



Children's Booklet on Climate Change



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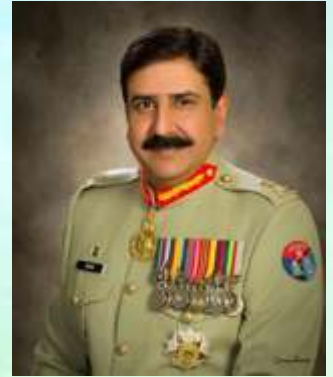
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Gender and Child Cell (GCC)
National Disaster Management Authority



Chairman's Message

Climate Change is a global concern, but developing countries like Pakistan are among the worst affected by its impact. German Watch has ranked Pakistan on the 7th position in the countries most affected in the Long Term Climate Risk Index (CRI). It is a well-known fact that children are especially vulnerable to the impacts of disasters and climate change, due to lack of effective coping mechanisms. An alarming 19,000 children died during the devastating 2005 earthquake in Pakistan and nearly 8.6 million children were affected during the floods of 2010.



The understanding that children and young people can evolve from vulnerable individuals to empowered citizens lies at the heart of child-inclusive climate change adaptation (CCA) initiatives by GCC- NDMA. Hence, the development of this interactive CCA Toolkit with a focus on key priority areas of solid waste reduction, water management, energy efficiency and natural resource management is immensely significant. The purpose of this Toolkit is to foster the adaptive capacity of children, by giving them simple guidelines to play their roles as effective agents of change within their communities.

The dissemination of this Toolkit in schools will help in empowering children, by raising awareness regarding the disastrous effects of climate change and their role in guarding their future. It is our responsibility to leave a better world to our children than the world we inherited.

Lt. Gen. Omar Mahmood Hayat HI (M)
Chairman, NDMA



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Children's Booklet on Climate Change, FAQs and Activity Book is an illustrative Toolkit, developed by Gender & Child Cell (GCC), NDMA, with a vision to strengthen the capacity of children, mainstreaming Climate Change Adaptation and Disaster Risk Reduction through interactive tools.

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Introduction

The future is shaped by the decisions we make today and the actions we take now. The pollution in our air, the contamination of our water, the threat of floods and droughts, the extinction of species, the reduction in forest cover, and the degradation of our ecosystems are the consequences of reckless actions that have been taken and the constructive actions not taken for the last few decades. Now these threats to our lives and lives of animals, plants, and entire natural systems are becoming more frequent and more severe due to climate change.

What is Climate Change?

For centuries the world's temperature has been very gradually increasing, but in recent decades this rise has been taking place at an alarmingly increased rate. 16 of the 17 hottest years in recorded history have been in the 21st century, with 2016 being the hottest.

What is the main cause of this increased change the world's climate?

All indicators point to human beings as the cause for this increased global warming and its effects on the world's climate. This effect of human actions on the global climate is known as anthropogenic climate change, more commonly referred to as just climate change.

So some people feel a little hotter. What's the big deal?

It is not just a matter of feeling hotter. Global warming affects other weather and natural phenomena. It impacts rainfall patterns, the frequency and timing of extreme

events like floods, storms, and hurricanes, the intensity and duration of droughts. Climate Change might not create these problems but it does make them more frequent, more severe, and less predictable.

How exactly does Climate Change happen?

The main culprits of global warming are Greenhouse Gases or GHGs.

What are GHGs?

GHGs are gases in the Earth's atmosphere that trap some of the heat energy reaching us from the Sun and prevent it from escaping to space. This is called the Greenhouse Effect.

So if the Greenhouse Gas Effect did not exist everything would be okay?

Not exactly. Without the heat trapped by the Greenhouse Gas Effect, the earth's temperature would be about -18 Degree C, far too cold for life on Earth to exist as it does today. But just like most other things are good in moderation, GHGs are only good for us in a certain amount. Excess GHGs trap more heat than is necessary and cause Global Warming. Without enough GHGs the earth would be too cold and with too much GHGs the earth would be too hot.

Oh! So what are these GHGs anyway and where do they come from?

The most common GHGs are water vapour, carbon dioxide, methane, and nitrous oxide. Carbon Dioxide (CO₂) is released as a result of burning of fossil fuels in industries, electricity generation, running of cars, trains, aeroplanes, etc. and in all other activities

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that involve combustion or burning. These activities also lead to the release of other pollutants such as Carbon Monoxide (CO) and contaminants that harm our air and water.

So the more pollution you have in your country the more climate change affects you?

Not exactly. Pollution is always bad as it harms the local environment. But unlike pollution and contamination, GHG emissions don't necessarily effect the countries that emit them. In fact, the countries that are most vulnerable to the impact of GHG emissions and the resulting climate change are not among the biggest emitters. Pakistan is one such country.

Tell me more about Climate Change in Pakistan

Pakistan might not be contributing a large amount of GHG emissions, but it is still among the top ten most climate-affected countries of the world. The average temperature of Pakistan has increased by 1 degree C in the last one hundred years, which has had devastating impacts on various sectors. Some of the areas in which Pakistan is vulnerable to climate change include:

- **Food:** Climate change can lead to reduction in food by damaging crops and livestock and reducing the nutritional value of food. In 2017, Pakistan was ranked 77th out of 113 countries on the Global Food Security Index.
- **Water:** Climate change puts stress on fresh water resources such as rivers, lakes, groundwater, and the water stored in glaciers, ultimately decreasing its availability for human use. According to the World Resources Institute, in 2040 Pakistan will be the 23rd most water stressed country in the world.

- **Bio-diversity:** climate change affects the natural habitats of animals, birds, insects, and plants and makes them unsuitable for them to continue living in.
- **Heat-stress:** increasing temperatures affect the health and lives of humans and animals, especially in urban areas where concrete structures absorb and retain more heat. This is called the Urban Heat Island Effect.
- **Natural Disasters:** climate change increases the incidence of floods and droughts in Pakistan
- **Energy:** climate change puts more pressure on energy sector as longer and harsher summers demand more electricity. Decrease of water levels in dams also reduces electricity generation.

These vulnerabilities show that climate action is not just about saving trees or animals but about ensuring people, society, and the economy remains safe and firmly grounded on the road to progress and prosperity.

So all we need to do is stop emitting GHGs and all the problems with food, water, energy, bio-diversity, etc. will go away?

Reducing GHGs emissions is very important but there are also a number of human actions, other than the emission of GHG, that damage our ecosystem and make us vulnerable to Climate Change. These actions compound the negative effects of Climate Change by reducing our ability to adapt to them and also contribute to further Climate Change by releasing more GHGs into the atmosphere.

- **Food:** Wastage and spoilage of crops and food.
- **Water:** Pollution and contamination of fresh water resources.
- **Air:** Smoke from crop burning and factories has increased problems such as smog.
- **Bio-diversity:** Deforestation and pollution of air and water resources.

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- Heat-stress: High rate of urbanization and deforestation.
- Natural Disasters: Lack of disaster preparedness and lack of knowledge on how to respond to early warnings and how to act after disasters strike.
- Energy: Wastage of electricity and not enough renewable energy production

What can we do?

Everyone on this planet has a role to play in preventing climate change and preparing to deal with its impacts.

There are mainly two ways to deal with climate change: **Mitigation** and **Adaptation**.

What do Mitigation and Adaptation mean?

Mitigation means taking action to reduce greenhouse gas emissions to avoid further climate change than has already occurred due to historic and current emissions.

Adaptation means making changes in our practices and systems to reduce the risk to our lives, health, and livelihoods from the impacts of climate change.

Mitigation and Adaptation are complementary responses and an ideal path forward should include a combination of the two. The advantages of actions that include both mitigation and adaptation elements are called Co-Benefits.

What is the world doing to increase Mitigation and Adaptation?

The international community meets every year for the Conference of Parties (COP) conducted by the United Nations Framework Convention on Climate Change (UNFCCC).

At the 21st COP held in Paris in 2015, 195 countries signed the Paris Climate Accord, under which they have committed to take action to limit GHG emissions and to invest in making communities, cities, and countries resilient to the impacts of climate change. Pakistan is also a signatory. Is the Government of Pakistan doing anything to help?

The Government of Pakistan has a Ministry of Climate Change and a National Climate Change Policy. It is the job of the Ministry to ensure that the National Climate Change Policy is implemented. The parliament of Pakistan also passed the Pakistan Climate Change Act 2016, which further shows the country's commitment to acting on climate change.

Is it only the Government that needs to take action on Climate Change?

Not at all. Various other institutions such as universities, non-government organizations (NGOs), and private companies are also playing a part in making Pakistan and its people resilient to Climate Change.

There are some actions that need to be taken by every individual – man, woman, and child – if Pakistan is to become resilient to climate change. Children have a special role to play as they will inherit the future we are fighting for. They also have a special stake as they are among the most vulnerable to the impacts of climate change.

What can children do to help?

The role that children must play includes direct action through various activities at school and at home, campaigning for change, and encouraging friends, peers, and elders to undertake individual and collective action. Without these actions on the part of individuals, we might never achieve the commitments we have made to save the planet from catastrophic climate change.

That sounds like work. Maybe children should wait to grow up and take action once they are adults.

That might be too late. Time is running out! As former President of the United States of America, Barack Obama said, "We are the first generation to feel the impacts of climate change, and the last that can do anything about it". If our current lifestyles and practices

continue we might walk into a bleak future. But making small changes in our lives now can dramatically change the shape of that future.

But I don't even know what this future will look like!!!

Understanding how our actions affect the future can be tough. Imagining the future is difficult. In the next few pages we will show you two paths you can take and what sort of future each path leads to. If you choose the path that leads to a cleaner, greener, and more climate resilient future, then we can help you answer questions about how to get there through our Frequently Asked Questions pamphlet, and also show you some ways in which you can start acting today, through our Climate Action Leader Activity Book.

Keep track of all the things in **GREEN** and **BROWN**. You can find out more about the things in **GREEN** in the Frequently Asked Questions pamphlet. We can show you how to do the things in **BROWN** in the Climate Action Leader Activity Book.



The Future We Want

What we do.....

- We are all fond of buying new things and we often waste the things we buy. Consumer spending in Pakistan reached an all time high of around Rs. 9,167,259 million in 2016



What we can do instead.....



- Reduce, Reuse, Recycle
- We can promise to only buy things we need
- We can avoid throwing items unnecessarily
- We can reuse the things we already have
- We can give goods to charity instead of throwing them away



What our future is going to be.....



- Our “throw away” mentality will lead to increased shortages of food, drinks, and household goods!

What our future can be.....

- 60-80% of the impacts on the planet come from household consumption. Changing our consumption habits will improve our environmental footprint.
- Reuse helps the disadvantaged people who cannot afford to buy new things.
- Buying less means we save more money and generate less trash.



What we do.....

- We are used to seeing our fresh water bodies such as lakes, streams, rivers, and nullahs, polluted with shopping bags, plastic and glass bottles, and plastic wrappers. These are **non-biodegradable items**.
- They affect the health of the humans, fish, animals and plants that depend on this water, on the beauty of the surrounding areas
- 84% of Pakistanis do not have access to safe drinking water.



What we can do instead.....



- We can reduce use of disposable plastic bags and bottles by keeping reusable cloth bags and reusable water-bottles handy
- We can properly dispose or recycle non-biodegradable waste at home and in public
- We should demand more garbage and recycling cans in public places



What our future is going to be.....



- Fish and other marine creatures will ingest plastics, suffocate and die. Their environment will also be destroyed.
- Fishermen who depend on abundant and healthy fish will become poor
- Tourists will stop visiting these areas
- Dirty water will be used for drinking and to produce our food including crops, fish, and meat.

What our future can be.....

- Fresh water bodies are pristine and clean, making them healthy for fish and other marine life.
- Fishermen have sustainable income and the fish we eat are healthier and nutritious for us
- Tourism increases, generating money for local businesses.



What we do.....

- Pakistan is already a **water-stressed** country and climate change and overpopulation are making it worse
- We are careless with water use and waste a lot of water in everyday activities such as brushing teeth, taking showers, washing dishes, cars, and our houses.
- A lot of water used once, if it is not mixed with chemicals or human waste can be reused for other purposes. This is called **Greywater**.



What we can do instead.....

- We can reduce water use in everyday activities by turning off the tap when water is not actively in use. E.g. when we brush our teeth, apply soap/shampoo in the shower, apply detergent to dishes, etc.
- Water used to wash dishes or clothes can be reused to wash cars, motorbikes, driveways, etc.
- Urge parents to collect rainwater in barrels. This is called **rainwater harvesting**.
- Write to your local political representatives to express your concern about water wastage by companies, schools, shops, and other institutions in your area.



What our future is going to be.....



- Water shortages and drought will become more frequent by 2025 and reduce availability of water for drinking, farming, washing, cooking, etc.
- Due to climate change and overpopulation, Pakistan is predicted to be most water-stressed country in South Asia by 2040
- Competition over water can lead to conflict and violence

What our future can be.....

- Water stress decreases and more people can benefit from clean water resources.
- Decreasing water availability doesn't have dire consequences due to better management and responsible use of water.
- Saving water will also save energy, as pumping water to our homes uses electricity.



What we do.....

- We are in an energy crisis but still waste electricity by using unnecessary and inefficient lights and fans.
- Currently, 67% of household electricity use is because of inefficient appliances such as fans and lights.
- Back up electricity is mostly through diesel generators and UPSs, which are inefficient.
- Roughly 65% of our electricity is generated by fossil fuels (Coal, Gas, and Oil)



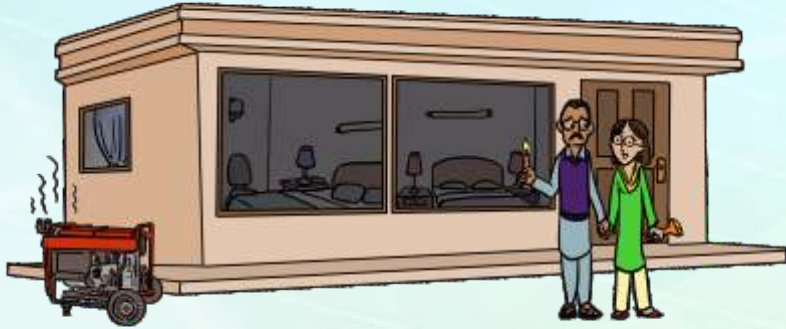
What we can do instead.....



- Turn off lights and electronic devices like TVs, Radios, and computers when not in use.
- Use energy-efficient light bulbs like 'energy savers' or 'LEDs'.
- Promote solar powered alternatives for back-up generators and UPS.
- During winter, turn down heating and wear another sweater instead.



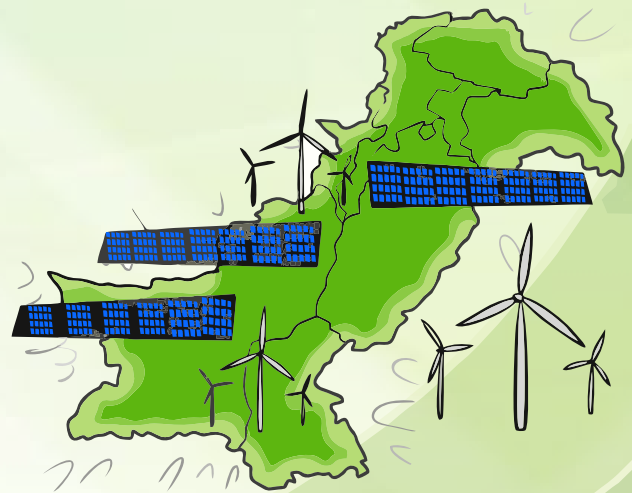
What our future is going to be.....



- We can expect more electricity shortages leading to increased load-shedding and power outages.
- More GHG emissions causing air pollution and Climate Change.
- Global energy use to grow by 50% by 2035

What our future can be.....

- Clean renewable energy replaces fossil fuel energy as main source of electricity. Now we produce more electricity without harming the environment.
- Conservation and efficient use of electricity means there is less drain on Pakistan's energy sources and less load-shedding



What we do.....

- We have increased our use of private cars instead of using and demanding more public transport. This has increased congestion on roads, increased GHG emissions from transport, and forced the government to cut trees for road expansion.



What we can do instead.....



- We can use shared or public transportation. For school, we can carpool with classmates and friends, or opt for a bus or van. If school is nearby, we can walk or cycle as a group.
- We can ask our school to increase school buses and vans at affordable price.
- For short trips to the market or playground, we should use cycles or walk.



What our future is going to be.....



- Increased smoke and smog in cities will cause reduction in visibility, and health issues.
- Increased carbon emissions will lead to more global warming. If we continue on the current trend, global temperatures would increase up to 5 degrees C by the year 2100.

What our future can be.....

- Less congestion on the road leading to more space for cyclists and pedestrians.
- Cleaner air and fewer carbon emissions.
- Fewer health issues related to breathing and heart problems.
- Healthier and more active population.



What we do.....

- We are cutting trees from forests, parks, and roadsides at an alarming rate, which is causing **deforestation**. In cities, this being done to make room for more buildings and roads.
- We value trees for the wood they produce but forget that trees also strengthen soil, protect from floods and heatwaves, absorb CO₂, and are home to birds and insects.
- **'Alien' species** are planted which cause more damage to biodiversity, consisting of other plants, insects, and birds.



What we can do instead.....



- Plant a tree! A single tree can absorb 1 ton of CO₂ during its life.
- Gather and spread information about which trees are appropriate for your town/city.
- Campaign to raise awareness about unsustainable cutting of trees in your town/city by organizing walks, tree-plantation days, etc.



What our future is going to be.....



- We can expect increased heat stress and heatwaves in cities due to Urban Heat Island effect
- Less trees to absorb CO₂ through Photosynthesis, causing more climate change
- Increased flood damage due to reduction in natural flood defences
- Natural habitats for insects and birds disrupted and biodiversity harmed

What our future can be.....

- More shady spaces for people and animals to shelter from heat and sun.
- Carbon captured and removed from atmosphere at higher rate.
- Natural flood barrier decreases intensity of flood impact on towns and cities.
- Ecosystems sustained along with biodiversity.



What we do.....

- We waste a lot of food at home, restaurants, and weddings!
- 40% of cooked food in Pakistan is wasted! This includes food that is thrown away or gets spoiled.
- Our diet has a lot of meat in it. Meat has higher water and carbon footprints than vegetables and too much meat is harmful for the environment



What we can do instead.....



- We can promise to not throw away left over food and instead collect it and give it to the poor directly or through community centres
- Rotten or spoiled food can be used for composting
- We can change our diet to include more vegetables and have meatless days.



What our future is going to be.....



- More frequent food shortages across the country can be expected, meaning there will not be enough food to feed all Pakistanis.
- Higher rate of hunger and malnutrition among those that are already poor and starving.

What our future can be.....

- More people are fed by the food that is produced which reduces hunger and malnutrition
- Pakistanis are healthier and happier
- Because of a healthy mixture of vegetables in our food, less water is used and fewer GHGs are released into the atmosphere.



The Future We Want

There are two possible futures for Pakistan. The first one is the result of ignoring our natural resources, our environment, and effect of our actions on climate change. This is shown on the top of every page. The second future is the result of taking action to prevent climate change and to protect ourselves from the negative effects of it. You can find this on the bottom of every page.

Climate Change is a global problem, but it affects Pakistan more than it affects most countries. According to UNICEF, climate change is a children's problem as it is today's children that will bear the future impacts of it.

But children don't need to wait for that future to begin acting. Climate Action needs to start today at the local level, starting from every child's own house, and moving on to their neighbourhood, their city, and their country.

Children can also influence their parents, siblings, and elders to take climate action! The children of yesterday played the important role of getting their parents to recycle. The children of today can do the same for climate action.

By taking action, children can prevent the possible futures shown in the top panel of each page, and instead move their families and communities towards the futures shown at the bottom.

To understand what taking climate action means to understand important concepts about it we invite you to read the Frequently Asked Questions (FAQ) pamphlet given to you.

To find out simple things you can do at home and school to become a climate action leader we invite you to make use of the climate action workbook given to you.

As always, never shy away from asking questions and finding out more about things you don't know. Ask your parents, your teachers, and your friends about climate change and continue the journey to becoming a climate action leader.

