

CLIMATE CHANGE CHALLENGES AND SOLUTIONS FOR SRI LANKAN BUSINESSES

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Over the past 20 years, climate change has risen as a major issue facing humanity today. During this time, the international community has struggled to address the issue, often it was mired by seemingly endless and frustrating debates. However, in 2015 there was a breakthrough in the form of the Paris Climate Change Agreement, where countries agreed to limit the “increase in the global average temperature to well below 2°C above pre-industrial levels” and further committed to pursue “efforts to limit the temperature increase to 1.5°C above pre-industrial levels.”

Under the Paris Agreement, over 140 ratifying countries have agreed to make an ambitious nationally determined contribution (NDC) in keeping with their economic growth, to reduce greenhouse gasses and adapt to climate change. Despite the recent withdrawal of the US from the Paris Agreement, all the other countries remain committed to it. It is our best chance yet of avoiding irreversible climate change and mitigating the far-reaching and devastating effects of extreme weather events that we are already experiencing, and which are predicted to increase and intensify.

Sri Lanka’s future climate impact outlook

Sri Lanka has seen a historical increase, in both the number and intensity of droughts, floods, geographic changes to vector-borne diseases, coastal erosion, tropical storms, lightning, crop failures, landslides and siltation of reservoirs. All of these are related, at least partially, to temperature and rainfall changes. Coastal erosion is partly the result of sea level rise and partly other causes, such as river-bed sand mining and unplanned coastal building activities. These events have devastating and adverse impacts on our environment, citizens, infrastructure, businesses, and the national budget.

The costs of climate change run into millions, if not billions of US Dollars. For example, it has been estimated that the coconut industry in the wet zone will suffer major losses. “Without extra adaptation measures, this is predicted to result in a loss of LKR 4,795 million annually by 2020, which is nearly 4.7 percent of the total value of the industry at equilibrium.”¹ A report from the Asian Development Bank and UK Aid stated “Tropical and subtropical regions of Bangladesh, Bhutan, India, and Sri Lanka are projected to be vulnerable to increasing temperature and CO₂ level, with a decline in rice yield of as much as 23% by 2080.” By the end of this century, Sri Lanka is likely to see an increase of 2-3 C degrees average temperature rise.² There is likely to be significant inundation all around the coast, and particularly in places like Negombo and Galle.³

¹ E. Pathiraja, G. Griffith, W. Farquharson, R. Faggian, *The Economic Cost of Climate Change and the Benefits from Investments in Adaptation Options for Sri Lankan Coconut Value Chains*, proceedings in System Dynamics and Innovation in Food Networks 2017, accessible at <http://centmapress.ilb.uni-bonn.de/ojs/index.php/proceedings/article/download/1746/712>

² Ibid, p 27.

³ See the Sea Level Hazard Profiles prepared by Disaster Management Center, Ministry of Disaster Management, accessible at <http://www.dmc.gov.lk/hazard/hazard/Sea%20Level%20Rise.html>

A June 2017 World Bank report stated that “on average over the long term, annual losses for housing, infrastructure, agriculture, and relief from natural disasters are estimated at LKR 50 billion (or around USD 327 million), with the highest annual expected losses from floods (LKR 32 billion), cyclones or high winds (LKR 11 billion), droughts (LKR 5.2 billion) and landslides (LKR 1.8 billion). This is equivalent to 0.4 percent of GDP or 2.1 percent of government expenditure.”⁴ The report also states “The execution of the budget is knocked off track continuously due to the impact of natural disasters, which seem to have increased in frequency, severity and economic impact as Sri Lanka’s economy has grown and has become more sophisticated. Although fewer people were impacted than in previous floods, the damage caused by the 2016 floods and landslides was more than twice as high in US dollar terms than the worst flood disasters between 1992 and 2011.”⁵

To overcome these challenges the report suggests that “it is of utmost importance for Sri Lanka to increase its physical resilience (to reduce the impact of disasters) and financial resilience (to deal with the impact when the disaster happens). To improve physical resilience, the World Bank is supporting the Government’s Climate Resilience Improvement Project (CRIP) and recommends that the country:

1. Identify current climate risk, and implement immediate risk mitigation interventions
2. Identify future drivers of risk
3. Create basin-level long-term risk mitigation investment plans, followed by physical investments.”⁶

Did we know of these impacts before?

Were these climate changes not known or predicted earlier? Sri Lankan scientists have been predicting such adverse impacts for at least 10-15 years. For example, a 2005 article stated that “The impacts of rainfall increases are predicted to be beneficial to the country as a whole in all five AOCGM [*Ocean and Atmospheric model*] scenarios, but temperature increases are predicted to be harmful. Nationally, the impacts vary from –11 billion rupees (–20 per cent) to +39 billion rupees (+72 per cent) depending on the climate scenarios. With warming, the already dry regions (the Northern and Eastern provinces), are expected to lose large portions of their current agriculture, but the cooler regions (the central highlands), are predicted to remain the same or increase their output. The paper reconfirms that climate change damages could be large in tropical developing countries, but highly dependent on the actual climate scenario.”⁷ Since then both data analysis and climate science have advanced significantly. Despite these advances, we do not know enough to make precise judgements about when, where and what impacts will occur. This uncertainty is because of a number of reasons – primary amongst which is the lack of accurate and reliable data sets and studies. But make no mistake – climate change impacts

⁴ The World Bank, Sri Lanka development Update, June 2017, page 12 et seq, accessible at <https://openknowledge.worldbank.org/bitstream/handle/10986/27519/116949-WP-P153384-PUBLIC-Sri-Lanka-Development-Update-Spring-2017.pdf?sequence=5&isAllowed=y>

⁵ Ibid.

⁶ Ibid.

⁷ S. Niggol-Seo, R. Mendelsohn, M. Munasinghe, *Climate change and agriculture in Sri Lanka: a Ricardian valuation*, 10 Environment and Development Economics (2005) Pp 581–596, Cambridge University Press accessible at <http://nersp.osg.ufl.edu/~vecy/LitSurvey/Seo.05.pdf>

are coming. They are already here. The fact that we don't know enough about them should not stop us from taking action to protect ourselves.

The rising cost of climate change is being and will be, borne by the Sri Lankan public and by citizens and corporations who suffer damage. It is also being borne by future generations as the country increases its debt burden on this account. Likely, an inequitable proportion of these losses will be borne by poor and marginalized citizens, living along the banks of canals, rivers and along the coast or residing in landslide prone areas.

No doubt, the government of Sri Lanka is taking steps to adapt to climate change.⁸ Sri Lanka has established a Climate Change Secretariat under the Ministry of Mahaweli Development and Environment.⁹ A national Climate Change Policy has been adopted in 2012.¹⁰ A National Adaptation Plan for Climate Impacts in Sri Lanka 2016-2025 was adopted.¹¹ Previous to this Plan, a National Climate Change Adaptation Strategy 2011-2016 was also adopted.¹² Sri Lanka has received a technical assistance grant from the Asian Development Bank for strengthening its adaptation capacity¹³ and has received funding from the Green Climate Fund for a climate adaptation project in the north-central province.¹⁴ The project seeks to strengthen the resilience of smallholder farmers in the Dry Zone to climate variability and extreme events through an integrated approach to water management.

What must Sri Lanka do in the face of Climate change?

Sri Lanka has little choice but to prepare for and adapt to climate change. Sri Lanka's greenhouse gas emissions are minuscule in comparison to those of developed nations, India or China. Climate change is not of Sri Lanka's making – but have no doubt, we are and will continue to be the victims of it. With climate change, some places will warm up and others will cool down. Some places will become wetter and others will dry out. There will be winners and losers in that process. We cannot stop climate change on our own. We cannot stop the impacts of climate change on Sri Lanka. But we can prepare for them, safeguard ourselves from them, mitigate their impacts, and where we are the winners of climate change, we can capitalize and make the best of it.

Do we have a national plan to do this – to adapt to climate change? Yes, we have National Climate Action Plans prepared by the Ministry of Environment. But are these plans being implemented? Are we raising the funds to put the needed infrastructure and policies and laws in place? Are we educating the public? Are we changing economic policies to prepare for what is here and what is coming? The answer is a resounding “NO”! We are doing things – as usual – in a patchwork, ad hoc manner. We cannot ever dream of adapting to climate change if we go on like that. Our agro-businesses, fisheries, local government institutions on the southern and western coast, businesses in vulnerable areas along the

⁸ For example, the Disaster Management center has mapped sea level rise hazard profiles (See Supra Ft. 59).

⁹ http://www.climatechange.lk/About_us.html

¹⁰ http://www.climatechange.lk/CCS%20Policy/CCS_Policy.html

¹¹ http://www.climatechange.lk/NAP/NAP%20For%20Sri%20Lanka_2016-2025.pdf

¹² <http://www.climatechange.lk/adaptation/Index.html>

¹³ http://www.climatechange.lk/adaptation/index_adaptation.html

¹⁴ <http://goo.gl/JX9kkQ>

coast – including tourist hotels, and our plantation sectors will suffer massive adverse climate impacts and they will either fail and go bankrupt or suffer massive losses.

That is why, I want to make this keynote address to our business community a call to arms. A call to mobilize and activate your influence over our democratic government, to put climate adaptation on a war footing. We as an island nation are more vulnerable than others to climate change. We need to be visionaries here and must act “yesterday” to ensure the prosperity and survival of our people – our children and grandchildren. If we don’t act now – if you don’t act now – we will be left with a devastated nation hurtling down an economic spiral of doom. But we can change this now – we must act with urgency and unity of purpose. Adapt – Adapt – and Adapt to climate change. Forget mitigation of our carbon footprint is minuscule compared to other nations who can make a difference to climate change. Prioritize and concentrate on climate adaptation. Tap into climate finance that is becoming increasingly available to nations and businesses. Support scientific research into climate scenarios on solutions. Ensure that politicians are listening to you and get them to put the right policies, laws and regulations in place. Change your business practices and look to invest in those areas that are likely to be winners in this unfolding game of climate jeopardy. In fact, I suggest we go a step further. We can and should become world climate adaptation leaders – nationally and business-wise. We can beat this *doom day future and prosper. But we must act now.*

What must we do to get it right?

What must we do to get climate change adaptation right? There are 10 things we need to do now!

First, our people, politicians and the public and private sectors are not adequately aware of climate change and the disasters and dangers as well as the opportunities it will most certainly bring to our country. They are not adequately aware of the need for adaptation and what that means in their daily lives. While climate change is taught in our schools as a scientific phenomenon, the curriculum has not been changed to teach the next generations about the dangers and opportunities facing our nation and what can and should be done to prepare and adapt to them.

Second, we have yet to enact appropriate and comprehensive climate change laws and regulations that establish the necessary legal and regulatory infrastructure to effectively deal with climate change and adaptation. Some would argue that we have laws and institutions for environmental protection, disaster management, generation, analysis and dissemination of meteorological data and information, and planning etc. and that these are adequate to deal with the situation. I agree that in a perfect world, that may well be the case. But Sri Lanka’s laws, agencies and law enforcement are far from perfect. The relevant agencies struggle to collaborate and cooperate. When they do, actions move far too slowly. The result is a patchwork of projects and initiatives that don’t add up. Each initiative/project is isolated and is hardly ever replicated. Lessons learned are disseminated but not absorbed and mainstreamed. And so, we repeat the cycle in ignorance. We make the same mistakes over and over again, and all the while the climate will continue to wreak havoc on us and our people and our businesses and the opportunities it brings will pass us by and be plucked up by others. We need a strong and effective law and legally mandated coordinating mechanism. We need strengthened agencies and we need

provisions for citizen engagement and enforcement of the law – because in climate adaptation we cannot rely only on our government alone. We need a comprehensive and powerful climate law – a law that forces government agencies and regulatory bodies to mandatorily factor in climate change considerations into a project, programme, and policy decisions. One that establishes a climate coordination mechanism at the highest level with teeth to act and powers to enforce the law free of political interference. One that establishes a Green Tribunal for Sri Lanka to quickly and effectively settle environmental and climate disputes that are more than likely to arise and arise frequently. One that supports needed research and the promotion of business opportunities.

Third, we have a National Adaptation Action Plan. But plans are exactly that – a futuristic set of activities that ought to be done. It looks great on paper – and remains impotent until and unless acted upon and funded. Plans go nowhere without action, without funds and without the necessary agencies to implement them. We are doing far too little to implement our Adaptation Plans. Sporadic and patchy actions have been initiated by the Ministry of Environment. Despite the Ministry's best efforts to put the plan into action, bureaucratic inertia, lack of awareness, obstructing vested interests, lack of serious political commitment and lack of funds have stood in the way of the plan coming to life. Plans are only a good start – but we need action, action and more action.

Fourth, we need to create the right economic and political incentives and disincentives for climate adaptation. For example, we already know that several areas of our shoreline will be lost to rising seas. Allowing businesses to invest in such areas and construct permanent buildings in the form of hotels and tourist facilities is, to say the least, foolish and shortsighted. Yet we continue to do so because our economic and political incentives are skewed in favour of it. Some of these areas will go under water in the next 5-10 years. Others in the 20-year horizon. The maps showing this scenario is available to all. These long-term horizons are well beyond the imagination of our politicians – because naturally their sights are set on the five-year election cycle. That is their future horizon. But climate change requires us to look beyond this – and look at the future through the lenses of many generations. An investment in a building where it would be washed into the sea in the next 5-10 years will probably not yield the economic returns that were calculated to justify its construction in the first place. We need disincentives in the form of taxes and regulation and business counselling to discourage such investments. We need incentives in the form of tax breaks and maybe even subsidies to encourage building tourist facilities in places that are safe from climate damage – and perhaps will enhance our efforts to adapt to climate change. Or we must ensure that facilities built in vulnerable shorelines are temporary and easily moveable.

We know that cyclones will increase in intensity and frequency. We will get more rain in the wet zone and less in the dry zone. In fact, we already know that the Northeast and East of our country will see more droughts and crop failures are likely to increase. So why do we allow buildings to be built, with glass facing the sun – ensuring that the building will need intense cooling with air conditioning – increasing both the cost of maintenance and the impact on our environment to produce that energy? We don't have to look far – drive along Galle Road and count the number of buildings facing the west – afternoon sun – covered with glass. These are artificial hot-houses totally inappropriate for our country – and buildings that drain energy. We need naturally cooler buildings and ones that will withstand the

increasing frequency and intensity of cyclonic winds. We need economic incentives for such adaptive buildings. We need architectural prizes for the most adaptive and environmentally friendly architectural designs. We need the right incentives and disincentives to change behaviour.

Fifth, we need our private sector to become proactive and influence our government to take climate change seriously and put adaptation on a war footing. We need businesses to do so, not only because it is right or good, but because it is in their best financial and economic interest to do so. Climate change impacts will destroy or damage some industrial establishments through floods, landslides, sea erosion and cyclones etc. Agro-businesses that are based on crops sensitive to weather changes will also suffer heavy damages through droughts, floods and changes to the behaviour of pests and vector borne diseases. While there will be winners and losers, given the high degree of general vulnerability of our island nation, the probability is that we will have more losers than winners. Even if a business or industrial establishment does not take a direct hit, there will be losses suffered because of disruptions to transport and communications from floods and more intense cyclones. In the arena of climate adaptation, civil society and the private sector have a common interest. Join hands and work together. That is why it is in the interest of the private sector to act now and push our government to do more with regard to climate change adaptation. If you don't, you will need to prepare for lower returns on your investments and significant economic losses.

Sixth, to mitigate and manage climate risks better, we need to beef up our insurance industry, especially those wishing to undertake climate insurance. This is particularly important for our agricultural sector. Crop insurance is not popular among farmers for several reasons. I will not go into them today – suffice it to say that insurers and research institutions, including the Institute of Policy Studies, have studied this issue and much of that research is available on the web. One key recommendation coming out of the research is to move away from indemnity-based insurance to index-based insurance. An IPS note describes the difference between the two – “Indemnity insurance is based on direct measurement of damage suffered by the farmer. In contrast, index-based insurance relies on an objective parameter (rainfall for instance) which is closely correlated with crop yield. When compared with indemnity-based insurance, index-based insurance is characterized with a higher level of trust, lack of adverse selection and moral hazard, ability to address covariate risks (such as droughts and floods), low costs and timely payouts.” The insurance industry is well aware of climate risks, have been studying it and mainstreaming it for some time and should be motivated and encouraged to enter this arena - big time.

Seventh, we need to mobilize financial support from all possible quarters. Many of the MDBs including the World Bank and the ADB have climate finance available. The UNFCCC has some small windows under the Clean Development Mechanism for funding which is available to the private sector. The GCF is another growing source of funding available to both the public and private sectors. But Sri Lanka is not doing enough to tap into these funds. We need dedicated staff who know these funding sources, befriends them and can help those who need the funding to develop proposals and shepherd them through the decision-making process. We are nowhere near achieving this goal. Sri Lanka does not even have an Accredited Entity at the national level with the GCF (direct access entity). I understand

that after over 1.5 years of preparation the DFCC has applied. We need to mobilize our local banks and financial institutions to take climate considerations into account in funding decisions. Otherwise, they may well be making poor investment decisions. We need them to develop programmes that provide funding for building our climate resilience – for needed applied research etc.

Eighth, the private sector must take unilateral action within the law to protect itself from climate impacts. Don't wait for the government, because when the impacts come it will be you who suffer the losses. Mitigate those losses now. The way to go about doing so is to undertake a climate risk assessment of your business. However big or small your business may be, commission a competent professional to do a climate risk assessment of your industry – your infrastructure – buildings – machinery, your labour force and your host environment. Have them assess your climate vulnerabilities and make recommendations how best to eliminate them or mitigate those risks, including taking out an appropriate insurance policy against those risks. If required, move your business out of vulnerable locations or establish a business plan to do so as quickly as you can. Share your information with competitors – because we are all in this game and while you may gain a short-term advantage over your competitor by hiding that information, you also stand to lose by not knowing your competitor's climate information. The more climate information you share – perhaps through your biodiversity platform – the more we can lift all boats – and compete better in the world market. Resolve not to gain short term advantages in the form of corrupt or fraudulent permits and regulatory favours obtained through regulatory capture. This will may benefit you in the short term – but you will lose big time in the future – because climate impacts are oblivious to your regulatory favor or gain.

Ninth, none of these nine actions will work unless we have a good – no great – actually fabulous weather and climate prediction and early warning system in place. We also need solid research from our Universities, IWMI, IPS and such other centres of excellence. To that end, we need to support them with funds to do that research. If there is one thing we need to do to ensure our survival in a climate dangerous world – it is knowing, as best as possible, what mother nature has in store for us. The Met department has remained a small department with around a 200 Million LKR annual expenditure. For a nation that is as vulnerable to climate change as we are, this is a wholly inadequate budget for a department that is critical for our survival. We need this department to be revamped, upgraded and adequately funded as a top priority matter. We need this department to have the latest and greatest climate instrumentation. We need this meteorological department to be using the latest technology in weather prediction, the best computer models, the best satellite and other international data and imagery and the best available technology for disseminating this information. Then we need this department to be connected with our farmers everywhere through mobile phones, radio and television. We need the department to be closely connected to climate dependent or vulnerable businesses and industry and to our urban centres. We need this department to map climate vulnerable areas – areas prone to landslides, areas prone to devastation from cyclones etc. We need it to work closely with the Coast Conservation department and the disaster management centers on a day to day basis to protect vulnerable areas, people and businesses and ensure that appropriate weather vulnerability information is being fed into policy, regulatory and enforcement decisions. Without this improvement, we are dead ducks!

Tenth, we need an interim, urgent and transitional plan – a plan to bridge the gap between where we are now to where we need to be. The transitional plan needs to establish an interim coordinating body under the President at the highest level – consisting of key regulatory and infrastructure related agencies and Ministries dealing with industry, tourism, lands, forests, coasts, marine affairs, local authorities, environment and wildlife. We need a transitional plan where agencies are instructed through appropriate legal instruments to start taking climate considerations into account in decision-making. The transitional plan needs to mobilize local authorities and provincial councils in vulnerable areas to be made aware of the oncoming dangers and to prepare for it within their mandates. We need this plan to mobilize funding for climate adaptation.

Ladies and Gentlemen, to end my presentation, let me leave you with two quotations. The first from Shakespeare's Henry V:

"All things are ready, if our mind be so."

None of these 10 actions can even be started, unless and until we have in our mind readied ourselves for them. Climate change will bring damage and losses to Sri Lanka. But it may well also bring some opportunities and positive outcomes. We need to mitigate and avoid the losses – but also be ready to jump at and make the best of the opportunities that present themselves. It is not enough to mitigate and avoid the damage and loss that climate change will bring. What is perhaps equally important for all Sri Lankans is to re-imagine the way we live and to use the opportunities that climate change will present to us. And so, I end with my second – more positive quote. It is from Sir Winston Churchill who said - "A pessimist sees the difficulty in every opportunity; an optimist sees the opportunity in every difficulty."

Thank you all.