



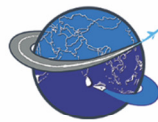
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5<sup>th</sup> International Conference

# Research for Transport and Logistics Industry 2020

21<sup>st</sup> November 2020

Colombo | Sri Lanka

Organized By



**SLSTL**  
Sri Lanka Society of Transport and Logistics

Domestic  
Member  
of





**Research for Transport and Logistics Industry  
5<sup>th</sup> International Conference**

**ABSTRACTS OF PROCEEDINGS**

Organised by  
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## Message from the President/ Conference Chair

The Sri Lanka Society for Transport & Logistics (SLSTL: [www.slstl.lk](http://www.slstl.lk)) was set up in 2014 to create a professional environment to discuss the issues in Transport and Logistics sector and to recommend sustainable solutions to improve the sector. Furthermore, it aims to promote research and development in collaboration with the industries to develop Sri Lanka as a true logistics hub. On 15th September 2015, the STSTL was admitted to the Eastern Asia Society for Transport Studies (EASTS: [www.easts.info](http://www.easts.info)) as its 19th domestic member. Domestic societies in all ASEAN countries are members of EASTS which is widely held as the most prestigious research society for transport & logistics in Asia. Thus, Sri Lanka now belongs to one of the most well established and renown transport research societies in Asia.



Research for Transport & Logistics Industry (R4TLI: [www.slstl.lk/r4tli-2020](http://www.slstl.lk/r4tli-2020)) is an initiative that endeavours to promote research and development in the transport & logistics sector in Sri Lanka and the region that would help diagnose its current issues and identify potential improvements based on scientific evidence. This annual research conference intends to build a platform where the needs of the industry can be discussed and scientific processes developed for rectification of issues can be showcases through research presentations. The last year, 2019, SLSTL jointly hosted the EASTS conference in September 2019 in Colombo which attracted more than 500 participants out of which 400 are international delegates. Despite the COVID19 pandemic, we decided hold the fifth conference (R4TLI 2020) online on 21st Nov 2020 to ensure that the series of R4TLI conferences begun in 2016 continue uninterrupted.

On behalf of the conference organising committee, I warmly welcome all participants, presenters, speakers to witness our exciting program - 30 different research presentations along with chief guests from related ministries, two keynote speeches by eminent speakers, Research Award, and an interesting/ timely panel discussion on "Do we have a viable Transport Plan for the Colombo Metropolitan Region?". I thank all those who worked to organise the conference at this scale.

### **T Sivakumar**

*B.Sc. (Hons) Eng., M.Eng. (AIT), D.Eng. (YNU), MCILT, AMIE (SL)*

President - SLSTL & Conference Chair - R4TLI 2020

## Message from the Founding President of SLSTL

The Research for Transport & Logistics Industry (R4TLI) has become a regular annual event that showcases the research efforts of researchers and students in transport & logistics. Even though COVID-19 has posed severe constraints on holding conferences, I am delighted to note that the 5th conference will proceed as an Online Edition.



The importance of research cannot be underlined in a middle-income country amidst rapidly changing parameters both on the demand as well as the supply side of transport & logistics. Traditionally successful models especially those from developed countries are fast becoming unsustainable and technologically irrelevant. It is indigenous research that can pick and choose the specific solutions that would solve local issues which are often complex amalgam of social political and economic parameters.

The scope of the R4TLI which brings experienced researchers as well as fresh undergraduates is a welcome mix. The high standard of review undertaken by the Editorial Committee is seen to have safeguarded the quality of research work presented at previous R4TLI. The launching of the Journal of South Asian Logistics & Transport (JSALT) associated with the conference is also a noteworthy achievement of the Sri Lanka Society of Logistics & Transport (SLSTL).

### **Amal S Kumarage**

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Founding President - SLSTL

## Message from the Keynote Speaker

Sri Lanka is strategically located in the Indian Ocean. It is in close proximity to the main East-West shipping corridor and has good liner shipping connectivity to the fast-growing Asian and African markets as well as Europe. Despite the competitive advantage of its geographic location, fully leveraging Sri Lanka's international connectivity to integrate the country's domestic supply chains and provide holistic logistic services has remained a challenge due to issues relating to, but not limited to, inefficiency, inadequate infrastructure, lack of digitization, limited public and private sector coordination, and a lack of supporting regulatory measures.



With this background, the establishment of the Sri Lanka Society for Transport & Logistics (SLSTL) is very much needed. It not only creates a professional environment for research and discussions of the issues in the Transport and Logistics sector, but also its collaboration with the industries and government agencies ensures that the recommendations and solutions proposed are practical and useful. At this global pandemic, safe transport and efficient logistics are more important than ever. I am very honoured to provide the keynote speech for the 5th conference of Research for Transport and Logistics. I look forward to learning more from researchers, academics, industry leaders and government agencies. Together, we will build back better.

**Winnie Wang**

Senior Transport Specialist - South Asia, World Bank Group

## Message from the Keynote Speaker

It's a pleasure to deliver the Keynote address at the 5th International Conference on R4TLI. The topic of my Keynote address will be on transport planning and in particular the exploration of what would be the most appropriate approach for handling the long overdue transport issues with the added constraint of COVID 19 issues and the new normal. The impact that the pandemic has had on lifestyles and travel patterns as well as on the economy needs serious consideration in revising existing transport plans particularly for urban and metropolitan areas. The Keynote address will look at some salient features of previous transport plans for Colombo Metropolitan Region and argue that an incremental development on current transport infrastructure would be the best first steps as opposed to introduction of expensive new transport networks. The Keynote address will also revisit the Colombo Metropolitan Regional Transport Masterplan developed in 2015 as being the most appropriate starting point given that much more ambitious plans have failed to get started or deliver the promised impacts.



### **Amal S Kumarage**

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## Editorial Preface

Considering the growing spread of the COVID-19 pandemic in Sri Lanka, 5<sup>th</sup> International Conference of R4TLI-2020 decided to be held as a virtual conference.

Graduating into her fifth successive year, R4TLI has demonstrated her sustainability and her potential in serving ‘to catalyse necessary discourse within the discipline of transport and logistics sector for greater research and development undertakings’, as the Sri Lanka Society for Transport and Logistics (SLSTL) intended in the inaugural 2016 R4TLI Proceedings. We are glad to note that our voice appears to have been heard and well received.

Editorial Committee of the R4TLI-2020 is encouraged that we received a total of 51 initial abstract submissions. After the full paper submissions, in total 22 abstracts were accepted for the conference proceedings (acceptance rate 43.13%) of and 8 full papers were accepted for the Journal of the Sri Lanka Society of Transport and Logistics: Journal of South Asian Transport and Logistics (JSALT) (acceptance rate 15.68%). There are 28 abstracts to be delivered as oral presentations. I am even more pleased to tell you that standards have again reached a very high level and we can expect to be exposed to most interesting research and great presentations.

As in preceding years, our task of editing and compiling the Proceedings of the R4TLI Conference has been a rewarding experience, affording new perspectives on the evolving research interests in the field of transport and logistics. Last year, we stated that it was our wish that future research activity will probe deeper into the questions faced by the domestic Transport and Logistics industry and improve its linkages, sharpening Sri Lanka’s competitive edge in the ever-complex and dynamic global and regional business environment. This year’s Proceedings propose innovative solution to the concerns of underserved areas, diverse industrialists, and a cross-section of Sri Lankan society

The Editorial Committee for 2020 is grateful to the eminent panel of academics for reviewing the submissions and providing feedback to each of our contributors – a contribution which is central to maintaining the standards SLSTL has set for itself. Their contribution to industrial research and development in Transport and Logistics is immense and deeply appreciated.

We look forward to continuing our efforts to catalyse necessary discourse within the discipline of transport and logistics sector for greater research and development undertakings.

T Lalithasiri Gunaruwan (Chief Editor)

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**CONFERENCE ON RESEARCH FOR  
TRANSPORT AND LOGISTICS INDUSTRY**

**2020**

**5<sup>TH</sup> INTERNATIONAL CONFERENCE**

**ORGANISED BY**

**SRI LANKA SOCIETY OF TRANSPORT AND LOGISTICS  
(SLSTL)**

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