FOCUSING ON CLIMATE CHANGE

Manishka De Mel is a Senior Staff Associate at the Center for Climate Systems Research (CCSR) at Columbia University's Earth Institute, based at NASA GISS in New York. She was a Lead Author on the UN Environment Programme's 2020 Adaptation Gap Report's focal chapter on nature-based solutions. Manishka speaks about the importance of recognizing the impacts of climate change and taking measures to mitigate as well as adapt to the effects. She explains that development and conservation of the environment go hand in hand, and that this has been recognized in Sri Lanka and globally as well.

By Udeshi Amarasinghe. Assisted by Swetha Ratnajothi. | Photography Menaka Aravinda.

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Could you elaborate on the focus of Columbia University's Center for Climate Systems Research (CCSR)?

The Center for Climate Systems Research (CCSR) is an institute at Columbia University's Earth Institute. The Climate Impacts Group, which I am a part of, provides climate risk information to stakeholders to prepare and plan for climate change. We primarily work in three areas; agriculture, urban areas, and conservation & development. We provide climate risk information on the rise in sea-levels, extreme heat, the manner in which rainfall patterns are changing and how that impacts all these various sectors. We then work with stakeholders across the world on how they can plan for and adapt to climate change. It is really about preparing people. We work across a range of countries and sectors such as water, agriculture, biodiversity, forest conservation, and urban areas.

The CCSR at Columbia is a collaborative entity with NASA's Goddard Institute for Space Studies (GISS), so we are based there and we work very closely with NASA scientists to develop the best available science knowledge to help the planet.

What does your work entail and what has been the impact?

At the Center for Climate Systems Research's Climate Impacts Group, I lead the portfolio of Conservation and Development projects. We have projects with leading global organizations such as World Wildlife Fund, United Nations Development Program, and Wildlife Conservation Society. I am currently working in the Mesoamerican Reef region where we are implementing a project to build capacity and to reduce coastal hazards.

We have a project in the high mountain regions in Asia in Afghanistan with the Wildlife Conservation Society because those systems are very important for water conservation, ecosystems, and endangered species. We are working with the United Nations Development Program in Uzbekistan in the Aral Sea region, which is an area that has been devastated due to water extraction. We do not believe in a top-down approach, we receive much of our information and insights from the people in those countries who have the local expertise. We see similar results emerging from across the world. Our research and information has been used for planning and implementation of urban, agriculture, and conservation and development activities in several locations across the world.

What are the prevalent environmental trends?

There are many high-level reports that are published and all of them highlight the urgency of climate change. There was a UN Special Report, which was called the IPCC Special Report on Global Warming of 1.5 °C that came out a couple of years ago. This report stated that the world has 12 years to ramp up and take action because if we wait too long, some of the systems will reach the tipping point and in order to curb warming we really need to take immediate action.

There are two components to climate action. One is what we call mitigation, where we have to come up with mechanisms to reduce the greenhouse gas emissions and even consider their removal from the air. That is extremely important because if that goes unchecked we are definitely headed for high end climate change. The other aspect is adaptation and building resilience, which is the area that I mostly work in, and these two areas mostly go hand in hand. If you do not mitigate, then we run out of options for adaptation. Because when its very high end climate change, it is very hard to control and you run out of options. With adaptation, we develop mechanisms to deal with impacts of climate change. The unfortunate thing about climate change is that there is a lag between the actions and the impacts we see. Some greenhouse gases, which are already in the air can stay in the atmosphere for hundreds of years. Even if we stop emitting greenhouse gases now, which we can't because we are reliant on fossil fuels, we are still locked in to a certain degree of climate change. Therefore, while we ramp up mitigation and adaptation, we can understand risks, plan for it and then implement solutions and that's the area that I mostly work on.

Climate change isn't just an environmental issue. It affects everyone and every sector, including the private sector. Even with 1°C of warming so far, we have seen the impacts of climate change, including extreme events. Based on UNEP's Emissions Gap Report, the world is still heading for a temperature rise in excess of 3°C this century. This far beyond the Paris Agreement goals of limiting global warming to well below 2°C and pursuing 1.5°C. Therefore, it is vital that Sri Lanka adapts and builds resilience to withstand impacts of climate change. The impacts are wide-ranging. As an island, sea level rise, storm surges and cyclones are a major concern. It can cause inundation of low lying coastal areas, affect settlements, hotels and infrastructure such as railway tracks, roads and bridges. It can also cause the intrusion of saline water into freshwater systems and affect drinking water. Extreme heat will have impacts on the health of the general population and will especially affect outdoor laborers. Changes in rainfall affects agriculture and ecosystems. Extreme events like droughts and floods will increase

in frequency and duration. The impacts are numerous and these are just a few.

A ‘whole agency approach’ is needed to tackle climate change and its impacts. Everyone needs to come together to solve this: the government, civil society, international organizations, private sector and individuals. While we fully utilize local expertise, it is important to be open to solutions from across the world and tailor them to suit our country. We can’t solve new problems using old solutions. All sectors need to be actively involved, not just the environmental sector but also health, urban, infrastructure, agriculture and water resources. With adequate planning and investment in innovative solutions, Sri Lanka, which is a high risk country, can become a leader in reducing its risks and adapting to climate change.

You have worked in Sri Lanka as well. Can you talk about your experience?

I worked at two institutions; I worked at the Environmental Foundation, which is a national level, non profit and I also worked at the Sri Lanka country office of the International Union for the Conservation for Nature (IUCN), which is a global organization. We worked on forest conservation, air pollution, noise pollution, and water. Sri Lanka has good policies and plans; we have protected areas but there are challenges. I worked in Sri Lanka for about seven years because after I graduated from university, I wanted to get some real life experiences and I wanted to see what it was like on the ground. I was exposed to many of the environmental issues while I worked in Sri Lanka and those issues have become more and more relevant.

I am very concerned about the scale of deforestation and the destruction of important ecosystems such as wetlands in Sri Lanka. These provide vital ecosystem services such as carbon storage, pollination, flood control and water purification, among many other benefits.

Forests are our country’s natural heritage. We have done a good job protecting our archeological sites, but the same cannot be said about our natural heritage. Nature has evolved over millions of years and have been there even before our country was first inhabited. Yet, these can be destroyed in a matter of hours or days. Random tree planting cannot replace natural forests, so we need to halt the destruction of these ecosystems. Areas that can be salvaged must be restored. Brownfield sites or degraded land can be used for developmental purposes, if additional lands are needed. We need to conserve our natural heritage so they can be passed on to future generations, just as it has been done in the past.

How do we balance between protecting the environment and development?

For a long time, we have thought that we need to choose between the environment and development. But they are on the same side of the coin really. More recently, the business community is increasingly calling for action on environmental matters both globally and in Sri Lanka. That is why The Economics of Biodiversity report that was done by the UK and released in February this year was actually not commissioned by their environmental department, but by their treasury. It is because they understood that our biggest asset is the environment.

Globally both with conservation and also with climate change, business leaders are really stepping up and calling for action because investments are at risk. Many businesses are dependent on natural resources and their supply chains can also be impacted by climate change impacts. Environmental metrics are becoming a core part of companies, especially the larger companies. We are used to the term Corporate Social Responsibility (CSR), which were at times internal, where the companies themselves improve their sustainability, and sometimes they were external projects. But now, these metrics are becoming embedded in companies and investors are looking at these indicators before they invest. As such CSR has now evolved into Environmental Social and (Corporate) Governance (ESG), and companies are investing more and more in ensuring that they meet these metrics and targets because they can attract more investment. Larry Fink, the head of BlackRock, the world's most powerful investor has urged companies to take action on climate change. BlackRock controls nearly USD nine trillion of investments. He wrote a letter to the world's CEOs and mentioned that climate change will be "a defining factor in companies' long-term prospects."

How did you get into this field?

I was interested in environmental issues from a very young age. I had this realization that if we harm the environment, if we damage the planet, there will be repercussions, even though we do not see it immediately. That really inspired me to be interested in the environmental field. My decision to study environmental management for three years surprised many people because it was unconventional at that time. It was not really a hot topic but I was interested in the subject and felt it would become important in the future.

I felt that I had a role to play in solving environmental issues so I completed my

Under graduate degree in environmental management at Imperial College, London, and then I did a Masters in biodiversity conservation at Oxford University. I wanted to see whether it made sense for me to get some experience overseas or whether to come to Sri Lanka.

I decided to come back to Sri Lanka and work because I wanted to get the ground experience. Thereafter, I applied to Columbia University to do a Masters in Climate Change. When I was working in Sri Lanka, climate change was becoming an important topic. I wanted to get a better understanding of climate science, so that's why I pursued the master's program at Columbia University on climate change. I also wanted to get a global understanding and that's why I stayed on to get experience.

Although based in the US, I work across the world and have been involved in projects spanning about 20 countries. I have been working in the field for 15 years now. I am focusing more on sustainable finance as it is an area of growing importance. Governments and nonprofits alone cannot solve climate change and other environmental issues, we need the private sector as they have a large reach and can make a major positive impact.