IN MEMORY OF OUR FALLEN PANDAS
This issue of Natura is dedicated to our fallen pandas, whom we lost to a tragic car accident. The entire WWF family is grieving. We have lost talented, young and passionate environmentalists and a senior forester who had been associated with the organization for years. For all of us at WWF-Pakistan, this loss is deeply personal.

We will continue to honour the legacy of our fallen pandas by continuing their work with dedication and diligence. We must act on the opportunities that we have been given by protecting and restoring our environment, not just to continue the work of those before us, but also for our future generations.

One of the ways we can ensure we bring about change is by creating awareness about environmental issues and educating our youth about environmental conservation. The knowledge we impart today will reap benefits into the future by helping create an enlightened, environmentally-responsible civic society. This publication is just one of the many steps we take to disseminate information about local and global environmental concerns, the latest research, and inspirational stories about individuals that are taking actions to bring about change.

This issue of Natura tells the story of Imtiaz, a local wildlife filmmaker from Gilgit-Baltistan and his travails of capturing the elusive snow leopard on film. It also includes an overview of the sixth intergovernmental panel on climate change (IPCC) report, features academic research from the Pakistan Field Research Programme, highlights climate change as a priority for action and speaks about water stewardship as a pathway to mobilize the private sector.
IN MEMORY OF OUR FALLEN PANDAS

WWF-Pakistan is extremely shocked and saddened at the loss of five of its friends and colleagues in a car accident on the morning of 15 December 2021. The five colleagues were on an early morning trip to inspect a forest which is part of a World Bank-funded scheme to reduce emissions from deforestation and forest degradation, known as REDD+. While on their way to Nathiagali, they suffered a terrible car accident when their car plunged into a ravine.

We have lost young and passionate environmentalists and a senior forester who had been associated with the organization for years.

For many of us, this loss is deeply personal. All of us at WWF-Pakistan have been deeply affected by this tragic incident and are still struggling to come to terms with the sudden loss of these precious lives.

Together, we are determined to stay strong in the wake of adversities and grief and honour the legacy of these friends and colleagues by continuing their work with utmost dedication.

“AOur hearts go out to the families and friends of the victims, as well as our fellow pandas at WWF-Pakistan. Please join me in sending them our deepest thoughts and condolences.”

Marco Lambertini, Director General, WWF

“I would like to express my heartfelt condolences and grief on this tragedy as it is a profoundly sad day for all of us. My heart goes out to the families and friends of the deceased. We are in this together and our thoughts and prayers are with them in this difficult time.”

Hammad Naqi Khan, Director General, WWF-Pakistan

AAMIR SAEED KHAN
A passionate environmentalist and loving father

Originally hailing from Kohat, Aamir had over 25 years of experience in conducting forest surveys and implementing community-based conservation projects. Aamir was a technical expert in his field and started his career in WWF working in the Salt Range for a decade. He held two Master’s degrees, in organic chemistry and forestry from the Pakistan Forest Institute, and was passionate about the protection of natural resources. Known to all for his kind heart and charitable nature, Aamir was a committed disaster relief volunteer, having spent hours in the field to help communities recover and rebuild after the earthquake of 2005 and the floods of 2010.

He leaves behind a wife, and three sons, aged 8, 15 and 21.

IFTIKHAR HUSSAIN
Nature enthusiast and loyal friend

Iftikhar had been a part of the Panda family since his internship days at the Chitral field office. A true nature enthusiast, Iftikhar held a Bachelor of Science degree in environmental sciences and had helped the organization with many challenging projects, including work on snow leopards, Ibex, and Markhors. He worked with the staff in WWF-Sweden who remembered him fondly and are shocked at his passing.

His dedication towards his work, charismatic personality and humble nature made everyone warm up to him instantly, be it his colleagues, project partners, or the community members he worked with.

Iftikhar leaves behind a young, grieving widow and his beloved mother.

ATIF ALI KHAN
Future leader, beloved father, and son

Anyone who knew Atif knew he had a bright future ahead of him. Well-organized, talented, and professional, Atif was a gold medalist with an MPhil degree in forestry and rangeland management and was towards the end of completing his PhD degree. He joined the Panda family as an intern and quickly gained confidence and respect within the teams, exhibiting a level of intellect and wisdom unparalleled by his peers.

He leaves behind grieving parents, siblings, and a young widow with a four-month-old son.

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RAFIULLAH SWATI

Budding professional and conservationist from early years

With a degree in forestry, Rafiullah joined WWF-Pakistan as an intern, like many of his team members. His passion for forestry was unlike others as he had grown up watching his father working in the same field and protecting forests. Already the team leader of the Hazara team of the National Forest Inventory under the REDD+ project, Rafiullah was highly ambitious by nature and aspired to become an expert in his field.

FARHAN ULLAH AFRIDI

Dedicated, diligent and expectant father

Farhan demonstrated maturity and seriousness towards his duty as a driver. He was also fond of nature and so enjoyed working on WWF assignments as they gave him a chance to explore new areas and be close to nature. Coming from an extremely marginalized background, he could not complete his education. However, he worked hard to provide for his family and despite his young age, was revered for his professionalism and work ethic.

He is survived by aged parents and a young, pregnant wife.
CAPTURING ‘THE GHOST’ THROUGH MY LENS

“Imtiaz’s recent footage does not only capture a beautiful animal but also contributes critical knowledge about this lesser-studied big cat. More recently, the joy of his life has been following and filming the lives of two snow leopard cubs since birth.”

Towering, snow-covered barren mountains, with green valleys swarming the foothills, is what makes Gilgit, Pakistan a magical place. These mountains are home to some of the country’s rare wildlife including one of the two remaining big cats of Pakistan – the snow leopard.

“Legend has it that every night fairy goddesses descend to these valleys with their pet – the markhor, protected by the ‘ghost’ or the snow leopard,” shared Imtiaz Ahmed, a resident of Gilgit and native wildlife filmmaker. But finding the ghost of the mountains is as hard as finding a fairy.

“I grew up in the mountains where snow leopards live but I waited for years to see one,” Imtiaz added with a mellow smile characteristic of the people of his area. “I prayed at night for years, hoping that one day I will find a snow leopard.”
In a valley where the snow leopard is considered an enemy that needs to be eliminated, listening to Imtiaz speak about this elusive animal with a fondness strikes odd. For the agro-pastoral community, sharing these mountains with the largest predator around comes at a cost. The attacks on livestock are common, and when this “protector” of the fairy goddesses visits a pen, the life of the owners changes forever. For some families, it would take years to financially recover after a single attack.

But contrary to this, Imtiaz speaks about the snow leopard with reverence, almost like he is speaking about a beloved big brother, who he deeply respects and has not seen in a while.

“From 2006 to 2010, I looked around for predator around comes at a cost. The attacks on livestock are common, and when this “protector” of the fairy goddesses visits a pen, the life of the owners changes forever. For some families, it would take years to financially recover after a single attack.

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“As peculiar as Imtiaz’s fondness of the snow leopard may sound today, he says that his elders once considered snow leopard attacks on their livestock as a good omen. It was widely believed that an attack from the “protector” of the fairy goddesses would bring blessings to the house and was a sign of “abundance”, indicating that their livestock would soon increase in numbers. Traditional practices also entailed limiting hunting of snow leopard prey such as Marco Polo sheep to older males, and never killing juveniles and females. The community maintained a system that ensured that the wildlife including snow leopards thrived. But since then, the perception of locals about the big cat has changed.

“It was a feeling that I cannot describe in words. I sat there, mesmerized, looking at the snow leopard feeding on my sheep, as I secretly watched,” added Imtiaz with a smile.

“Although they did not understand my love for the snow leopard, my family knew that the animal and I needed to be left alone. After some time, I thought of taking out my camera and filming the leopard. At that moment, I was not a herder who just lost his livelihood, I was a filmmaker who had to let nature take its course, as I filmed it.”

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“Nowadays, I see that the communities have waged a war against snow leopards, persecuting them at any chance they can get. I am concerned that they might soon vanish from my area.”

Globally, persecution by communities, because of livestock predation, remains one of the leading causes of the plummeting snow leopard numbers. In Pakistan, once home to the world’s third largest snow leopard population, close to 70 animals out of between 200 to 400 animals, were killed in a decade. Across the 12 range countries where the snow leopard is found, more than half of all killings are because of retaliation by communities. With their prey base decreasing and human making roads inside once remote habitat of the big cats, the conflict with communities is often inevitable and retaliatory killing is the most common outcome.

To address the human-wildlife conflict, Pakistan initiated livestock insurance schemes to compensate the families for snow leopard attacks. The schemes worked well for a while and resulted in a marked decrease in the killings. But as the economic, social, and environmental dynamics of the previously inaccessible snow leopard habitat changed, these schemes failed to evolve accordingly. Now after two decades from when they were first rolled out, the locals, including Imtiaz, point out flaws in the strategy.

“These schemes are not even compensating one-third of the actual cost of the livestock so there is no incentive for the community, and they quietly shoot or poison the leopard. For them, a compensation of US$150 for a goat that is worth US$30 is almost nothing. That is the reason why the incidents of snow leopard killings are growing when they should have decreased,” he weights in.

Not able to influence policy change, Imtiaz is employing other ways to make a difference. Although a tourist guide, he is often seen around the mountains looking for a snow leopard. It was his love for the big cats that encouraged him to pick up a camera and start filming. By showing the world how beautiful they are, he aspires to change the perception about these shy animals and save the iconic species from extinction.

“But it is not always this simple. Dedicating my life to conserve snow leopards is not something others around me understand fully. Some even say that I am befriending their enemy.”
Despite the opposition, Imtiaz continues his work in the hope that one day others in the community will see the snow leopard in a different light.

“Imtiaz’s recent footage does not only capture a beautiful animal but also contributes critical knowledge about this lesser-studied big cat. More recently, the joy of his life has been following and filming the lives of two snow leopard cubs since birth. I have captured unique footage of snow leopards and have been developing videos in the local language so that my community learns more about how snow leopards have equal rights to live in the land we share with them. I have also developed cartoons for local TV channels so that the children of my village do not grow up hating the leopard, like their parents.”

Imtiaz continues to follow the cubs, now six months old and plans to develop an educational video for the people of his village, and others, in hopes that they will see the snow leopard through his lens – not a ferocious enemy, but a shy and magnificent animal that is worth saving.

“When I see these cubs, my heart swells with happiness and I can’t help but feel hopeful for the snow leopards. As I see them through my lens, following their mother, healthy and alive, I pray that they stay out of harm’s way.”

Sana Ahmed is Coordinator, Communications and Fundraising, Living with Big Cats Initiative, WWF.

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“The alignment of companies with a common goal of running businesses in a sustainable way is a good start for a climate change action plan.”

Climate change is taking a toll on our lives with effects that are now palpable, leading to droughts, poor air quality, famine, inflation, habitat relocation, wildfires, loss of businesses, etc., hence compromising the Sustainable Development Goals (SDGs) which were set to be achievable by 2030. Consequently, the way of thinking, mode of operations and terminology has now shifted for the better to alternatives like green businesses, climate investment, net-zero, greener investments, green profile, green financing, etc.
COP26 last year shifted the focus on climate change and how businesses and private investments can play their part to mitigate climate change to survive the economic, health, and environmental crises that are looming ahead. This brings into question the commitments made by corporations as one might construe their role as just another way of upgrading their green profile or can we expect the prospect of achieving sustainable development? We can all still play our part in ensuring prudent and apt steps are taken to move in the right direction.

We will therefore be looking into corporations and companies and their previous trends of green investments and how their commitment this time can create a ripple effect prompting greener business practices hence controlling climate change and its adverse effects over time.

According to CDP, a non-profit organization that runs the global disclosure system for investors, companies, cities, states, and regions to manage their environmental impacts, over 300 companies are investing to reverse climate change either by buying water stocks, implementing green and eco-friendly plants, contributing in environmental solutions researches, or by advancing their research and development initiatives to create products that are more efficient in reusing, recycling, or creating a net-zero waste future by 2060. So far, there are only ten companies that are on the 2021 A-list, working for three causes i.e. climate change, forest, and water Security. These companies include DANONE, Firmenich SA, FUJI Oil Holding Inc., HP Inc., KOA Corporation, L’Oreal, Mondi PLC, Philip Morris International, Symrise AG, and UPM. Taking into account the work being done, new policies and strategies are being made to sustain climate change so that humanity’s stamp on nature can be controlled while working towards environmental conservation. Unfortunately, the major contribution, especially plastic waste from companies like Coca-Cola, Pepsi, and Nestlé, etc. is making things worse.

According to Statista, Nestlé produced about 95,000 metric tonnes of single-use plastic waste in 2019 which they tried to balance out or underplay in 2020 through sustainable packaging techniques i.e. using paper-based packaging instead of plastic packaging and use of paper-based straws instead of plastic straws. These strategies were considerably censured and drew criticism because paper straws are mostly wrapped in plastic which makes such efforts questionable, but every single step towards environmental protection is better than no action.

Greener investments to achieve net-zero emissions

The “Net-Zero Emission” concept is now being adopted by companies to work on “purpose and impact-driven” measures and means of operation; meaning organizations are investing in social and environmental causes to alter the environmental harm caused by them and to work towards a climate change action plan. Shell has been working on cutting its emissions and investing more in research and development to create efficient fuels which have lower to negligible potential of creating secondary and tertiary pollutants when used by vehicles. Regarding scientific research and development, the Science-Based Targets Initiative (SBTI) has released net-zero standards in October 2021 which will help companies to comply in order to fall under the “Net Zero Emission” category. This will also motivate and give impetus to other companies to follow suit and invest in greener projects, conduct internal research and development to fund environmental-friendly processes to hasten the impact of the climate action plan. Projecting the future of businesses, companies that will comply with the G8 Social Impact Investment Strategies will secure more opportunities and investment, gaining global prominence and a competitive advantage.
Investors now give precedence to projects which are focused on climate adaptation and mitigation i.e., Wellington Management Company, one of America’s largest investment firms looks to invest in similar projects and initiatives. This will be a huge leap towards climate adaptation solutions and to bring more investors towards climate action projects like weather-resistant building materials, eco-energy projects, natural resource rejuvenation, and enhancement projects, etc. Investors usually forecast and invest in projects which can reap monetary benefits with a payback period of three to five years, but investment in climate adaptation and mitigation projects is helping investors to get the idea of the long-term benefits of fighting climate change.

According to Forbes, around US$178 billion has been invested globally towards green investment funds in the first quarter of 2021, hence paving the way forward in 2021. This involves buying water stock investments, decarbonization, and renewable energy stocks. Tesla’s stocks are considered green and sustainable, as the company is using eco-friendly practices like using bitcoin, eliminating lithium mining for batteries, and for developing electric cars, etc. According to the 2021 Unilever review report, 26 Unilever brands are using agricultural raw materials in their production processes to make it more sustainable. Similarly, Toyota Motors will shift totally to hybrid and electric car manufacturing by 2050. Alphabet is totally powered through wind and solar capacity i.e., renewable energy.

The alignment of companies with a common goal of running businesses in a sustainable way is a good start for the climate change action plan. Today’s greener initiatives like analyzing potential sustainable investment opportunities, focusing on producing greener products, changing to a circular economy plan, etc. will help in reversing the effect of climate change, community adaptation to sustainable businesses and investment practices, involvement of advanced technology in alleviating environmental issues and creating a space for young entrepreneurs to bring forth their green projects to achieve the goal for 2050’s “Net Zero Emission”.

Additionally, awareness amongst investors throughout the globe to make sustainable investments like untapped technologies and updated projects will start to show its positive effects by 2030. Hence, the bottom line is that green investments and initiatives are the future of business financing and climate change action plan.

Rubaisa Tabasum currently works with PlatMaps, a data management company as the Team Lead.
“The concept of stewardship is still new in Pakistan where business-as-usual water management practices need to change, and where businesses need to evaluate, and take action on the risks associated with water across a broader context.”

For the longest time, water conservation, its management, policies and allocation has been the government’s mandate. However, what we fail to understand is, a shared resource needs a shared vision, where its users are collectively held responsible for its governance. While there have been numerous debates, from water pricing to storage and agricultural productivity, we tend to ignore the role of the private sector, its leverage and capacity, and the impact it can have on water governance.

It is important to understand that leverage should not just be interpreted in terms of finances, but more in terms of the sector having a coordinated approach and influence, international and local standards to adhere to, and a reputation to maintain.
According to The World Economic Forum’s Global Risk Report (2020), the water crisis continues to remain a high impact risk, and so many international (and now local) businesses have started considering water risk as part of their decision-making process. However, this is usually limited to companies viewing water through volumetric lenses, or only acting within their fence lines. While water reduction and conservation are a great feat, the dynamics of the resource need to be viewed more holistically.

The global pandemic has shown that the need for safe water is more crucial now than ever, and its importance goes beyond efficiency. This is where water stewardship comes in.

The concept of stewardship is still new in Pakistan where business-as-usual water management practices need to change, and where businesses need to evaluate, and take action on the risks associated with water across a broader context. A “one-size-fits-all strategy” is not the solution anymore and sharing information and innovation is becoming a necessity.

As of now, two sites of Soorty Enterprises in Karachi have obtained the AWS Standard certification this year, along with two sites of US Group and all four sites of Nestlé Pakistan. It’s necessary to accelerate efforts such as these at a larger scale, so Pakistan can build resilience and continue doing business with other countries, not just as a consumer requirement but also for business continuity efforts.

The AWS System can work as a bridge between the public and the private sector, where its network (globally and locally), and the learning it produces through collaborative efforts complements the Integrated Water Resource Management (IWRM) approach that the National Water Policy of Pakistan clearly references.

Sustainability does not mean going back to our primitive ways, nor cutting access to resources. It means utilising resources in a way that builds continuity and resilience for people, the economy and nature. This is exactly what the AWS definition of water stewardship aims to ensure.

Maheen Malik is the Country Coordinator for Alliance for Water Stewardship (AWS), Pakistan.
OVERVIEW ON THE SIXTH INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC) REPORT

“Scientists are fairly certain that due to past and future Greenhouse Gas (GHG) emissions, changes to the ocean, the polar ice sheets, and sea level are essentially locked in. This means that even if emissions stop today, the impacts will continue to be felt long into the future.”

What is an IPCC and what is an Assessment Report?

The Intergovernmental Panel on Climate Change (IPCC) was created in 1988 and its main purpose is to provide policymakers and leaders with regular scientific assessments on climate change. These assessments are integral to analyse the risks posed by climate change as well as identifying options for mitigation and adaptation.

An assessment report comprises of three sections, namely physical science, adaptation and mitigation. The recently released report is in fact on the physical science basis of climate change. In other words, it analyses and reflects upon the latest scientific literature in this domain. As such, it highlights how human influence is altering the state of the global climate, the state of knowledge as it pertains to future climate scenarios, climate information as it pertains to various regions and finally how the scenarios will play out if the temperature rise is kept to a minimum. (The Paris Agreement calls for temperature rise to stay below two degree Celsius in comparison to the start of the industrial age (circa 1850).
What is the key message of the report on physical science?

The report starts out by highlighting how the impact of humans on changing climate was ‘unequivocal.’ Such terminology is rare for such documents where scientists speak in cautious tones and are circumspect when discussing such subjects. Building on the five assessment reports before this as well as numerous other studies including the IPCC special report on the impacts of global warming of 1.5 degree Celsius from 2018, the report warns of an impending crisis of grave magnitude if steps are not taken immediately to curb greenhouse gas (GHG) emissions.

What causes global warming?

Think of the world as a self-regulating system that utilizes the energy from the sun. Over the past 200 years, the burning of fossil fuels such as coal, oil and natural gas have resulted in the emission of GHGs such as carbon dioxide, methane, etc. These gases have enveloped the planet in such a way that the heat from the sun is being trapped inside thus raising the global temperatures. Carbon dioxide emissions, according to the report, are higher now than at any time in at least two million years, highlighting the anthropogenic nature of the crisis.

How is climate change or global warming impacting us?

As the IPCC’s sixth Assessment Report (AR-6) on physical science states, global temperatures have risen to about 1.1 degree Celsius on average across the planet. The continued rise of GHG emissions poses a massive risk to the global ecological system.

In fact, scientists are certain that due to past and future GHG emissions, changes to the ocean, the polar ice sheets, and sea level are essentially locked in. This means that even if emissions stop today, the impacts will continue to be felt long into the future.

Extreme weather: monsoons and droughts

This has resulted in the intensification of extreme weather events such as hurricanes and monsoons. Moreover, climate change is tantamount to water change and is directly connected to the water cycle. According to the sixth assessment report, global warming will further intensify the global water cycle “including its variability, global monsoon precipitation, and severity of wet and dry events.” This is of serious concern for Pakistan which is already affected regularly by seasonal flooding in urban and rural areas. Poor planning along with global warming will threaten our cities like never before.

Changer in the water cycle will have repercussions for our food security. Alterations in the growing season, as well as the potential impact of extreme weather events, will have consequences with regards to adaptation planning. Additionally, the water cycle also has implications for drought conditions which are likely to be exacerbated as per the report. This can have long-lasting and serious repercussions for areas such as Balochistan which are long-suffering from drought-like conditions.

Heatwaves

According to the sixth Assessment Report (AR-6), it is “virtually certain” heatwaves will become more frequent and more intense. This is very concerning for Pakistani cities such as Karachi and Hyderabad which have already felt the brunt and impacts of intense heatwaves for the past few years. The urban
Sea level rise

Pakistan has a coastal belt that is over a thousand kilometres long. Global warming is leading to sea level rise which will impact our coastal areas with saltwater inundation of aquifers and enhanced flood risks for communities living on the coasts. Unimpeded emissions will lead to a sea-level rise of two metres by 2100 and five meters by 2150 (relative to 1995). This can be restricted to levels below one metre if steps are taken to mitigate GHG emissions.

Glacier melt

The report has "high confidence" that glaciers will continue to melt for "decades or centuries" as global warming has essentially been locked in. Continued emissions will further exacerbate the risk to glaciers in the coming decades. The Antarctic ice sheet and the Greenland ice sheet will continue to lose ice mass resulting in further sea-level rise. Pakistan is home to what is known as the "third pole," the area containing most glaciers outside the poles.

Glacial Lake Outburst Floods (GLOFs) are already impacting us in Gilgit Baltistan and Chitral. Such episodes will intensify in the coming years and decades as temperatures warm. The impact on communities will be immense. Glacial melt will also increase riverine flows in the coming decades that has the potential to exacerbate seasonal floods.

Compound events

The report highlights the increase in the probability of compound events as global warming intensifies. This means that concurrent heatwaves and droughts, for example, will become more frequent. In fact, Pakistan has been seeing such events for a number of years now.

What do climate models say about temperature rise in light of climate change?

Climate models reveal that we will cross the 1.5 degree Celsius mark of global warming (since the preindustrial era) in about 10 years or so and unless deep cuts are undertaken to reduce GHG emissions, it is expected that we will breach the two degree Celsius mark by the end of the century. The business as usual approach without cuts (something that is unlikely) can see a temperature rise of over four degree Celsius. However, since governments have started to put forward targets viz net-zero by 2050 (or thereabouts), it is likely that higher emission scenarios will be curtailed. Yet, given the reluctance to immediately curb emissions, it is very likely that we will exceed the two degree Celsius mark.

Given what we know about the dangers that this entails, particularly viz bleaching of coral reefs and melting of ice caps/glaciers, such a scenario can prove to be catastrophic. It is imperative to note that even if all emissions are stopped today, temperatures will continue to rise at least until the mid-century (under all scenarios). This should be of immense concern and needs to be highlighted to the policymakers for immediate action.

How can climate change models be improved?

Climate change models need to account for emissions from natural sources as well. This includes carbon dioxide and methane emissions from wetlands, permafrost thaw (due to warming already underway) and wildfires (that may also be induced by global warming).

There is so much that we know about climate change and there is so much that we do not.
What’s next?

This report is only the first iteration of the AR 6 report. There are two more working groups on adaptation and mitigation that will come out with their analysis in early 2022. The report on mitigation will analyze the steps that are necessary to ensure a reduction in GHGs. This will entail moving away from fossil fuels and towards a renewable energy paradigm.

The adaptation report will be much awaited especially by countries such as Pakistan which are some of the most impacted and thus bear the repercussions of climate change. It will entail an in-depth look at the adaptation steps necessary to ensure that our policies and plans are in line with the needs dictated by a changing climate.

Where does Pakistan stand?

Pakistan’s response has been mixed when it comes to the climate crisis. In 2013, we came up with a climate policy, yet there hasn’t been much done to ensure that we take the necessary steps to implement its key provisions, especially on the adaptation front. The climate policy is currently being revised so that it is in line with the latest scientific understanding and our nationally determined contributions (NDCs) or commitments as part of the Paris Climate Agreement. In the run-up to the Conference of Parties in Glasgow (COP 26), Pakistan submitted its NDCs which call for 60 per cent of renewable energy to come from cleaner mechanisms such as hydropower, solar and wind. Moreover, it highlights the initiatives the government is taking as part of nature-based solutions, particularly the Ten Billion Tree Tsunami programme as well as Recharge Pakistan which focuses on rehabilitating our wetlands and groundwater resources.

While the afforestation campaign has won plaudits, our reliance on coal power plants is a major concern. Pakistan is not a major emitter of GHGs with our contribution being around one per cent of the global total. Yet, it is imperative that we play our part as one of the most affected countries and take the lead in mitigation initiatives. Our plans for investment in solar and wind have not taken shape as envisaged earlier in this government’s tenure. The share of hydropower is being increased which is a cleaner source of energy albeit with significant environmental and social costs. With regards to adaptation, this will have to be taken up at the local level. While provinces have come up with their own climate policies, it is imperative that local adaptation plans be developed and financed as early as to address climate-induced extreme weather events as well as long term challenges to the well being of our most vulnerable communities.

COP 26

The Glasgow conference took place six years after the Paris Agreement and as such, was supposed to be a stock-taking exercise whereby governments would assess whether or not we are in line to meet the goal of keeping the temperature to well below two degree Celsius. Unfortunately, we are not on track. In fact, research shows that we will eclipse 2.4 degree Celsius by 2100 under the current emission scenario. This will be catastrophic for the well being of the planet. It was hoped that countries will develop a plan of action to phase out fossil fuel use. However, the only agreement was on ‘phase down’ of coal which essentially allows the use of all fossil fuels, including coal, for the foreseeable future.

The Glasgow conference also highlighted that the developed countries were yet to meet the goal (set for 2020) of providing US$100 billion annually for climate mitigation and adaptation to developing countries. Loss and damage have become a key call for action by vulnerable countries who want the developed world to pay for losses incurred by them as a result of climate-induced disasters. Yet, here too the response from the richest countries has been abysmal.

While there was incremental progress in Glasgow in terms of developing a plan of action vis-à-vis the Paris Climate Agreement, it is clear that we are not moving quickly enough to counter a global threat. The next conference COP27 will be held in Egypt in 2022.

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The Pakistan Field Research Programme — Reimagining Student Academic Research

“The scholars pointed out that working and coordinating cross-country partnerships and relationships with various actors added a layer of complexity that helped increase the scope and type of learning.”

The pandemic has caused significant disruption in the way teaching and research is conducted at educational institutions worldwide, with many going completely online or adopting a hybrid structure. This unprecedented global event has prompted both students and academics to ideate innovative ways to overcome geographical barriers and revise study designs. In this endeavour, the Pakistan Field Research Programme is an example of an initiative that successfully reconsidered and redesigned its approach to the changing circumstances in order to deliver cutting-edge research with the potential to influence environmental planning and policy in Pakistan.

Under the mentorship of WWF-Pakistan and convened by Himaverte, a social enterprise company in Pakistan and Pilio, an energy and environmental services company in the UK, the Pakistan Field Research Programme, or FRP, is a summer research programme with the Oxford University Centre for the Environment (OUCE) that is part of the School of Geography and the Environment at the University of Oxford. Currently in its sixth year, the FRP has enabled two students, namely Adnan Jaafar and Emil Beddari, pursuing an MSc in Environmental Change and Management and an MSc in Nature, Society and Environmental Governance, respectively, to conduct research on sustainable cotton practices in Pakistan to fulfil their MSc degree requirement. The Oxford-Pakistan scholars were guided by the two co-coordinators of FRP, Dr Mehjabeen Abidi Habib, Director at Himaverte and Catherine Bottrill, CEO of Pilio, alongside Rab Nawaz, Senior Director Conservation Biodiversity at WWF-Pakistan.
While this research partnership came at a time when travel bans had restricted mobility and prevented the scholars from travelling to Pakistan to conduct their research, the FRP partners leveraged their long-term relationship with an institutional network of actors and leaned on digital technology to reimagine research study designs. In doing so, it empowered both scholars by allowing them access to key research participant stakeholders and facilitating data collection both virtually and on-field.

Adnan’s research focused on comparing and contrasting the understandings of sustainability and priorities among stakeholders in global cotton production networks in order to explore any associated emerging tensions arising from these varied understandings and priorities. Some of the interviews used in his analysis were facilitated by the FRP partnership, where members of WWF-Pakistan’s Sustainable Agriculture and Food Programme (SAFP) conducted interviews with Pakistani cotton farmers on behalf of the researcher and arranged virtual Zoom interviews with sustainability intermediaries. The research findings suggest the need to interrogate the different meanings of sustainability and how they are being used as well as the diverse priorities underpinning these understandings of sustainability. Furthermore, the research highlights the dynamics of power relations and their implications for stakeholders. By demonstrating that stakeholders’ understandings of sustainability and priorities are socially constructed and embedded, this research offers a practical pathway to inclusive stakeholder engagement based on a desire to understand the socio-spatial, socio-cultural, and socio-institutional contexts shaping stakeholders’ understandings of sustainability and priorities.

On the other hand, Emil’s research investigated emergent farmer innovation as an understudied aspect of agrarian socio-technical transitions and asked how these differ from externally organized innovation, focusing on smallholder cotton farmers in Basti Ridd in Multan district, Pakistan. The data used in this study was collected with the help of an external researcher, Priya Sajjad, an anthropology scholar at the University of Oxford working towards her PhD. The FRP organizational partnership helped facilitate the field visit and allowed the researcher to conduct interviews with key stakeholders such as cotton farmers, cotton pickers, cotton research centre scientists, and entrepreneurs involved in implementing a natural-coloured cotton trial in Basti Ridd. The findings suggest that the farmers in Basti Ridd have responded to economic and environmental challenges in cotton cultivation by developing local systems of experimentation that involve both novel practices and alternative uses of existing biotechnologies, such as inventing new practices using agrochemical pesticides and Bt cotton seeds, which pragmatically engages with the difficulty of completely removing pests from agricultural fields. Importantly, these innovations are evaluated by the local community based on social and environmental considerations as well as economic performance. As such, farmers’ practices destabilise both dominant models of agricultural production and of agrarian systems transition, creating local solutions which challenge the assumption that farmers are purely economically motivated recipients of fully formed technologies and that agricultural innovation is limited to traditional experts such as plant scientists and business entrepreneurs. As such, this analysis adds nuance to ongoing discussions regarding how local actors experience and resist contemporary commodity crop systems by providing insights into how both farmers and cotton pickers in Basti Ridd negotiate processes of agrarian transition. This study may provide fertile grounds for further discussions on how sustainability transitions are negotiated at the farm level and emphasise the importance of engaging with smallholder farmers as system analysts and innovators.
In an interview, both scholars acknowledged that this programme gave them an opportunity to engage first-hand with the issues that are shaping the international sustainability discourse around cotton and allowed them to produce research that is consequential and novel. They also commented on how the FRP made it possible for them to navigate the logistical and operational roadblocks by streamlining data collection approaches.

The scholars pointed out that working and coordinating cross-country partnerships and relationships with various actors added a layer of complexity that helped increase the scope and type of learning. Additionally, it helped redefine and reimagine what a master’s dissertation can do in terms of its impact on the real world as the findings from these studies can provide feedback into national policy and cotton development practices.

Catherine, one of the coordinators for the programme, commented on how the FRP has enabled both scholars to adopt a more active research methodology to generate knowledge that has the potential to benefit different actors and stakeholders while simultaneously aiding in their professional skill development. She also said that both scholars approached the topic of sustainable cotton with very different perspectives and produced critically important knowledge products that can be mobilized to benefit current sustainable cotton projects underway in Pakistan.

Similarly, Dr Mehjabeen highlighted that by valuing the research generated by some of the finest young scholars in the world and making it applicable to change-making, the FRP models how research should be used in a country like Pakistan. This can be done with relatively modest resources while leveraging significant impact.

FRP has successfully reconceptualised graduate students’ research experiences by engaging them in the global cotton narratives and conversations in academia and development sector organizations. Both scholars appreciated that the institutional support enabled them to carry out more grounded research despite the inevitable constraints during the pandemic.

Perhaps the future of academic research requires similar collaborative offerings that allow research findings to directly influence institutions involved in conservation and development work. This may also be invaluable to prevent working in silos so that student research doesn’t stay insulated from on-ground challenges and needs. In this regard, the Pakistan Field Research Programme may provide an excellent blueprint to not only reimagine student academic research but also push the frontiers of knowledge in a way that benefits both nature and people.

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