). However, petrol-fueled vehicles, lights vehicles (cars/ vans), auto-rickshaws and there 1.78 millions motor vehicles' in Dhaka city contribute 85% of total carbon monoxide (CO), while diesel-fueled buses and trucks throw in 84% of total Nitrogen oxides (NO) report (DOE 2022).

Brick Kilns

There are 18 million people staying within 1 kilometer of brick kiln in Bangladesh and It stands the fourth largest brick producer in the world. There are more than 7,000 brick kilns; producing about 23 billion bricks annually (Bagchi 2021).The brick filed industry contributing 1% of the country's GDP and more than 1 million people directly working in this sector indirectly will be more. The brick kiln is a informal sector of Bangladesh and there are 17% carbon dioxide emission in the South Asian countries and there are 58% of air pollution alone in Dhaka (Begum BA et.al.2019). The brick kiln produces up to half of the fine particulate matter that is very harmful to human lungs and reduce the life expectancy rate published in Proceedings of the National Academy of Sciences (Bagchi 2021).

Ship Breaking Industry

There is 15.8 million tons metal release from the breaking industries in the world where as 7 million tons produced by Bangladesh alone. These shipping breaking industries are the big source not only the air pollution but responsible for the loss the of life, reduce the productivity of land and adverse effect for the climate change. Ship breaking industries released the extensive level of sulfur dioxides, nitrogen dioxides, particulate matter in the surrounding area of coasts, increase the threatening the health of the coastal population especially in coastal areas. The environmental effects of shipping breaking industries include air pollution, water pollution. The ship breaking industries contaminated

ammonia, floating gases, chemicals oil and responsible for more than 18 percent of air pollutants. The shipping industry is responsible around 940 million tones of CO2 emission annually in Bangladesh that is 2.5% of the world's total CO2 emissions (DOEs 2021).

Table2: Air quality of Bangladesh comparison with WHO Standards in 2020.

Pollutant	**Bangladesh Standard**	**WHO**	**Average Time**
Carbon Monoxide (CO) (mg/m^3)	10 (9 ppm) 40 mg m^3 (35 ppm)	10 30	8 hours 1 hour
Oxides of Nitrogen (NO_x) (mg/m^3)	100 µg/m^3 (0.053 ppm) 50 µg/m^3	- 15	Annual Annual (b)
Particulate (PM10) (mg/m^3)	150 µg/m^3 15 µg/m^3	50 10	24 hours (c) Annual
Fine Particulates (PM2.5) (mg/m^3)	65 µg/m^3 235 µg/m^3 (0.12 ppm)	25 -	24 hours 1 hour (d)
Ozone (O^3) (mg/m^3)	157 µg/m^3(0.08 ppm) 80 µg/m^3 (0.03)	100 -	8 hours Annual
Sulfur Dioxide (SO_2) (mg/m^3)	365 µg/m^3 (0.14 ppm)	20	24 hours (a)

Source: *Salamat and Ahmed (2022) and WHO 2020.*

Table-03: Contribution of air pollution by vehicle Type (Haque, Huda, Sultana 2017)

Type of Vehicles	CO%	HC %	NO_x	PM	Annual Growth
Truck	13.4	8.6	59.7	47.5	7.8
Bus	10.3	9.7	18.5.	29.4	2.5
Mini Bus	7.3	3.9	6.5	19.1	6.8
Utility	6.3	4.4	2.8	0.7	10.2
Car	38.2	18.2	6.5	1.2	9.4
Three Wheeler	10.6	26.9	6.0	1.2	31.0
Motor Cycle	14.0	28.3	0.3	0.3	8.10

Source: *Haque, Huda, Sultana 2017.*

The vehicles like Car, Truck, Bus and Three wheelers are the major cycle is the main contributor of CO of Dhaka city. However Truck is the most contributors for $PM_{2.5}$ particulate, diesel buses and trucks (45%) and auto rickshaws (40%) are contributor of PM of Bangladesh.*(DOE 2019).*

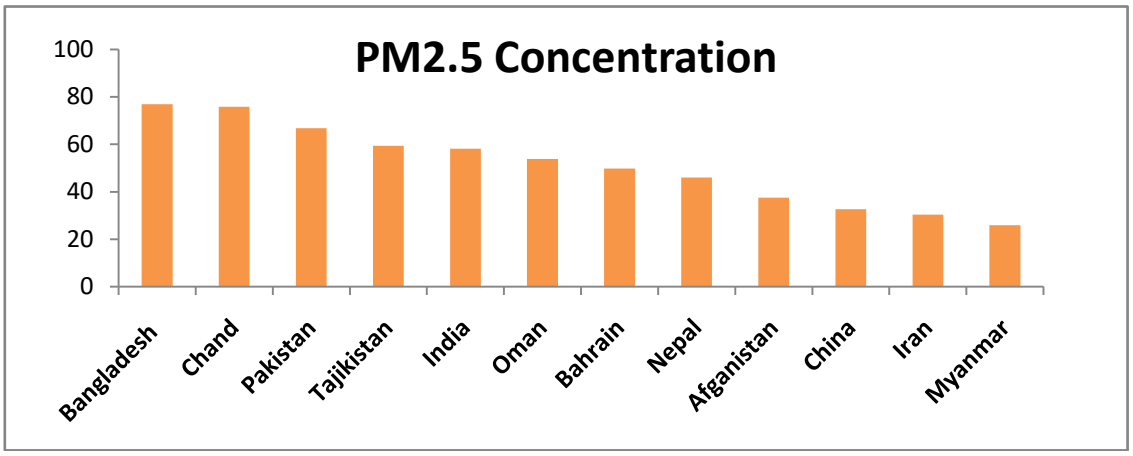


Figure-4: Average PM2.5 concentration (µg/m^3) for countries in 2021, *Source: AQI 2021*

PM stands for Particulate matter mixture of solid particles and liquid droplets are the major pollutant that is worry about domestically and internationally. The result shows that the Bangladesh is the highest of PM criteria of air pollutions and that is the harmful for human health and causes for loss of life. However, black carbon and others harmful particles discharged from the truck, construction, open burning and industrial sectors. Bangladesh should ambient air to achievements of the compliance for PM related poor standards.

Table-05: Air quality data of PM_{10} and $PM_{2.5}$ if different cities of Bangladesh from 2013- 2017 *(Source-DOE 2019)*

Main City of Bangladesh	**PM_{10} ((µg/m^3)**	**$PM_{2.5}$(µg/m^3)**
World Health Organization Guideline	50	Less Than 12.5-25
Dhaka	155.8	86.1
Gazipur	161.3	100.7
Narayangonj	203.3	108
Chittagong	132.2	78.7
Barisal	126.7	85.6
Average	146.9	85.6

This Table shows the concentrations of PM_{10} and $PM_{2.5}$ in the different cities of Bangladesh where the PM_{10} and $PM_{2.5.}$

Children and Women

Due to Air pollution children and especially pregnant mothers are the highly vulnerable in Bangladesh. Even those children walking in the street faced problem for breathing problem because oxygen level is high due to black carbon. Air pollution creates adverse effect for pregnant women, it creates early birth, low weight, abnormalities not only lifelong health problems but also increase the child mortality.

Air Pollution Reduce the Life Expectancy Rate

Air Pollution reduce life expectancy rate on an average 1.8 yrs globally. In Bangladesh trim down 3 years average life expectancy rate for air pollution (Molla Mohammed, The Daily Star- 2022). However, it is high than the others SAARC countries like India, Pakistan, Bhutan and Afghanistan and Nepal. Air pollution increases the premature death. There are 24000 premature deaths due to air pollution and AQLI has expected 6.7 years will be shortening due to air pollution of Bangladesh.

Environment and Sustainability

For example, if air pressure increases, the temperature must increase. If air pressure decreases, the temperature decreases. It also explains why air gets colder at higher altitudes, where pressure is lower. There are highly correlated between environment and sustainable development. The UN reports clear that sustainable development convene for needs of present without compromising the capability of future generations. In 2002, UN conference joins 170 nations portray the join up for environmental opportunities and wisdom. To achieve the sustainable development environment quality is very important a part with women, children, youth, indigenous people, minorities, the society as whole. All activities would have directly or indirectly impact on environment.

Increasing Co2 emissions, Increasing Temperature consequences for climate change and it leads to increase the sea level, loss of opportunity in rural and force to migrate from rural to urban as a climate change refugees. In Bangladesh there are 4 million climate change refugees and generating 4,600-5,110 tons of waste/day (Dhaka Tribune 2015). High density of the low-income climate change refugees especially children, senior citizens, women and disabilities in slum areas are more vulnerable that is the obstacles for the sustainable development in the Dhaka city.

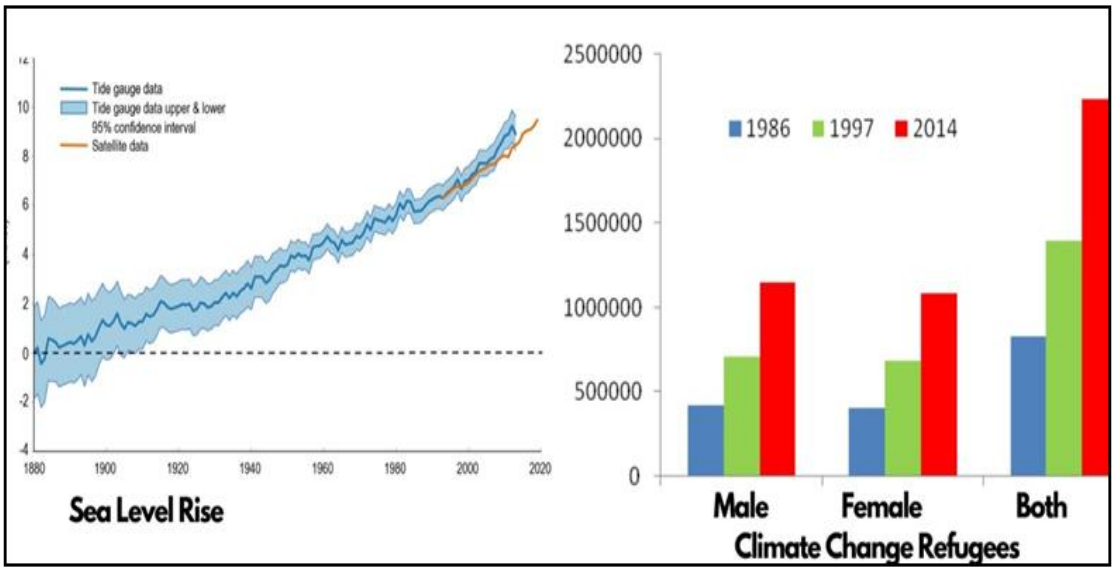
Effect and Outcome of Air Pollution

The five particulate matters ($PM_{10}$and $PM_{2.5}$), $NO_, CO$, SO_2, and Ozone are more far than the normal average in Bangladesh. The capital city Dhaka has been grappling day by day with air pollutants and uprising. The city life is worsening due to air quality and it becomes unhealthy during winter season. According to the $PM_{2.5}$ standards Dhaka is the

second most polluted city in the world in 2021 (UNB 2022). The air quality index (AQI) reported 161 in 2021 of Dhaka city. This is considered as unhealthy for everyone especially for sensitive groups like children, women and ageing people bathing problems and creases for other problems. In the worldwide, the air pollution considered as a top risk factors for death and disability. Breathing problems is the causes for many life loss risk disease like heart disease, chronic respiratory and lung infections particular. However, $PM_{2.5}$ and PM_{10} can lead to reduce lung function, increase ageing and capacity will reduce. Moreover, shortness of Oxygen lead to side effect like ischemic heart disease, organ fails turn to heart attack and problems of blood pressure as well as increase the mortality rate. For example, if air pressure increases, the temperature must increase. If air pressure decreases, the temperature decreases. It also explains why air gets colder at higher altitudes, where pressure is lower.

Source: *NASA Image- global change.com and Bangladesh Bureau of statistics census 2014 data*

Figure 02: Sea level rises and Climate Change refugees are increasing



Result and Consequences

The result of the study is that the CO2 emissions, Increasing Temperature are highly correlated to increase the sea level. The heat ambush, greenhouse gases and world weather transform, carbon emission are the causes for global. The developed and industrial countries are producing most carbon emissions but developing country like Bangladesh is a victim and millions of people are affected lost their home land, salinity for their agriculture field, lack of opportunity force them to climate change refugees moving from rural to urban Slums.

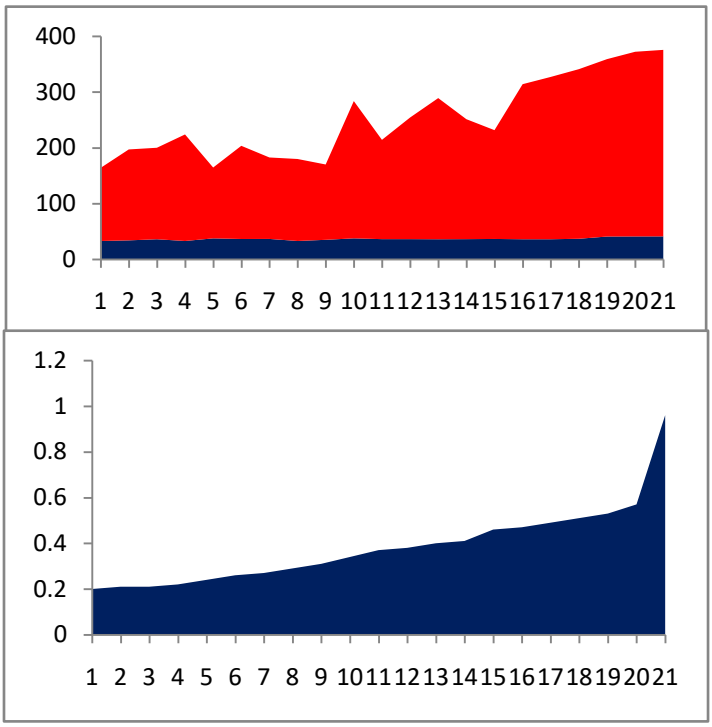


Figure 03: *Temperature and Sea level from 2001 to 2021* *Figure 06: CO2 Emission 2001 to 2021*

Regression Analysis

Table -06: The regression result for Temperature and Sea level (Temperature – Independent and Sea Level is a dependent Variable)

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.828[a]	.686	.669	40.45152	.686	41.442	1	19	.000
a. Predictors: (Constant), VAR00001									

ANOVA[b]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	67812.054	1	67812.054	41.442	.000[a]
	Residual	31090.184	19	1636.325		
	Total	98902.238	20			
a. Predictors: (Constant), VAR00001						
b. Dependent Variable: VAR00002						

Coefficients					
Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	95% Confidence Interval for B

		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	87.818	21.756		4.037	.001	42.283	133.353
	VAR00001	331.867	51.552	.828	6.438	.000	223.967	439.766
a. Dependent Variable: VAR00002								

Table- 07: Regression Analysis Result for CO2 Emission and Sea Level

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.859[a]	.739	.725	36.885	.739	53.697	1	19	.000
a. Predictors: (Constant), VAR00001									

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	73053.266	1	73053.266	53.697	.000[a]
	Residual	25848.972	19	1360.472		
	Total	98902.238	20			
a. Predictors: (Constant), VAR00001						
b. Dependent Variable: VAR00002						

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	88.252	19.180		4.601	.000	48.108	128.396
	VAR00001	323.161	44.101	.859	7.328	.000	230.857	415.464
a. Dependent Variable: VAR00002								

Coefficient Correlations			
Model			VAR00001
1	Correlations	VAR00001	1.000
	Covariance	VAR00001	1944.855
a. Dependent Variable: VAR00002			

Table-06, shows the relationship between Temperature and Sea level (Temperature – Independent and Sea Level is a dependent Variable), result Adjusted R^2 = 0.669, β_1=87.818, β_2 =331.867, Y= 421mm means 0.41m, If Temperature increase 1C the level will rise 0.41m means highly correlated.

Table -07, shows the relationship between CO2 emission and Sea Level (CO2 in dependent variable and Sea level is dependent variable), result Adjusted R^2=0.725, β_1= 88.252, β_2= 323.161, Y= 411mm = 0.411 M. If the CO2 emission increase 1mm Sea level will rise 0.41m the result is highly correlated.

Conclusion

Bangladesh is a victim for the climate changes this reduces our land, agricultural lands, alarming for food security and vulnerable to the coastal people force to climate change refugees to city urban slum. This man made climate change causes for disappearing glaciers threat to everyone. In Bangladesh 1.5 m rise the sea level 20 million will be forcefully climate change refugees and 22,000 km land will be under the water in 2050. Climate change is threat to the world and 12 million children are refugees mostly children and women. To stop the forcefully climate change refugees the world should stands to gather and work for the solution to build sustainable future.

Bangladesh is a highly polluted country and Dhaka is sixth most pullulated city in the world. For the rapid economic growth and development construction and city life instruments are increasing with the population boom. Simultaneously, congestion, pollution, Co2 emission are up rising that trim the life expectancy rate, men fertility rate, poor semen quality and standard of living as a whole. Due to lack of regulations and implementations of laws the environment are degrading, importing dirty product and exporting clean products are the waste and

Dhaka became a dust basket and unhealthy to live. The air pollution increases the global warming and finally increases the sea level. In this regards, it is important to implement rules and regulations. To aware the society the government should emphasize this issue as a priority basis. The law and order agencies banned two stoke engine vehicles, unfit vehicles, reduce lead and sulfur content of fuel, conversions to natural energy and banned wooden brick kilns in the city areas. The green banking finance also can play a vital role to reduce industrial pollution to save the human life and mostly the global must have to stop.

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