

Induction and Graduation Ceremony 2019

The Institution of Engineers, Sri Lanka held its annual Induction and Graduation Ceremony for the year, 2019 on Friday, 16th August 2019 at the Main Hall of the BMICH. Senior Professor Sujeewa Amarasena, Vice-Chancellor of the University of Ruhuna graced the occasion as the Chief Guest.



This year's event saw the induction of 409 Associate Members of the IESL into the corporate membership as Chartered Engineers – the highest number ever recorded in the history of the IESL- and 28 students of the IESL Engineering Course receiving their certificates having

successfully completed the course.

Scholarship winning school children of the Junior Inventor of the Year (JIY) Competition – 2019 also received their scholarships at the event. Pioneered by the IESL, with the purpose of inculcating creativity and

invention among school children, many of the JIY winners have gone on to win at the national level competition 'Sri Lanka Science and Engineering Fair' and thereafter proved their ability to compete and win event at the Intel International Science and Engineering Fair, the world's

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Techno 2019 Launch



The launch of "techno 2019", the National Engineering and Technology Exhibition, was held on 12th July 2019 at Hotel Marino Beach. The exhibition is the flagship event of the Institution of Engineers, Sri Lanka (IESL) and is organized for the 34th consecutive year. The

exhibition will be held on 11, 12 and 13 October at the Bandaranayake Memorial International Conference Hall (BMICH).

Starting as an Electrical-mechanical exhibition in 1985, techno has grown into a fully-fledged engineering and technology exhibition over the years, providing

an opportunity for the visitors and stallholders to experience the essence of engineering and technological innovations and inventions around the globe.

The President-Elect of the IESL, Chairman of the organizing committee for

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President's Corner

My Dear Fellow Engineers,



My previous correspondence was a glimpse at the engineering education history of Sri Lanka from the establishment of a Technical School at Colombo in 1893 to the establishment of the latest engineering faculties. Within these 126 years, engineering education in Sri Lanka has taken a roller-coaster ride shaping the fundamentals of the education system in the country as well as the standards of the profession. Even though we have a century-old engineering education history, evidence of a well structured National Engineering Education Policy is conspicuously lacking. I strongly believe that it is belated obligation on our part to form such a policy.

First of all, it is important to understand the reason why we need a comprehensive engineering education policy. Perhaps one may think that for more than 100 years of engineering education prevailed in the country, why bother now? The answer is simple. Continuous indifference paid to this topic and political influences has made the engineering education in the country a ship without a helm. Therefore through the "Presidents Corner" I would like to highlight some of the major issues and problems engineering education and engineering profession is facing today.

The Engineering Council Act passed by the parliament in 2017, recognizes six categories of engineering professionals. They are Chartered Engineers, Associate Engineers, Affiliate Engineers, Incorporated Engineers, Engineering Diplomates and Engineering Technicians. Regulations regarding registration regarding each category have yet to be finalized by the Engineering Council of Sri Lanka. The prevailing education system catering to the industry has created three levels of qualifications for engineering practitioners. These are the Certificate level, Diploma level, and Special Degree level offered by different governmental bodies and state universities. With the more recent creation by the government of the 'Technology Stream' at GCE A/L and subsequent 'Technology Faculties' in universities offering 'Engineering Technology' degrees equivalent to three year degrees, along with already established University of Vocational Technology B.Tech degrees, the category of Engineering Technologists generally recognized in the global arena has been created. However, it should be noted that the local job market is yet to be restructured to accommodate these engineering practitioners.

In the international arena three well defined categories of engineering practitioners have been established. Under the International Engineering Alliance (IEA) where IESL is a member, Accords have been established to regulate the educational standards for these three categories. The well known **Washington Accord** is for 4 year equivalent Engineering Degree programmes creating 'Engineers' to later become Chartered or Professional Engineers through professional development. The **Sydney Accord** has been established for 3 year equivalent Engineering/Technology degree programmes creating 'Engineering

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Featured Column: Till Sun and Moon Shines...[Part 3]

Sustainability: A Multifaceted Concept

by Eng. Chandana Jayawardana



"Eng. Chandana Jayawardana has earned his first degree in Electrical Engineering from University of Moratuwa and then, post graduate qualifications in Industrial Engineering and Buddhist Studies. He is currently working as Design Manager, Balfour Beatty Ceylon (Pvt) Ltd, Katunayake"

In the last issue, we have noted how the term 'sustainability' became a buzz-word and its often quoted description 'development that meets the needs of the present without compromising the ability of future generations to meet their needs' came into being. However, according to some scholars, this description is somewhat vacuous. It is obvious that this definition does not enclose any workable framework to decide the sustainability of a process and some authors note this ambiguity was deliberate as it was intended to be popular amongst a diverse constituency (Chaharbaghi, K., Willis, R., 1999).

The popular understanding of sustainability is often linked to concepts like energy efficiency, reduction of environmentally harmful emissions, ecosystem preservation and other 'save the earth' efforts. Environmentalists consider climate change, caused by global warming, to be the greatest environmental threat amongst the many major environmental problems faced by society. This problem, they assert, is of society's own making and the product of society's unsustainable consumption and production decisions (Intergovernmental Panel on Climate Change, 1996).

Juxtaposed to the environmentalists are the economists who view the issue of sustainability through different conceptual prism. For many economists, the problem is a simple one, coming down to a basic Pigouvian issue of internalizing externalities (Chaharbaghi, K., 1998). The solution, as basic economic theory informs us, is twofold; (a) the impediments to the working of the price mechanism should be eliminated by removing subsidies from the energy sector and (b) the externality should be internalized by greening the tax system. From this perspective, the issue of the depletion of the earth's capital stock is also resolved in neo-classical theory through substitution.

Technologists have little doubt that they can go a long way to providing the capabilities to make sustainability a reality. Thus environmental technologies are the means through which sustainability can be achieved (Sousane, R., 1996). This will be done through the reduction of risk, the enhancement of cost effectiveness and improvements in process efficiency leading to the creation of products and processes that are environmentally beneficial.

Politicians who have to make a compromise environmental wishes and hard economic reality, take on board many of the concerns raised

by environmentalists. Taking the advantage of uncertainty of deducting how much and at what rate the climate is changing, politicians call in more scientists to investigate and more technologists to find solutions, often just a cover for business rather than finding real solutions (Chaharbaghi, K., Willis, R., 1999).

The media treats sustainability as a commercial opportunity, with news editors capitalizing on the rising tide of environmental awareness. Given the interests of the media together with the communication revolution, industrialists tend to consider sustainability is a public relation. They realize that they can suffer from a heavy long term costs in public relations by harming the broader environment through actions that would bring only short term gains (Chaharbaghi, K., Willis, R., 1999).

From the above analysis, it becomes apparent that sustainable development is surrounded by many complex, contentious and conflicting issues. Some scholars suggest that if sustainable development to become meaningful, the debate surrounding it should adopt the same guiding principles observed in nature (Chaharbaghi, K., Willis, R., 1999). Within this context, industrial ecologists now believe that if industry is to be sustainable it is necessary to change the paradigm fundamentally through which the relationship between industry, society and the natural world is viewed (Barnes, P.E., 1998). For example, in the natural system the concept of waste is non-existent; the waste of one organism is the resource of other organisms. Sri Lankans, as a society prevailing for thousands of years, may have many contributions in this respect. In the coming issues, such possible contributions will be discussed in detail.



Destruction of rain forests



Draughts, food security and famine

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Prof. E.O.E. Pereira Memorial Lecture 2019

IESL commemorated the 112th birth anniversary of Late Eng. (Prof.) E O E Pereira, considered as the Father of Engineering Education in Sri Lanka, on 16th September 2019 with a memorial lecture on "Cost Estimation is an Educated Guess" delivered by Eng. P H Sarath Gamini.



Eng. D.J. Wimalasurendra Memorial Lecture 2019

The 145th birth anniversary of Late Eng. DJ Wimalasurendra was commemorated at IESL on 18th September 2019 with a memorial lecture on "Applications of Large Scale Batteries for Utilities and Industrial Purposes" delivered by Eng. D G Rienzie Fernando.



Deshamanya Vidya Jyothi Eng. (Dr.) Ray Wijewardene Memorial Lecture 2019

The annual Ray Wijewardene Memorial Lecture for the year 2019 was held at the Wimalasurendra Auditorium of the Institution of Engineers, Sri Lanka (IESL) on Wednesday, 4th September 2019. Eng. U.D. Jayawardene, General Manager/Chief Executive Officer of LTL Holdings delivered this year's lecture on the topic 'Transforming local engineers into global entrepreneurs'.



Intriguing Levels of Phthalic Acid Esters in Coastal Urban Watercourses of Colombo and Its Suburbs: A Bizarre Situation Caused by Urban Sprawl



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Phthalic acid esters: another emerging contaminant of concern

Phthalic Acid Esters (PAEs) are reported to be a group of emerging complex organic contaminants, which is ubiquitous in the aquatic environment and seems to be often released to the environment as a consequence of urban sprawl. PAEs are generally, added to plastic and polyvinyl

chloride manufacturing industries as a plasticizer to enhance the beneficiary attributes of final products such as softness, flexibility, durability and longevity, and workability. PAEs are also found in pharmaceuticals, cosmetics, personal-care products, insect repellants, household-hardware, including wire coverings, cables, tubes, hoses, lubricants, stationery products (such as inks, paints), toys, and pesticides.

The urban sprawl results in PAEs to be ubiquitous at astounding levels in watercourses, especially in developing countries. The urbanization and industrialization are the possible major sources of PAEs in urban watercourses (Fig. 1). Among all PAEs, six compounds, namely dimethyl phthalate (DMP), diethyl phthalate (DEP), di(n-butyl) phthalate (DBP), benzyl butyl phthalate (BBP), bis(2-ethylhexyl) phthalate (DEHP), and di(n-octyl) phthalate (DnOP) have been included in the priority pollutant list published in Appendix A to Part 423 of Title 40 of the Code of Federal Regulations (40 CFR, Part 423) US Government. Canadian water quality guidelines specify the levels of DEHP and DBP to be 16 and 19 µg/L, respectively, for the protection of aquatic life. PAEs are not bound to a polymer by covalent bonding resulting in easy detachment

and may subsequently transport through leaching to the aquatic environment. DEHP and DnOP are weak in biodegradability and hence, subject to bioaccumulation with a likelihood of biomagnification in the aquatic environment.

What role do the coastal urban watercourses play?

Coastal watercourses are the conduits of diverting essential nutrients, contaminants, and sediment loads to the oceans. However, their transport phenomena are solely dependent on hydrodynamics, hydrogeochemistry, and tidal dynamics of the coastal stretch of concern. PAEs as a group of emerging contaminants are found along such open shallow watercourses making them available in a multitude of congeners with subsequent adverse impacts on aquatic biota and humans.

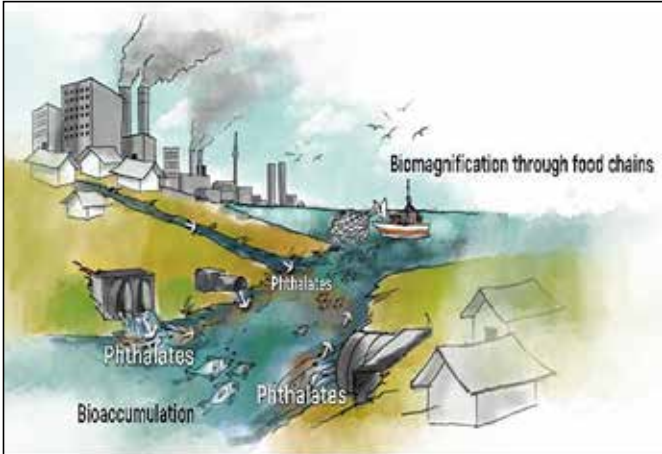
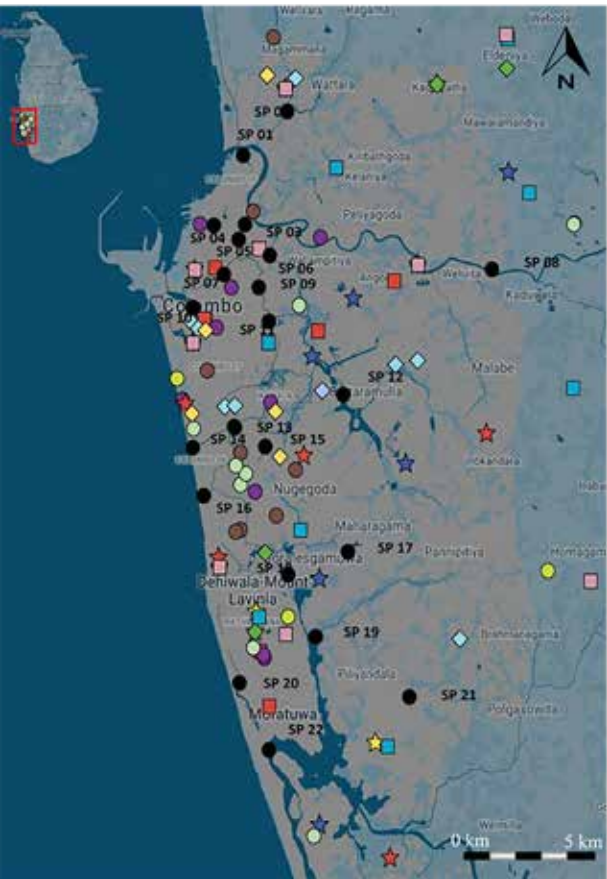


Figure 1: Schematic diagram of ingress of PAEs into the urban watercourses



- Sampling Points
- Household Hardware Products Distribution
- ★ Paint Manufacturing
- ★ Plastic Manufacturing
- ★ Cosmetics manufacturing & packaging
- PVC cable Manufacturing
- Polyethylene Manufacturing
- Pharmaceutical Packaging
- Apparel Industry
- PET bottle Manufacturing
- PVC Manufacturing
- Pesticide Manufacturing
- Stationery Products Manufacturing
- Toy Manufacturing

Sample ID	Sample site
SP 01	Sri Wickrama canal
SP 02	Peliyagoda canal
SP 03	Main Drain
SP 04	Beira lake-North lock gate
SP 05	St. Sebastian canal (North)
SP 06	Kittampahuwa canal
SP 07	St. Sebastian canal (South)
SP 08	Raggahawatta canal
SP 09	Dematagoda canal
SP 10	Beira lake-East
SP 11	Kinda canal
SP 12	Diyawanna lake
SP 13	Kirulapona canal
SP 14	Wellawatta canal
SP 15	Poorwarama canal
SP 16	Dehiwela canal
SP 17	Maharagama Ela
SP 18	Nadimala canal
SP 19	Weras Ganga
SP 20	Ratmalana canal
SP 21	Kesbawa lake
SP 22	Bolgoda lake

Figure 2: Sampling locations and the industries that have a potential for migration of PAEs from sub-catchment areas

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EDITORIAL TEAM



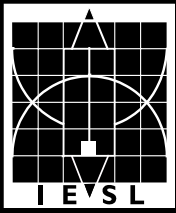
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Sri Lanka Engineering News Editorial

Presidential election is around the corner!

The next few weeks will be the busiest for all the politicians and their supporters. All top politicians will be drafting, launching and marketing on their policy propagandas during this period. The policies on developing infrastructure such as road network, construction of high-rise buildings, electricity generation, water supply etc. will be in the discussion. The entire spectrum of topics under this conversation are directly and indirectly are engineering themes. Though engineering topics are heavily discussed by non-engineering community the involvement of engineers is remarkably low in these discussions.



The direct involvement to the party politics is one's own liberty. What I want to discuss here is not about such an involvement of engineers in politics which is entirely a different kind of a ball game. The involvement of engineering professionals in the national policy level deliberations is the requirement of the hour. This contribution is seriously lacking. In the absence of this positive involvement of engineers the society will be at a disadvantage and the benefits are only for the corrupted politicians and their followers.

Engineers should initiate solutions to mankind using the concepts of natural sciences and discoveries. In achieving this the resources must be used objectively as those are not in abundance. Therefore, leaving the resources for our future generations while consuming those with care is a must. This is the social obligation common for all citizens, yet the engineers should follow this cardinal principle as they can influence a large community through their acts. We should endorse the use of technology towards the protection of the masses. Engineers should lead the process of infrastructure development in a manner where the natural environment is protected. The environmental impact must be integrated into the planning process so that only projects causing minimal impact to the environment are embarked on; rather than only seeking to mitigate the negative impacts later on at the implementation stage.

Further while emphasizing importance of investment in infrastructure towards the growth of the society, it is to be noted that the procurements especially in large scale projects should be seriously evaluated beforehand and implement on the best terms for our society, without committing succeeding generations to a massive debt burden. As large infrastructure projects have tremendous scope for corruption, especially those based on unsolicited proposals, and assert that good financial & engineering discipline is essential for development.

The above facts essentially highlight the prime importance of the correctly disciplined practices of the engineering professionals towards the betterment of the society. This too emphasizes the importance of the proactive contribution of engineers over the actions of power greedy politicians. As engineers, are we ready for that?

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Induction and Graduation...

largest international pre-college science competition held annually in the USA. Winners of Special Memorial Awards too received their awards. The event is also an occasion for rewarding winners of various memorial award schemes worked out by IESL to promote practical orientation among final year undergraduates encouraging industrial training and project work, research among young engineers, performance at Professional Review exams, etc. all with the aim of uplifting the profession".

"Entrepreneurship and Business Development" Program by YMS at University of Ruhuna



"Entrepreneurship and Business Development" program was held on 5th June, 2019 from 9.00 am to 12.30 pm at Faculty Auditorium, Faculty of Engineering, University of Ruhuna, Hapugala Galle. The program was organized by IESL YMS Ruhuna Engineering Student Chapter of the IESL in collaboration with Marvel Crew Innovation and Entrepreneurship Club of University of Ruhuna. The program marked a remarkable success with a participation over 140 undergraduates from the faculty. The program was conducted



by two keynote speakers; Eng. Jasmine Nanayakkara, Chairman, Entrepreneurship Forum, IESL and Eng. P.W. Sarath, Chief Innovations and Culture Officer, Sri Lanka Telecom. Eng. Jasmine Nanayakkara interacted with students by conducting several activities involving participants and delivered a fruitful speech on Entrepreneurship. Eng. P.W. Sarath educated the gathering by conducting a speech on "Marketing Strategies" based on his own experiences as a successful engineer.

Apart from interactive sessions conducted by the keynote speakers, Eng. R.M.S.D. Bandara, Vice Chairman, IESL YMS also delivered an introductory speech about IESL YMS and its role.

Eng. Thilina Salindha and Senior Lecturer Dr. Udayanga Galappaththi also participated in the event representing IESL YMS and the academic staff of the faculty respectively.

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IESL Q-CHAPTER CPD 01 - Building a Personal Brand as an Engineer

The most difficult thing in the life is to “Know Yourself”, Greek philosopher & mathematician Thales once said, knowing yourself in life is very important. Most of the people think that they know everything in their life about themselves. But the hard truth is that they are unknown about themselves.

In line with the above IESL Qatar Chapter has successfully completed this CPD session titled as “Building a personal



brand as an Engineer” (know yourself to grow yourself) on 21st of June 2019 at the Millennium Hotel, Doha, Qatar. The resource person of the session was Mr. Chelliah Srikanth (FCA, MBA, ACMA (UK), CGMA, B.Sc. (B.Ad) Sp. ASCMA) who is working as Chief Financial Officer of Tanween Group of Companies, Qatar. During the session we learned about Objectives of personal branding, how to become a strong personal brand, and how we should

lead ourselves. It was an interesting evening session. The resource person shared his personal experience to motivate the participants to know the importance of understanding their passion to build their personal brand. The session emphasized the value of spending time for our own. Most of the IESL Qatar chapter members have actively participated in the session. Certificates were provided for the participants at the end of the session.



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President's Corner...

Technologists' while the **Dublin Accord** is for 'Engineering Technicians' with Diplomas of technology in relevant areas. The IESL is the official signatory representing the jurisdiction of Sri Lanka for both Washington Accord and Sydney Accord. Consequently, IESL has formulated and published standards and procedures for Recognition and Accreditation of academic qualifications for 'Engineers' and 'Engineering Technologists' fitting respectively in to membership categories of 'Associate Member' and 'Affiliate Member' who are respectively eligible to register under 'Associate Engineer' and 'Affiliate Engineer' at the Engineering Council of Sri Lanka. However, clear mapping of the local job and position structure to the created qualifications has not been possible due to historical, social and political reasons. Should our categorizations also follow international standards? Or should it be unique to meet the requirements of the country? Is the question facing us.

More than ever before, due to social high demand, higher education has become a lucrative profit making venture, internationally as well as locally. Once the sole authority on higher education, the state university sector is now being marginalized by its own deficiencies, conflicting interests of its key players and short-sighted political and profit motives. The result is what is to be expected, high demand areas like engineering are the first victims to be exploited for profit oriented educational endeavours. Hence, it is imperative that quality assurance and quality control combined with ethical propensity govern the delivery of higher education especially in engineering, where capability, responsibility, and accountability of the practitioner is of utmost importance in the interest of the public.

From the early ages, children are being pushed to become an engineer or a doctor, which is a social factor in our country. However, one should be cognizant of the demand for engineers in the country, demand for the other engineering practitioners and the ratios between different categories. Is the education system of the country producing appropriate numbers at appropriate ratios between them under categories of engineering practitioners? The usual prediction of the requirements of Engineers or Engineering Technologists based on qualified numbers in the appropriate streams at GCE A/L examination may not be the best way of proportioning the engineering workforce of the country.

Most importantly, the ethical, social and economic issue of recipients of public funded higher education in very high demand areas such as Engineering, shying away from serving the country for perceived greener pastures in other lands has to be addressed. At least, by national level GCE A/L standards, the cream of the young analytical minds of the country gets Engineering education through fierce competition at a huge outlay of public funding. If the country is unable to gainfully employ them for national development or if they are not willing to serve the country with various excuses to migrate, the whole operation is an economic as well as ethical

disaster, promoting brain drain and squandering of public money. Hence, all recipients of higher education from state institutions should be made accountable for paying back with interest at least the capital outlay made on their higher education by the public funds.

Discussed above are few of the facts and glaring issues faced by the higher education in general and Engineering higher education in specific, which I wanted to place before you through the President's Corner. When I chaired the Education Standing Committee of as a Vice President few years ago, the Committee initiated similar discussions about having an IESL policy on Engineering Education. I wish to summarize a few points that we discussed back then, which are still applicable.

"Basis of the IESL is the identification and the recognition of the 'Chartered Engineer'. A professional well-founded in the theories of Science and Engineering, augmented by training and experience and made accountable through ethics and responsibility.

Foundation for the creation of a Chartered Engineer is prepared through school education and laid at the undergraduate level in the University, where the prospective candidate acquires the theoretical grasp of the science of Engineering. Hence, providing guidance for ensuring academically sound, practically viable, superior quality undergraduate Engineering education for aspirant Engineers of Sri Lanka is the single most important task faced by the IESL.

- IESL recognizes free education policy of Sri Lanka, which emancipates persons with aptitude, from economic constraints, for gaining an education.

- IESL recognizes a four-year degree in Engineering, obtained from a reputed and recognized University, gained after successful completion of secondary school education in Mathematics and Science (GCE (A/L)), to be the basis of academic qualifications to become a Chartered Engineer.

- IESL recognizes that continuous appraisal of recognized academic programmes in Engineering is essential for maintaining quality and timeliness of knowledge.

- IESL recognizes that apart from the established disciplines of engineering emerging disciplines have to be recognized after appropriate appraisals.

- IESL recognizes that Engineers who have fulfilled the academic requirements to be a Chartered Engineer should be gainfully employed in Sri Lanka for the benefit of the country. As such IESL is not in favour of producing Engineers without proper appraisals of the demand of the country."

By considering the importance of formulating a National Engineering Education Policy, IESL has already assigned a Council Committee for the task. The committee has already had a full day session to discuss on the related matters. I personally believe that it is our duty and responsibility as the premier professional engineering body to take this matter forward and that all of you would agree on this endeavour by the Institution.

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විජයබා කොල්ලය - 1521 සිට 1938 ඔස්සේ 2019 දක්වා



ගොඩනැගිලි සේවා වරලත් ඉංජිනේරු සුරත් ප්‍රනාන්දු මහතා ශ්‍රී ලංකා ඉංජිනේරු ආයතනයේ විධායක සභාවේ සාමාජිකයෙකි. ඔහු ගොඩනැගිලි සේවා ඉංජිනේරු අනුකම්පිතවේ සභාපතිවරයායි. වෘත්තීයයෙන් නඩත්තු ඉංජිනේරුවකු හා හරිත ගොඩනැගිලි උපදේශකයෙකු වන සුරත් ප්‍රනාන්දු මහතා IESL ආයතනය මගින් පළකරනු ලබන Sri Lanka Engineering News (SLEN) සඟරාවේ වත්මන් උපකතාවරයා ලෙසද කටයුතු කරයි.



විජයබා කොල්ලය

මෙරට පසුකාලීන ඉතිහාසයේ ගමන්ගත වෙනස් කිරීමට හේතු වූ මායාදුන්නේ කුමරුන්ගේ 'විජයබා කොල්ලය' (1521) පසුබිම් කොටගත් ගත්කරු ඩබ්. ඒ. සිල්වා විසින් රචිත මනහර 'විජයබා කොල්ලය' නවකතාව (1938) පදනම් කොටගෙන, මහආදරු සුනිල් ආරියරත්නයන් විසින් නිර්මිත 'විජයබා කොල්ලය' සිනමා පටය (2019) විසිතුරු සිනමා සිත්තමයි.

1505දී මෙරටට ගොඩබැසි පෘතුගීසීන් මෙරට තුළ දේශපාලනිකව ස්ථාපිත වූ ස්වරූපය තීරණය වීමේ ප්‍රධාන නිශ්චිත හැරවුම් ලක්ෂයක් වූයේ, 1521දී සිදුවූ විජයබා කොල්ලය හා ඒ හා සබැඳි පසුකාලීන දේශපාලන බල පෙරළි සමුදායයි. කෝට්ටේ රාජධානිය කොටගත් 7වන විජයබාහු රජතුමාගේ (1509-1521) ප්‍රකණ්ඩත්ව ක්‍රියාත්මක වූ බවනකබාහු, පරරාජසිංහ හා මායාදුන්නේ යන කුමාරවරුන් පසෙකින් සිටිය දී, රාජ්‍යයන්වයට මුල්පෙළේ හිමිකමක් නැති, සිය දෙවන බිරිඳගේ පුත් වූ කුඩා දේවරාජ කුමාරයන්ට රජ කිරීමට හිමිකර දීමට රජතුමා තීරණය කර තිබුණි. රජතුමා විසින් නිවාස අඩස්සියේ රඳවා තබා සිටි පුත් කුමරුවෝ කිදෙනා පමණක් නොව, රටවැසියා පවා රජුගේ මේ තීරණය පිළිකෙටු කළෝය.

රැකවල් වලින් මිදී පලාගොස්, පසුව හමුදාවක් සමඟ කෝට්ටේ රජවාසල බලා ගමන් කරමින් සිටි කුමාරවරුන් කිදෙනාගේ ආගමනයට බියවූ විජයබා රජු, ඔවුන් සමඟ සාකච්ඡා කොට ගැටළු විසඳාගැනීමට කැමැත්ත පළ කළේය. සාකච්ඡාවක මුළුවාවෙන් රජමැදුරට ගෙන්වාගෙන තමන්ට මරාදැමීමට රජු විසින් කුමන්ත්‍රණය කර ඇති බවට සැක උපදවාගත් කළබලකාරී මායාදුන්නේ කුමරු විසින් සිය හමුදාවට රිසිසේ රජමැදුර කොල්ලකෑමට අණ දුන්නේය. විජයබාහු රජතුමාට මරණය හිමි කරමින් රජමාලිගයේ සිදු වූ මහා කොල්ලය 'විජයබා කොල්ලය' ලෙස පසුකාලීනව නම් විය.

ඊට පෙර මහනුවර හා යාපනය රාජ්‍යයන් කෝට්ටේ සමඟ බැඳී තිබුනේ තරමක්ව ලිහිල්ව වුවත් රටේ බලගතු අගනුවර වූයේ කෝට්ටේය. විජයබා කොල්ලයෙන් පසු බුවනෙකබාහුට (පසුව කෝට්ටේ 7වන බුවනෙකබාහු (1521-1550) ලෙස රජවූ) කෝට්ටේත්, පරරාජසිංහට (පසුව රයිගම් බණ්ඩාර) රයිගමත් සහ මායාදුන්නේට (පසුව සීතාවක මායාදුන්නේ (1521-1581)) සීතාවකත් ලෙස කෝට්ටේ රාජ්‍යය තුන්කඩකට බෙදී විසිරිණි.

පසුකාලීනව බුවනෙකබාහු රජතුමාගේ මුහුදුබා වූ දොන් ජුවන් ධර්මපාල (1551-1597) කෝට්ටේ රාජ්‍යය පෘතුගීසීන්ට තැගි ඔප්පුවක් මගින් පවරා දීමට තරම් පෘතුගීසි අනුගාමිකයෙක් වූ අතරම, ඊට ප්‍රතිවිරුද්ධව මායාදුන්නේගේ පුත් විකිරි බණ්ඩාර (පසුව පළවෙනි රාජසිංහ (1581-1593) ලෙස රජවූ) පෘතුගීසීන්ට එරෙහිව පසුනොබා සටන්වැදුණු රණකාමියෙක් බවට පත්විය.

එකෙනෙකට වෙනස් විවිධ රාජ්‍ය පාලකවරුන් යටතේ මෙරට තුළ පෘතුගීසි පාලනය ස්ථාපිත වූ ස්වරූපය තීරණය කළ ඉතිහාසයේ කඩඉම් ලක්ෂ්‍යය, 1521 දී සිදුවූ විජයබා කොල්ලයයි.

විජයබා කොල්ලය නවකතාව



පියදාස සිරිසේන (1875-1946) වැනි නවකතාකරුවන් ජාතිය අවදිකිරීමේ හා ජනතාව යහමගට ගැනීමේ අරමුණින් දහම් පණිවුඩ ඇතුළත්, තාත්විකත්වයෙන් තරමක් ඇත්වූ නිර්මාණ බිහිකළ සිංහල නවකතාවේ මුල් යුගයේ ගමන් මග වෙනස් කරන්නේ, මාර්ටින් වික්‍රමසිංහ (1890-1976) හා ඩබ්. ඒ. සිල්වා (1890-1957) වැනි ගත්කතුවරුන්ය. ඒ එකිනෙකට වෙනස් වූ දිශානතීන් දෙකකටය. සැබෑ ලෝකයේදී

මුණගැසෙන තාත්වික චරිත හා සිද්ධි තුළින් වික්‍රමසිංහයන් නවකතාකරණයේ යෙදෙද්දී, රසවත් බටහිර ඉංග්‍රීසි රහස් පරීක්ෂක හා වෙනත් නවකතා ඇසුරුකිරීමෙන් තමන් විදි රසය සිංහල පාඨකයාටත් එලෙසටම ලබාදීමේ අරමුණෙන් ඩබ්. ඒ. සිල්වා සිය නවකතා රචනා කළේය. හුදෙක් කතා රසයම ඉස්මතු වන සේ සංස්කෘතික මිශ්‍ර ව්‍යාකෘති සිංහලෙන් නිර්මාණකරණයේ යෙදුනු ඩබ්. ඒ. සිල්වා මෙරට බිහිවුනු හොඳම ඓතිහාසික නවකතාකරුවා ලෙස අවිවාදයෙන් නම් කෙරේ.

මුහුදුබඩින් පෘතුගීසීන්ගෙනුත්, උඩරටින් වික්‍රමබාහු සාමාන්ත යාගෙනුත් හා යාපා පටුනෙන් ආර්ය වක්‍ර වර්තී ගෙනුත් එල්ලවූ තර්ජන වලට අමතරව මායාදුන්නේ ප්‍රමුඛ තමන්ගේම පුත්කුමාරවරු කිදෙනෙගන්ද එල්ල වූ බලපෑම් හමුවේ රජ කළ 7වන විජයබාහු රජතුමාගේ පාලන සමය හා එහි කුටුප්‍රාප්තිය වූ විජයබා කොල්ලය අමිල කලාකෘතියකට අනගිතම වස්තු විෂයක් බව මහා ගත්කරු ඩබ්. ඒ. සිල්වාට වැටහීයාම අරුමයක් නොවේ. අරුමය වන්නේ මේ අසමසම ඓතිහාසික වටපිටාව පසුබිම් කරගත් මනබන්ධනීය පෙම් පුවතක් ඒ ඉතිහාස කතාව සමඟ සුදුසුම මාත්‍රාවෙන් මුහු කොට අමරණීය නවකතාවක් බිහිකිරීමට එතුමා දක්වා ඇති කුසලතාවයයි.

බටහිර ශ්‍රේෂ්ඨ කලාකෘති ඇසුරු කිරීමෙන් කතුවරයා ලද අසහාය ප්‍රතිභාව තුළින් බිහිවූ අසංග, නිලමණි හා නයනානන්දගේ තුන්කොන් පෙම් කතාන්දරය අතිශයින්ම මිහිරියි. විජයබා කොල්ලය රචනා කිරීමේදී එහි කතුවරයා, ශෛවන්ගේ 'පිසාරෝ' (Pizzaro) නාටකයෙන් හෝ වාර්ල්ස් ඩිකන්ස්ගේ 'අ ටේල් ඔෆ් ටු සිටීස්' (A Tale of Two Cities) නවකතාවෙන් යම් ආභාෂයක් ලබාගෙන ඇතිබව පෙනේ.

18 වන සියවසේ දී එංගලන්තයේ දී රඟදැක්වුනු රිචර්ඩ් බ්රින්ස්ලේ ශෛවන්ගේ (Richard Brinsley Sheridan) 'පිසාරෝ' (Pizzaro) වේදිකා නාටකයට පසුබිම් වන්නේ ස්පාඤ්ඤ ජාතිකයෝ දකුණු ඇමරිකාවේ ජීරු රටේ මුල්වැසියන්ට එරෙහිව සිදුකළ, නොපනත්කම් හා සැහැසිකම්ය. පෘතුගීසීන් විසින් ලක්වැසියන්ට එරෙහිව මුදාහළ ප්‍රචණ්ඩත්වය ද මීට අනුරූපය. එලෙසම 'පිසාරෝ' හි රොලා (Rolla) කොරා (Cora) හා ඇලොන්සෝ (Alonzo) අතර ඇති වන තුන්කොන් කතාන්දරය විජයබා කොල්ලයේ අසංග, නිලමණි හා නයනානන්දගේ කතාවට

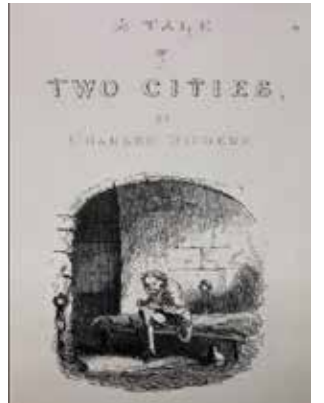
අතිශයින්ම සමීපය 'පිසාරෝ' හි මේ චරිත ත්‍රිත්වය අතර හුවමාරුවන සමහර දෙබස්, විජයබා කොල්ලයේ ප්‍රධාන චරිත තුන අතර සිදුවන සංවාද වලට එකඟවන අනුරූපය.



ප්‍රංශ විප්ලවය (1789) සිදුවූ වකවානුව පසුබිම් කොටගෙන 1859දී ලියැවුනු ඉංග්‍රීසි ජාතික මහා ගත්කරු වාර්ල්ස් ඩිකන්ස්ගේ (අ ටේල් ඔෆ් ටු සිටීස්) (A Tale of Two Cities) නවකතාවෙහි එන සිඩ්නි කාර්ටන් (Sydney Carton) වාර්ල්ස් ඩානේ (Charles Darnay) හා ලුසී මැනට් (Lucie Manette) යන චරිත ත්‍රිත්වය සම්බන්ධ සිදුවීම් දාමය මූලික වස්තු බිජිය ලෙස ගෙන, එය තව තවත් විචිත්‍රවත් කොටගෙන විජයබා කොල්ලය නිර්මාණය කළා විය හැක.

සිරගතවී සිටි වාර්ල්ස් ඩානේට එයින් මුදවා යවා ඒ වෙනුවෙන් තමන් සිරගතවී පසුව ගිලටින යට දිවිදීම මගින් සිඩ්නි කාර්ටන් විසින් මැනට් මෙනවිය වෙනුවෙන් උතුම් ආත්ම පරිත්‍යාගයක නියැලීම (අ ටේල් ඔෆ් ටු සිටීස්) කෘතියේ කුටුප්‍රාප්තියයි. කෙසේ වෙතත් කලින් සිය පෙම්වතිය වූ නිලමණි කුමරියගේ සිතැති ඉටුකර දීමට ඇයගේ වත්මන් පෙම්වතා වූ නයනානන්ද සෙනවියන්ට පරංගි සිරකුටියෙන් මුදවාගැනීම සඳහා සිය දිවි පරදුවට තබා ඉදිරිපත්වීම මගින් අසංගසෙනවියන්ගේ උතුම්බව එලෙසම අප හමුවේ සනාථ කිරීමට 'විජයබා කොල්ලය' කතුවරයා සමත් වේ. නමුත් එතැනින් නොනවතින කතුවරයා, අසංගයන් පරංගි වාඩියෙන් හිමින් සිරුවේ පලා යවනු වෙනුවට පරංගි නායක ද ලසර්දාව නින්දෙන් අවදිකොට ඔහු සමඟ සටන්කොට ජයගෙන නමුත් මරණය තුවාල සහිතව කඳවුරෙන් පිටකරවීම මගින් අසංගගේ උතුම්බව හා සමව යන ඔහුගේ චිරත්වය අප හමුවේ විද්‍යාමාන කිරීමට සමත් වේ.

කෝට්ටේ රාජ්‍යය සමඟ සම්බන්ධතාවයක් ගොඩනගා ගැනීමට මෙරට බටහිර මුහුදුබඩ තීරයේ කඳවුරු බැඳගත් පෘතුගීසීන් වැයම් කරමින් සිටි සමයේදී සිදුවූ, මායාදුන්නේ කුමරාගේ හදිසි කෝපයේ ප්‍රතිපලයක් වූ විජයබා කොල්ලය හා ඒ ආශ්‍රිත සමකාලීන දේශපාලන වටපිටාව පිළිබඳ



යම් නිර්මාණශීලී විවරණයක් තම නවකතාව හරහා සහාදයා වෙත දැක්වීමට ඩබ්. ඒ. සිල්වා ඉදිරිපත් වේ.

ඒ සමඟම ද ලසර්දා හා ඔහුගේ පෘතුගීසි හමුදාවේ සැහැසිකම් මෙන්ම, කුටුප්‍රාප්තිය පියවුමාගේ අහිත සිල්වන් බවත්, හම්දුම්මාගේ සියුම් සෘජු බවත් නවකතාවට මහත් ආලෝකයක් ලබාදේ. නවකතාවේ ප්‍රමුඛ පෙම්කතාවට අමතරව මායාදුන්නේ කුමරාගේ හා ලීලාවතී කුමරියගේ පෙම් කතාව ද පසුබිමින් ගලායයි.

විජයබා කොල්ලය සිනමා පටය

ජැක්සන් ඇන්තනිගේ 'අබා' (2008) චිත්‍රපටයෙන් ඇරඹී නූතන ඓතිහාසික සිනමා රැල්ල මඳක් ඒකාකාරී රාමුවක කොටු වූ බවක් විද්‍යාමාන වන කාලයක, 'විජයබා කොල්ලය' වැනි දැවැන්තවූත් රසයෙන් අනූනවූත් නිර්මාණයකට අනගැසීම පිළිබඳව, අප, මහආදරු සුනිල් ආරියරත්නයන්ට කෘතඥ විය යුතුය.

පිටු තුන්සියයකට ආසන්න ඉඩකඩක් තුළදී නවකතාකරුවා දක්වන පෙළහර, එළෙසම, පැය දෙකහමාරකට අඩු කාල පරාසයකදී සිනමාකරුවෙකුට පෑ නොහැක. එහෙයින්, ඓතිහාසික දේශපාලන පෙරළියට අදාළ සමහර චරිත, අනු කතාන්දර හා සිද්ධි සිනමා පටයේ දී ගිලිහී ගොස් ඇත. පොතෙහි එන ඓතිහාසික දේශපාලන කතාන්දරයට ආසන්නවල එය අඩු නැතිව දැකගැනීමට සිනමාහල වෙන යන සහාදයාගේ සිතැති එළෙසින්ම ඉටු නොවේ.

නවකතාවේ එන සමකාලීන උද්වේගකර දේශපාලන බලපෙරළිය පසුබිමින් තබාගෙන, නාට්‍යයමය අවස්ථාවලින් අනූන තුන්කොන් පෙම් කතාන්දරයට මූලිකත්වය දෙමින් 'විජයබා කොල්ලය' සිනමා පටය නිර්මාණය කිරීමට ඉදිරිපත්වීම නිසා ආරියරත්නයන්ට සිය ප්‍රතිනිර්මාණයේදී, මුල්කෘතියෙන් යම් පමණකට අපගමනය වීමට හිමිවන නිදහස වැඩිය. එළෙසම පරම්පරා කිහිපයක් පසුබිම් වන,

Women Engineers’ Survey - Part 3

For the first time in Sri Lanka a countrywide survey was carried out to gather information on the status quo of the woman engineer living and working in Sri Lanka. This article is the third part of a series published in the SLEN newsletter of the Institution of Engineers Sri Lanka (IESL) to share the results obtained in the survey which were initially announced to the audience of the AGM of the WEF (Women Engineers’ Forum) of IESL in March 2018. The full survey comprised of:

- Section 1 – Identifying the status
- Section 2 – Perception of engineering as a profession and the place of women in engineering
- Section 3 – Identifying inhibitors
- Section 4 – Engineering education
- Section 5 – Identifying work place issues and barriers
- Section 6 – Identifying a wish list

Part 1 of this series which covered the findings of the Sections 1 & 2 of the survey can be found on the page 7 of Vol. 54, No 03, April/May 2018 issue (<http://www.iesl.lk/> Resources> Publication>); Part 2 can be found on page 9 of Vol. 54, No 05, September/October 2018 issue (<http://www.iesl.lk/> Resources> Publication>) and covers the Sections 3 and 4 of the survey.

This article covers the findings of Sections 5.

Section 5 - Identifying work place issues and barriers

Issues and perceived barriers at the work place are known to be major hindrances to the career progression of women engineers elsewhere in the world. The questions were targeted at eliciting responses to issues that may be common to the woman engineers in Sri Lanka. As shown on Table 9, only half of the respondents felt that they were treated equally by their engineering colleagues. This, although may be viewed as just a “perception”, can be quite damaging and demoralising.

Table 9: Do you feel you get treated as an equal in your work place among your fellow engineering staff?

Yes	No	Not sure
51%	30%	19%

Asked about their perception of the treatment they receive from the non-engineering male and female staff respectively (Table 10), a high percentage (55% and 67% respectively) responded with positivity while 23% and 17% felt they were being treated with less respect by non-engineers staff. It is a common practice and an unconscious bias among the general public to view male-dominated careers as being better suited and performed by males and therefore can also prevail among non-engineering staff, male or female; they see females being either unsuitable or not as skilful which leads to their unfavourable treatment

or grudging accommodation of female engineers. A 7% and 4% of respondents, albeit a small number, feeling that they are treated with more respect is an encouraging statistic which perhaps is indicative of the appreciation of the female engineer who appears to be skilfully ‘managing’ both the career and the family responsibilities. Those 2% responding as “Other” gave comments such as “This varies with the people. Some treat us better than males while some people disrespect.”, “It depends on your attitude & style of management, not on your sex.” and “It takes a longer time for a female engineer to earn the respect compared to our male counterparts. But once earned, it continues.” indicating that there is a wide variance in perceptions.

The views regarding the gender separation during prior education and its influence on the development of a female engineer are shown in Table 11. There is no clear winner and ambiguity prevails with 69% and 78% respectively agreeing each system is ‘better’ than the other which is expected because there are benefits to be gained from both systems; what is more important is to foster and nurture the positive attributes of one system in the other and attempt to make learning environments gender-neutral.

The next questions in this section were to find what team compositions and dynamics encourage the advancement of a career in Engineering. As shown in Table 12, having more females in the workplace does neither necessarily nor significantly help other females to achieve more. Having more females in leadership positions however does appear to have a marginally more influence. These responses are explicable: generally there is no formal obligation for female engineers to support other female engineers and when there is support, it is generally only informal and personality-dependent; role models in leadership positions on the other hand,

Table 10: Do you feel you get treated equally respectfully non-engineers staff?

	Male staff	Female staff
Yes	54%	66%
No. With more respect/regard than for male engineers	7%	3%
No. With less respect/regard than for male engineers.	23%	15%
Not sure	14%	14%
Other (Specify)	2%	2%

Table 11: Perception regarding basic education

Question	Agree	Disagree	Not sure
"All-girls' education up to A/L is better because gender issues never come up and girls grow up believing that they can do anything." Do you agree?	69%	18%	13%
"Co-education is better because it allows mutual understanding early in life." Do you agree?	78%	6%	16%

Table 12: Effect of the team composition and dynamics

Question	Yes	No	Not sure
Will having more female members in your work team/division/department encourage you to achieve more?	40%	31%	29%
Will having more females in leadership positions in your work place encourage you want to succeed more?	48%	27%	25%
Will having a mentor (male or female) in your workplace help you to succeed?	71%	12%	17%

Table 13: Do you think that there was (will be) a time in your engineering career when you had (will have) to choose between family and career?

Yes	61%
No	25%
Not sure	14%

Table 14: If you have to choose between family and career which did (will) you choose?

Family	52%
Career	10%
Not sure	12%
Not applicable	26%

Table 15: If you chose (will choose) ‘Family’ what kind of compromises did you have to do (are you ready to do)?

Answer Choices	Responses
Give up work completely	8%
Choose to work part-time	33%
Forego an opportunity for promotion	22%
Forego an opportunity for further studying/training	23%
Not applicable	34%
Other (please specify)	7%

Table 16: If you chose (will choose) ‘Career’ what kind of support did you get (will you seek) to reduce impact on your family?

Answer Choices	Responses
Help from parents, relatives and extended family	23%
Help from domestic helpers	18%
Help from husband to take on an increased share of family responsibilities	26%
Not sure	3%
Not applicable	29%
Other (please specify)	1%

can be direct or indirect inspiration for junior females. It should be noted that with a 71% agreement the respondents are clear in their view that a mentorship - be it male or female - will be of help. Only 12% seem to disagree while 17% are not sure perhaps because they have never been mentees, even informally, at their work places.

It was established earlier (Women Engineers’ Survey

- Part 1, Table 7) that nearly half of the respondents felt that there is a need to spend long hours at work in order to progress in a career in engineering. Given the high demand on their time, the responses to the next few questions reveal that the difficulties women face in balancing the acts of achieving career ambitions and family responsibilities can sway them towards lowering their career ambitions. Table 13 shows that

an overwhelming majority of the female engineers have to choose between family and career at some stage and a sizeable majority tend to choose their family over career (Table 14).

The next question was for those who chose/will choose family over career and Table 15 summarises the responses to that question.

Contd. from page 8...

Women Engineers’ ...

Table 17: Would you consider returning to a career in engineering after a long break taken for family reasons, or would you choose a different line of work?

Answer Choices	Responses
Like to go back to engineering full time	53%
Like to go back to engineering part time	10%
May not return to work	2%
Choose other line of work	9%
Not sure	13%
Not applicable	12%
Other (please specify)	1%

Shown in Table 18 are the other factors that have affected the respondents’ career progression.

Table 18: Do you think any of the below affected your performance or career progression at any stage of your career?

Answer Choices	Responses
Workplace culture (including harassment, discrimination & being disadvantaged)	19%
Long working hours and difficulties balancing career and family	17%
Lack of support from management	17%
Lack of networks or difficulty maintaining networks (isolation)	8%
Gender pay gap or the lack of transparency in pay scales	5%
Lack of visible role models	10%
No transparent career path	11%
Political interference/influence	10%
Not affected	1%
Other (please specify)	2%

Because the respondents have more than one answer choice 8% may appear small, but it still is significant; choosing to completely give up a career in engineering is a massive blow to the profession. Foregoing opportunities (22% and 23%), and some of the ‘other’ choices (not on the table) such as “Diversify my Career in to different fields”, “Went for another job which had more time for family”, and “Early retirement” all indicate a departure from the field of engineering which is a great loss to the industry. Table 16 summarises the answers from those who chose/will choose career over family which reveals that sharing the additional load with family members or domestic helpers is the commonest approach in Sri Lanka.

The good news is that most females do want to return to engineering after a long break in their careers as shown in table 17; only 2% consider stopping work all together. “Other” responses vary from hopelessness: “But the engineering field might not give a chance to the women who want to” and “There will be no opportunities for career for women after a long break”, to anticipation: “May choose for another line of work such as academic, teaching or research path”. The nature of the engineering industry in Sri Lanka does not seem to provide pathways for women to return to work in engineering with rela-

tive ease as in some other countries. Women’s desire to prioritise family conflicting with the need to invest long hours to engineering work, and the perceived difficulties in balancing life and work in an engineering career as opposed in other work/trades may all contribute to females not wanting to study engineering in the first place.

Apart from the given answer choices the specified “other” responses vary from lack of technical exposure [“There is misconception among managers that female engineers are willing to do management related activities more. Most of the time they don’t offer equal opportunities to female engineers. Therefore the real technical exposure to ladies are less. This highly affects the career progression.”], through office politics [“Political interference in the sense of Office Politics; which is biased towards male engineers], to dynamics characteristic to male dominated industries [“Being left out of important decisions made by the all males club (male colleges drinking after work with boss.)”] all of which are very concerning.

Considering the responses to this part of the survey we can come to several conclusions and make a few recommendations:

- The perceived differential treatment towards female engineers by other engineering as well as non-engi-

neering staff may arise from deep-rooted unconscious biases and belief systems embedded in a society. However, non-acceptance from counterparts as an equal is in direct contradiction with two significant reinforcers of engineering occupations (altruism and autonomy; others are comfort, safety, achievement and status) that drive individuals to pursue a career in Engineering in the first place. This is a dangerous slippery slope that can only get worse unless corrective adjustments in the attitudes are made to happen.

- Ambiguity with regard to segregated- or co-education is not surprising. There is research evidence showing segregation caused people to develop strong stereotypes and in-group biases while there is also evidence that segregated education is a personal choice and those who take that do thrive in that environment. The best way to achieve unbiased mindsets will be to foster gender-neutral learning environments for children from a very young age regardless of whether they are in the company of the opposite sex or not.

- Arranged mentoring by more experienced senior engineers is clearly a matter that should be taken up by the engineering industry and institutions seriously. It is a much needed and an extremely beneficial process that helps (particularly female) engineers to forge ahead successful careers. Engineering institutions overseas have initiated such mentoring programs and individuals as well as the engineering industry in general reap significant benefits.

- Lack of visible role models is a hindrance to improving the status quo. Engineering institutes and the industry must incentivise senior female role models in the profession to take initiative and empower/support junior female engineers based on a medium- to long-term plan focussed on measurable outcomes.

- More often than not it is the female in a family that ‘sacrifices’ career progression when faced with the choice between career and caring for children and/or ageing parents. Their overwhelming desire to return to engineering after such a break is commendable; however, considering the variety of hurdles that a returning female engineer encounters – logistical (finding the right work pattern and childcare arrangements), professional (refreshing skills) and personal (confidence, and image) – and there being no provisions by the industry to help the female engineer to overcome them (as we shall see in Part 4 of this series) it is not surprising that there seems very little hope, if any, that a return to engineering is a possibility in Sri Lanka. Every engineer leaving the profession is a loss to the industry that needs to be halted.

- Without the sincere corporation, participation and buy-in from the male counterparts it will be impossible to get rid of the barriers such as negative stereotyping, unfavourable workplace culture and attitudes of ‘boys’ club’. There should be more exposure of male engineers to the plight of the female engineers and their perceptions, the reasons for the lower participation of females in engineering and how they (males) can contribute to ameliorate the situation. The senior male engineers who witness for themselves the barriers their female offspring face in male-dominated industries in particular can use that true eye-opener to take the initiative to play an active role in supporting this cause.

To be continued.....

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Comments and feedback on this article will be entertained until 30th of June 2019. Please send them to a.fernando@griffith.edu.au.

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Techno 2019...

techno 2019, Eng. (Prof) S B S Abhayakoon said that the theme of the exhibition for this year is “Innovative Engineering towards A Sustainable Sri Lanka”.

“Today, the current issues faced by us are very complex in nature and hence there is no doubt that Engineering needs to be innovative. The development of the country in a sustainable manner is closely related to innovative engineering. This is evident as sustainable development directly depends on the appropriate and timely actions initiated by the engineers. Therefore engineers have a crucial role to play in inspiring, collaborating and being creative in all their endeavors to make sure that the country is properly guided in its efforts towards sustainable development” he said.

The main emphasis of the national engineering and technology exhibition is to bring out and unleashing countries multi-disciplinary engineering talents to drive Sri Lankan technological excellence for the revolutionary uplifting of people’s living conditions and prosperity.

Implications of the exhibition are substantial. A wide variety of engineering and technology products and services are showcased in techno 2019 under one roof allowing all levels of industrialists and the general public to meet their needs. techno 2019 is a rare opportunity for inventors and entrepreneurs to unveil their innovative ideas and to look for investors.

The best stalls selected during the exhibition will be awarded at the techno night. In keeping with the theme, institutions Young Members Section with collaboration from engineering faculties of the state universities and Sri Lanka Telecom have organized an array of competitions alongside the exhibition. Key features of the techno exhibition such as Building Clinic, Short Seminars, junior inventor Area and Undergraduate Inventor Area and the armed forces pavilion will function as usual. As for the visitors, there will be a raffle draw with exciting prizes from the entry tickets, drawn twice a day throughout the whole duration of the exhibition.

7 වැනි පිටුවෙන්...

විජයබා කොල්ලය....

තරමක් සංකීර්ණ ඓතිහාසික සිද්ධි දාමය වැඩියෙන් ඉදිරිපත් කරනවාට වඩා නවකතාවෙහි එන තුන්කොන් ආදර අන්දරය වටා සිනමාපටය කේන්ද්‍රගත කිරීම, වාණිජ වශයෙන් වඩා සාර්ථක නිර්මාණයක් එළිදැක්වීමට හේතුවන බව සුනිල් ආරියරත්නයන් මැනවින් දැනී. මේ සම්මිශ්‍රණය සාර්ථක ලෙස සිදුකිරීමට ඔහු ප්‍රමාණවත් උත්සහයක් ගත්තේදැයි සොයා බැලීම වටී.

ප්‍රේක්ෂකාගාරයේ ආකර්ෂණය දිනාගැනීමට අධ්‍යක්ෂකවරයාගේ උපරිම අවධානය සැමවිටම යොමුවී ඇති නිසා, විටෙක නවකතාවෙහි එන පෙම්කතාවට එලෙසින්ම අනුගත වෙමින්ද වරෙක එයින් තරමක් අපගමනය වෙමින්ද ගලා යන පරිදි ඔහු සිනමාපටය හසුරුවයි.

අසංග සෙනෙවි හා විවාහ ගිවිසිගෙන සිටි නිලමණිය තමාට අහම්බෙන් හමුවන නයනානන්ද නම් ඔත්තුකරුවා සමග පෙමින් වෙලෙන අවස්ථාවේ සිට ඔවුන් දෙපළට අසංගයන්ගේ හා දෙමාපියන්ගේ ආශීර්වාදය හා සහයෝගය ලැබෙන අවස්ථාව දක්වා දිවෙන, සිනමාපටයේ මුල් භාගය මහත් සීරුවෙන් සිනමාකරුවා පෙළගස්වන නමුත් අසංගගේ උතුම්බවත්, නයනානන්දගේ විරත්වයත් හුවාදැක්වීමට ඉවහල් වන සිදුවීම් කෙටියෙන් ලිස්සා යවනු ලබයි. නමුත් හේමාල් රණසිංහ හා අශාන් ඩයස් වර්ත නිරූපනයෙහි දක්වන ප්‍රතිභාව එමගින් කිසිසේත් යටපත් නොවේ. නයනානන්දගේ හා අසංගගේ වර්තවල ඇති පෞරුෂය විදහා දක්වන ප්‍රබල දෙබස් බණ්ඩ සිනමාපටයේ බහුලයි. නයනානන්දගේ අංග වලන හා භාව ප්‍රකාශනය අතිශයින්ම නිවැරදි. මේ අතරින් සෙනාලි ආරියරත්න පණ පොවන නිලමණි වර්තය වඩා ප්‍රබලව නැගී නොසිටින්නේ සිනමාකරුවා ඇයව යොදාගන්නේ සියුම් භාව ප්‍රකාශනයකට නොව ප්‍රේක්ෂකාගාරය සිනමාපටය වෙත රඳවාගැනීමේ මෙවලමක් ලෙසට වීම නිසාය. තවද ද ලසර්දා ලෙස රඟන හැන්ස් බිලිමෝරියාගේ රංගනය පැසසුම් කළ යුතුයි.

නවකතාවක් සිනමාවට නැගීමේදී එහි ඇති සියළුම දේ ඒ අයුරින්ම සිනමාපටයට නැගීම නුසුදුසු බව සත්‍යයකි. නවකතාව හරය උකහාගෙන එය සිනමාත්මකව ඉදිරිපත් කිරීමේදී යම් යම් වෙනස්කම් කිරීමට සිනමාකරුවාට තහංචියක් නැත. එනමුත් ඉතිහාස කතාවක අක්මුල් ගලවා දැමීමට ඒ නිදහස යොදාගත යුතු නැත. ඇති පිල්ලමක් අතර සැඟවෙන්න රහසේ... ගීතය ඉතාමත් විසිතුරුයි. නිලමණියගේ දඟකාරබව උපරිමයෙන්ම පෙන්වීමට සිනමාකරුවා මෙහිදී යත්න දරයි. එනමුත් ඇයගේ රංගනය හා නර්තනය විසි



එක්වන සියවසේ සෙනාලි ආරියරත්නාට විනා දහසය වන සියවසේ ජීවත්වූ නිලමණි කුමරියට නම් සුදුසු නොවේ. විජයබා රජ සමයේ දී පෘතුගීසි වෙළඳ බලපෑම පැවතුනා මිස සංස්කෘතික බලපෑම තීව්‍රව නොතිබූ බව සුනිල් ආරියරත්නයන් නොදන්නවා විය නොහැක. 1518හි දී මෙරට කුලකතුන් කිසිලෙසකින්වත් නොඇඟලූ ඇඳුම් වලින් සරසා මුහුදු වෙරළේ හා පිළිමහනේ ඇයව නටවන්නට සිනමාකරුවා පෙළඹෙන්නේ සිනමාපටයේ වාණිජ අරමුණු සාක්ෂාත් කරගැනීම සඳහාම පමණක් බව පෙනේ.

නිලමණිය කෙබඳු තරාතිරමේ තැනැත්තියක්දැයි යන්න පළ කිරීමට, ඩබ්. ඒ. සිල්වා මෙසේ ඉඟි ලබාදේ. නායක සෙනවියන්ගේ වස් හවනයෙහි පශ්චිම භාගය උද්‍යානයකින් යුක්තය. එ කල මෙ කල මෙන් පවත් සුව පිණිස වුවද, ප්‍රසිද්ධ ස්ථානයන්හි නිදැල්ලේ හැසිරීම කුල කාන්තාවනට අනුවන වූ හෙයින් ප්‍රභූවරයන්ගේ වාස හවනයන්හි කාන්තා පක්ෂයට සන්ධ්‍යා පරිසරායය පිණිස පිළියෙල වූ ගෘහෝද්‍යානයෝ වූහ. කිසියම් දිනක, අවසර ඇති පරිද්දෙන් නිලමණි හුදකලාව ම හෝ මැණියන් කැටුව හෝ මේ ගෙ උයන, සවස් කල් පවත්

සුව විඳිමින් විශ්‍රාමයෙන් පසු වන්නීය' (3 පරිච්ඡේදය - 14 පිටුව).

ඩබ්. ඒ. සිල්වාගේ නිලමණිය නිහඩ තැන්පත් යුවතියක් වුවත්, ආරියරත්නයන් ඇයව සිනමාපටයට ගැලපෙන අයුරින් කෙළිලොල් යුවතියක් බවට පත්කිරීම ලොකු වරදක් නොවේ. නමුත් කතාවේ කාල වකවානුව තමන්ගේ සිතැගි පරිදි වෙනස් කිරීමට ඔහුට අයිතියක් නැත.

මි විකින් මත්වූ පරංගි සෙබළුන් බැඳක්ක තුළ නටමින් ගායනා කරන මිහිරි බයිලා ගීත කිහිපයක් එදා මෙදා තුර සිංහල සිනමාවේදී අපට හමුවේ. ලෙස්ටර් ජේම්ස් පීරිස්ගේ 'සංදේශය' (1960) චිත්‍රපටයේ එන 'පෘතුගීසිකාරයා' ගීතය හා ඩිල්මන් ජයරත්නගේ 'රණ දෙරණ' (1984) චිත්‍රපටයේ එන 'සිඤ්ජර සිඤ්ජරේ' ගීතය සමකාලීන සිනමා තාක්ෂණයට අනුව හොඳ නිර්මාණ වේ. මේ ආකෘතියට අලුතින්ම එක්වූ විජයබා කොල්ලයේ එන 'සිංගලි නෝනේ...' ගීතය හැම අතින්ම ඉතා අනගිය. සුනිල් ආරියරත්නගේ පද්මාලාවට හා රෝහණ විරසිංහගේ සංගීතයට, සනුක වික්‍රමසිංහගේ කටහඬ හොඳින් ගැලපී නිමැවුනු මේ ගීතයට සාධාරණය ඉටුකරන්නට රංගන ශිල්පීන් දායක වී ඇති ආකාරය ඉතා විශිෂ්ටයි.

"...කවදා හරි රට දාලා ගියත් පරංගි ...නෝනේ හැංගි හැංගි හැමතැනකම ඉඳි පරංගි..." කියා ආරියරත්නයන් ගීතය අවසන් දෙපදයේ දී අපට මතක් කර දෙන්නේ පෘතුගීසි ආගමනය නිසා මෙරට සමාජ සංස්කෘතික දේහයේ සිදුවූ වෙනස්කම් කිසිදා මැකී නොයන බව නොවේද?

විශිෂ්ට ලෙස කැමරා කෝණ හැසිරවූ දර්ශන රැසකින් 'විජයබා කොල්ලය' සමන්විතයි. සිනමා පටයේ බොහෝ දර්ශන වල වර්ණ සංයෝජනය ආකර්ශනීයයි. එනමුත් මෙහි වර්ණ තේමාව සාමාන්‍යයෙන් ඓතිහාසික කථා වස්තු පසුබිම් කොටගත් චිත්‍රපට වලදී දක්නට නොලැබෙන්නකි. එය වඩා ආසන්න වන්නේ සරල වාණිජ චිත්‍රපටයක වර්ණ සංයෝජනයටයි. රාත්‍රී දර්ශන අලෝකකරණයේ දී දැක්වෙන දෝශ, චිත්‍රපටයේ විසිතුරු බව වැඩි කිරීම සඳහා උවමනාවෙන්ම කළ ඒවාදැයි සිතේ. අඳුරු පසුබිමක වුවත් තමන්ට පෙන්වීමට අවශ්‍ය ප්‍රදේශය අස්වාභාවික ලෙස ආලෝකනය කර දැක්වීම මගින් රූප රාමුවේ විශ්වසනීයත්වය පළුදු කරවයි.

'විජයබා කොල්ලය' මෙරට නිෂ්පාදනය වූ පළමු ත්‍රිමාණ සිංහල චිත්‍රපටය බැවින් එහි ත්‍රිමාණ තාක්ෂණයේ ඇති අඩුපුහුඩුකම් හුවාදැක්වීම සුදුසු නොවේ. නමුත් ප්‍රේක්ෂකයාගේ අසලටම ගෙන එන සමහර රූප රාමුවල ඇති බලාපොරොත්තු නොවිය හැකි පැතලි බව වලකා ගැනීමට හැකි වූයේ නම් සුදුසුයි. නූතන අධ්‍යාත්මික බටහිර ත්‍රිමාණ චිත්‍රපට නරඹන ලාංකික ප්‍රේක්ෂකයාගේ අපේක්ෂාවන් ඉහළ මට්ටමක පවතින බව වටහා ගත යුතුයි. සංග්‍රාම දර්ශන නිර්මාණශීලීව හා නවතාවයකින් යුතුව ඉදිරිපත්

කිරීමට සිනමාකරුවා කිසිදු උත්සාහයක් දරා නැත. පරංගි හටන සරල ද්වන්ද කඩු සටන් කිහිපයකට සීමාවේ. පසුගිය කාලයේ තීරගත වූ 'අබා' (2008) 'මහරජ ගැමුණු' (2015), 'ආලෝකා උදපාදි' (2017) වැනි සිනමාපට වල යුද්ධ හා ඒ ආශ්‍රිත දර්ශන මීට වඩා කිහිප ගුණයක් ඉදිරියෙන් පවතී.

'විජයබා කොල්ලය' සිනමාපටය තුළදී, විජයබා කොල්ලයට ලබාදී ඇති ඉඩකඩ නම් කිසිලෙසකින්වත් ප්‍රමාණවත් නැත. එය ඉදිරිපත් කරන්නේ ද ඉතා දුර්වල ලෙසය. මෙහිදී කොල්ලයක අංශුමාත්‍රයක්වත් නොපෙන්වන්නට සිනමාකරුවා ප්‍රවේසම් වන්නේ ඇයිදැයි නොතේරේ. අගමැති කඳුරේ බණ්ඩාර සියුමැලි දේවරාජ කුමරුගේ සහයෙන් රජුගේ පුත් කුමාරවරුන් තිදෙනා ඝාතනය කිරීමට සැලසුම් කරන ආකාරයත්, පසුව ඒ සැලසුම ඉටුකිරීමට තමන්ම බිමතින් තනිවම මායාදුන්නේ කුමාරයව හමුවන ආකාරයත් විනිඵ සහගතය. මෙහිදී නවකතාකරුවා සිනමා අධ්‍යක්ෂකවරයාට වඩා ගවු ගණනක් ඉදිරියෙන් සිටී. 'අයිය, අයිය, නොයන්' - නොයන් රහස් කුංචේ හැට දෙනෙක් - අයියලා මරන්න'' කියා දේවරාජ කුමාරයා කීහ. (42 පරිච්ඡේදය - 270 පිටුව).

මායාදුන්නේ කුමාරයා 'විජයබා කොල්ලය අරඹව්' ලෙස සිය සෙනගට විධානය කරනු ලබයි. පසුකාලීනව මේ සිදුවීම හැඳින්වීමට ඉතිහාස ගවේෂකයන් යෙදූ නම, සිදුවීමට කලින්ම ඔහු දන්නේ කෙසේදැයි අපට නම් නොතේරේ. සිනමාපටයේ උච්චතම අවස්ථාවක් කරවාගත යුතුව තිබූ අසංග සෙනවියන් හා ද ලසර්දා අතර සිදුවන ද්වන්ද සටන මීට වඩා ප්‍රබලව හා සිනමාත්මකව ඉදිරිපත් කිරීමට 12 වැනි පිටුවට...

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Dr. Kamal Laksiri elected to the Strategic Council of the International Water Association (IWA)



Dr. Kamal Laksiri, the Chairman, Water Forum of the Institution of Engineers Sri Lanka has been elected as a member of the Strategic Council of the International Water Association (IWA) based in London, UK.

International Water Association is a network of water professionals striving for a world in which water is wisely, sustainably and equitably managed. IWA members and staff are situated in 130 countries

worldwide, forming the largest international network of water professionals working towards a water wise world. IWA is headquartered in London, United Kingdom with a Global operations office in Hague, the Netherlands and African and Asian regional offices in Nairobi, Kenya and Beijing, China respectively.

Currently IWA is in the implementation of the 2019-2024 IWA Strategic Plan. This strategy learns from and builds upon the previous IWA Strategic Plan 2014-18. Vision of this endure is to establish a network of water professionals striving for a world in which water is wisely, sustainably and equitably managed. IWA mission is to promote knowledge and provide agenda-setting leadership for the global water Community.

Contd. from page 3...

Intriguing levels of ...

Intriguing Levels of PAEs ubiquitous in watercourses

Gas Chromatograph coupled with a Mass Selective Detector (GC/MS) was used for the qualitative analysis of PAEs. DEP, DBP, BBP, and DEHP were found in most of the watercourses, while DMP and DnOP were below the respective levels of quantification (0.5 µg/L for DMP and 1.0 µg/L for DnOP) for all the watercourses (Table 1). The average concentrations detected for DEP, DBP, BBP, and DEHP were in the range of 2.5–265.0, 1.0–32.0, 61–108, and 12–165 µg/L, respectively and these average values were compared with the same detected in the watercourses of different countries (Table 2). DEHP and DBP in most of the watercourses of our study exceeded those of Canadian permissible levels (16 and 19 µg/L) for the protection of aquatic life.

This article, therefore, reports a study done by the authors on the occurrence of PAEs in coastal urban watercourses in Colombo and its suburbs (particularly the lower stretches of watercourses). Figure 2 shows the 22 locations at which water samples were collected for PAE analysis and the distribution of industries that have a potential for PAE release to the watercourses selected for the study.

Some of the principal influencing factors for the retention of PAEs in the water column include pH, temperature, and salinity. PAEs are hydrolyzed below pH 5 and above pH 7 and have high hydrophobicity with increasing salinity resulting in a negative impact on water solubility. PAEs show positive relationship with temperature of the water column. Further, the sorption affinity of colloid-laden PAEs declines with increasing concentrations of Na⁺, K⁺, Cl⁻, and SO₄²⁻ of colloids. Other factors of concern constitute solubility in water, Octanol/water partitioning, air/water partitioning, water/solid partitioning, photodegradation, and biodegradation. Low or almost stagnant flows in the lower reach of these watercourses provide prolonged access for aquatic biota to PAEs.

On the other hand, DMP, DBP, and DnOP concentrations were of the same order of magnitude as reported in other countries, while DEP, BBP and DEHP concentrations detected were more than one order of magnitude higher than those observed in many of the other countries (Table 2). The possible factors for a vast variation of PAE concentrations of the watercourses (Table 2) include a varying degree of migration potential of PAEs from industries and households, inherent properties of PAEs (volatility, solubility, biodegradability,

Table 1: PAE concentrations detected in water at sampling locations						
Sample	PAE Concentration (µg/L)					
	DMP	DEP	DBP	BBP	DEHP	DnOP
SP 01	< 0.5	22.0 ± 3	17.0 ± 1	< 1	58 ± 2	< 1
SP 02	< 0.5	37.0 ± 15	16.0 ± 5	< 1	165 ± 136	< 1
SP 03	< 0.5	20.5 ± 8	26.0 ± 11	< 1	105 ± 54	< 1
SP 04	< 0.5	61.0 ± 39	27.5 ± 2	61 ± 4	82 ± 16	< 1
SP 05	< 0.5	26.0 ± 7	15.5 ± 3	< 1	70 ± 6	< 1
SP 06	< 0.5	< 0.5	< 0.5	< 1	73 ± 1	< 1
SP 07	< 0.5	31.0 ± 17	20.0 ± 15	< 1	110 ± 56	< 1
SP 08	< 0.5	< 0.5	32.0 ± 11	< 1	44 ± 2	< 1
SP 09	< 0.5	110.5 ± 51	20.5 ± 3	72 ± 3	114 ± 23	< 1
SP 10	< 0.5	265.0 ± 25	27.5 ± 4	75 ± 11	137 ± 6	< 1
SP 11	< 0.5	< 0.5	< 0.5	< 1	102 ± 2	< 1
SP 12	< 0.5	< 0.5	< 0.5	< 1	21 ± 3	< 1
SP 13	< 0.5	27.5 ± 1	27.0 ± 17	< 1	53 ± 3	< 1
SP 14	< 0.5	42.0 ± 7	24.5 ± 5	< 1	12 ± 1	< 1
SP 15	< 0.5	25.0 ± 1	19.0 ± 3	< 1	93 ± 12	< 1
SP 16	< 0.5	48.0 ± 17	24.0 ± 3	< 1	90 ± 22	< 1
SP 17	< 0.5	25.0 ± 8	21.0 ± 3	< 1	108 ± 50	< 1
SP 18	< 0.5	< 0.5	< 0.5	< 1	62 ± 2	< 1
SP 19	< 0.5	246.0 ± 26	21.5 ± 6	69 ± 6	101 ± 45	< 1
SP 20	< 0.5	26.0 ± 13	27.0 ± 7	108 ± 7	134 ± 1	< 1
SP 21	< 0.5	2.5 ± 1	2.5 ± 1	< 1	< 1	< 1
SP 22	< 0.5	61.0 ± 15	20.5 ± 4	< 1	98 ± 20	< 1

LOQ for DMP: 0.5 µg/L; DEP: 0.5 µg/L; DBP: 0.5 µg/L; BBP: 1 µg/L; DEHP: 1 µg/L; DnOP: 1 µg/L; N=3

photodegradability), quality of the receiving water (pH, salinity, temperature), and extent to which such PAEs are regulated.

Plausible reasons for the occurrence of copious levels

The major reasons for the copious levels of PAEs present in lower reaches of the urban watercourses may be the mushrooming of industries releasing PAEs within the sub-catchments

pH, temperature and salinity) that could assist with the prolonged retention in the watercourses.

Resilience of an imminent ecological disaster or manmade calamity

It is apparent that the contamination of PAEs in most of the watercourses is detrimental for the protection of aquatic life, as concentrations of DEHP and DBP were higher than those of Canadian permissible concentrations

act as a potent teratogen, neurotoxin, and endocrine disruptor.

Sri Lanka has been a fabulous country in producing shellfish [crustacea (such as shrimps, crabs, lobsters) and mollusks (such as clams, mussels, oysters, scallops)], which is a delicacy for many. However, with the unprecedented levels of PAEs found in the coastal aquatic environments, the shellfish industry may topple in no time with a likelihood

Table 2: Comparison of average levels of PAEs of watercourses in different countries

Country	PAE Concentration (µg/L)					
	DMP	DEP	DBP	BBP	DEHP	DnOP
Sri Lanka ¹	< 0.5	2.5–265.0	1.0–32.0	61–108	12–165	< 1
China ²	0.065–0.208	0.140–0.334	0.190–4.762	< 0.001	0.364–2.682	0.001–0.621
China ³	< 0.001	< 0.001	6.825	0.21	5.196	NM
China ⁴	< 0.010	0.098–0.197	0.146–0.225	< 0.010	0.582–2.05	0.010–0.059
China ⁵	< 0.001	< 0.001	35.65	NM	54.73	0.84
France ⁶	< 0.01	< 0.015	0.086	< 0.005	0.090	< 0.01
Germany ⁷	NM	NM	0.12–8.80	< 0.02	0.33–97.80	NM
Japan ⁸	< 0.03	< 0.03	3.34	NM	0.97	NM
Sweden ⁹	0.40	0.63	6.8	0.17	NM	NM
Spain ¹⁰	0.003–0.008	0.300–1.742	NM	0.005–0.122	0.014–0.180	NM
Spain ¹¹	0.158	0.261	< 0.125	0.029	0.133	NM
Taiwan ¹²	NM	0.6–2.5	1–13.5	< 0.6	1–18.5	NM

¹Canals and lakes- This study; ²Songhua River; ³Wujin river; ⁴QX section of Yangtze section; ⁵Wuhan section of Yangtze River; ⁶Seine River; ⁷Rivers, Lakes and Canals; ⁸Tempaku River; ⁹River water; ¹⁰Shallow water bodies; ¹¹River water; ¹²River water; NM- Not measured

(Fig. 2). It is a bizarre situation to note that almost all industries utilizing PAEs in their production have been located in Colombo and its suburbs. Another plausible reason would be the ever-increasing high population densities in Colombo and its suburbs, which may intentionally or inadvertently release PAE-rich products in the form of solid waste. Other factors affecting the ubiquitous presence of PAEs in the urban watercourses of concern are the inherent properties of each PAE (such as volatility, solubility, biodegradability, photodegradability) that could trigger its persistence, presence of industrial and household products dissolved in wastewater with a great potential for migration of PAEs in the water column, and quality of the receiving water (such as

(16 and 19 µg/L). Because of the low- or non-flowing hydraulic regime prevalent in coastal urban watercourses, PAE-rich water may be pervasive until monsoon-driven run-off carries such flows to the ocean. Until such time, the water column is a rich foraging ground for many biological forms, and consequently, bioaccumulation of PAEs begins. Carnivorous fish are often found to get PAEs transferred from the prey that is rich with PAEs in many orders of magnitudes, and the PAE levels of such carnivorous fish are steadily on the rise. This phenomenon is known to be the processes of bioconcentration and biomagnification with extended half-lives of PAEs in fish (one to several weeks). The Majority of PAEs consequently, transfers to humans and can

of Sri Lankan seafood being banned for human consumption. Such a bleak era seems to be close at hand unless we would be proactive collectively to say 'no' to sources containing and spewing astounding levels of PAEs. In this context, regulations on PAEs that are to be added to different diverse products need to be promulgated and enforced. Further, it is imperative that a rigorous scheme of PAE measurements is paramount, as the behavior of PAEs in the aquatic environment seems to be not fully understood. It is our fervent obligation to leave the coastal environments free of PAEs for better ecological sustenance for which strict principles of resilience need to be implemented so that a bizarre situation detrimental to ecological health could be avoided.

10 වැනි පිටුවෙන්...

විජයබා කොල්ලය....



අධ්‍යක්ෂකවරයා යොමුවූයේ නම් මැනවි. විරයා හා දුෂ්ඨයා අතර සිදුවන්නට තිබූ අවසන් 'ගල උඩ සටන්' දියරු කරගන්නා සිනමාකරුවා ඒ වෙනුවට අසංගයන් සමඟ පලායද්දී හමිදුම්මා දුනු හි යොදා පරංගි සෙබලෙක් ව බිම දමන ආකාරය පෙන්වයි. මේ ජවනිකා පෙළෙහි අරමුණ වන්නේ අසංගගේ මරණයට පෙරඔහුව නිලමණිහානියානන්ද සිටින ස්ථානයට කෙසේ හෝ රැගෙන යාමයි. චිත්‍රපටය අවසාන වන්නේ නයනානන්දගේ හා නිලමණි හමුවේ සිදුවන අසංග යන්ගේ මරණයෙනි. 80-90 දශකයේ බිහිවූ හින්දි කොපියක වැනි අවසානයක් අපට අත්දැකීමට

කෘති සම්පාදනය කළ මහාචාර්ය සුනිල් ආරියරත්නයන්, 'විජයබා කොල්ලය' වැනි ජනාදරයට පත්වූ ඓතිහාසික කෘතියක් මෙසේ නාස්ති කරනු ඇතැයි කිසිවෙකු නොසිතනු ඇත.

කුමන අඩුපුහුඩුකම් තිබුනත් 'විජයබා කොල්ලය' යනු බලා රස විඳිය හැකි සුන්දර සිනමාපටයක් බව නම් සඳහන් කළ යුතුය. ඩබ්. ඒ. සිල්වාගේ ආරයේ නවකතා කියවීමෙන් ලැබෙන මිහිර, පුරුද්දෙන් අස්වාදනය කරනු විනා ඒවා තාර්කිකව විග්‍රහ කිරීමට යැම නොකළ යුතු යැයි අදහන පුරුද්දකින් හෙබි අප, ඒ රීතියම සුනිල්



අවස්ථාව සැලසීමට සිනමාකරු උත්සුක වේ.

එසේම විජයබා රජ මාලිගය, ප්‍රභූ ගොඩනැගිලි හා වෙනත් ඓතිහාසික පසුතල හැකි කරම් අඩුවෙන් පෙන්වන්නට අධ්‍යක්ෂකවරයා ප්‍රවේසම් වීමෙන් සිනමාපටයේ තත්වය බරපතල ලෙස පහත දමා ඇත. මුහුදේ ඇතිත් පෙනෙන නැව් සහිත දර්ශන කිසිදු උවමනාවකින් කල ඒවා නොවේ. 'මහරජ ගැමුණු' හා 'ආලෝකා උදපාදි' වැනි සමකාලීන උසස් ගවේෂණශීලී සිනමාපට වලට වඩා සැලකිය යුතු අඩු පිරිවැයකින් නිර්මාණය වූ 'විජයබා කොල්ලය' තරමක විට ඒ අඩුව හේතුකොටගෙන ඇතිවූ සාණාත්මක බලපෑම පැහැදිලිවම විද්‍යාමාන වේ.

බයිලා කපිරිඤ්ඤා විමර්ශනයක් (1985), ග්‍රැමරෝන් ගී යුගය (1986), කැරොල් පසම් කන්තාරු (1987) දෙමළ බොද්ධයා (2006) වැනි මහඟු සාහිත්‍යයමය පර්යේෂණ

ආරියරත්නයන්ගේ 'විජයබා කොල්ලය' සිනමාපටයට ද පොදු යැයි සළකා එය රිසිසේ වින්දනය කිරීමට නොහැකිද? නොඑසේනම් ඉතිහාස කතාවක් පසුබිම් කොටගත් චිත්‍රපටයක් නිර්මාණයේදී, එය අපට අසා පුරුදු ඓතිහාසික කතාවට වැඩි බරක් දී නිවැරදි පසුතල හා නිවැරදි සිද්ධි දාම වලින් සමන්විතව නිර්මාණය විය යුතුද? කලාකරුවාගේ කාර්යයභාරය වෙළෙඳපොළ ඉල්ලුම ඉලක්ක කරගෙන සිය පාරිභෝගිකයා පිනවීමට නිර්මාණකරණයේ යෙදීමද, නැතහොත් නිර්මාණය තුළින් සහාදයාගේ චින්තනය ඉහළ නැංවීමට කටයුතු කිරීමද? මේ ප්‍රස්තුත පිළිබඳව ලාංකීය සිනමා රසික ජනතාව දරන ආකල්ප මොනවාදැයි, ඉදිරි සති කිහිපයේදී 'විජයබා කොල්ලය' සිනමාපටයට ඔවුන් ප්‍රතිචාර දක්වන ආකාරය අනුව, තරමක් දුරට හෝ අපට වටහා ගැනීමට හැකි වනු ඇත.

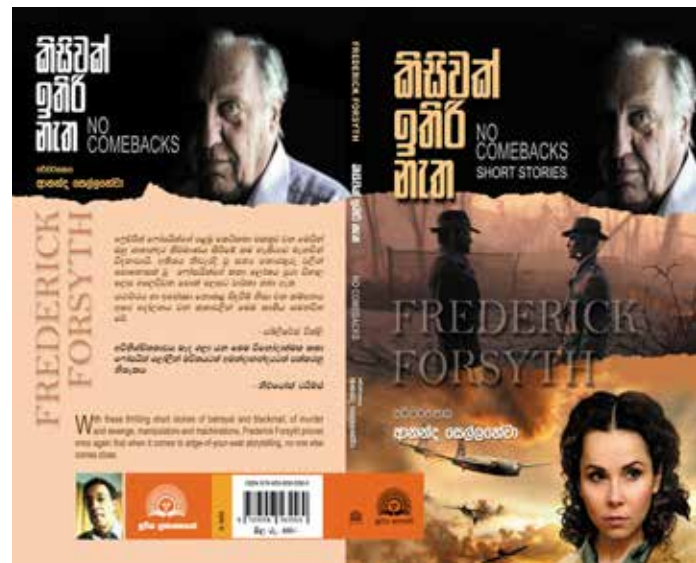
Chartered Engineer Become English Fiction Translator

Eng. Ananda Sellaheewa, Eminent Engineer, a graduate of Peradeniya Faculty of Engineering. Former Director of Mahaweli Authority MASL and Project Director of Dam Safety Project, Chartered Engineer and fellow of Institution of Engineers, Sri Lanka is a renowned Fictions Translator a mong Sinhala Fiction Readers.

He has translated 14 fictions of the famous author Fredric Forsyth and he has also published a collection of Sinhala poems contributing to the enrichment of Sri Lankan literature.

One of His translations 'NAGA MEHEUMA - COBRA' was recommended for 'KIYAVANNO DINAN-

NOYA' competition organized by the Ministry of Education. 'BURUMASAMAYA' - Burmese Days - another translation which was selected for the final competition under the category of Translated Books in State Literature Festival in the year 2018. Burmese Days is recommended for students who study world History of the colonial period in the Asian region. His latest Short Stories book 'KISIWAK ITIRINATHA - NO COMEBACKS' by FREDERIC KFORSYTH - was launched at BIMCH on 20th September 2019 along with the Annual International Bookfair which is a publication of Sooriya Publishers. All his publications are available with Sooriya Publishers.



Contd. from page 2...

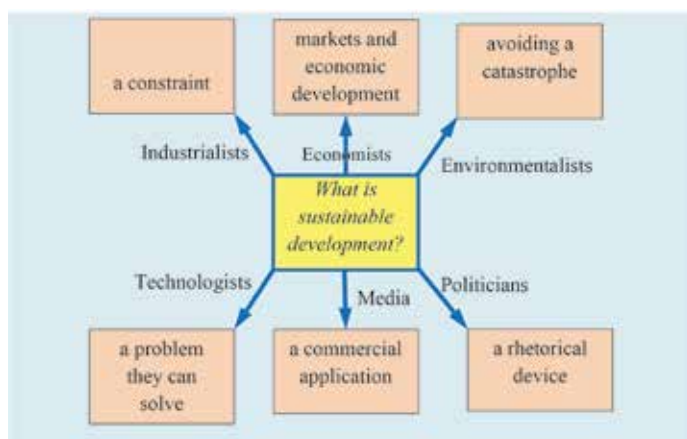
Sustainability: A Multifaceted Concept...



Coastal erosion



Flooding in cities



Images of sustainable development (after Chaharbaghi, K., Willis, R., 1999)

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Note: Photos have been down loaded from the some websites.