

TRANSFORMING OUR WORLD

The Newsletter of UNU Peace and Progress (UPP)

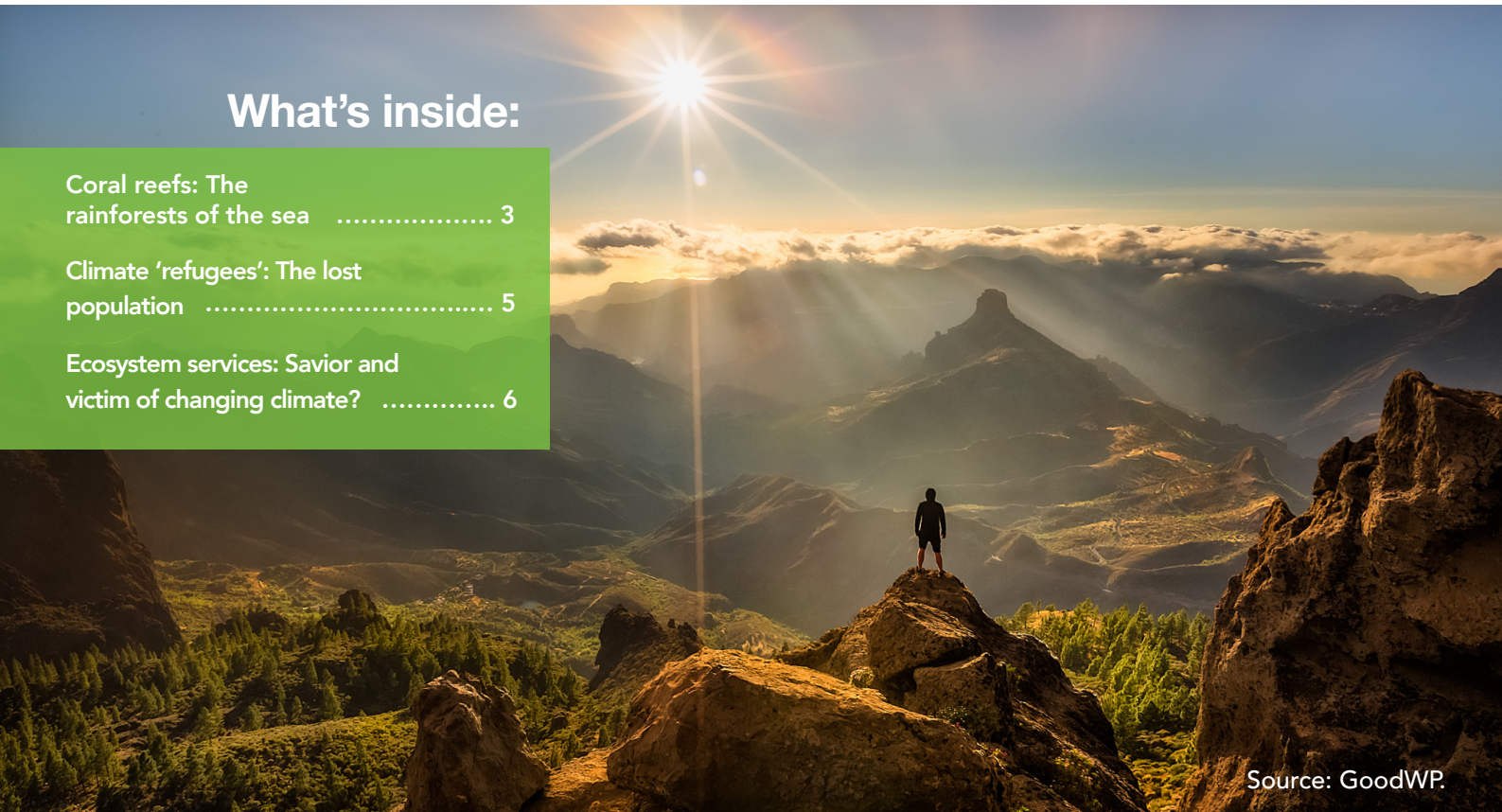
May - June 2019

What's inside:

Coral reefs: The rainforests of the sea 3

Climate 'refugees': The lost population 5

Ecosystem services: Savior and victim of changing climate? 6



Source: GoodWP.

Saudade and the Rain: Nature, Culture, and Identity

By Gabriel Wilson Tavares Calderaro (UNU-IAS)

I love the rain. The sound it makes when it hits the roof of my house; how the lightning illuminates a whole new world for a split second; even how the thunder seems to shake me to my very core. I always thought rain would be the same; make me feel similar emotions, regardless of where I lived. Yet, as it rains in Tokyo, it doesn't seem to incite the same easy joy it did in the Amazon. Why?

What starts with a single drop of water landing on the pavement, then leads to a deep feeling... that perhaps doesn't really exist in, or translate fully into English.

Saudade. This Portuguese word reminds me of home. It is a feeling of being incomplete or longing for something which one once had but has now lost. It is the sadness of missing, and the happiness of having the privilege of experiencing it. I feel *saudade* of the rain, the rivers, and the forest that surrounded me for years. *Saudade* of what made *home*, home.

I realized that the Amazon, in its beautiful mix of rain, river and forest, is part of who I am when I moved to Texas for college. "Distance makes the heart grow fonder" was not just a sappy promise of a long-distance relationship... (*cont'd to page 2*)

The Environment, Climate, and Energy Issue.

Each issue of *Transforming Our World*, the UNU Peace and Progress (UPP) newsletter, features one of the three thematic clusters highlighted at UNU's Strategic Plan for 2015-2019. This issue will focus on the topic environment, climate, and energy.



Source: Wallpaperplay.

For me, it was the first time I was isolated from my culture and from people who understood how I felt. Six years since, and the saudade that settled in is yet to leave my side. Being able to visit home throughout the years has not remedied this feeling, but instead, has made it grow stronger.

It wasn't until recently that I understood why I was so strongly attached to those elements of nature. It is because I lived and breathed them even when not physically surrounded by them. I also learned that I wasn't alone. Paes Loureiro, a poet and writer, described the Amazonian culture as the culmination of the interaction between humans and nature. The fact that we, the people, are living with nature, depending on it, and being impacted by it, is reflected in the collective manifestations deeply rooted in customs, religious displays and myths.

Many of the traditions and beliefs I am proud to carry come from the many native peoples in the Amazon. Their care and knowledge of nature was able to survive the invasion and colonization of the Americas, mixing itself with the other groups that became present in the region. This isn't to say that all is well just because they have been resilient and strong, and their culture has become part of the local mainstream culture. Their fight is still as much a struggle for survival as it was five centuries ago.

When Europeans first arrived at the Amazon, the native population had to fight for their land and way of life against missionaries and colonizers. Currently, many indigenous groups are building up resistance against public-private partnership initiatives that, in one way or another, would hurt their home, their culture, and their way of life.

The Munduruku people, located in the Tapajós basin in Brazil, have fought for their land for many years, against colonizers, but also modern Brazil. They were even able to dissuade the military dictatorship (1964-1985) from building hydroelectric dams that would flood many of their villages. It is almost ironic how it was recent democratic governments that have pushed and started the construction on those dams.

One of the proposed dams, São Luiz do Tapajós, would flood 380 sq. kilometers of forest, equivalent to 3.6 times the size of Paris, France. A study by *Grupo de Estudos Tapajós* – a study group funded by national and international companies interested in realizing the project on the environmental impacts of this dam by the interested parties – has identified 7 endemic bird species, as well as 18 fish species exclusive to the basin. This study also discovered 16 new reptile species.

The impact of the proposed São Luiz do Tapajós dam to the local ecosystems would be catastrophic, especially for species living in the flooded areas. As the flow of the rivers slow because of the dam, migratory fish species would not be able to travel to reproduction sites, affecting their populations, as well as other organisms dependent on them. With less flow of water, the oxygen levels in it would be expected to decrease, slowly but surely suffocating aquatic species.

Regarding the social impact of this project, the number of impacted people seem to differ greatly. While the report by Grupo de Estudos Tapajós on impacts of the dam present a figure of 1,400 people living in the impacted area, it is a much smaller figure than the one presented by Greenpeace. In the report produced by the environmental NGO, an estimated 12 thousand Munduruku, as well as 2,500 people in traditional riverine communities, live in the affected area.

These different groups depend on the river and forest for their subsistence -- food, water, health, and transportation. However, not only their livelihoods would be heavily impacted by the construction of new dams; their culture would also suffer. The history of the Munduruku people is recorded along the banks of the Tapajós river. The origin of their people and their world, their beliefs, and who they are is alive through that flowing water and surrounding forest. To submerge those sacred sites is to also erase such references to their memory.

In a major victory for the Munduruku people, the Brazilian environmental agency, IBAMA, decided to cancel the process for environmental licensing and construction of the São Luiz do Tapajós dam in 2016 because of such impacts to indigenous and traditional communities' land and cities in the region. This is not to say that the storm has blown over. The Ministry for Mines and Energy defends the position that Brazil needs more hydropower to develop, with the current President, Jair Bolsonaro, indicating his position on the issue affirming that not one more inch of land will be given to any and all indigenous peoples. (cont'd to page 3)

The Munduruku have continued fighting to save their people and their culture, but their story is not without losses. In 2013, the consortium responsible for the construction of the Teles Pires dam, located in a major tributary of the Tapajós, dynamited the *Sete Quedas*, an important sacred site for all the Munduruku. These rapids are the equivalent of “Heaven” to them. The home to spirits after their death. Where should the Munduruku go now that their resting place is gone? Will their spirits ever rest, or are they fated to wander this earth forever as more victims of development?

As I witness the Munduruku people lose their history and culture, I also feel as if I am losing part of myself alongside them. I wonder what will happen if the nature that defines much of who they are, of who I am, is gone. Will our identities adapt to the new environment surrounding us? Or perhaps *saudade* will become the central piece of who we are. Always longing for what we had and lost... aching to return home but unable to. Perhaps we will forget who we are and simply carry on with our lives, unwilling to learn from our past.

Every day away from the Amazon feels like a continuous process of forgetting who I am. Perhaps distance doesn't really make the heart grow fonder; perhaps it makes the heart forget what makes us whole.

But not all hope is lost. The Munduruku have been warriors for centuries, and they don't plan to change that. In a letter released in 2017, Munduruku Shamans said that they are made of and living of the sacred, and with the blessing and protection of their ancestors and of spirits, they will keep fighting for their rights.

And fight they have. Indigenous people have rallied in Brasilia, the national capital, to protest against deforestation, their decreasing rights, and the violence that has plagued many tribes after Jair Bolsonaro took office in January 2019. In Alter-do-Chão, a small village in the state of Pará, a collective of women descended from the Borari people have denounced and are protesting construction on the banks of the Tapajós River, which invades protected areas. Their fight is not simply against a government or an institution, it is a fight for their lives and that of the nature they depend on.

The fierce determination with which these groups fight for what they love and believe in is inspiring. It is a reminder that nature is important for many groups across the whole planet; people who are laying down their lives to protect Earth. The *saudade* I feel seems to lessen for a moment, with the soothing feeling that I am not alone, that other people also feel like I feel, and that we are working towards a common goal.

I am now able to remember, with a renewed sense of self and of purpose, that I am part of the Amazon even if I'm away from it. It is as much a part of me as I am a part of it. This thought gives me the inspiration to use my research to give back to the place that has already given me so much.

Much of the research on the impacts of public policies does not focus on the human perception and impact of their implementation. This means consequences of policies on many groups that are seen as undesirable by those in power are not researched or publicized. One example is how the government has attempted to stop free and public consultation of indigenous peoples in areas to be affected by mega projects. They need a platform, a way to make their voices heard far and wide.

By looking into the human perception of projects, I hope I can help in giving a voice to people that are fighting, broadly speaking, for justice, but rather more simply, for home. Now I can say without hesitation that I love the rain; and someday, the rain will lead me back to the river, the forest, *home*; and this time, I will know why. ■

Coral reefs: The rainforests of the sea

By Priyanka Rohera (UNU-MERIT)

Curaçao is an island paradise home to 35 white sand and crystal blue water beaches, located in the Caribbean Sea. The island's European heritage can be seen through the architecture, and pastel colored buildings. The cobblestoned-streets filled with shops and restaurants in the island's city center, Punda and Otrobanda, provide activities for tourists and locals alike. From live music and the World's Best Mojito Bar to the captivating colors and the historic area of Willemstad, a UNESCO World Heritage site, the island is a popular tourist destination. Curaçao's diverse history can be seen through the presence of a large international community consisting over 55 different cultures (Curaçao Tourist Board). *(cont'd to page 4)*

Coral nursery tree. Source: Ocean Encounters Curaçao.



This island paradise is also home to beautiful coral reefs that surround the coast. The reefs are under stress due to a number of causes including climate change, pollution, careless tourism and bleaching events.

Coral reefs are underwater ecosystems that consist of various forms of corals, particularly stony ones. They get their stony exterior from calcium carbonate that holds together the coral polyps. Colonies made from these polyps are what we know as coral reefs. Coral reefs primarily reside in shallow waters. Also known as “rainforests of the sea,” coral reefs contain some of the world’s most diverse ecosystems and are home to about 25% of all marine species, yet only occupy 0.1% of the ocean’s surface area (World Wildlife Foundation). Millions of people globally rely on coral reefs to provide essential nutrition, livelihood, and also protection from increasingly life-threatening storms. Coral reefs are valued at approximately \$9.9 trillion USD (Reef Resilience Network). Coral reefs are often a part of tourism for islands such as Curaçao, where some of the main excursions are snorkeling or scuba diving. The protection of these reefs presents a crucial economic opportunity for nation states with similar tourist attractions.

Today, about half of the world’s coral reefs are gone due to climate change, overfishing, unsustainable coastal development, pollution, sedimentation, destructive fishing practices, careless tourism and coral mining (WWF). It should be noted that without a call for action to address climate change, pollution, overfishing and destructive coastal development, coral reefs would cease to exist (WWF). Oceanic pollution is becoming an increasingly popular topic in terms of raising awareness on the effect that the pollution has on marine life. Reducing the consumption of plastic straws to save the turtles is a step in the right direction.

Coral bleaching occurs when corals are put under stress because of changing conditions around them. Changes in temperature, light intensity, nutrients cause corals to expel the symbiotic algae residing in their tissues, which in turn, causes the corals to turn white. The process of coral bleaching doesn’t always result in coral death, corals are able to survive a bleaching event, but they are more vulnerable to mortality.

Corals in different parts of the world can be more resilient than others to change. Water temperatures in the Florida Keys dropped 12.06 degrees Fahrenheit into the high 40s and low 50s in January 2010, causing a major coral bleaching event, and the first Florida cold-water bleaching event in 30 years (NOAA). This significant drop in temperature was about 20 degrees Fahrenheit lower than the lethal lower limit for corals, which is 60 degrees (NOAA). Coral bleaching is a threat to communities living in the Caribbean islands. As island nations, communities are dependent on coral reefs that surround them. *(cont’d to page 5)*

The Coral Restoration Foundation (CRF), headquartered in Key Largo, Florida, USA, is the largest coral reef restoration organization in the world. The CRF has a mission to restore coral reefs, educate others on the importance of the oceans, and outplant and monitor genetically diverse reef-building corals (CRF). The process of coral restoration involves growing corals on underwater tree nurseries and then outplant the corals into selected sites. Since 2012, the Coral Restoration Foundation has planted over 74,000 critically endangered corals into the Florida Reef Tract alone. The process of coral restoration is integral in healing coral reefs, because once healthy corals are outplanted, they grow into colonies and continue the natural recovery process of coral reefs.

Ocean Encounters Curaçao, a local dive shop, was the founding member of the Coral Restoration Foundation Curaçao in 2015. Ocean Encounters built coral nurseries in a local reef of the island, Stella Maris. At the beginning, ten trees consisting 400 coral fragments were planted. Since the beginning of the coral restoration initiative in Curaçao, other dive shops have also joined in efforts with the Coral Restoration Foundation Curaçao. Celebrating its fourth anniversary this year, CRF Curaçao has planted 38 coral supporting trees, with 1,500 growing corals, and over 4,500 corals that have been outplanted since 2015 (CRF Curaçao). At Ocean Encounters Curaçao, natives and tourists alike get together to volunteer for restoration dives to help care for the coral nurseries on the island all while enjoying the breathtaking views of the life below the surface. The collaborative work in Curaçao can be used as inspiration for people worldwide to work towards a common goal. ■

Climate 'refugees': The lost population

By Femke Laauwen (UNU-MERIT)



Source: Getty Images.

Climate change is a topic that is on everyone's minds, in one way or another. It is difficult to look at any newspaper, on any given day, and not see at least one article on the topic. It has led to heated debate within political circles and has exacerbated the differences between us through polarizing society, as illustrated through recent election results within the European Union. Ever since we've basically worked out the science behind climate change, the political and ideological differences between us have become all the more stark. But there is one aspect of this debate that has consistently fallen between policy gaps, and that is the concept of 'climate refugees'. More specifically, the lack of a possibility to gain refugee status if you are fleeing for environmental or climate-related reasons because this is not covered within the scope of the definition of a refugee as outlined in the United Nations (UN) Convention Relating to the Status of Refugees. Why does this not receive more attention? And what will this mean for the future when the effects of climate change become increasingly more visible?

Many people refer to those fleeing from natural disasters and the impacts of climate change as 'climate refugees', but, legally, there's no such thing. The UN's 1951 Convention previously specified that only those with a "well-founded fear of being persecuted because of [their] race, religion, nationality, membership or a particular social group or political opinion" can qualify as a refugee. As a result of this, climate migrants lack any form of formal or legal protection. This remains a major policy gap, especially seeing as a World Bank report published in 2018 estimated that climate change could force over 140 million people to migrate within Sub-Saharan Africa, Latin America, and South Asia. (cont'd to page 6)

Citizens of island nations such as Kiribati, Tuvalu, and Nauru, whose homelands are literally disappearing into our oceans, cannot qualify for any legal protection to relocate to other countries. By 2050, the International Organization for Migration estimates that as many of 200 million people could fall into this 'protection gap', as it were. So, what needs to be done? Who needs to be involved? And what does a potential timeline look like?

Some argue that change to the definition of the term 'refugee' is necessary to encompass the changes that have occurred in the many decades since the creation of the Convention. But, seeing as the global political climate has been less than favorable to refugees in recent years, to put it lightly, it is highly unlikely that countries will come to an agreement regarding a new definition. This becomes even more obvious considering that many countries that are signatories to the Convention fail to accept asylum seekers who fit even this narrow definition.

The UN Global Compact for Migration, signed by 164 countries, takes a step in the right direction, but is not without its limitations. The document does outline that climate change can be a major driver of migration, however, like many international agreements, it is both voluntary and non-binding. The question that remains, then is whether or not this will be enough to move international policy initiatives in the right direction. But, perhaps instead of implementing policies to prepare for climate migrants, we should start truly tackling climate change. This conclusion seems to be the 'elephant in the room' with regards to discussions on climate change: it is less difficult to develop policies for issues that arise as a result of the negative impacts of climate change than to implement policies directly tackling climate change. So how do we proceed? How do we make climate change 'palatable', a less taboo subject? And in doing so, how can we find a legal solution for climate migrants?

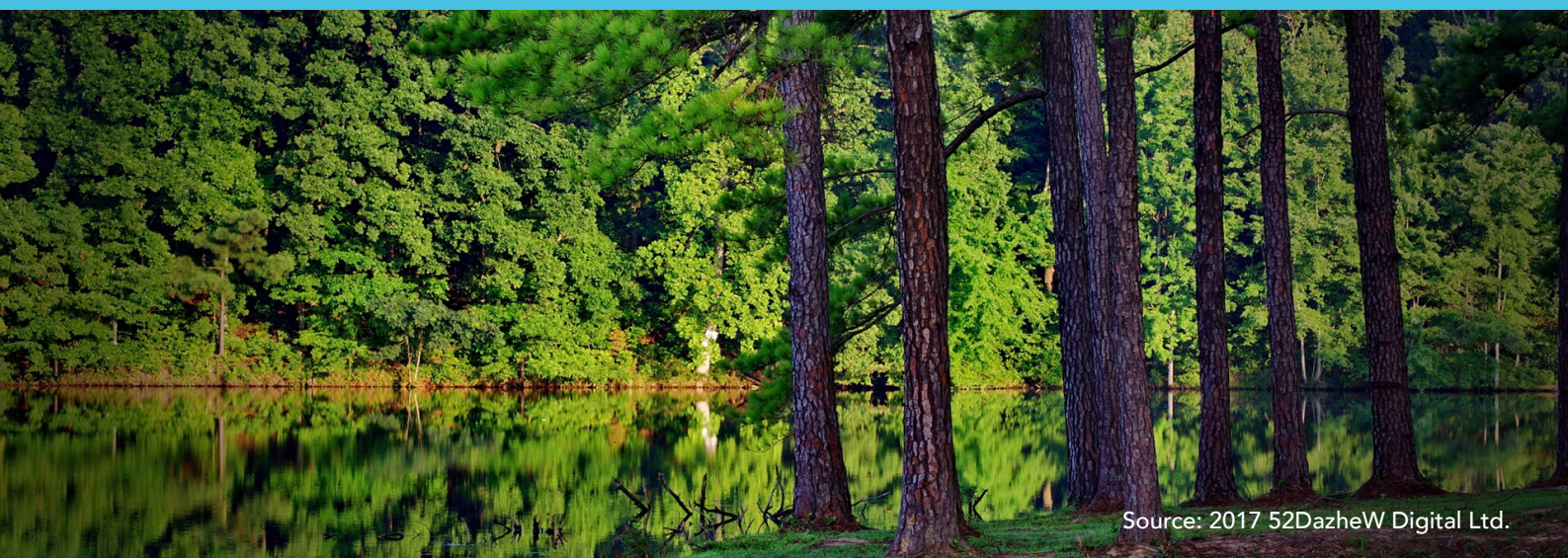
We should all be aware that we have the power to make a change, and change starts with awareness. With this, I hope that those reading this article understand we all have this power. Read up on the issue, get involved, and don't stop talking about climate change! It is here and it is here to stay, regardless of whether or not we remain silent. So I suggest it's time to start truly speaking up. ■

Ecosystem services: Savior and victim of changing climate?

By Anuska Joshi (UNU-IAS)

It has been decades since climate change started threatening the health of the planet, and it still continues to do so. It has been decades since the discussion on the plausibility of anthropogenic climate change and its threat started taking center stage and while the discussion still continues, we have yet to know if the threat will ever really cease. Ecosystem services are the basis for our existence, and climate change is now creating a vicious circle with it, whereby the changing climate impacts the ecosystem and the impacted ecosystem further drives the consequences of changing climate.

For instance, the climate resilience of any ecosystem depends much on species richness, diversity and landscape ([Locatelli et al., 2008](#)), but these are also the very elements that climate change is threatening to disrupt. All types of services provided by our ecosystem is now under threat. A case example could be that of Sahel and the semi-arid drylands of East Africa which are now facing challenges of "crop and livestock losses, food insecurity, displacement, cultural losses including traditional livelihood systems, and conflict" ([Geest, et. al., 2018](#)). Impacts such as these differ according to the area but nonetheless are now occurring across the globe. (cont'd to page 7)



Editor-in-Chief

Paoloregel Samonte*(UNU-IAS)*

Managing Editors

Priyanka Rohera*(UNU-MERIT)*

Associate Editors

Gabriel Wilson Tavares**Calderaro***(UNU-IAS)***Julia Lopes Ferreira***(UNU-IAS)*Website and Social Media
Manager**Rishard Shiva Nazrudeen****Khan***(UNU-IAS)*

Executive Secretary

Farbod Alidaei*(UNU-EHS)*

Writers and Contributors

Femke Laauwen*(UNU-MERIT)***Anuska Joshi***(UNU-IAS)*

Disclaimer: All views expressed in this publication are the author's own and do not represent the opinions of the UN or any of its staff.

The planet we inhabit, and call our home is the only place that sustains life. The ecosystem of the planet sustains our life with the services it provides. The Millennium Ecosystem Assessment Report in 2005 defined ecosystem services as "benefits people get from ecosystem" and has categorized these services into supporting, provisioning, regulating and cultural services. Climate change threatens these very services that we need to sustain our life, and are now constantly threatened with collapse of forests; pollutants in the atmosphere taking us faster to our tipping point and many of the species we share our planet with under the risk of extinction.

The provisioning service of ecosystems does help us to combat the impacts of climate change, taking for example that nitrogen-fixing helps to make crops more resilient to drought by improving soil nutrients and water infiltration, thereby increasing the impacts by folds if these nitrogen-fixing trees were to be impacted in the first place. The shade trees have also shown to improve resilience of coffee and cacao in Mexico by controlling temperature and humidity and protecting from storms (Lin, 2010). Along with impacts to the species and agrobiodiversity, the changing climate is also increasing the intensity and frequency of disasters, and as pointed out by research, when these impacts are coupled with ecosystem degradation, they can have a much more hazardous result (Palomo, 2017). And sometimes, the certainties of ecosystem service are much clearer than the uncertainties of climate change impacts. As the author points out in his report, it might not be clear how climate change impacts the frequency or intensity of avalanche, but it is clear that forest expansion could enhance avalanche protection at some sites (Grêt-Regamey et al 2008).

The ecosystem is the basis for life on earth and it is also the basis for the sentiment of the people. The local communities worldwide revere the ecosystem they live in; the African tribes near Mount Kilimanjaro, Chinese communities close to Mount Khawa Karpo, communities near Mount Yulong, Sherpa in Nepal, Quechua tribe in Peru, each hold their livelihood and cultural significance to the glaciers that they live near (Geest, et. al., 2018). When the changing climate impact these ecosystems, it causes not just physical threat to the communities but also harm to their sentiments, and often time their traditional knowledge hangs on a cliff due to the changes.

Now we are in the situation where ecosystems that could serve as a weapon against the changing climate are the first ones being impacted. Mangroves have been proven to reduce the impacts of climate change by acting as a natural barrier but are now being impacted by sea level rise. The forests and the biodiversity regulate the atmosphere and precipitation thereby maintaining a suitable local climate but are the ones getting impacted now due to drought, disaster events or increasing forest fires. The ocean itself is a big heat absorber, maintaining the average temperature of the earth but now is facing its degradation due to the excess heat it is having to absorb. In this fight with the changing climate, the first victim might be our savior. ■