

# ADRIIMP

*Association for Disaster Risk Management Professionals*



## IN THIS ISSUE

**Message from the President**

### Editorial

**Current economic crisis and risk of employment in the labour market of Sri Lanka**

**Sri Lanka's economic turmoil has cast a heavy shadow on renewed tourism hopes of Sri Lanka**

**The need for building resilience of critical infrastructure**

### ADRIIMP AGM 2022



This is an official publication of ADRIIMP  
The Association of Disaster Risk  
Management Professionals in  
Sri Lanka

Ministry of Disaster Management Building  
2nd Floor, Vidya Mawatha  
Colombo 07

For More Details:  
[www.adrimp.org.lk](http://www.adrimp.org.lk)

#### Editors:

Dr. Saranga Vithanage  
Dr. Lahiru Kodithuwakku

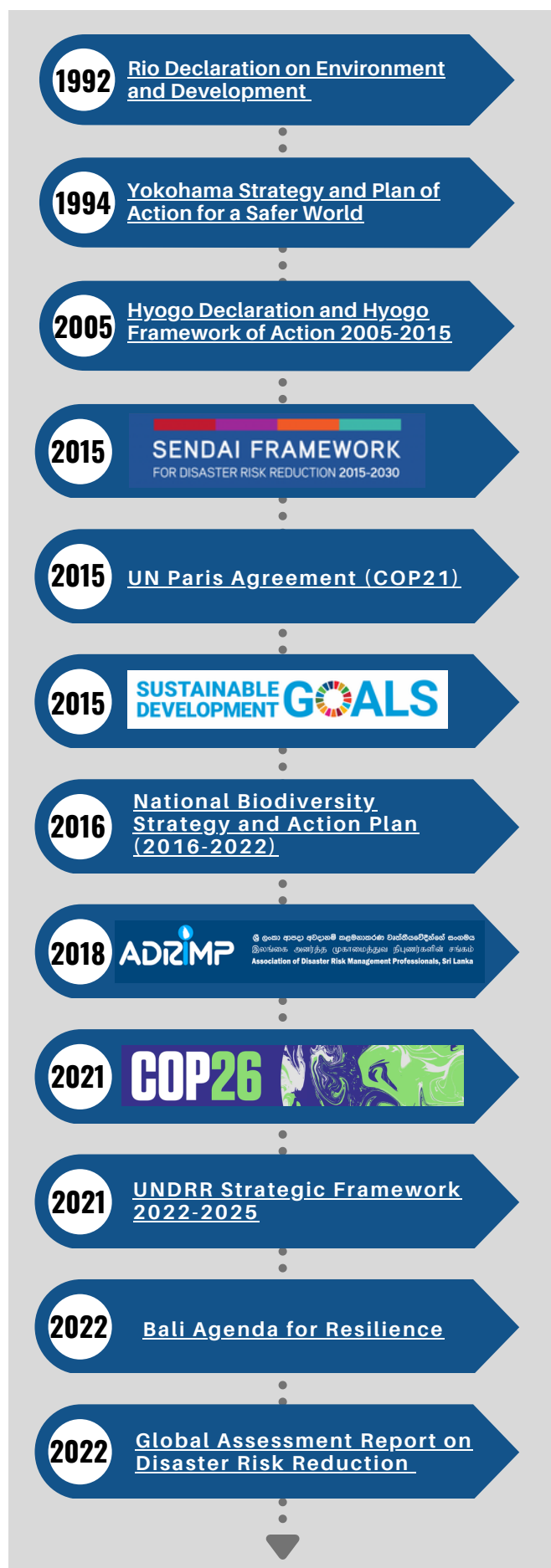
Editorial Support:  
Narmada Sittampalam

## Message from the President

Modern-day disaster management has evolved much in the recent past, especially technologically and logistically. This has also affected the way that different stakeholders participate in disaster management, locally and globally. In Sri Lanka, Disaster Risk Management picked up momentum after the Indian Ocean Tsunami of 2004, though some of the foundations were established several years before after the landslide and flood events in 2003 when National Disaster Management Centre and NBRO landslide division was formed.

The post-tsunami momentum along with the Hyogo Frame of Action on DRR led to the concept of "Safer Sri Lanka" where the Disaster Management Centre (DMC) followed by the Ministry of Disaster Management was formed along with supporting elements such as the National Council, Emergency Operations Centre (EOC), National Disaster Management Coordinating Committee (NDMCC), "DisInventor" disaster event database, DMC training and other units etc., to name a few. This evolution shaped and capacitated the national and sub-national level Disaster Management from preparedness, to response to build back better.

The setup also allowed Govt. Technical Agencies, Provincial and District Administrations, UN, Bilateral, IFRC/Red Cross, I/NGOs, Universities and others to rally around the Disaster Management Operations for a better coordinated approach to achieve the Disaster Risk Management Objectives of the country, which were recognized at the international level. These processes were given a new lease of life through the Sendai Framework.



Establishment of the Association of Disaster Risk Management Professionals (ADRIIMP) could be considered as another development in the sector. ADRIIMP professionals and others interested in Disaster Risk Management to join hands and generate synergy towards activities and programmes on DRR. As a new entity, the ADRIIMP is evolving and finding its niche in “Safer and Sustainable Sri Lanka” where not only the known disasters are to be managed but the slow onset disasters such as health, pollution and other new forms are also to be considered in the “changing climate.”

The ADRIIMP platform recently passed another milestone by selecting a young set of professionals to drive the ADRIIMP agenda and be innovative into the future. Backed by the seniors, the new group of Executive Committee Members are ready to reach out to the rest of the members, interested agencies, private sector, UN organizations and others and invite those who worked in the Sri Lanka Disaster Management sector and currently living abroad to join hands with ADRIIMP.

During the coming months, the EX-CO members and ADRIIMP expect to generate more ideas, resources and participation of membership. Some of the emerging ideas include, but are not limited to, capacity building of professionals and middle managers on the subject, reviewing and proposing potential areas to strengthen Disaster Management operations at national to community levels, developing events to promote the subject and engagement and medium-term training options leading to certifications.

As the re-elected President of ADRIIMP, I am taking great pride on the enthusiasm and energy associated with our young Ex-CO members and look forward for a productive two-year period where we could look back and be happy of the achievements. Please feel free to send us ideas and ways to collaborate. We hope the current economic downturn will be short-lived and we will be able to move around and help vulnerable populations and systems better. In that regard, as Indicated in the SENDAI Framework of Action, the ADRIIMP should take an active role to build back better the economy and resilience of the country.

## Editorial

*"Economic crisis is a situation in which the economy of a region/country experiences a sudden downturn brought on by a financial crisis... An economy faced with an economic crisis will most likely experience a falling GDP, a drying up of liquidity and rising/falling prices due to inflation/deflation"*

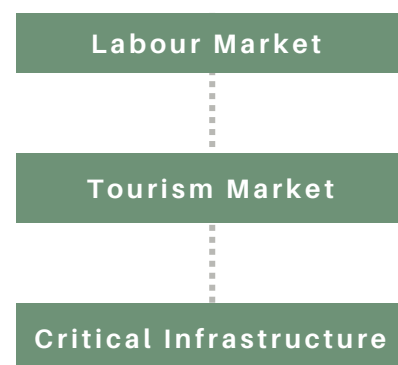
**Business Dictionary**

Economic crises will trigger disasters and conversely high disaster risks become more and more accountable for long-term socio-economic turmoil

Sri Lanka, once a proud resilient nation is going through its worst crisis in living memory with a systematic failure of all essential sectors including but not limited to agriculture, energy and power generation, health, education, tourism, and social security. The crippling and cascading effects are felt across every tier of the community with skyrocketing inflation, frequent price hikes of essential commodities, lack of essential medications and routine power interruptions. Critical infrastructures and systems are thought to be the worst hit with devastating consequences which have also reflected on the entire population of the country.

It is worthy to understand the underlying risk factors and socio political and economic determinants of the current unfavorable situation which led to this crisis. Political and economic stability are considered as the foundation of a stable and resilient system which has the ability to anticipate, accommodate, absorb, and adapt to shocks and stressors.

In this month's feature articles we tried to look at some of these key sectorial aspects of the current crisis with special emphasis on the



Our eminent writers have critically analyzed the underlying risk factors and explored the possibilities of a future revival of these important sectors. We hope this rich collection of ideas would provide guidance for policy directives, strategic directions, evidence-based actions, and contingency planning towards averting and mitigating a possible humanitarian crisis in the near future.





# Current Economic Crisis and Risk of Employment in the Labour Market of Sri Lanka

## Background

Sri Lanka is facing the most serious economic downturn ever faced so far with a huge contraction of all its economic sectors. Low official reserves, crisis in external debt payments, accelerated inflation, overshooting exchange rates, low fiscal status, power crisis and social and political unrest are caused in the economy as a result of these crises (CBSL, 2021). This has been caused by both short-term as well as long-term policy failures in macroeconomic management such as drastic reduction of taxes, re-introduction of long term tax structures, discontinuity of the price formula for petroleum, ceasing external commercial financing leading to reduced accessibility to foreign capital markets, maintaining currency peg with the fixing of the exchange rate at Rs. 203 per USD, black market and informal foreign exchange transactions, unusable budget deficit and several other issues (Weerasinghe, 2022). The economic growth rate of Sri Lanka has gradually fallen from 3.6 percent to - 3.6 from 2017 to 2020 as a result of the Covid 19 pandemic and it remains at 3.7 percent in 2021. Sri Lanka is experiencing rapid inflation with the inflation rate doubling per three months and showing 8.3 percent in October 2021, 16.8 percent in January 2022 and 33.8 percent in April 2022, thus leading to a rapid reduction of real wages of all employees. Current inflation in Sri Lanka is 45.3 percent with food inflation hiking up to 58 percent and nonfood inflation increasing up to 34.2 percent in May 2022 (CBSL, 2022). All three production sectors in Sri Lanka have been hit by the economic crisis, leading to a sudden contraction in the economy due to the reduction of both aggregate supplies and demand.

The demand for labour derived by the aggregate demand is decreasing. This further caused an increase in unemployment rates in Sri Lanka from 4.8 to 5.1 from 2019 to 2021 (CBSL, 2021). Sri Lanka has a very poor social security system for employed persons and better coverage was provided only to the public sector workers. The proportion of informal employment was encountered as 67 percent in Sri Lanka (DCS, 2020) with 21.1 percent of informal employment being from the formal sectors and they are at a higher risk of losing their employment due to the economic crisis since they are the first layer to lose employment.

Manpower supplying agencies working with such informal labour are exploiting labour due to lack of social securities and lack of protection from labour laws in issues like Covid 19 (Wimalaweera, 2020). During the Covid 19 pandemic, the 52.15 percent industrial establishments which were closed completely were mainly among the industries with 1 to 15 employees, while only 2.66 percent of the large scale industrial establishments were fully closed (Wimalaweera, 2020). Lack of sufficient protection through social securities to small scale industries and their employees has emerged as an issue during both the Covid 19 pandemic and the prevailing economic crisis. Reduction of employment opportunities due to crises in different production sectors, job sectors and occupations vary according to their unique characteristics and their importance to the overall economic development.



## Sectorial Analysis on Employment Risk in Sri Lanka

The employment sectors facing the highest risks with negative employment growth and the economic uncertainty due to the Covid 19 pandemic and the ongoing crisis are the administrative and support activities, other service activities (including real estate, arts, entertainment and recreation, activities of extra territorial organization and bodies), mining and quarrying, manufacturing, transportation and storage, professional scientific and technical activities, wholesale and retail trade, repair of motor vehicles and motor cycles, construction, electricity, gas, steam and air-conditioning supply, water supply, sewerage, waste management and remedial facilities, accommodation, food services and activities as given in Figure 1 (QLFS, 2021).

The aggregate negative impact of each sector on the overall economy is affected by the negative growth rate of the sector plus the proportion of employees in the respective sector.

Even though administrative and support activities show a higher negative influence on the labour force, the proportion of employed in the sector is relatively lower by about 6.2 percent. Employment administrative and support activities might reduce as a result of the lockdown, social distancing and the expansion of information and communication technology facilities. Teleworking was popular for this specific sector and the number of required workers for the smooth conduct of the service has decreased. Even through the other categories of employment have a higher rate of reduction in employment, the proportion of employed in such sectors are less than 1 percent from the total employed thus leading to reduction of the overall impact. Mining and quarrying also show a negative growth in employment, but the contribution to the total employment sector is 0.7 percent, this leading to a lower aggregate loss.

The negative employment growth in the manufacturing sector is 15 percent and it represents 16.3 percent of the total employment. Therefore, the negative impact created a higher aggregate influence on the overall economy (QLFS, 2021). Gross national income from the industrial sector at constant prices is decreasing. The major manufacturing sector with the highest foreign exchange earnings are textiles, apparel and leather related products and that is the second largest sector with the highest gross national income. The income from this sector has been decreasing from 2019 to 2021 and will decrease further as a result of the ongoing power, dollar and fuel crises and also import restrictions (CBSL, 2021). Investors are discouraged from investing in the sector and the lowering demand for the products lead to a further lowering of the aggregate supply. Gross national income from the manufacture of Coke and refined petroleum products and furniture have reduced (CBSL, 2021), thus showing that the contraction of aggregate demand for the products lead to a reduction in the derived demand for the labour of the respective sectors. Transport and import barriers worsen this situation.

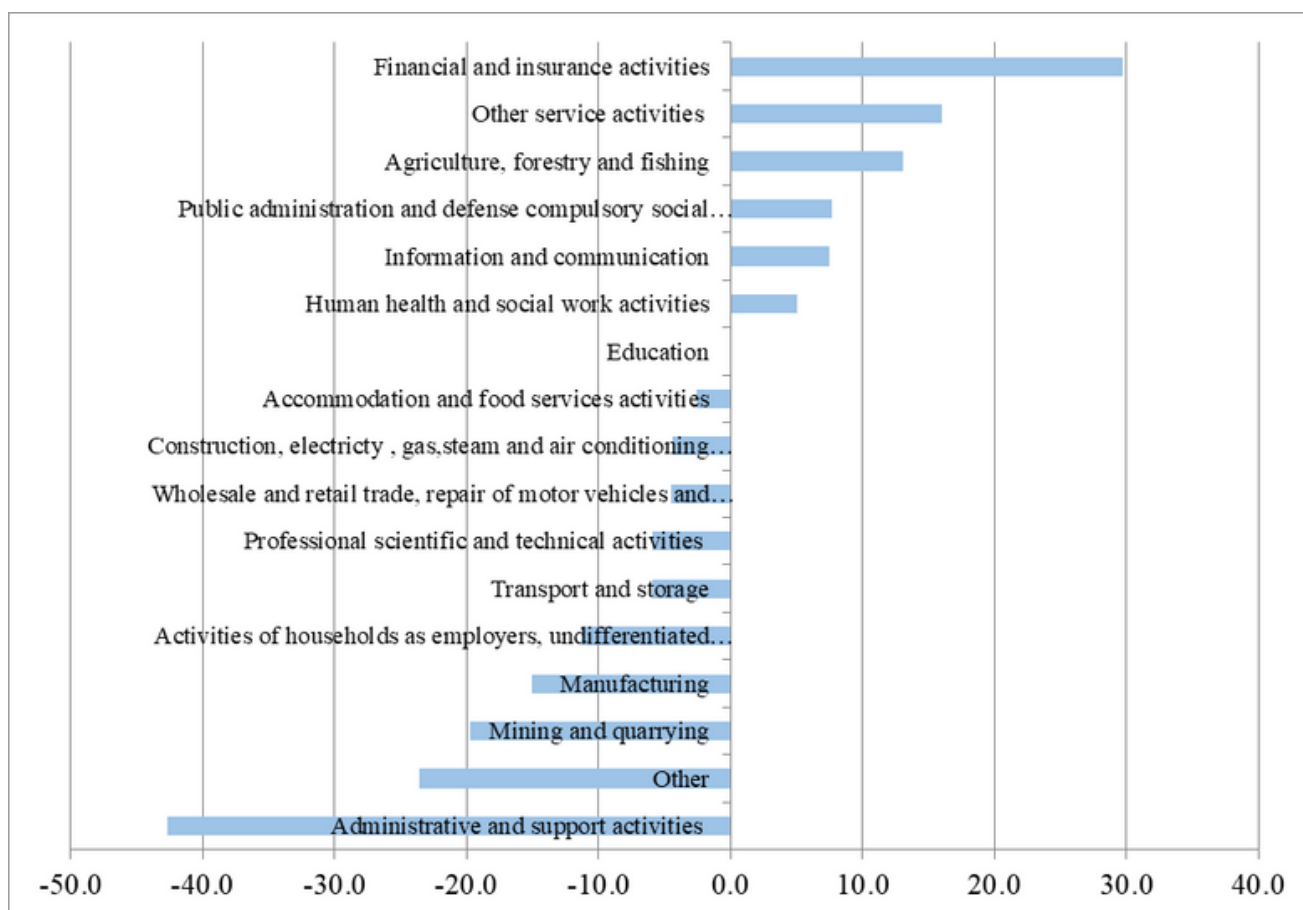


Figure 1: Growth of Employed persons - Quarter 2, 2019 - Quarter 2, 2021 (%)

Note: These Industry groups are based on ISIC - Rev. 4

Source: DCS, 2021, created using the data of Quarterly Labour Force Survey Report (Page 10)

Transportation and storage is the next important sector with the highest influence on employment affected by both the Covid 19 pandemic and the economic crisis (DCS, 2021). Those employed both in the public and private transport sectors are at risk of losing their employment due to the economic crisis, mainly due to fuel shortages. The import cost of crude oil has reduced from US\$ 971 million to US\$ 625 million from 2019 to 2021. Currently, Sri Lanka is facing a serious issue with the severe scarcity of fuel for essential transportation activities due to the lack of foreign exchange and thus leading to the loss of thousands of man days in the fuel queues. This further deepens the inflationary pressure on all sectors and the headline inflation in the transport sector showing 79.7 percent in May 2022 (CBSL, 2022), with the registration of new motor vehicles showing a decrease from 367,303 to 33,850 - a 90 percent reduction of new registration of motor vehicles. Two types of vehicles, passenger buses and three-wheelers which have caused a major influence on employment, have shown a decrease in registration by 82.6 percent and 86.5 percent respectively from 2019 to 2021. The Sri Lanka Transport Board has recorded operating losses in both 2020 and 2021, showing the reduction of its employment potentials (CBSL, 2021).



Employment in professional, scientific and technical activities also reduced during 2019-2021 and the cause may be the lockdown during the Covid 19 pandemic. Employment opportunities in sector of wholesale and retail trade, repair of motor vehicles and motor cycles too have recorded a decrease during the period 2019-2021 (DCS, 2021). Lockdowns directly impacted on this, while online trade gained popularity during this period. Employment in the motor vehicles and motor cycle repair sector has reduced due to transport restrictions and also due to the reduction of new registration of these vehicles, with 97 percent reduction in the new registration of motor cycles and 90.9 percent reduction in the new registration of motor cars (CBSL, 2021). Contraction of the respective sector reduced the opportunities for employment in the respective sector during the Covid 19 pandemic and now due to the economic crisis.

Employment in the construction, electricity, gas, steam and air-conditioning supply, water supply, sewerage, waste management and remediation facilities are the next important sectors negatively affected by the crisis (DCS, 2021). Gross national income generated by the construction sector has reduced from 683,371 million to 604,410 million Sri Lankan rupees from 2019 to 2021, thus showing the reduction in capacity of the respective sector. Prices of construction materials increases rapidly due to high inflation, import restrictions and issues encountered during opening of letters of credit due to the foreign exchange crisis. For instance, the price of cement increased by 155.9 percent from December 2020 to April 2022. The prices of Tor steel, structural steel, roofing sheets etc. have doubled or even trebled in the sector, thus leading to unbearable cost escalations (Wijetane, 2022). Delays in payments for completed construction activities also discouraged workers and contractor from engaging in the construction sector. Fuel and transport related issues have worsened the situation. The electricity generation sector is also facing burning issues with the scarcity of fuel power generation. Hydro power, fuel and coal are the three key sources of power generation in Sri Lanka and the second and third sources are badly affected by the foreign exchange crisis. Inflation in the sectors of housing, water, electricity, gas and other fuels has been recorded as 17.1 percent in May 2022 (CBSL, 2022).

The accommodation and food services, including the tourism sector and related activities are also severely affected by the economic crisis. This is the third largest foreign exchange earner of Sri Lanka encountering 14 percent of foreign currency earnings between 2014 and 2019. However, there was setback due to the Easter Sunday terrorist attacks on 19th April 2019 and that drawback continued in 2020-2021 along with the Covid 19 pandemic. The current economic and political instability and fuel crisis affecting travel make this negative implication more severe and employment among the respective sectors will be affected badly. With the increasing headline inflation in the expenditure on food and alcoholic beverages (58 percent in May 2022), alcoholic beverages, tobacco (28.4 percent in May 2022) and restaurant and hotels (61.3 percent) (CBSL, 2022), the demand in these sectors have been shrinking continuously leading to reduce derived demand for employment in the specific sectors.

Employment in the sectors of financial and insurance activities, agriculture, forestry and fishing, information technology and communication, public administration and defense, compulsory social security and human health and social work activities grew during the period 2019-2021. Although the agricultural sector showed a growth between 2019 and 2021, it was seriously affected by the organic fertilizer policy implemented by the government suddenly leading to a reduction in the productivity of the sector. The sector affected by high informality and higher rate of underemployment and hidden unemployment led to the lower overall productivity in the sector. The sector was further affected by the ongoing fuel crisis with transportation issues of products to the economic centers in the country. Since food safety and security is one of the main goals of today's development agenda, this sector has been promoted with the support of the government to fulfill the self-sufficiency goals. Foreign employment opportunities were also promoted continuously by the government as a solution to the lack of employment opportunities in Sri Lanka and also to earn foreign currency.

### Summary, Conclusion and Policy Insights

The Sri Lankan labour market faced significant negative consequences with the Easter Sunday attacks and the Covid 19 pandemic even before the most severe placement in the ongoing economic and political crises. Unsustainable debt management, issues in fiscal consolidation and prioritization show the issues in macroeconomic policy management in the country. Employment in different sectors was severely affected by the crisis in all three production sectors. Therefore, the macro-economic framework in Sri Lanka should be revisited to handle the required labour market reforms aimed at addressing unemployment, underemployment, informality and the reduction of real wages due to inflationary pressures in the economy. Issues in each sector with negative employment growth should be analyzed and addressed by introducing cohesive national employment policies based on sectorial needs and issues.

### References

Central Bank of Sri Lanka (2021), Annual Report, Central Bank of Sri Lanka

Central Bank of Sri Lanka (2021), Press Release: NCPI based headline inflation accelerated further on year-on-year basis in May 2022, Central Bank of Sri Lanka

DCS (2020), Sri Lanka Labour Force Survey Annual Report - 2020, Department of Census and Statistics, Sri Lanka

DCS (2021), QLFS - Sri Lanka Labour Force Survey - Quarterly Report - 2nd Quarter (2021), Department of Census and Statistics, Sri Lanka

Weerasinghe, N, (2022), Webinar 1: Evolution of Economic Crisis: How will it unfold in the immediate future, organized by Sri Lanka Economic Association (SLEA), Sri Lanka Forum of University Economists (SLFUE) and Sri Lanka Agricultural Economics Association (SAEA) - on 26th March 2022

Dr. G.R.S.R.C.  
Samaraweera  
Senior Lecturer

Department of Economics  
and Statistics  
Sabaragamuwa University  
of Sri Lanka

[sumadirangika@gmail.com](mailto:sumadirangika@gmail.com)





# Sri Lanka's Economic Turmoil has Cast a Heavy Shadow on Renewed Tourism Hopes of Sri Lanka

## Background

It was a welcome shift, as tourism is the country's third-largest source of foreign exchange, after worker remittances and the garment industry. It is also huge employment and a significant source of dollars that aid the government's operations. Following the Easter Sunday explosions in April 2019, the number of tourists dropped by 18% three years ago. In 2020, there was a very bad coronavirus pandemic. Arrivals plummeted, with little indications of recovery until November 2021, when the government waived all quarantine rules for properly vaccinated tourists, encouraging tourists to visit the island state. While COVID-19 appears to be behind Sri Lanka in terms of events, the country's deteriorating economic situation has placed a pall over tourism. As per the BBC news May 2022, declared that the government of Sri Lanka has defaulted after failing to pay \$78 million (£63 million) in debt interest payments according to two of the world's largest credit rating agencies. To make matters worse, Sri Lanka has been without foreign money for months, preventing it from purchasing anything it requires from abroad. Food and fuel shortages have pushed up prices. The current rate of inflation is around 30%. There have been power outages, and the health system is on the edge of collapsing due to a scarcity of medicines.

## Tourism Industry in Sri Lanka and the Current Economic Crisis

As per the data from the Department of Census and Statistics Sri Lanka's national inflation rate for March 2022, as measured by the National Consumer Price Index (NCPI), increased to 21.5 per cent from 17.5 per cent in February 2022. As Sri Lanka's worst economic crisis since independence unfolds, dreams in Galle that the country could once again become the thriving tourist destination it was when COVID-19 prohibited worldwide travel in 2020 have been crushed. However, as Sri Lanka grapples with the greatest financial crisis in its history, there are daily power outages, people are forced to queue for miles to get fuel and cooking gas, and the government has tightened import restrictions, increasing shortages.

All of this is driving tourists away once again, at a time when the government is scrambling to repay an enormous amount of foreign debt and desperately needs tourist revenue.

Due to import limitations and increased costs of local food goods, some restaurants have had to close for days due to the gas scarcity; others have had to delete or reduce their menu selections. Tourists find it difficult to understand the power outages. They understand our suffering, but no one wants to come on vacation and wait in the dark and heat. Changes in consumer habits and travel needs should inform tourism marketing initiatives and strategies. Personal financial well-being and disposable income, pricing variations, perceived health risks, and reduced spending capacity raised due to the economic crisis are all factors that influence behaviour (Lee & Chen, 2011).

## Impact of the Economic crisis on Small and Medium-Sized Tourism Enterprises (SMEs)

Small and Medium-Sized Enterprises (SMEs) are the lifeblood of any economy, providing job opportunities, stable and growing wages, pushing local production of high-quality goods and services and stimulating innovation. They need fewer resources to invest in environmental enhancements and management systems that could help them become more sustainable in their operations even in a tragic situation. In a crisis, involving the entire range of SMEs in the development of long-term solutions would be possible only if the regulatory bodies, as well as the citizens, will realize the opportunity even with the dark cloud of economic crisis, very consciously. Sri Lanka is experiencing its worst financial crisis in decades, with foreign exchange reserves depleted, and the Small and Medium-Sized Tourism Enterprises in the country are also suffering as a result. Tourists are leaving hotels as the hotels struggle to provide even the most basic amenities. Power outages and shortages of necessities have harmed recovery aspirations, particularly in the tourism sector which is vital to the Sri Lankan economy.



Central Bank data evidenced that 80% of reservations were cancelled from March to April 2022. Even though Sri Lanka has become a popular tourist destination due to its beautiful beaches and diverse culture, public protests are putting a pall over the image of the country as a safe place to visit.

### **Possible Resilience Strategies to Boom the Tourism Industry**

Authorities in charge of tourism should evaluate the impact of the current economic crisis on the local and global tourist industry. Until September, it's impossible to determine how the economic crisis will evolve or how travel restrictions and severe job losses will affect tourist demand. As a result, the industry must prepare resilience options to deal with this scenario. The industry and government associations should enact favourable policies to protect the industry. The repercussions of these regulations are critical for the tourism industry's future. The following are some of the recommendations and policy decisions.

Importantly, the media has the right not to transmit and disseminate the negative picture of Sri Lanka and the issues there to tourists, because tourists will never feel threatened while on vacation. As a result, the media and communication channels, as well as our use of social media, must be strategic to avoid spreading our terrible news to the rest of the globe. We must be diligent in keeping information with us that may harm us.

Before re-starting the industry, a thorough examination of the current economy and forecasting future economic conditions is critical. As a result of the post-Covid 19 ramifications, there will be more online transactions, online reservations, and virtual promotions in the future than there were previously. It is also projected that, following the economic crisis, the situation in Sri Lanka will return to normal, with citizens being more attentive than before to save everything while being more conscious. As a result, government leaders and industry representatives should take the required steps to improve such systems.

Companies in the tourism industry must recognize the issues that come up as a result of the economic collapse and establish a contingency plan to increase resilience and better adapt to future economic and other crises, such as health difficulties and natural and man-made disasters. The lessons acquired from this event are critical in getting the company back on track. Tourism businesses must identify and respond rapidly to financial and operational threats. They must respond quickly to changing circumstances and reduce financial hardship. A global promotion campaign should be launched to promote the market ensuring a safe and comfortable stay in Sri Lanka. It is important to consider the risk and resilience strategies and take actions to build the image of the country which was tarnished last few months due to internal riots and protests happened in the country.



SMEs can frequently be more flexible and responsive to consumer needs than large integrated corporations since they are organized in local production systems. SMEs may thrive even in a crisis because they can operate with fewer resources. However, if citizens can think strategically now is the opportunity to grow our economy and bring greater wealth to our country. People are concerned about saving because of inflation. It's time to revert to our previous ways of self-sufficiency. Sri Lanka today requires economic and political stability for its shops to function properly and for tourists to return to its coasts. Fostering public-private collaborations as well as small-firm networks and clusters could be the quickest way to a thriving SME sector. SME access to financing, information infrastructure and worldwide markets must all be improved by governments. A priority is to create regulatory, legal, and financial frameworks that encourage entrepreneurship and small business start-up and growth. Worrying and arguing about the state of the economy and political deceptions are futile in the face of a massive crisis. That type of thinking will obliterate our strategic thinking and provide no advantage. As a result, let us stop whining and start thinking about ways to revitalize the economy and sustain the country so that we can safeguard our motherland and become known around the world as a self-sustaining nation.

### Conclusion

Even though Sri Lanka's economic instability has placed a pall over the country's revived tourism hopes, we must consider the opportunities for growth in the tourism industry. True, we are all struggling and stressed to meet even everyday expenses as individuals and as a nation; yet, we must resume with the hope of being a prosperous nation as we were in our proud history. As a result, the industry must prepare resilience plans to deal with this scenario. The government and industry associations should enact favourable policies to protect the industry. The consequences of these regulations are critical for the future of the tourism industry.



**Ms. Wasana Nadeeshani Sellaheewa**  
Project Assistant

Faculty of Applied Sciences,  
Uwa Wellassa University of Sri  
Lanka



**Prof. Rangana Shalika**  
Senior Lecturer

Department of Tourism Management,  
Faculty of Management Studies  
Sabaragamuwa University of Sri Lanka  
[rangana@mgt.sab.ac.lk](mailto:rangana@mgt.sab.ac.lk)



### References

- Lee, C.C., & Chen, C. J. (2011). The Reaction of Elderly Asian Tourists to Avian Influenza and SARS. *Tourism Management*, 32(6), 1421-1422. <https://doi.org/10.1016/j.tourman.2010.12.009>
- Perera, A. (2022). Sri Lanka: Why is the country in an economic crisis- BBC News, Retrieved on 20.05.2022 from <https://www.bbc.com/news/world-61028138>

# The Need for Building the Resilience of Critical Infrastructure as Emergent from the Current Socio-Economic Crisis in Sri Lanka: The Perspective of Critical Infrastructure Dependencies and Interdependencies

Modern society is becoming more and more dependent on the proper functioning and extensive use of its infrastructure network. Assets or services that have a compelling impact on societal functions, where disruptions to such assets or services could severely impact the nation's security, economic sustainability, quality of life, and public health and safety, are considered critical infrastructure (Alcaraz and Zeadally, 2015). Infrastructure can be categorised according to civil, civic, social, environmental, financial, and education. Many western countries have identified critical infrastructure sectors, considering their importance to the functioning of the country. Sri Lanka has yet to properly recognise the critical infrastructure sectors applicable to its context. However, the study conducted by Randeniya, Palliyaguru, and Amaratunga (2022) revealed emergency services, water, energy, finance, transportation, and telecommunication as the critical infrastructure sectors for Sri Lanka.

Critical infrastructure sectors often demonstrate dependent and interdependent relationships with one another. According to Rinaldi Peerenboom and Kelly (2001), a dependency is a "linkage or connection between two infrastructures, by which the state of one infrastructure influences or is reliant upon the state of the other", while an interdependency is a "bidirectional relationship between two infrastructures in which the state of each infrastructure influences or is reliant upon the state of the other." Further, according to the authors, dependencies can be categorised into upstream, internal, and downstream dependencies and can be classed into physical, cyber, geographic, and logical, while interdependencies too can be categorised into physical, cyber, geographic, and logical interdependencies, as depicted in Figure 1 below:

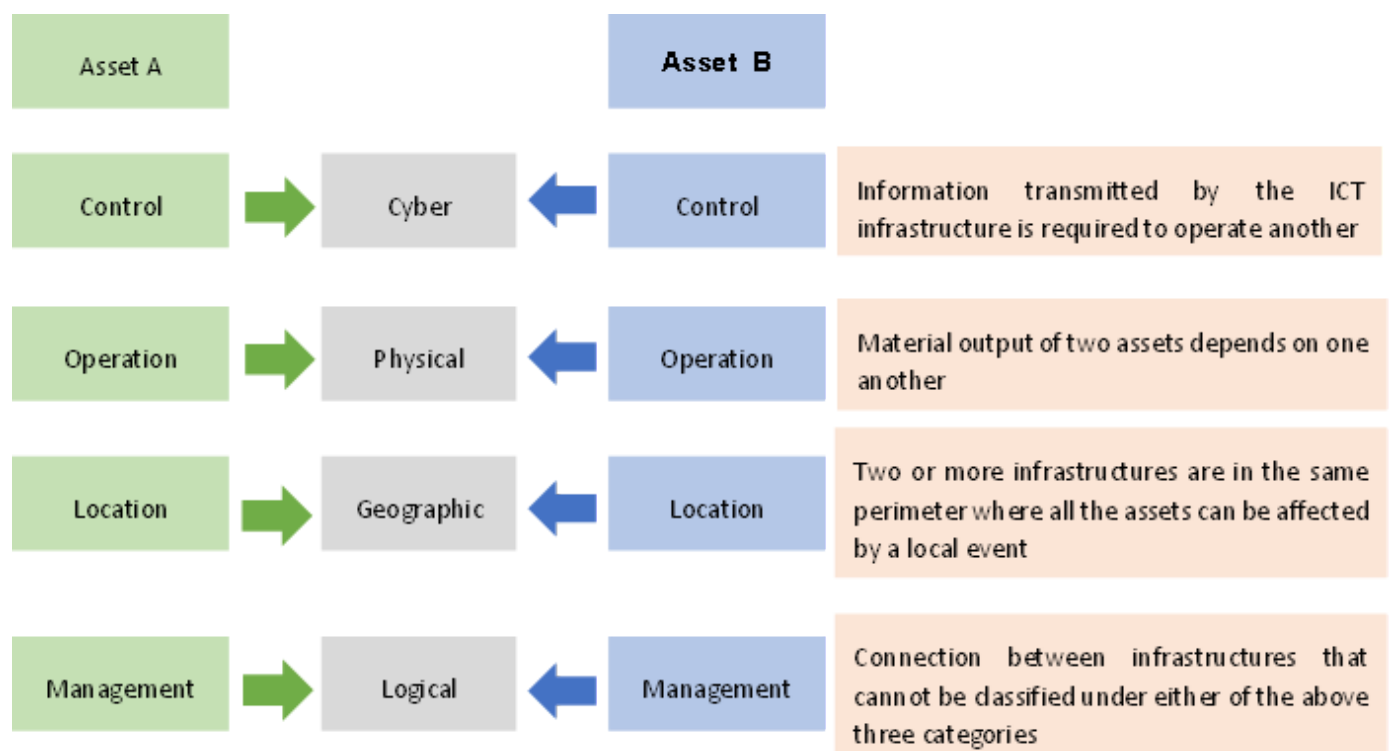


Figure 1: Infrastructure Interdependencies



The SENDAI framework, published by the United Nations Office for Disaster Risk Reduction (UNDRR), stresses the importance of awareness of critical infrastructure sectors and acknowledging and understanding the interdependencies between critical infrastructure sectors. Failures at a single point may provoke hidden links between interdependent systems and may result in significant economic and physical damage on various scales, even up to a national or international level (Portante et al., 2017). The SENDAI framework highlighted the quality of governance and management, along with high standards, transparent decision making, and accountability, as the pillars of efficient and resilient infrastructure systems. As far as the current socio-economic and political instability in Sri Lanka is concerned, which is more of a human-induced nature, it is clearly visible that irrational decision-making and bad governance have led the country to a dire economic crisis, causing severe impacts on almost all the infrastructure sectors, with cascading effects across them.

#### **The Situation in Sri Lanka at a Glance**

Presently, in Sri Lanka, the financial sector is under enormous stress as foreign reserves have dried out, causing import restrictions to an extent never anticipated. Therefore, there are many shortages within the country in terms of fuel, gas, essential items, etc. Moreover, the inflation level of the country has been skyrocketing day by day since early 2021. Therefore, all these occurrences have adversely affected the livelihood of the general public to the extent of public unrest. The government has deployed its police and military forces to manage the tense situations arising due to fuel and gas shortages and ordered the security forces to suppress the social unrest.

#### **The Power Crisis and its Cascading Effect on Other Sectors**

Among the many sectors affected by the crisis, the most notable sectors are the power and transportation sectors. The fuel shortages arisen due to the lack of foreign reserves for the importation of fuel and the low hydropower output during the first quarter of 2022 have caused the Ceylon Electricity Board to impose scheduled power cuts, sometimes up to 12-hours per day.

Due to the interdependent nature of the critical infrastructure, many sectors such as telecommunication, water supply and banking are facing major issues with the scheduled power cuts. Currently, with the effects of COVID-19, distance learning and working from home are majorly practiced within Sri Lanka. However, with the lengthy power cuts, telecommunication and internet providers are facing tremendous difficulties in providing uninterrupted services. An insider from the telecommunication sector revealed they could not withstand lengthy power cuts as most battery backups have capacities of around 6 to 8 hours. Moreover, the telecommunication providers have failed to obtain fuel to run their in-house generators due to the fuel crisis. Therefore, with the power cuts, many consumers are experiencing unstable internet connections, disrupting their activities. The IT industry, considered the fifth largest export earner for Sri Lanka, is facing critical issues in fulfilling its deliverables and maintaining the output quality due to the unavailability of a steady power supply and smooth internet.

According to the former minister of water supply, the supply of water to the Colombo area will be disrupted in the event of a power outage near the Ambatalale Water Treatment Plant. Further, according to the minister, an uninterrupted power supply is required for the operation of water pumps in the Ambatalale Water treatment Plant, unlike in the water treatment plants located in other areas of the country, which are equipped with generators. However, it is noted that, with the ongoing fuel crisis, the regional sub-stations are unable to procure their fuel requirements to run their emergency generators. Thus, constant water supply disruptions were recorded in many parts of the country.

#### **The Impact of the Agriculture Sector on National Food Security**

On May 6, 2021, Sri Lanka's Minister of Finance, in accordance with Section 20 read together with Sub-Section 4(1) and Section 14 of the Imports and Exports (Control) Act; announced that the Sri Lankan government would restrict and ban the import of fertilisers and agrochemicals (including insecticides and herbicides). The government insisted on banning chemical fertilisers and shifting towards organic farming overnight. These sudden and short-sighted policy decisions made by the government have adversely affected the country's production.

It is predicted that there will be food shortages during the upcoming period due to the low yield along with the unavailability of foreign exchange to purchase required fertilisers or to import essentials. Moreover, with the agriculture sector being one of the key contributors to the GDP of Sri Lanka, its downturn will worsen the current economic situation of the country.

### **The Sri Lanka Healthcare Sector is now in a Perilous Situation**

The healthcare sector is another sector that has been hard hit by the economic crisis in Sri Lanka. The low foreign currency reserves have limited the imports of medical and pharmaceutical supplies. According to the reports, Sri Lanka imports more than 80 per cent of its medical supplies. Currently, around 200 medical items are in short supply, including essentials, and life-saving drugs ranging from antibiotics for heart diseases, vaccines for rabies and chemotherapy drugs for cancer, and the list goes on.



In addition, there are reports from numerous parts of the country regarding disruptions to the proper functioning of hospitals due to lengthy power cuts. According to the reports, the Peradeniya Hospital had to temporarily suspend its routine surgeries and the National Hospital of Sri Lanka had to stop routine diagnostic tests to cope with 12-13 hour power cuts. Worsening the situation, the utilities within the hospital premises, such as telecommunication and water supply, get disrupted due to the impact of the power cuts. The Sri Lankan healthcare industry long suffered from the COVID-19 pandemic, and now with the economic crisis and South Asia's best healthcare sector, it has not been able to return to normalcy ever since.

### **The Impact on the Transportation Sector and its Infrastructure Development**

The transportation sector, which consists of roads, railways, airports, and harbours, is in serious jeopardy, and experiencing tremendous difficulties due to the fuel shortage. The public has been experiencing major troubles with the fuel crisis to the extent that the minister in charge of the Ministry of Transport and Highways has decided to restructure the public transport system by giving due attention to the impact of the acute fuel crisis that Sri Lanka is currently facing and to minimise the impact on the livelihoods of people. In addition, to cope with the increasing prices and inflation, public transportation fares have risen more than thrice before. Moreover, the Airport and Aviation Services (Sri Lanka) (Private) Limited have declared that they do not possess fuel for emergency requirements, and the Sri Lanka Airlines have started refueling their aircraft from Chennai, Dubai, and Singapore airports. The disruption to the transportation sector and its infrastructure affects each and every industry and sector in Sri Lanka in a direct or indirect manner.

The tourism sector is considered Sri Lanka's third largest contributor of foreign currency inflow (Central Bank, 2021). However, with the effect of COVID-19, the tourism sector experienced a major blowout, which has been a critical factor in the ongoing economic crisis. However, the ongoing fuel shortages for transportation, disruptions of utilities like power and water supply, and scarcity of essential items, together with the political stability within the country, act as barriers for a revamp in tourism, making the current situation much direr.

The construction industry is on the verge of collapse due to the rippling effects of the economic crisis, forcing the government to suspend infrastructure projects worth billions of dollars while the Secretary to the Ministry of Finance has indicated that the government will be compelled to suspend capital works for at least one year. Furthermore, according to the Ministry of Finance, the unpaid claims of road contractors and contractors of other development projects carried forward stood at over Rs.35.2 billion since 2019, and the final amount of dues up to this year is yet to be finalised.

According to the reports from the Chamber of Construction Industry of Sri Lanka (CCI), nearly 70% of materials for building construction projects and 60% of materials for road projects are imported. Therefore, with the inflation and instability of the exchange rate, it is predicted that the construction costs will increase by at least 60%, obstructing their feasibility. In addition, with the spike in fuel prices, the overall construction costs would further rise by at least 5%. Thus, it has closed the doors to new investment opportunities. The suspension of these infrastructure projects will certainly cause grave difficulties in the future because infrastructure is the lifeblood of a nation.

### Recommendations and the Way Forward

It is evident that all the critical infrastructure sectors are battling with the consequences of the economic crisis being experienced in Sri Lanka. Thus, policymakers should identify the critical infrastructure sectors within the country and how dependencies and interdependencies between these sectors, whether direct or indirect, would affect the stability of the country. Public transportation should be given priority to reduce the inconveniences caused to the general public. One of the most critical sectors influencing every other sector is the power sector.

According to the Minister of Power and Energy, the government's plans to shift toward generating 70% of the total power through renewable energy by 2030 have been disrupted due to various disagreements from numerous parties. Furthermore, the minister stressed that considering the prices in May of 2022, power generation using diesel and coal would cost Rs. 756 billion a year, and the income generated through the power generation would be Rs. 250 billion a year, making a loss of Rs. 506 billion. Further, according to the minister, power generated through coal and diesel would cost more than Rs. 60 per unit, while the cost per unit through mini-hydropower plants and renewable energy is Rs. 4.97 and Rs. 16.90, respectively.

Thus, we cannot keep relying on coal, thermal, and diesel power generation any longer, and we must transition toward renewable energy generation. It should be stressed that government policymakers are the ones who make all the critical decisions regarding these lifeline critical infrastructure sectors, but ultimately it is the general public that faces the consequences of mismanaged and short-sighted decisions, which in the first place put Sri Lanka into this dire socio, economic and political crisis. With lessons learned from this crucial situation, now it is time for Sri Lanka to adhere to the SENDAI framework to strengthen its critical infrastructure sectors by implementing proper resilience strategies. Necessary amendments should be made to national regulatory frameworks and policies. The following Figure 2 represents the recommendations made by the SENDAI framework to enhance the resilience of critical infrastructure.



Figure 2: The Recommendations by the SENDAI Framework  
Source: Adopted from SENDAI Framework (UNDRR, 2020)



Moreover, we are in an urgent need to learn lessons from developed countries that have identified the cruciality of critical infrastructure sectors, and their dependencies and interdependencies, and must progress for capacity building. The hidden complex links between infrastructure sectors which cause direct and indirect impacts on other sectors should be identified, and proper consideration must be given to the building of resilience of critical infrastructure that are subject to various vulnerabilities due to dependencies and interdependencies of these infrastructure sectors.

### References

Alcaraz, C. & Zeadally, S., 2015. Critical infrastructure protection: Requirements and challenges for the 21st century. *International Journal of Critical Infrastructure Protection*, 8, pp. 1-34.

Central Bank. 2021, Annual Report 2021.

Portante, E.C., Kavicky, J.A., Craig, B.A. and Talaber, L.E. 2017. Modeling electric power and natural gas system interdependencies. *Journal of Infrastructure Systems*, 24(4), pp. 1-18.

Puuska, S., Rummukainen, L., Timonen, J., Lääperi, L., Klemetti, M., Oksama, L. and Vankka, J., 2018. Nationwide critical infrastructure monitoring using a common operating picture framework, *International Journal of Critical Infrastructure Protection*, 20, pp. 28-27.

Randeniya, M., Palliyaguru, R. and Amaratunga, D. 2022. Defining critical infrastructure for Sri Lanka In: Sandanayake, Y.G., Gunatilake, S. and Waidyasekara, K.G.A.S. (eds). *Proceedings of the 10th World Construction Symposium*, 24-25 June 2022.

Rinaldi, S.M., Peerenboom, J.P. and Kelly, T.K. 2001. Identifying, understanding, and analyzing critical infrastructure interdependencies, *IEEE control systems*, 21(6), pp.11-25.

UN Office for Disaster Risk Reduction (UNDRR). 2021. Making critical infrastructure resilient: Ensuring continuity of service policy and regulations in Europe and Central Asia.

**Asha Palihakkara**  
Lecturer

Department of Building  
Economics, University of  
Moratuwa, Sri Lanka



**Dr.Roshani Palliyaguru**

Department of Quantity Surveying,  
University of Vocational  
Technology, Sri Lanka



**Prof. Dilanthi Amaratunga**

Global Disaster Resilience Centre,  
University of Huddersfield, UK



# ADRIIMP Annual General Meeting 2022

## “Safer Sri Lanka through Climate Adaptation”



ශ්‍රී ලංකා ආපදා අවදානම් කළමනාකරණ වෘත්තීයවේදීන්ගේ සංගමය  
இலங்கை அனர்த்த முகாமைத்துவ நிபுணர்களின் சங்கம்  
Association of Disaster Risk Management Professionals, Sri Lanka

### ANNUAL GENERAL MEETING MARCH 23RD 2022 TECHNICAL SESSION



#### Keynote Address by Guest of Honour

*Creating action-oriented Multi-Hazard Impact-Based Warning Systems (MHIEWS)*

**DR DAVID ROGERS**

Senior Hydro-meteorological Advisor, World Bank, Switzerland



#### Chief Guest

**MAJOR GENERAL (RETIRED) SUDANTHA RANASINGHE**

Director General, Disaster Management Centre (DMC)

#### Guest Speakers



**DR. KAREN SUDMEIER-RIEUX**

Senior Advisor, Disaster Risk Reduction, Post-conflict disaster management branch, UN Environment, Geneva



**PROF. DILANTHI AMARATUNGA**

Professor, Disaster Risk Reduction and Management, University of Huddersfield, UK



**DR. SHIROMANI JAYAWARDENA**

Director, Forecasting and Decision Support, Department of Meteorology, Sri Lanka

## Executive Committee 2022



ශ්‍රී ලංකා ආපදා අවදානම් කළමනාකරණ වෘත්තීයවේදීන්ගේ සංගමය  
இலங்கை அனர்த்த முகாமைத்துவ நிபுணர்களின் சங்கம்  
Association of Disaster Risk Management Professionals, Sri Lanka

### EXECUTIVE COMMITTEE 2022



**President**  
Dr. Ananda Mallawatantri  
[ananda.mallawatantri@iucn.org](mailto:ananda.mallawatantri@iucn.org)



**President - Elect**  
Dr. Chandana Siriwardana  
[chaasi@uom.lk](mailto:chaasi@uom.lk)



**Vice President-Advocacy**  
Maj. Gen. (Rtd) Ajith Manohara Perera  
[manoperera2@yahoo.com](mailto:manoperera2@yahoo.com)



**Vice President-Projects**  
Ms. Anoja Seneviratne  
[anoja.seneviratne@gmail.com](mailto:anoja.seneviratne@gmail.com)



**Vice President-Education**  
Mr. Menake Wijesinghe  
[menakew@gmail.com](mailto:menakew@gmail.com)



**Secretary**  
Ms. Gothami Chandraratne  
[gothami@janathakshan.lk](mailto:gothami@janathakshan.lk)



**Coordinating Secretary**  
Mr. Hiran Tilakaratne  
[hiran.eco@gmail.com](mailto:hiran.eco@gmail.com)



**Assistant Secretary**  
Mr. Chathura Liyanaarachchi  
[chathura@dmc.gov.lk](mailto:chathura@dmc.gov.lk)



**Treasurer**  
Ms. Nilmini Thaldena  
[nilminith@yahoo.com](mailto:nilminith@yahoo.com)



**Assistant Treasurer**  
Dr. Shiromani Jayawardena  
[shiro1010@gmail.com](mailto:shiro1010@gmail.com)



**Public Relations Officer**  
Mr. Ravi Jayarathne  
[ravijayarathne@gmail.com](mailto:ravijayarathne@gmail.com)



**Coordinator of Technical Committees**  
Mr. Sarath Premalal  
[spremalal@yahoo.com](mailto:spremalal@yahoo.com)



**Chief Editor**  
Dr. Saranga Vithanage  
[saranga@dmc.gov.lk](mailto:saranga@dmc.gov.lk)



**Editor**  
Dr. Lahiru Kodituwakku  
[lahirundcu@gmail.com](mailto:lahirundcu@gmail.com)



**Media Officer**  
Mr. Janaka Handunpathiraja  
[janakah@dmc.gov.lk](mailto:janakah@dmc.gov.lk)



**Committee Member**  
Eng. Sugeeshwara Seenipellage  
[sugeeshwara.seenipellage@gmail.com](mailto:sugeeshwara.seenipellage@gmail.com)



**Committee Member**  
Mr. Vajira Hettige  
[vajira.hettige@undp.org](mailto:vajira.hettige@undp.org)



**Committee Member**  
Ms. Prasadini Perera  
[prasadini85@live.com](mailto:prasadini85@live.com)



**Committee Member**  
Mr. M. Kamil  
[msmkameel@gmail.com](mailto:msmkameel@gmail.com)



**Committee Member**  
Mr. Malith Fernando  
[malith@meteo.gov.lk](mailto:malith@meteo.gov.lk)