

FINAL REPORT

BIOMIMICRY WORKSHOP:

Fostering Innovation through Cross-Border Collaboration between India and Sri Lanka

Organization Name gap Research and Development Center

Project Lead By: Prof. Ranjith Dissanayake

Date of Submission: 25th November 2024

TABLE OF CONTENTS

1. Introduction	-----	3
2. Methodology	-----	4
3. Activities and Milestones	-----	5
3.1. Webinar Series	-----	5
3.2. Workshop	-----	6
3.3. Conference	-----	7
3.4. Exhibition	-----	9
4. Stakeholder Engagement	-----	10
5. Media Released	-----	11
6. Financial Summary	-----	13
7. Conclusion	-----	14
8. Annexures		
8.1. Annexure 1 – Evidence of financial summery		
8.2. Annexure 2 – Abstract Book		

Executive Summary

The Biomimicry Project was a comprehensive initiative designed to promote sustainable development through nature-inspired innovation. This project encompassed four key components, a webinar series, a hands-on workshop, an international conference, and an exhibition. These events were organized to foster knowledge exchange, develop practical solutions, and strengthen cross-border collaboration between India and Sri Lanka.

✓ Major Activities and Outcomes

- 1. Webinar Series** - Conducted five virtual sessions featuring international speakers, attracting over 650+ participants to discuss biomimicry applications in various fields.
- 2. Workshop** - Hosted a hands-on workshop with 50 participants, developing practical biomimetic solutions for real-world challenges.
- 3. Conference** - Held an international conference published 34 papers with over 150 attendees, showcasing research, and expert insights.
- 4. Exhibition** - Organized an exhibition featuring 5 innovative biomimetic solutions by entrepreneurs, researchers, and startups.

✓ Key Achievements

- ✓ Formation of cross-border research collaborations between Indian and Sri Lankan institutions.
- ✓ Increased awareness of biomimicry among professionals, academics, and students.
- ✓ Development of practical biomimetic solutions with real-world applicability.

The project successfully bridged knowledge gaps, fostered partnerships, and initiated research projects aimed at sustainable development, benefiting both countries and the broader global community.



1. Introduction

The Biomimicry for Sustainability Project was developed as a pioneering initiative to promote the principles and applications of biomimicry as a tool for addressing global sustainability challenges. Biomimicry, the practice of emulating nature's time-tested processes and strategies, offers innovative solutions to pressing human challenges such as climate change, resource depletion, urbanization, and environmental degradation. By learning from nature's design principles, biomimicry fosters sustainable innovation that aligns with ecological systems.

This project was initiated to leverage the rich biodiversity and shared environmental challenges of India and Sri Lanka, two nations uniquely positioned to collaborate on sustainability-driven initiatives. With a strong emphasis on cross-border knowledge-sharing and collaboration, the project aimed to enhance understanding, capacity, and adoption of biomimicry across various sectors.

The project encompassed a series of impactful events, including a Webinar Series, a hands-on Workshop, an International Conference, and an Exhibition. Each of these components was carefully designed to build awareness and understanding of biomimicry principles, provide practical tools and strategies for integrating biomimicry into professional and academic contexts, foster partnerships between researchers, entrepreneurs, and policymakers, encourage innovation by showcasing real-world applications and success stories.

By bringing together participants from diverse fields such as architecture, engineering, agriculture, and social entrepreneurship, the initiative created a platform for interdisciplinary dialogue and collaboration. These activities highlighted the transformative potential of biomimicry in addressing challenges related to sustainable urban development, renewable energy, waste management, and more.

The Biomimicry for Sustainability Project represents a significant step forward in advancing biomimicry as a framework for innovation and sustainability.

✓ Achieved Objectives

1. Conducting biomimicry workshop for participants from both countries.
2. Facilitating collaborative research projects that address common environmental and technological challenges.
3. Organizing special sessions to discuss the latest advancements in biomimicry.
4. Encouraging cross-border partnerships and networking among participants.

2. Methodology

S/N	Objective	Methodology	Milestones
1.	Conducting biomimicry workshop for participants from both countries	Conducted in-person, the workshop emphasized interactive, hands-on activities to develop biomimetic solutions. Expert facilitators guided participants through design thinking exercises.	50 participants encouraged to explore how nature-inspired strategies can address sustainability challenges, with a particular focus on engineering, architecture, agriculture and local success stories.
2.	Facilitating collaborative research projects that address common environmental and technological challenges	Virtual platforms such as Zoom were used to facilitate four expert-led webinars on biomimicry applications. Sessions included live discussions, case studies, and Q&A segments.	Over 650+ participants engaged, gaining insights into biomimicry applications.
3.	Organizing special session to discuss the latest advancements in biomimicry	A hybrid event combining in-person and virtual participation. Keynote speakers, panel discussions, and technical paper presentations formed the core of the conference.	Attendance of 150 participants and submission of 30+ research papers.
4.	Encouraging cross-border partnerships and networking among participants	Entrepreneurs and startups presented nature-inspired solutions to real-world challenges, fostering networking and investment opportunities.	Showcased eco-friendly products and solutions from 5 entrepreneurs. Facilitated connections



3. Activities and Milestones

3.1. Webinar Series

Dates: May 28th – June 1st, 2024

Theme: Nature-Inspired Solutions for a Greener Future

Total Attendees: 650+ participants from India, Sri Lanka, and other regions

The **Webinar Series on Biomimicry for Sustainability** was a foundational component of the Biomimicry Project, organized to promote the potential of nature-inspired solutions in achieving sustainability across various sectors. This series provided a platform for experts to share insights on how biomimicry can contribute to sustainable development, sparking innovation, entrepreneurship, and environmentally conscious practices. Each webinar session addressed a specific theme related to biomimicry, drawing a diverse audience of professionals, researchers, students, and sustainability enthusiasts.

Webinar Overview

1. 28th May – Understanding Sustainability for Biomimicry
2. 29th May – Biomimicry and Social Entrepreneurship
3. 30th May – Biomimicry and Innovation
4. 31st May – Biomimicry in Construction
5. 01st June – Biomimicry in Agriculture

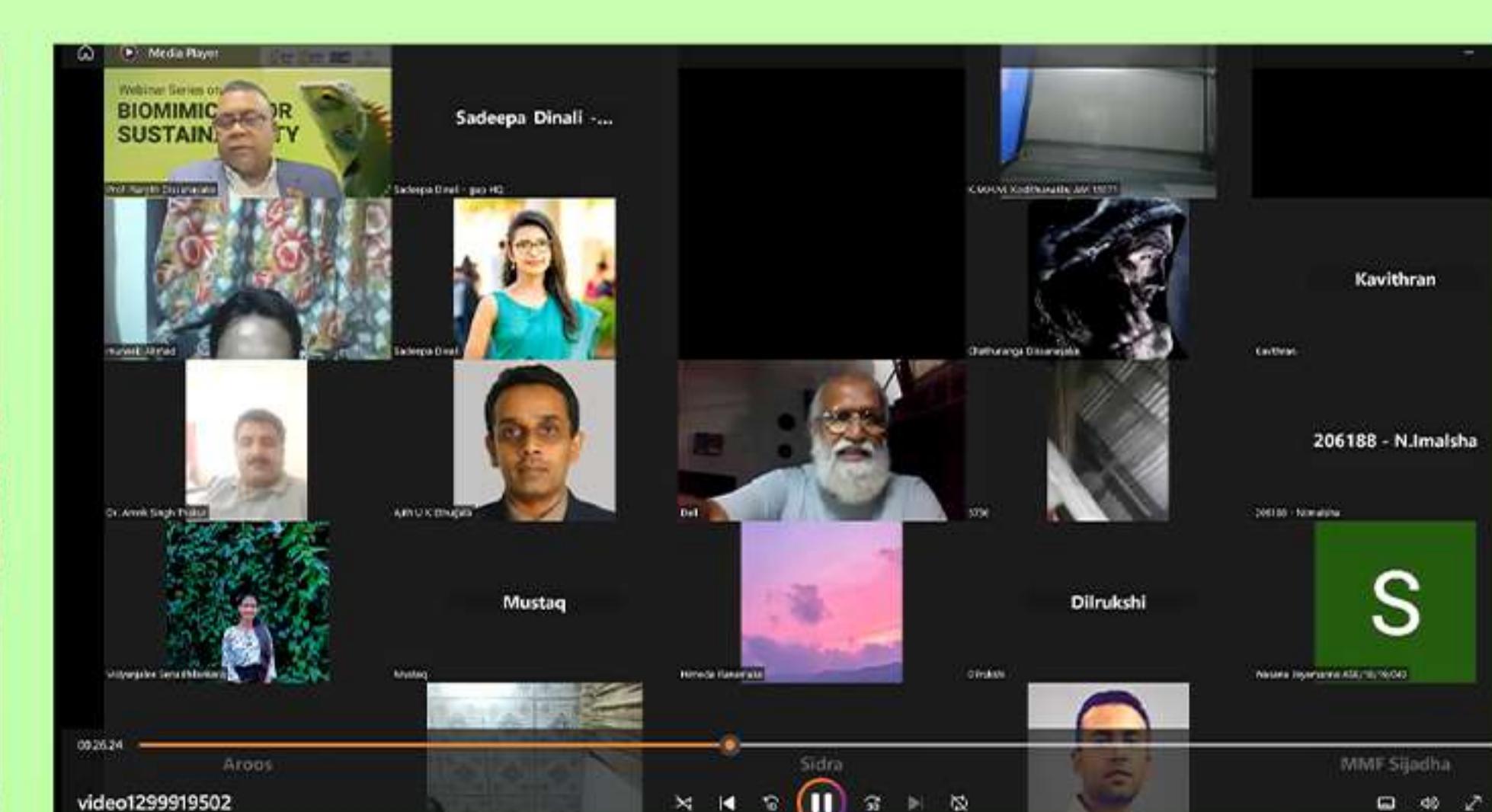


YouTube

Watch Biomimicry Webinar Series

CLICK HERE

Each session attracted a large and diverse group of participants, culminating in over 650 attendees across the five webinars. The interactive Q&A segments at the end of each session allowed attendees to engage with the speakers, ask questions, and share their perspectives on biomimicry applications. This series significantly raised awareness about biomimicry's role in addressing environmental and social challenges, inspiring participants to explore biomimetic approaches in their own fields.



✓ Highlights

- ✓ 90% of attendees reported that the series deepened their understanding of biomimicry and its potential applications.
- ✓ Many participants appreciated the practical examples and case studies, which made the concepts more relatable and actionable.
- ✓ The webinars facilitated valuable connections between Indian and Sri Lankan participants, paving the way for potential future collaborations.

The Webinar Series on Biomimicry for Sustainability successfully laid the groundwork for the Biomimicry Project, empowering participants to think creatively about nature-inspired solutions for a sustainable future. This series not only increased knowledge and awareness of biomimicry but also encouraged participants to consider biomimicry's transformative potential within their industries, furthering the project's goal of fostering sustainable innovation and cross-border collaboration.

3.2. Workshop

Dates: 23rd August, 2024

Theme: Biomimicry

Total Attendees: 50 participants from Sri Lanka and India

The Biomimicry Workshop served as a dynamic and interactive event designed to introduce participants to the foundational principles of biomimicry while providing practical tools to integrate these principles into professional innovation processes. This hands-on workshop encouraged participants to explore how nature-inspired strategies can address sustainability challenges, with a particular focus on agriculture and local success stories.

The workshop combined expert-led sessions, collaborative discussions, and case studies, fostering an engaging environment for participants to learn, innovate, and collaborate. The goal was not only to deepen the understanding of biomimicry but also to empower professionals to apply these principles in their respective fields.

Workshop Overview

The workshop brought together a diverse group of 50 professionals, including architects, engineers, researchers, and environmental experts, fostering interdisciplinary collaboration. Participants actively engaged in discussions, practical exercises, and case study reviews, contributing to a rich exchange of ideas and experiences.





✓ Feedback Highlights

- ✓ Participants found the sessions on local success stories particularly inspiring, as they showcased tangible applications of biomimicry in real-world contexts.
- ✓ The hands-on activities enabled participants to translate theoretical knowledge into practical solutions.
- ✓ The group discussion provided actionable insights into overcoming barriers to biomimicry adoption, with participants expressing enthusiasm for continued collaboration.

3.3. Conference

Dates: 23rd August, 2024

Theme: International Conference on Biomimicry for Sustainability (ICBS 2024)

Total Attendees: gapHQ, Colombo 07, Sri Lanka

The International Conference on Biomimicry for Sustainability (ICBS 2024) was a transformative event that brought together experts, researchers, and professionals to explore how biomimicry can drive sustainable innovation across various sectors. With the theme "*Nature-Inspired Solutions for a Sustainable Future*" the conference showcased groundbreaking research, fostered collaboration, and highlighted the practical applications of biomimicry in addressing environmental and industrial challenges.



Opening Ceremony

The conference commenced on August 23rd, 2024 with an inspiring Opening Ceremony at gapHQ. The event was graced by Prof. Ranjith Senarathna the Chief Guest and Dr. Rohan Pethiyagoda, the Keynote Speaker, both of whom delivered thought-provoking speeches that set the stage for the conference.



✓ Chief Guest Address by Prof. Ranjith Senarathna

Prof. Senarathna emphasized the significance of biomimicry in fostering sustainable solutions for global challenges. His insights underscored the importance of integrating nature-inspired strategies into research, education, and industries to create a more resilient and sustainable future.

✓ Keynote Address by Dr. Rohan Pethiyagoda

Dr. Pethiyagoda's keynote "*Nature as a Blueprint for Sustainable Innovation*" captivated the audience by exploring how nature's time-tested designs can inspire groundbreaking advancements in technology, industry, and social entrepreneurship.

The opening ceremony set a powerful tone for the conference energizing participants and highlighting the transformative potential of biomimicry.

Technical Sessions

On August 23rd, 2024, gapHQ hosted Technical Sessions as part of ICBS 2024. These sessions served as a platform for researchers and professionals to present their innovative work in biomimicry and sustainability.

✓ Highlights

- ✓ Authors delivered compelling presentations on themes such as Biomimicry in sustainable architecture and urban planning, Nature-inspired innovations and technology, Fountain - sustainable university-industry collaboration, Sustainable agriculture through biomimicry, Health and medicine, Adaptation and resilience all inspired by biomimetic principles.
- ✓ 30+ high-quality abstracts were presented during the sessions.

These technical sessions showcased the cutting-edge research being conducted in biomimicry, pushing the boundaries of innovation and sustainability.



Panel Discussion

The Panel Discussion during the conference provided a platform for experts to share their insights on the role of biomimicry in reshaping industrial practices.

✓ Key Topics Covered

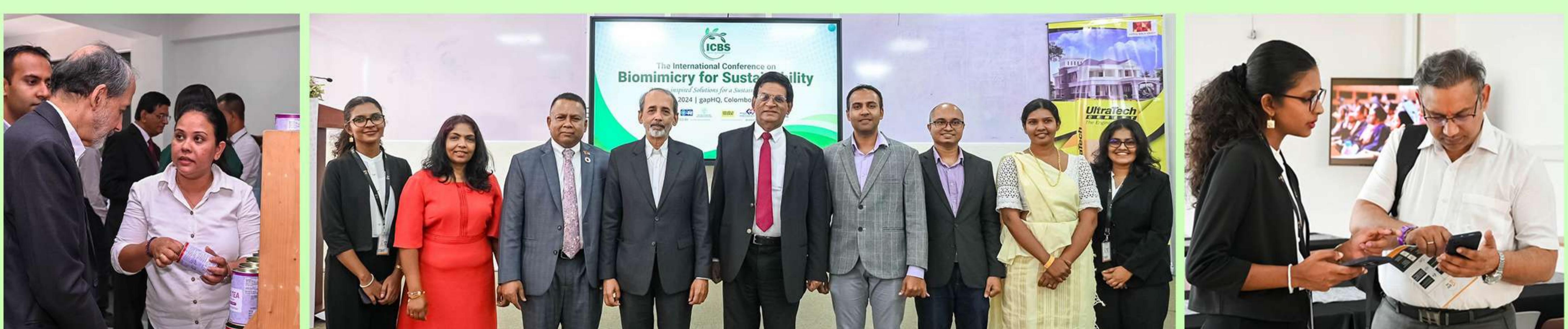
- ✓ How biomimicry can address challenges in energy efficiency, waste reduction, and material sustainability.
- ✓ The role of nature-inspired solutions in creating innovative products and processes.
- ✓ Opportunities for industries to adopt biomimetic designs to enhance sustainability and competitiveness.

The discussion was thought-provoking and visionary, offering participants a glimpse into the future of sustainable industries powered by biomimicry.



Networking Opportunities

ICBS 2024 provided numerous opportunities for participants to network with experts, collaborators, and stakeholders. From informal networking breaks during the technical sessions to focused discussions in the workshop, the conference fostered meaningful connections that will drive future partnerships and projects. The networking sessions were instrumental in building cross-border collaborations, particularly between Indian and Sri Lankan researchers.



3.4. Exhibition

Dates: 23rd August, 2024

Venue: gapHQ, Colombo 07





As part of the **International Conference on Biomimicry for Sustainability (ICBS 2024)**, gapHQ hosted a vibrant Exhibition on August 23, 2024, bringing together visionary entrepreneurs and innovators from across the region. The exhibition was a celebration of creativity, sustainability, and entrepreneurship, offering a platform to showcase groundbreaking products and solutions that merge profit with purpose. The exhibition created a unique networking environment where startups could connect with potential investors and stakeholders.

The atmosphere at gapHQ was electric as attendees explored stalls featuring eco-friendly innovations and nature-inspired designs, each demonstrating the transformative potential of biomimicry in creating a sustainable future. Participants actively engaged with exhibitors, sparking conversations that explored the potential for collaboration, investment, and scaling these innovations.

The Exhibition at ICBS 2024 showcased the cutting-edge intersection of biomimicry, business, and sustainability, proving that nature-inspired solutions can create a brighter, more equitable future. The event not only celebrated innovation but also emphasized the importance of merging profit with purpose, inspiring attendees to rethink the way businesses operate and contribute to a sustainable world.

Through this exhibition, ICBS 2024 reaffirmed its role as a catalyst for change, providing a platform for groundbreaking ideas and fostering a global movement toward a greener, more sustainable future.

4. Stakeholder Engagement

✓ Partners



India-Sri Lanka Foundation



University of Peradeniya



University of Huddersfield



KDK University



gap R&D

✓ Participants

- ✓ Researchers
- ✓ Undergraduates
- ✓ Professionals
- ✓ Industry Leaders
- ✓ Academics from India and Sri Lanka

5. Media Released

www.facebook.com/brunchlk | brunch.lk

THIS WEEK

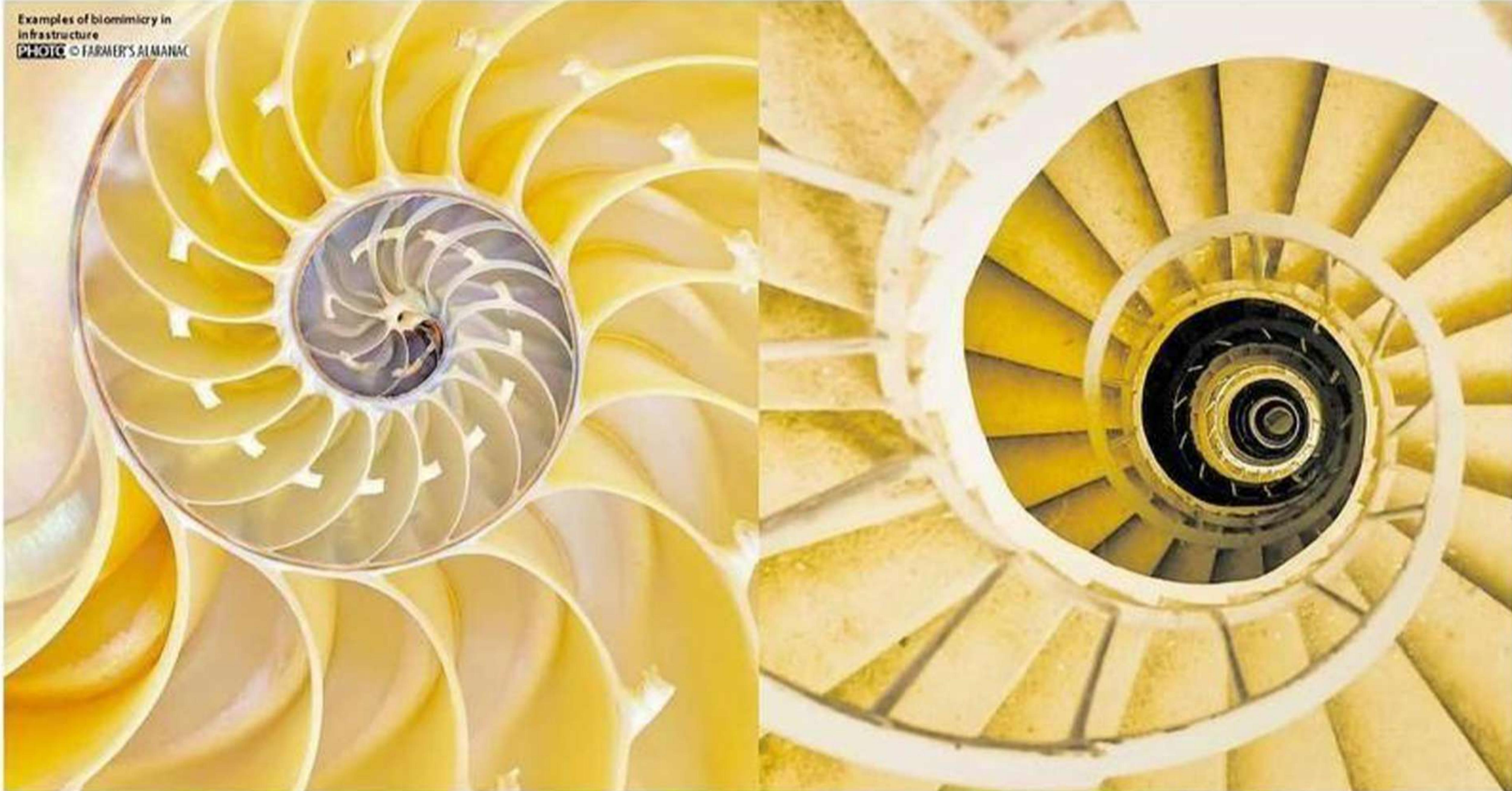
- INTERNATIONAL CONFERENCE ON BIOMIMICRY FOR SUSTAINABILITY**
23 and 24 Aug. at gapHQ, Colombo 7
- LANKA COMIC CON**
24 and 25 Aug. at Trace Expert City, Maradana
- COLOMBO INTERNATIONAL THEATRE FESTIVAL**
24-30 Aug. at Elphinstone Theatre, Maradana

the sunday morning brunch

Sunday, August 18, 2024

EXPLORING EXPERIMENTAL THEATRE IN SRI LANKA
SEE PAGE 5

Examples of biomimicry in infrastructure
PHOTO © FARMER'S ALMANAC



BY NAVEED ROZIAS

In a world where human-made environments are often disconnected from the natural systems that sustain life, biomimicry, a concept rooted in the emulation of nature's time-tested patterns and strategies, offers a visionary approach to solving human challenges. Derived from the Greek words 'bios' (life) and 'mimesis' (imitation), biomimicry essentially means learning from and mimicking the strategies found in nature to create sustainable solutions.

Prof. Ranjith Dissanayake on the role biomimicry can play in building a truly sustainable future

As we face increasingly complex global issues, such as climate change, resource depletion, and urban overpopulation, the need for innovative approaches like biomimicry has never been more pressing. Biomimicry seeks to fix problems in man-made systems by drawing inspiration from organisms, ecosystems, and natural processes that have evolved over millions of years.

Sri Lanka's first International Conference on Biomimicry for Sustainability (ICBS) will take place on 23 and 24 August. Spearheaded by Institute of Engineers Sri Lanka President and Graduate Associate Professional Headquarters (gapHQ) Founder Prof. Ranjith Dissanayake, this conference will see over 40 research proposal presentations on biomimicry and its potential applications in the Sri Lankan context.

The Sunday Morning Brunch sat down with Prof. Dissanayake for a discussion on biomimicry and how it can be used to fix Lankan problems.

Prof. Dissanayake is also Chairman of the Green Building Council of Sri Lanka and serves as Senior Professor at the University of Peradeniya's Department of Civil Engineering. Speaking about what lay at the core of the concept of biomimicry, Prof. Dissanayake said: "Biomimicry is about finding solutions to the problems we have by looking at nature. It's about understanding that the best solutions can be found from nature."

BIOMIMICRY: A BRIDGE BETWEEN NATURE AND INNOVATION

The core principle of biomimicry is straightforward: nature has already solved many of the problems we face today. For billions of years, life has been evolving on Earth, adapting to environmental challenges and finding efficient ways to survive and thrive. This evolutionary process has led to the development of ingenious strategies and designs that are sustainable, resilient, and incredibly efficient. Biomimicry taps into this vast repository of knowledge, offering a framework for creating human-made systems that work in harmony with the natural world.

Prof. Dissanayake elaborated: "When we, as a civilisation, encounter problems, nature has already set certain limits and solutions. In the wild, animals have adapted to their environments in ways that avoid issues we face in our built environments. Biomimicry allows us to identify these natural solutions and apply them to our challenges."

CONT'D ON PAGE 2

Biomimicry: Embracing nature's blueprint



What does it take to win a beauty pageant?

NAVEED ROZIAS

Beauty pageants have long been a platform where poise, talent, and beauty converge.

The glitter and, well, pageantry that comes with a pageant can often leave people thinking that beauty pageants are superficial. But behind all that glitter and glam lies a world of intense preparation, dedication, and personal growth that is often overlooked by the public.

To many, especially those who compete, these contests represent more than just a showcase of physical beauty; they are a celebration of confidence, intelligence, and empowerment.

Speaking to *The Sunday*

Morning Brunch, pageant veteran and Miss Earth Sri Lanka 2015 Winner Viana Fernando explained that competing in a pageant was a journey that began long before the stage lights were up and a model walked on stage.

"It is hard work," she said. "Some believe that your physical

appearance alone is enough to become a beauty queen. However, your appearance is only one [major] factor in beauty pageants. Beauty alone is not enough as you need to represent your country globally, and in order to do that, you need to conduct yourself well, possess a

good understanding of the world, and have the ability to lead."

From a pageant perspective too, the narrative has shifted to become more holistic than focus on physical beauty alone.

"Pageants no longer take just looks into account. Although this was the case earlier, now even locally, they consider looks, education, and personality," beautician and Mrs. World Sri Lanka National Director Chundimal Jayasinghe said, adding that components such as personal interviews and other achievements could count for more than 50% of a contestant's final score.

FAR MORE THAN SKIN-DEEP

The journey to becoming a

pageant winner starts with the development of various skills, each critical to standing out in a sea of competitors. From mastering the perfect walk to nailing the interview round, every aspect of a contestant's persona must be honed to perfection.

Competing in a pageant demands an immense commitment to self-improvement, building discipline, and learning to present yourself with grace under pressure.

While the physical component does play a vital role, pageant mentor, model agent, trainer, and BK Model Management and Brian Kerkoven Academy Founder Brian Kerkoven shared: "It's not just about looking good;

it's about feeling good, too."

Brian explained that physical fitness went hand in hand with mental well-being, and therefore, contestants were encouraged to cultivate a positive mindset, essential for handling the pressures of competition.

Contestants invest countless hours in maintaining a healthy lifestyle, which includes a balanced diet, regular exercise, and skincare routines.

Models mentored by Brian have gone on to win and rank highly at pageants and competitions all over the world including (to name a few) Miss World, Mr. World, Mr. International, Miss Grand, Face of Asia, Miss Earth, and Supermodel International.

CONT'D ON PAGE 2



International Conference on "Biomimicry for Sustainability" held at GAP HQ on 23rd August 2024

Article Category

User: Super User Department Activities Date: 28 August 2024 Hit: 1379 Rating: ★★★★★



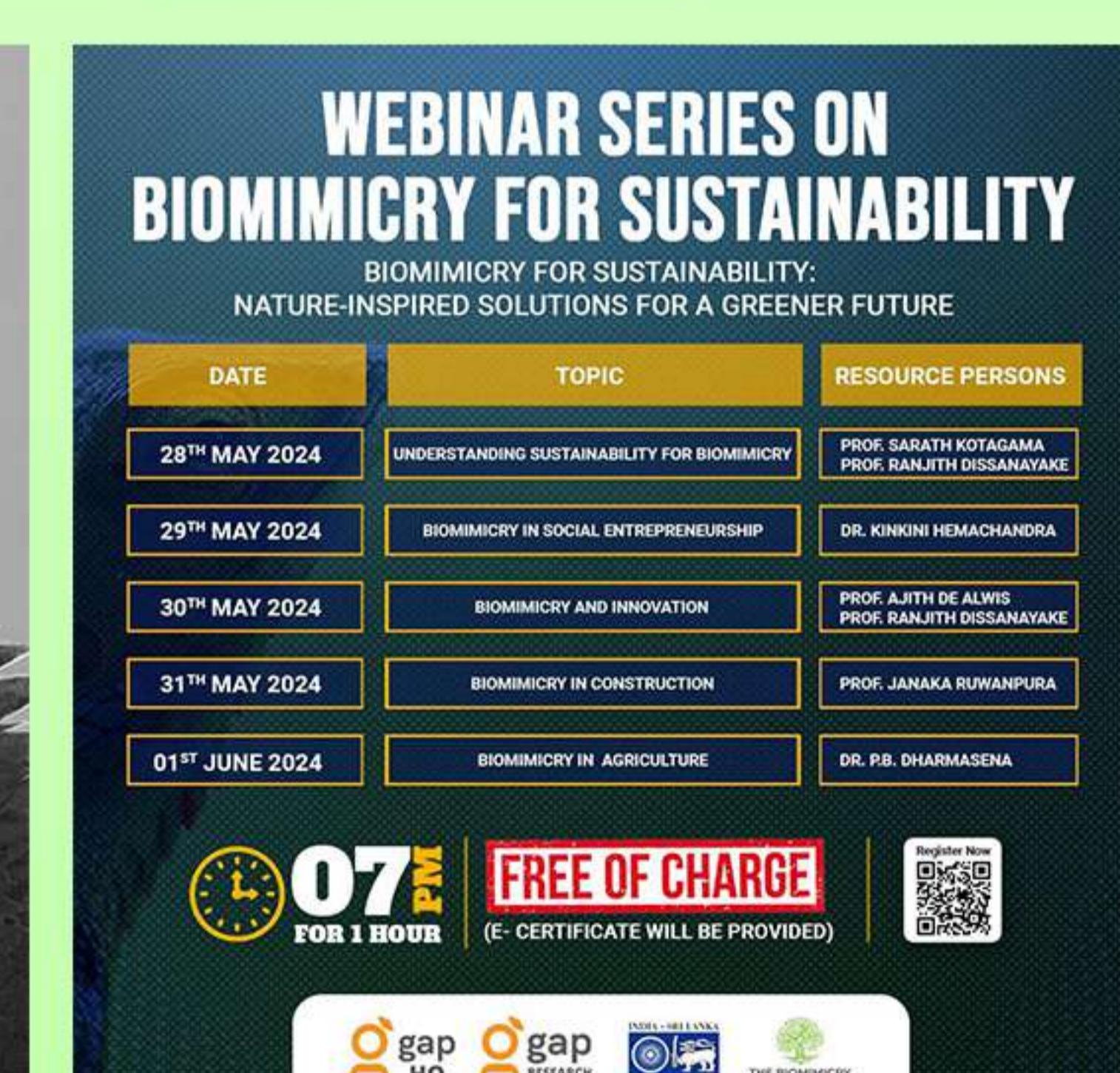
The GAP HQ under the visionary leadership of Prof. Ranjith Dissanayake, President of IESL, conducted an international conference on "Biomimicry for Sustainable Development" with special focus on "Nature-inspired Solutions for a Sustainable Future" on 23rd August 2024. GAP HQ is strongly committed to promoting biomimicry with a view to finding lasting solutions to man-made problems in a wide range of sectors and it has now become a hive of activity in Sri Lanka in this important field.

Emeritus Professor Ranjith Seeraratne, Chairman, NSF was the chief guest and Eng. Rohan Pethiyagoda, a distinguished scholar, was the keynote speaker at the opening ceremony. It was followed by technical presentations made by renowned scientists from home and abroad.

Office of the Chairperson Facebook Twitter LinkedIn

© 2024 NSF All Rights Reserved | Privacy Policy | Disclaimer | Terms of Use

Flyers





ACKNOWLEDGMENTS

The First International Conference on Biomimicry for Sustainability (ICBS 2024) marks a significant milestone in the exploration of nature-inspired solutions for sustainable development. As we embark on this important journey, we are fortunate to have the strong support and collaboration of esteemed academic and organizational partners. First and foremost, we extend our deepest gratitude to the University of Huddersfield for serving as our esteemed academic partner. Their unwavering commitment to advancing biomimicry research has greatly contributed to the intellectual foundation of this conference.

We are also profoundly thankful to the India-Sri Lanka Foundation for their exceptional support. Their efforts in fostering bilateral cooperation between India and Sri Lanka, particularly in areas of research and sustainability, have been instrumental in the successful realization of this conference. Their generous grant has provided us the resources needed to bring together global experts to share knowledge and expertise in this crucial area.

Additionally, we would like to extend our heartfelt appreciation to our sponsors, whose generous contributions have been pivotal to the success of ICBS 2024. Their dedication to promoting sustainability and innovation has enabled us to host this significant event, bringing together thought leaders and professionals from around the world.

Together, with the support of our academic partner, sponsors, and collaborators, we are confident that ICBS 2024 will inspire groundbreaking discussions and foster a shared vision for a sustainable future.

Conference Co-Chairs,

International Conference on Biomimicry for Sustainability (ICBS 2024)

23rd August 2024, gapHQ, Colombo 07, Sri Lanka



CONFERENCE ORGANIZATION

Organized by

Gap Research and Development Center

In association with

Global Disaster Resilient Centre, University of Huddersfield, UK

India Sri Lanka Foundation

Conference Co-Chairs

- Prof. Rajith Dissanayake, Curtin Colombo, Sri Lanka
- Dr. Kinkini Hemachandra, Global Disaster Resilience Center Huddersfield Business School, University of Huddersfield, UK
- Dr. Chethika Abenayake, Faculty of Architecture, University of Moratuwa, Sri Lanka
- Dr. Panduka Neluwala, Faculty of Engineering, University of Peradeniya, Sri Lanka
- Prof. K. K. Pattanak, Dean of Faculty Affairs and Professor of Information Technology, Atal Bihari Vajpayee - Indian Institute of Information Technology and Management, Gwalior, India.

Organizing Committee

Conference Manager

- Dr. Pradeep Gajanayake

Conference Secretary

- Ms. Sadeepa Dinali Gamage

Conference Coordinator

- Ms. Lakmi Perera

Logistic Committee

- Mr. Deshitha Gunarathne
- Mr. Mahesh Rathnayake
- Ms. Amanda Wijesooriya
- Ms. Sadeesha Senanayake
- Ms. Resheeka Ariyaratne
- Ms. Nadeesha Senaratne
- Mr. Wimukthi Dhananjaya
- Mr. Yassas Wickramasooriya
- Mr. Hashan Thilakarathne

vi

6. Financial Summary

S/N	Activity	Item	Actual Total Cost
1	Workshop	4 Resource Persons (25,000/= LKR per person)	100,000.00
		Certificate Printing	10,680.00
	Cost of workshop	110,680.00	
2	Webinar	2 Resource Persons (25,000/= LKR per person)	50,000.00
		Zoom link hiring	10,600.00
	Cost of Webinar	60,600.00	
3	Conference/Special Session	Online facility	386.00
	Cost of Special Session	386.00	
4	Collective Expenses(Conference + workshop + webinar)	Hall Charges	171,400.00
		Meals	288,925.00
		Designs	42,650.00
		Online Facility	80,000.00
		Social Media Boosting & Communication (64.97 USD + 1432.22/= LKR)	20,267.39
		Photography fee	25,000.00
		Transport	14,877.90
		Souvnier Tie - Key note speaker	9,900.00
		Souvnier Tea - Chief guest	4,000.00
		Accomodation	8,000.00
		Backdrop	35,000.00
		Wrsit Bands	4,950.00
		Garlands	6,000.00
		Flower Decos	5,460.00
		Note Pads	30,000.00
Cost of collective expenses		746,430.29	
	Total Cost	918,096.29	

7. Conclusion

The Biomimicry Project achieved its goal of promoting sustainable development through nature-inspired solutions. By fostering collaboration, knowledge-sharing, and innovation, it has laid a foundation for future advancements in biomimicry. This initiative not only benefited India and Sri Lanka but also contributed to the global discourse on sustainability.

8. Annexures

8.1. Annexure 1 - Evidence of financial summary

8.2. Annexure 2 - Abstract Book

