



Institute of Sustainability and Singularity Malaysia (ISSM)

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Embark on a Transformative Pedagogical and New Science for Environment, Sustainability, Net-Zero and Singularity Learning to Create a Sustainable and Desirable Future

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**Charting New Economy,
Environmental Sustainability
and Net-Zero Future for
Malaysia via Refocusing,
Renewing and Rethinking
Malaysia Environmental,
Sustainability, Net-Zero and
Singularity Education, Training,
Research and Advisory.**





THE WAY WE *define them*

Sustainable Development is a Whole-System and Holistic Approach to Development that galvanises the Green Strategy to maintain Economic Resiliency for National Prosperity and Societal Well-Being via the deployment of the Nature and Science Based Solutions, Emerging Technologies, Innovation and Sound Economic Instruments with a balanced consideration of Intra and Inter-Generational Interest, Nature-Capital Protection, Regeneration of Built Capital and a Target Oriented Net-Zero Future.

Singularity is a point in time in the future where an Artificial Intelligence or Agent created by humans has acquired the necessary capability to undergo self-awareness or self-improvement or self-modification to achieve the level of intelligence that surpasses that of the humans that can either positively or negatively alter humanity future.

Nature-Based Solutions (NBSs) recognize nature's genius and innate benefits and via a suite of science and nature positive actions, protect, restore, manage and regenerate the resiliency and ability of its natural ecosystems and services and in doing so, help to solve societal ecological and climatic challenges and to attain a planetary proof and Net-Zero future.

Net-Zero Future seeks to establish science and nature based climate positive targets and safe balance of greenhouse gases between anthropogenic emissions and removal or sequestration thereof the equivalent amount from the atmosphere on timescales that allow the maintenance of a planetary safe operating space and earth regenerative capacity and resiliency that are conducive to human sustainable habitation.

The NEW EDUCATION *for the New Normal*

Addressing the emergence global risks and planetary ills require unprecedented awakening on the part of all Earth's citizens regarding the importance of renewed education system to galvanise the generation of creative and innovative ideas and solutions.

A transformative education system is necessary to introduce ethical mind shift of all Malaysian individuals and businesses and to produce professionals and leaders fit for the 21st Century.

Education system must be transformed to meet contemporary knowledge and skill needs, but most succinctly of all is, it should not only be about teaching people how to build more industrial and built systems but also on how to co-exist with our surroundings, both in co-habitation and in mutuality of space and resources.

With the undeniable severity of climate risks and relentless environmental related disasters, it is most timely for us to ask what current environmental education can accomplish in addressing these issues and its contribution in creating a truly ecological, neutral and Net-Zero carbon savvy society for Malaysia.



We believe that the holy grail of environmental education lies in its ability to discern and prevent unnatural calamities especially those of the anthropogenic origins. It must have the boldness to constantly evolve to achieve relevancy and where necessary, integrate new sciences and approaches to better understand the complex relationships of dependency and mutuality and diverse causal and effect processes amongst the many facets of human developments and their interactions with Nature.

We are utterly convinced that a prosperous and successful Malaysia requires a renewed and transformative approach to environmental, sustainability, Net-Zero and AI learning. Through a renaissance and whole-embodiment approach to their education, we could empower our society to live and work sustainably with Nature and bring the necessary systemic change in the way we see, work and connect with Nature.



“ *The current ecological and climatic calamities befalling our planet warrant us to have a hard look at our development and economic policies and fathom why we are in this mess.* ”

For a start, we need to transform and rewire our approach in the manner we learn things and acquire new knowledge and skills. ”



From the desk of the **FOUNDER**

by Datuk Dr. Francis CW Wong

Key Aphorisms

As a developing nation, we can no longer be a mere follower and mundane observer in charting and finding new science for solving planetary breakdown and its fractured environment. We need to position ourselves and always be ready to deal with the emerging global and ecological risks that can undermine our years of progress. The quest for new knowledge and skills to deal with these global and emerging risks must be made a lifelong effort, through a transformative pedagogical approach and new science.

In the quest of finding new science to address global risks and planetary breakdown, I believe Nature possesses a vast wealth of wisdom and information that can benefit us both didactically and pedagogically, inter alia teaches us on how to live and work sustainably with Nature and in the pursuit of sustainable progress and prosperity.

We need to find newer ways to understand and appreciate the wonders of Nature where its innate services are valued and protected. A nature-based or ecosystem-based approach including effective protection principles and policies, accurate pricing and valuation is of utmost important in rendering our economy green and green, circular and carbon negative.

Just like humans, Nature needs to be nurtured and when harms are inflicted, we must then give her a break so that she has time to heal, restore and regenerate Herself. We need to embark on a development policy that can help to heal, Revive, Restore, Regenerate, Rebuild and Rewild (5R's) our Planet, a policy that can build back better both our Natural Environment and Built Environment.

It is of utmost urgency that, we start to dedicate ourselves to do things that are within our means to impact positive change on our Natural Environment and Planetary Boundaries and not to further indulge in Business As Usual (BAU) practices that can perpetuate planetary breakdown and undermine our very own existence and civilization.

Why we need ISSM & the AiTHROEP INSTITUTE

Education for Environment, Sustainability, Net-Zero and Singularity

Despite the growing green renaissance and adoption of the concept of sustainability as a maxim for sustainable development over the past two decades, societal inner and personal transformation and mindset to catalyse sustainable living on this fragile planet has not been encouraging. Perhaps, it is now necessary to re-look at our current pedagogical approach to environmental and sustainability learning and its effectiveness in instilling the necessary inner and mindset transformation apart from the typical knowledge and skill attainment. A renaissance in environment, sustainability, Net-Zero and singularity science and learning is necessary to produce the kind of society we want, inter alia the kind of society that possesses the mindset and innate resiliency to deal with the challenges of the 21st Century notably the ecological and climatic risks. In addition to creating a Nature-Centric, Carbon Neutral and Technological savvy society, it is also important for a renewed pedagogical system to jumpstart societal behavioural capacity and creativity to innovate systemic Nature-based Solutions in particular the 5R's and change the way we live, work and interact with Nature.

Indeed, the future is already at our doorstep and our modern world has ushered in the largest driver of change on our Planet and most of this change is geared towards planetary breakdown. Our fractured relationship with Nature must be addressed with a renewed pedagogical system that can change old mindsets and galvanize inner transformation. This pedagogical system must be able to succinctly remove that old thinking and mindset that got us into this mess in the first place. Albert Einstein once said **"We cannot solve our problems with the same thinking we used when we created them"**.

We need to ask ourselves some salient questions: How adaptable is convention wisdom and the current pedagogical approach in allowing new

paradigm shifts in thinking and learning to prevail? And in the acquisition of skills needed to confront the emerging challenges of the 21st Century including the exponential proliferation and advancement of technology?

ISSM represents the much needed institution for nation-wide transformation of environmental, sustainability, Net-Zero and singularity learning. It will utilize a propriety model called the AiTHROEP model as the new and integrated science and Whole-System approach to transdisciplinary and integrative learning.

The AiTHROEP model encourages systems thinking, shifting fragmented science and integrating socio-economic-ecology-technology as one Wholeness to guide humanity in welcoming three intertwined centrism, the anthropocentrism, ecocentrism and techno-centrism. The AiTHROEP model is a must science for steering humanity to achieve sustainable living and a Net-Zero future.

ISSM via the AiTHROEP model can be used as a holistic mechanism to rewire national development and economy strategies, revaluing and rebuilding our natural and societal assets and pursuing only on true and meaningful wealth and prosperity for all Malaysians. It encourages openness to understanding complex centrism and their intrinsic interactions and prioritises relationships and actions that can help to achieve the desired wealth and prosperity.

ISSM aims to prepare the young generations, civil societies, professionals, government officials, policy makers and political leaders and businesses to have the necessary knowledge and skills including the inner transformation and visionary mindset for a revolutionary change to attain the optimum savviness to better accommodate the simultaneous arrival of Megatrends and to address challenges of the 21st Century.



The Solution is in the Creation – the New and Unavoidable Science

I believe that when God created this Planet, He has embedded in His creation the solutions to all our planetary problems, inter alia, planetary boundaries overshoot, ecological collapse and climate change that can truly undermine human civilization and survivability on this Planet.

Nature's wisdom is definitely more superior than human and technological intelligence combined if not primitive at that. Sadly however, we have not placed enough effort to decipher this embedded wisdom as solutions both at academia and research levels. We cannot let this innate wisdom go to waste but must harness them for the good of humanity and this is where the AiTHROEP model promoting the science of Nature and Biomimicry is most useful. Indeed, to understand nature of Nature better, we need to undertake more research to unravel its hidden secret especially by keen scientific observations and exploring the quantum dimensions of its reality.

Concomitantly, we can strengthen the role of research by utilising citizen, data and quantum sciences to explore its innate characteristics that

are responsible for its "wild systems thinking" and geniuses including the axiological aspect of these characteristics and the diverse mathematical spaces imaginable. AI technology can be actively deployed to enhance the epistemological and gnoseological aspects of the research and to improve the analytical capability to understand Nature complex relationships and interconnectedness amongst its biotic and biota components. This can inadvertently help our understanding of its many secondary complex relationships, inter alia, between Nature and Humans, Nature and Development, Nature and Business, Nature and Economy, Nature and Health, Nature and Technology, etc. It will also help to enhance our understanding on approaches needed to adopt Nature-based Solutions and Science Based Targets to address ecological and climatic problems.

Henceforth, I truly believe that by enhancing our holistic and transdisciplinary approach to education, training and research, we can discover Nature's innate solutions to our planetary problems - a new and unavoidable science to guide humanity into a sustainable, resilient and Net-Zero future.



Sustainability – How shall it be defined?

Although sustainability will always remain an ambiguous and elusive concept, I believe that at best the term must detach itself from a static interpretation and the seemingly unachievable maxim. Its meaning must allow for the co-evolution of interpretation in line with our latest scientific understanding and considering all emerging issues and challenges together perhaps with the help of our exponential advancement in the technological front. Most importantly however, it should never be exploited for hidden and divergent intentions, especially for selfish economic gains including greenwashing agenda and the good feeling that goes along with it.

We all can agree that the Covid-19 pandemic and soon to be endemic has ushered in a new meaning for sustainability as this virological threat can simply erase all manner of success, happiness and even life itself in a blink of an eye. Henceforth, Malaysia needs to revisit the current definition on sustainability and sustainable development and where necessary, redefine them so that our pursuit for more development and economic growth is in line with our own needs for wealth, prosperity and the well-being of the people. In whatever shape or form the interpretation may eventually reside, it must always be in line with the

true nature of things, acceptable local and universal principles and the vulnerability of our transient existence. At the outset, the success of any development must be measured from its absolute utility and qualitative perspectives including the generation of actual happiness and enhancement of one's quality of life considering both tangible and intangible dimensions. Surely, we can now all agree that a clean and healthy environment is a pre-requisite and *sine quo non* for true well-being, wealth and prosperity; an environment that is free from pollution and toxins including deadly pathogens and viruses.

Sustainability must bring about tangible changes in our development and economic policies and strategies, the ones that can induce the least ecological and carbon footprint and at the same time, able to amend and to rebuild our fragile Planet. A new Malaysia must embrace this notion of sustainability for its development and economic agenda and when transitioning into a carbon neutral future.

Sustainability and Singularity – prepare for the Beyond and the Inevitable Merger

AiTHROEP model addresses the many potential mergers of the three centrism, primarily derived from their unavoidable interconnectedness and interdependencies, most salient of which is between anthropocentrism and techno-centrism or simply put, between humans and machines. The omnipresent of machines in human daily lives is not only becoming a prevailing scene, but already in tight grip with its human counterpart. Techno-centrism has now literally redefined the meaning of anthropocentrism and its characteristics and it would not be an over exaggeration that this symbiosis will be easily detectable through a geological time scale, a new epoch that tags alone the Anthropocene, I coined it, the Aithropocene.

Another merger less observed is between Nature and Technology. In fact, techno-centrism is not possible without the fusion between Nature's geology and Nature and Human Intelligence. These mergers need our prime attention as

ignoring them is akin to ignoring the best possible scientific pathway available to unravel our existential threat from a hostile if not already a dying Planet. AiTHROEP model dwells on these intense relationships.

It is inevitable that Aithropocene will usher in a point of Technological Singularity but I do hope that when this point of Singularity does eventually arrive (the total merging of AI and Human Intelligence and where AI is smarter than humans), we are truly ready to use AI to unravel the innate wisdom of Nature and the Secret Law of Nature to solve all of our planetary problems including the residual effects. But my concern is when this point of Singularity surfaces, will there then be anything left for us to unravel and therefore save? Had we by then already altered our natural environment to such a state that its innate functioning ecosystems are no longer recognisable in scientific research, with perhaps very little wisdom left to guide or teach us?

This is where educating current and future generations as responsible citizens, nature-centred thinkers, philosophers, scientists, technologists and leaders who can shape the right paths for a sustainable and desirable future and in the use of human-nature centric AI is extremely crucial. As machines are getting smarter exponentially and more intelligent, we need to ensure that they do not pose an existential threat to humanity itself and most importantly, not void of right values in its service to humanity and the Planet. These machines must be both Human and Nature centric. Henceforth, we need to address the ethical and moral dimensions of AI and other emerging technologies, in particular that of genetic editing, engineering and enhancement. We need to educate and train human and nature centric algorithm scientists and ethicists in our midst to keep an eye on these technologies and whatever technological pathways we choose, these pathways for our technological progress must be firmly anchored on sound science, universal human moral and ethical values and at the same time, considering the Aithreop dimension of the equation.

AI and all other emerging technologies must be effectively governed and regulated. A renewed national policy and strategy for AI education, training and research is utterly crucial in preparing Malaysians for a challenging and exciting technological future that is without doubt, will revolutionize the way we live and perform tasks and businesses. If properly blended with the right moral and ethical values, effectively pursued and governed, AI together with that of other technologies can offer a great deal of benefits to all sectors of our economy including the realisation of Shared Prosperity and Equitable and Nature-Benign Growth, Sustainable Development Goals and in achieving a Net-Zero future.

Education, Training, Skills and Competencies

The right education, training and skill acquisition is necessary to empower all sectors of our society to make the necessary transformation and adaptation to new practices and systems in line with the need for new development and economic models of growth. Transformative new knowledge, skill and ethical mindset are needed to spur healthy dialogues amongst the government and businesses especially on the kind of economic trajectory we all hope to achieve including the transitioning pathways to a Sustainable and Net-Zero future.





As the AiTHROEP model will usher in many great challenges and opportunities and that the future job market is likely to be very volatile and uncertain, inter alia, having to compete with smart and intelligence machines, we need to start planning and implementing the kind of education and training programmes that would meet future needs. A focused national institution like ISSM is necessary as the nexus for not only reskilling and upskilling of human capital to meet future workforce competencies, but also to foster a lifelong learning culture amongst the Malaysians to enhance active citizenship participation in solving planetary problems and to better adapt to new challenges including the Aithroep way of life. ISSM can be leveraged to implement quality education and training programmes where relevant knowledge and skill empowerment notably, in the areas of new nature and environmental science, sustainability, Net-Zero and singularity can be infused, both transdisciplinary and holistically. All sectors of our society must be provided with the right kind of knowledge agility to adopt paradigm shift in

systems, critical and creative thinking to better address and adapt to the challenges of Sustainability, Net-Zero, Aithroep and the potential disruptive dimension of Singularity.

Our education and training programmes must not simply be about providing information and knowledge but actively equipping Malaysians with the right values, cognitive skills and competencies to meet current and future challenges and market job demands particularly when in competition with automation, AI and other emerging technologies.

The proposal to establish an institute like ISSM is essentially based on an awakening realisation of the Founder, Francis CW Wong that inducing and enhancing sustainability, Net-Zero, singularity and Aithroep literacy with future proofing skills to live and work sustainably irrespective of the sectors of society in Malaysia is a task neither the Government nor the private sector can wait to implement.

Future Economy And Innovation

Building future economy for Malaysia must be based on reinterpreting and rewiring the meaning of Wealth and Prosperity for all Malaysians. Most importantly however is that the desired Wealth and Prosperity to be attained must be Nature-Positive, Innovation-led and without causing harm to the very source of such Wealth and Prosperity, *inter alia*, the Natural Environment.

The future new economy must be shaped by the AiTHROEP model primarily incorporating ecoconscious and ecotechnology paradigms supplemented by strong innovation foundation to create new knowledge, ideas and skilled human capital. This will require an institution like ISSM to provide the necessary nexus for societies, businesses and key players to interact and exchange knowledge, ideas and skills both domestically and internationally. Innovation-led growth must be strategically galvanised where conducive ecosystem can be created to unleash Malaysia's business potential. This is most important when our modern carbon intensive world has created the needs for an ongoing acquisition and creation of new knowledge and innovative solutions. The future new economy will also need to be anchored on a Solid Innovation Strategy and this is even more critical when we want to achieve an economy that is Sustainable, Net-Zero, Innovation-led, Nature and Technological Positive. Via a healthy investment in innovation, we can make science and technology at the heart of this new economy agenda where our businesses can be made more sustainable and competitive and the growth of start-up and scale up companies can be supported.

Effective innovation strategy will be critical for Malaysia's future prosperity and it needs to be initiated as early as possible. The 2020s will be that pivotal moment to building an Aithroep way of life and to supporting businesses in the enhancement of capabilities to address the challenges of Aithroep, especially in the embodiment and operationalization of Nature

and Technology Positive and climate resiliency maxims and at the same time enabling these maxims to yield profitable and sustainable outputs. The success of a green, circular and Net-Zero economy for Malaysia lies in this effective innovation strategy, the Innovation-led Strategy.



Innovation is also a key strategy to creating new economic and business opportunities and in scaling existing practices. Without innovative strategy for new science and technology, there can be no breakthroughs to boost creativity and implementation of Nature and Low Carbon Solutions and in reducing their Green Premiums. ISSM could work closely with the government and businesses to support the necessary interaction needed for specific research in areas such as creating high-value businesses, facilitating the conversion of ideas and products for market commercialisation, addressing transitional risks and challenges of Aithroep and Net-Zero, meeting a variety of sustainable and Net-Zero goals and sourcing human talent and skills to boost productivity.



Matthias Gelber (The GreenMan)

It is great to see the World and the financial industry pushing for Environmental and Social risk management and positive impact delivery aligned with UN Sustainable Development Goals and a Net-Zero Future. This ESG (Environment, Social, Governance) rating and fund management is having a huge impact on businesses notably the public listed companies. Together with megatrends such as decarbonization, health & wellness, ecological regeneration and Net-Zero future, we finally have a window of opportunity to change the direction of the planet and humanity from destruction to holistic harmony where the value of the ecosystem gets appreciated and the tangible outputs for our future generations are targeted. We need to change as well our education system to align with those opportunities and now is the best time to shape our future beyond the new normal and to create true synergism between humanity, planetary systems and economic development.



Dr. Fairoza Amira binti Hamzah

I strongly believe that AI is today's game-changer and is an inevitable technological force that will transform the way we live and work. AI together other superhuman innovation and technologies will shake up the way businesses are run. While it will provide vast opportunities for businesses, AI together with other emerging technologies will raise critical ethical and security concerns.

The goal of ISSM is to prepare Malaysians for its arrival and harness its power for to gain competitive advantage as our country progresses into a developed nation. Other superhuman innovation like the renewed version of AI, the AGI must be properly nurtured so that humanity dignity will not be compromised. It is important to ensure that the use of AI and its eventual evolution will remain not only human-centric but also nature-centric. The rise of AI and other technologies such as Robotics, Nanotechnology, Genetic Engineering, Materials Technology and

Green Technology needs to be well comprehended, sufficiently regulated and ethically guided. Genetic modification and alteration technology for instance can undermine the meaning of being-human as superhumans and cyborgs can be born out of this technology. Thus, it is of utmost important that this kind of technology or any other technologies having similar threats are well guided in their development including the setting of no-go zone, perhaps via well research principles, morality and ethical settings as well as regulations.

ISSM aims to provide effective pedagogical learning and research on AI and other technologies where human-nature-ethical centric can be nurtured and implanted amongst the young technological enthusiasts, engineers and logarithm scientists.

VISION

Achieving Sustainable, Thriving, Prosperous Malaysia via Renewed Pedagogical and Innovation Strategy where New Cognitive Skills, Competencies and Ideas can be Attained to Effectively Manage and Maintain Planetary Safe Operating Space and Adoption of Positive Singularity

MISSION

To become the first and revered Centre of Excellence for Environment, Sustainability, Net-Zero and AI Learning, Education, Training and Research in Malaysia as well as a Global Centre of Excellence for Environmentalism, Sustainable Development, Net Zero and Positive Singularity.



GOALS

As the Primary Institution and Centre of Excellence for:

1 Transformative learning and research in the areas of environmental, sustainability, Net-Zero and AI development, instilling Malaysians with the right knowledge, skills, values and human capacity to embrace AiTHROEP way of life, sustainable living and doing business.

2 Co-creation of a Nature and AI savvy society for Malaysia where exponential and futuristic thinkers can be germinated to address the challenges of the 21st Century.

3 Educating and training of future leaders, policymakers, professionals, businesses and industrial players with a renewed scientific knowledge, innovative-led ideas and transdisciplinary thinking and skills to help shape better decisions affecting the environment, sustainability and Net-Zero agenda and in transitioning Malaysia into sustainable and desired future.

Five Core

VALUES

01

Accurate Learning and Renewed Didactic and Pedagogy Approach

Adopt adaptive didactic and pedagogy approach to environmental, sustainability, Net-Zero and AI learning based on accurate science, nature and ethical values.



02

Integrity

Pursue education, training, research and advisory service with commitment to strong moral and ethical values and convictions.



03

Independence

Not driven by outside interests, influences or hidden agendas for all its pursuits and decision-making processes.



04

Creativity

Bold and transformative ideas and innovative approaches to transdisciplinary and translational education and research that encourages critical, systems and cognitive thinking in addressing environmental, sustainability and singularity issues.



05

Collaboration

Firm believe in creating intertwining partnerships and collaborations with all sectors of society to achieve excellence and in promoting sustainable, safe and resilient outcomes.

Four Core PRINCIPLES

Principle of Transdisciplinary, Totality and Futurism

Environment, sustainability, carbon neutrality and technological elements shall be studied, researched and addressed based on the unity of whole-system and holistic knowledge to truly capture the essential aspects of Nature notably its intertwining interconnectedness, relationships and dynamism and to explore new science and learning possibilities to solve real-world and planetary problems.

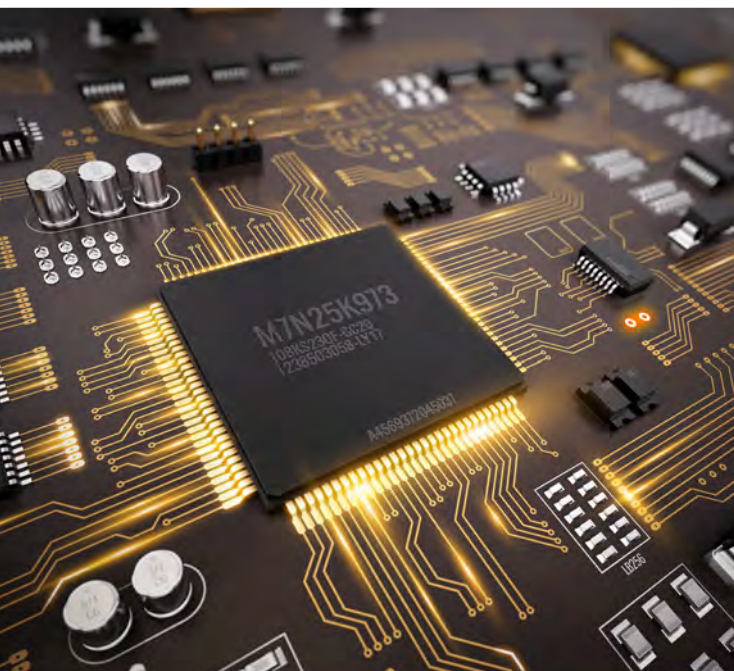
The best way to understand the Nature and upholding the maxims of Nature-based Solutions and Sustainability is through the prism of Nature itself - that is to understand the myriad ecosystems and sub-ecosystems and their intricate relationships via accurate assessment, research and appreciation of their value.



Principle of Complexity

Appreciate the complexity of Nature and thus environment, sustainability, carbon and technological issues and the need to arouse curiosity and develop critical, systems, cognitive and innovative thinking and skills to solve emerging environment and sustainability issues and in the use of AI technology.

Complexity arises from the diverse and complex relationships and interconnectedness of Nature and Ecosystems and in the determination of their values. Complexity is further exacerbated from the exponential dimension of population growth, consumption of natural resources, ecological destruction, climate change and the disruptive nature of AI technology.



Principle of Oneness, Interconnectedness and Diversity in Nature

Utilizing Nature and its diverse ecosystems and relationships as the best science for holistic understanding and fundamental direction for environmental, sustainability, Net-Zero and AI pedagogy with due emphasis on practicality and first-hand experience allowing for systems and creative thinking to excel.

Our planet is presented as a unit in itself, as a singular and individual whole. We need to understand its true nature and complexity and dynamic relationships as an interconnected whole and not a dispersed discipline as currently perceived.



Principle of Urgency to Achieve Net-Zero Future and Prevention of Planetary Safe Operating Space Transgression

Recognising that there are planetary boundaries and safe operating space within which humanity can continue to live and develop with respect to the Earth System and that we have crossed some of these boundaries including the ecological and carbon footprint. To prevent further transgression of these boundaries including the restoration of overshoot and damaged ecosystems is now a critical task. "Business as Usual" attitude must be discarded and replaced with AiTHROEP model of living and doing business.

Addressing Transformative MEGATRENDS & CHALLENGES

The 21st Century has ushered in the two most important transformative trends and challenges - Sustainability and Singularity. These challenges are mostly intertwined and interconnected with each other are:

Globalization

Population Growth and Aging Community

Environmental Degradation and Pollution from Polluting Industries

Planetary Boundaries Overshoot and Ecological Collapse

Smart and Sustainable Cities

Climate Change and Adaptation
Emergency, Threats and

- Urbanization, Demographic Shifts and Social Mobility
- Achieving a Net-Zero Future and Agenda 2030
- Green, Circular and Net-Zero Economy, Inequalities and Development Conundrum
- Automation and Job Discrimination
- Land and Water Shortage and Food Security
- Disruptive Emerging Technologies, Digital Divides and Threats of Technical and Biological Singularity
- Natural and Un-natural Disasters, Public Health and Emerging Diseases



New Science for Environment, Sustainability, Net-Zero and Singularity for the 21st Century - the much needed tapestry for success and to build back better, the

AiTHROEP MODEL

Founder Francis CW Wong believes that a renewed future proof and holistic model embodying the whole-system and interconnectedness of socio-economic-ecological system with that of technology is crucial in attaining the right scientific pathway for humanity continual progress and saving the Planet. Inspired by Nature's wisdom, its efficient circularity systems and intrinsic biotic and abiotic elements and relationships, he introduces the AiTHROEP model as a must science for the 21st Century, notably to achieve true Sustainability, Net-Zero and Positive Singularity. He asserts that the AiTHROEP model can help to redefine the scientific discourse over the whole-system and transdisciplinary approach to humanity, planetary and technological intertwined

problems. Position itself as a renewed science, AiTHROEP model must be mainstreamed into all spectra of learning and research and at the same time, embedded into all policy derivations, regulatory framework, planning and development, economic, sustainability and Net-Zero business models.

He believes that the traditional Venn diagram depicting the three pillars of sustainability - environment, social and economy needs a refresh outlook and incorporates the new emerging pillar, the technological front in the equation. This is necessary as technology is delicately linked with Nature and human's intellects where the combined forces will create a new dynamism and generating a potential epochal transformation in

the manner we live and do things. This technological force will drive future progress for humanity but only when it is safely and morally used to allow positive Singularity to prevail. Such inevitable technological evolution must be both human and nature centric where humans must always remain as the Masters and not Slaves.

To meet Aithroep, technological centrism must be safely and morally cultivated. In addition to embed anthropocentrism, it must also embed nature or ecocentrism so that nature ability to supply the resources needed by both the humans and machines is not compromised. Technological centrism just like anthropocentrism, must learn and adapt to “co-exist’ with ecocentrism, the Aithroep way of thinking and living.

Francis CW Wong has introduced a new whole-system intertwining diagram depicting the arrival of the technological centrism into the midst. This diagram will now usher in an inevitable collision of now four key pillars of socio-economic, ecological and technological spectra of the system. These four pillars can be further refined into three postulated centrisms - the Anthropocentrism, Ecocentrism and Techno-centrism. These three centrisms converging at the centre or point is called Aithroep. To achieve Aithroep, we need to deploy a balanced approach to all the three centrisms, supported by a new set of philosophical and scientific understanding where Human-Nature-Technology based Solutions will be the core driving and balancing force. Our ability to achieve sustainability, Net-Zero and positive singularity now lies with our ability to understand and achieve Aithroep.

The Aithroep approach shall be the basic consideration for all future interdisciplinary and transdisciplinary learning, training and research, including policy orientation and strategic actions. If achieved, Aithroep can usher in a new utopianism where Humans and Machines can interact and live sustainably with Nature. This is also the point of Positive Singularity for humanity

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For economic indicators like GDP to be accepted as the quintessence indicator for growth, it must fulfil three succinct measurements:

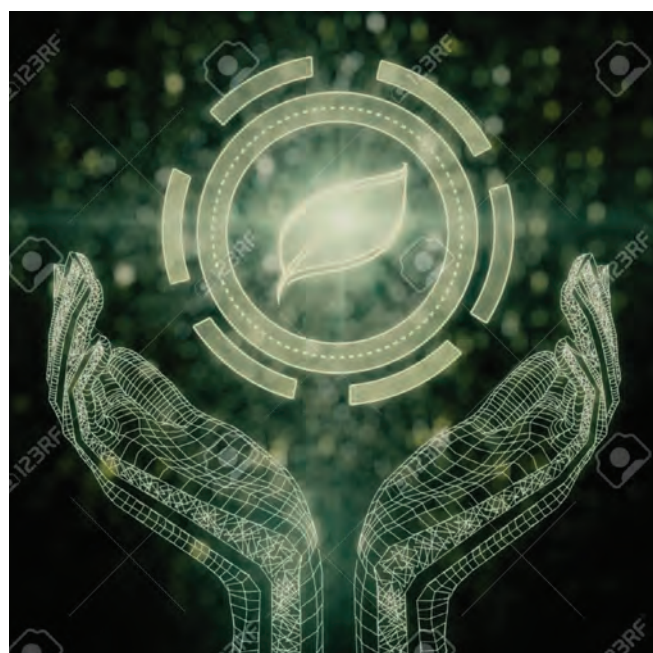
- i. societal actual happiness, wellness and quality of life*
- ii. social, environmental and carbon negative externalities*
- iii. Human and Nature benign technological advancement.*

”



and our Planet, a point where AI and its advanced versions are not human and ecologically antagonistic. The model denotes key intertwining pillars and principles and the kind of philosophy and science we need to achieve sustainability and positive singularity. Aithroep discards any worldview or approach that can give rise to potential conflicts and unsound trade-offs between Human and Nature, Human and Machine and Nature and Machine. Aithroep suggests a holistic and whole-system partnership and synergistic relationship between the three centrism. Aithroep is necessary for the following:

As a Whole-System Approach Model to address Human-Nature-Technology relations and to deal with the simultaneous emergence of the transformative MegaTrends and Challenges of the 21st Century inter alia, planetary breakdown and boundaries overshoot, ecological collapse, climate change, species extinction, extreme weathers, population growth, bad economic theories, inequalities and disruptive technologies. Francis CW Wong asserts that achieving Aithroep is a must and need to be diligently pursued for sustaining the co-existence among the three entities, inter alia, Humans, Planet and Machines and for humanity to achieve true wealth and prosperity without undermining its dignity and



Understanding the Science of AiTHROEP

AiTHROEP phenomenon is already at our doorstep without we noticing it. But Aithroep utopianism is going to be a huge challenge for humanity to achieve without the help of AI and the resiliency of our Planet. Nevertheless, it is vitally important that we acknowledge its imminent power in determining the final fate of humanity and the Planet. Aithroep represents a collision of the three concurrently occurring centrism and for the first time in history of our Planet, these centrism will usher in new epoch where their footprint will be so engrained into our daily lives and into the geological strata where traces are still recognisable over a geological timescale. Despite the current intense debate about the appropriate geological timescale, inter alia, Holocene vs Anthropocene and the Rules of Stratigraphy or the relationship in which human-time is metaphorically interpreted, Francis CW Wong has coined this as the epoch of Aithroepocene, denoting the succinct co-existence of the three centrism.

The prime challenge of the Aithroep is to determine the synergistic boundaries of each centrism with that of its neighbouring centrism(s) and the degree of which offsets is needed to achieve acceptable primary and secondary Entries. An Entry is only considered acceptable when it produces a positive synergistic and additive effect and with the least antagonistic influence of its neighbouring centrism(s) upon entering either the primary or secondary boundary and into the realm of Aithroep. In the realm of Aithroep, no centrism should dominate the other(s). Entries within the realm of Aithroep must synergistically co-exist to achieve optimum equilibrium output or performance.

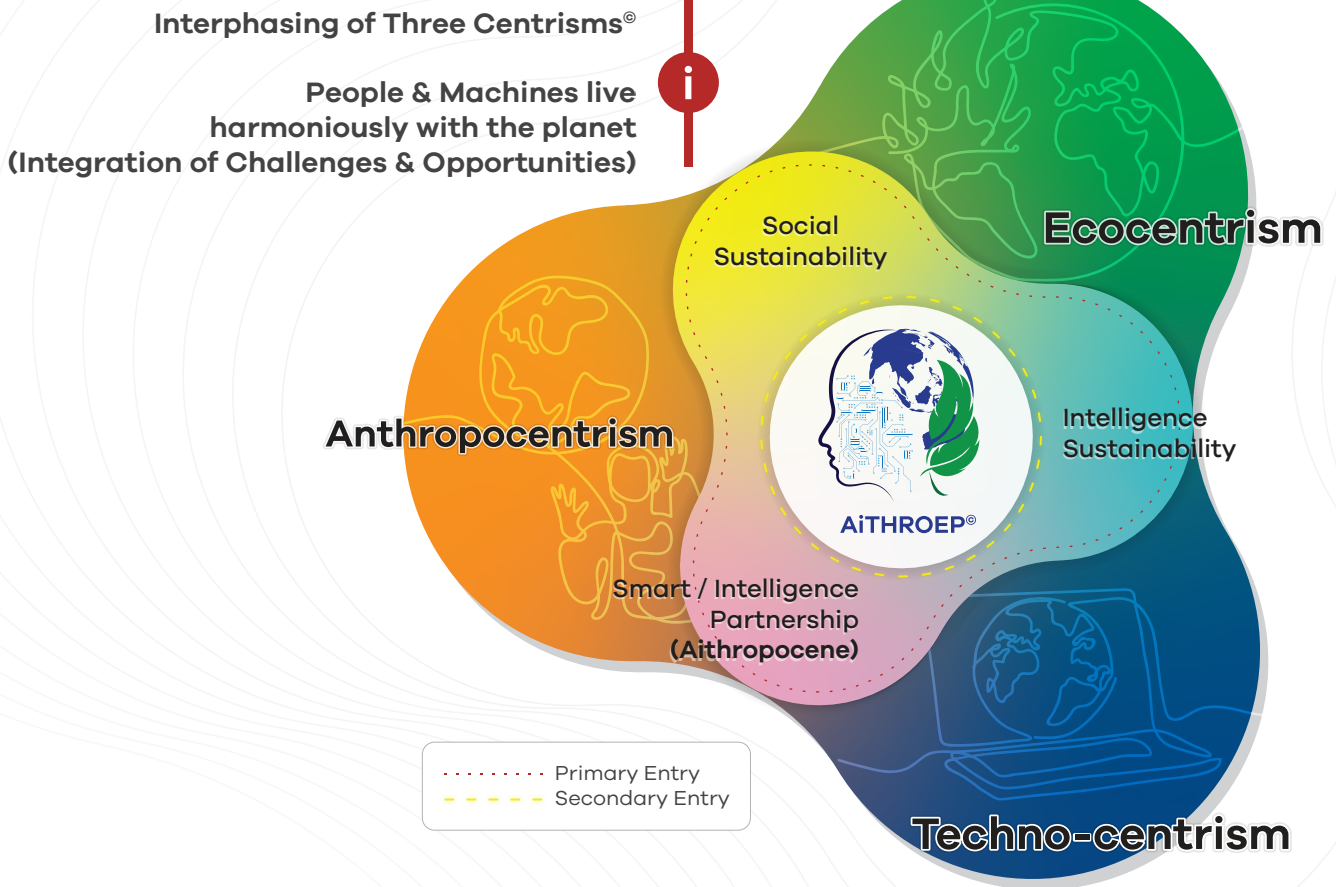
This optimum state of equilibrium output or performance is also a state where People and Machines can live harmoniously with the Planet.

The benefits of embracing Aithroep is abound. It enables new development and economic paradigm to emerge notably by rewiring sustainability a Net-Zero agenda with the help of emerging technology. Aithroep allows the best bounding and interacting mechanisms to all sectors of society to work together toward a common goal - sustainable growth for humanity perpetuate prosperity without undermining planetary resiliency and attaining Net-Zero and positive Singularity. Aithroep will also allow the Planet to undergo self-perpetuating healing when disturbed or its resiliency undermined. It is salient to note that Aithroep must cease all unsustainable economic and perilous and unethical innovative and technological practices and recognising the importance of Nature-based Solutions and science driven decisions in solving planetary problems.

With further research and the incorporation of intelligent partnerships, the Aithroep model can be made self-aware to undergo self-righting and correcting function including self-innovating when necessary to boost positive collaboration and entanglement to achieve the optimum state of equilibrium output and performance.

Further in-depth research will be needed to develop the Aithroep model for its optimum utility and to redefine the scientific discourse over the Whole-system Based Approach to solve humanity and planetary problems. Key research areas shall include the determination of what constitute acceptable primary and secondary Entries for each centrism, synergistic and offsetting criteria for achieving optimum equilibrium output and performance and Aithroep. AiTHROEP Model for the 21st Century will be further refined via Nature Intelligence, Advancement in Science and Technology and Learning by Implementing and Learning by Doing.

The Science of AiTHROEP



The Era of AI & SINGULARITY

The momentum for achieving singularity in particular the technological singularity has already been ignited with the arrival of Industrial Revolution 4.0 (IR4.0) in particular the AI front which will revolutionize the way we live, grow and prosper. It has invaded our minds and space and mainstreamed societal pursuit and will aggressively transform businesses, public service and skills requirement. AI together with other technologies - Smart, Digital and Information, Robotics, Advanced Materials, Bio-Neuro-Nano, Genetic Engineering, Additive Manufacturing etc, will transform almost everything as we know it, even the very meaning of life and what it means to be a human. We need to ensure that the creation of these technologies is safety and morally guided where their eventual benefits together with the potential human-nature disruptive and antagonistic characteristics are thoroughly evaluated.

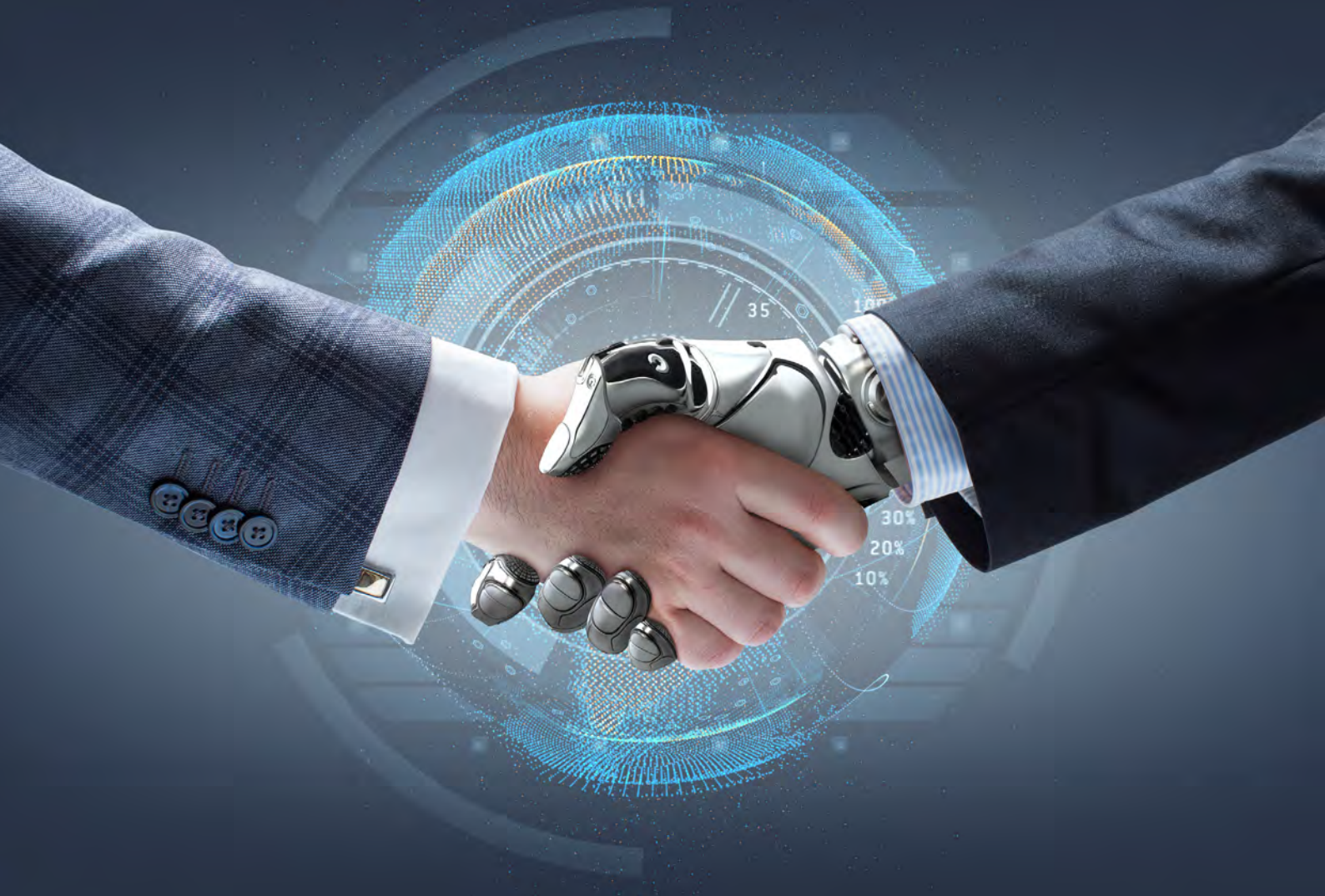
At the very least, we need to ensure that future development of AI is human-nature-ethical

centric and actually benefiting humankind in the quest for greater prosperity and success. Algorithm practitioners, scientists, engineers and regulators must be trained with the right ethical values as we need to recognise that every invention contains the intend of its creator.

Henceforth, a strategy is needed to shape the future of technologies and their wider application including embedding the right values and setting priority of actions for a well-designed infrastructure, regulatory and governance framework. Transformative and renewed approach to AI education, training and research needs to be introduced and reinforced together with the science of Aithroep.

When successfully approached and mainstreamed into all sectors of our society and businesses, AI could offer great advantage toward achieving Aithroep, sustaining nature benign economy and resilient social-ecological systems for the 21st Century. In the realm of sustainability,





AI can help to accelerate the creation of a Green and Circular Economy and the achievement of the United Nation's Sustainable Development Goals (SDGs) and a Net-Zero future.

Notwithstanding this, it is important that we can successfully safeguard the integrity of the singularity. All potential negativities must be quickly addressed with full readiness and responsibility should their arrival cannot be prevented. If anything, we must ensure that we can produce AI that can guide humanity against the emergence of dangerous, unfriendly and freewheeling AI and its upgraded version, the superintelligence. We need to be wary of the fact that within the next few decades, we will gain enough technological progress to build smarter and self-aware AI and machines, smarter than humans that can build even smarter AI and

machines. If not careful, we may be sucked into a vicious cyclical loop of Ai-nism and unless safely and morally oriented, this may at some future point after singularity, spell the end of humanity as we know it. We need to be extremely careful and be prudent in both its creation its use. Most importantly however is that we are able to prevent the self-modification and enhancement of its intelligence that is not aligned with humanity's interests and that seeing us as competitors for the resources it needs to survive.

It is obvious that there is an urgent need to improve AI and Digital literacy across society as these are the foundations upon which knowledge about AI, AGI and future superintelligence are built. This effort must be taken collaboratively by both the public and private sectors.

Nature inspired wisdom should guide humanity in the adoption of Nature Based Solutions to address planetary and Whole System challenges of the 21st Century.

Rethinking Nature Intelligence and **NATURE INSPIRED WISDOM**

We are surrounded by Nature's wisdom - as a well-adapted entity over 3.8 billion years and as first manufacturer with 10 to 30 million species and tens of thousands of tons of materials produced without waste, noise and pollution. Nature's wisdom is much more superior than human technological intelligence if not primitive in comparison. Nature can give us hope to heal the Planet and can teach us on how best to run our economy. One such wisdom we can learn from Nature is that it has sustainable regenerative capabilities and has a highly resource efficient economy that runs entirely on renewable energy of the sun.

Our Principle of Oneness and Interconnectedness is inspired by Nature. Nature taught us that wisdom resides in the Whole, not in the sum of its parts, and more specifically the circular and interconnected whole and in corporate relationships and functioning as an ecosystem. Nature tells us everything is connected to everything and if we can only spend more time observing and trying to understand how Nature works, then we will soon be able to see that all our ingenuity and approaches to manage our environment and attaining sustainability have already been innated and achieved in Nature. Albert Einstein said, "Look deep into Nature and you will understand everything better".

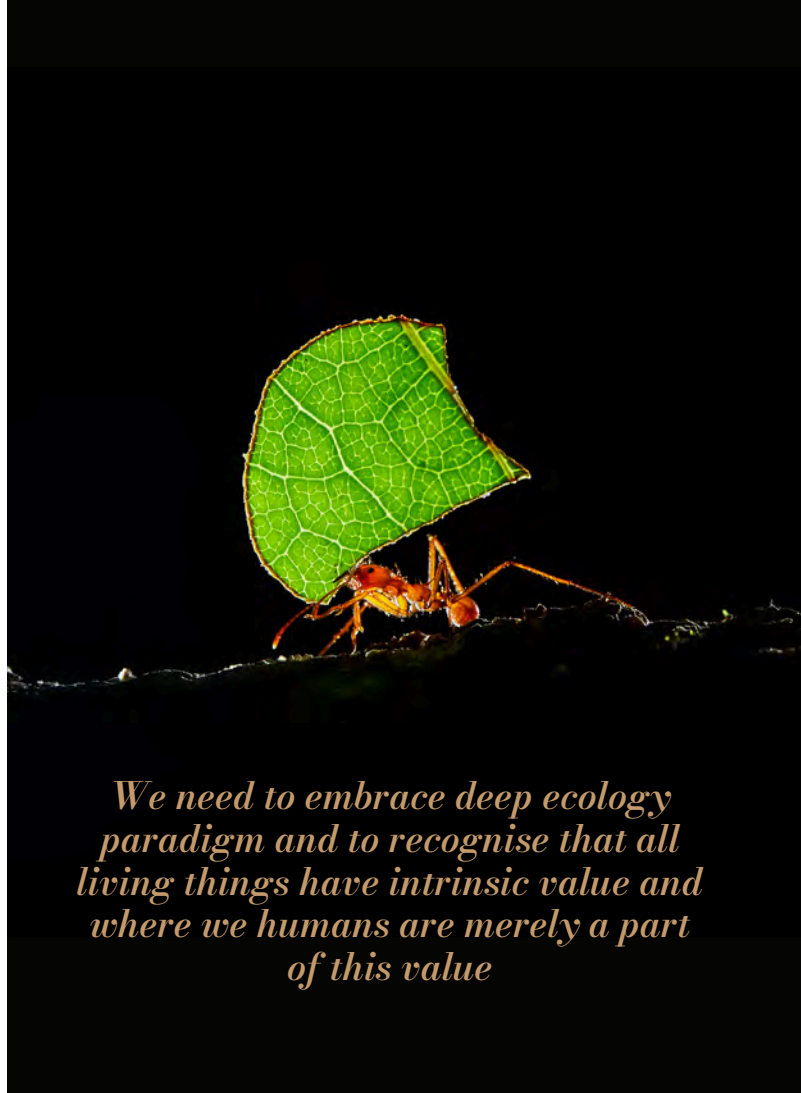
We need to renew our scientific understanding and potency on environment and sustainability and how to achieve Aithroep based on what we can learn from Nature. Similarly, we can mimic Nature's way in preventing our planetary

As time is of the essence, dedicate ourselves to things we can change, areas we can make a difference through Good Science and Nature Based Solutions

breakdown and remediating overshoots. Thus, pursuing and tapping Nature's wisdom and geniuses is the most apparent and logical step for any sensible society and educational institution to embark on.

The science of Biomimicry or Biomimesis needs to be rigorously introduced so that Nature inspired solutions can be enhanced, inter alia in the adoption of Nature-based Solutions, science and engineering best practices and in climatic and resilient design. Indeed, the emergence of AI is simply because of our ability to mimic Nature which is our own human anatomy, physiology and its neural network.

Whether we realise it or not, all innovations are inspired or are a copy of something in Nature. Take for instance, the first World Wide Web which can be found in Mycelium, a branching, threadlike vegetative portion of fungi used to transfer information and nutrients. Nature can teach us how to live and develop sustainably, heal our



We need to embrace deep ecology paradigm and to recognise that all living things have intrinsic value and where we humans are merely a part of this value



The course for action to protect and value Nature is pretty straightforward as Nature underpins our economy and well-being

wounds, make green materials and harness green energy, conduct circular or green economy, etc. Learning from Nature can be attained among others by studying and observing her form, shape, structure, strength, innate and complex relationships, communication systems and ecosystems. Our built environment must be designed with Nature in mind rather than humans alone, inter alia sharing spaces with Nature and placing the whole natural ecosystems at the centre of design. Likewise, when planning for urban development and utilities and in connecting infrastructure, a biophilic design that enhances human connectivity with Nature must be incorporated and all possible efforts must be rendered to avoid natural habitat and ecosystems disruption. Nature-based Solutions must be ploughed into damaged lands and forests and adopt nature strategies such as the 5Rs to build back better their natural functions and services. Nature-based Solutions can be integrated into sustainable agricultural practices

such as agroecological and regenerative agriculture, forestry and silvopasture which will also help to combat climate change via soil carbon sequestration strategy. In the soil nature ecosystem, microorganisms in the soil, through complex interdependence networks and processes can create healthy soil which in turn enhances carbon sequestration and productivity. This is a typical example of how Nature teaches us the meaning of wholesomeness in mutualistic and cooperative relationships and how self-regulating and self-regenerating can help to build back a better a healthier ecosystem. Indeed, we cannot stop climate change without protecting and restoring Nature.

Learning from Nature can help us understand the meaning of cooperative relationships and that the actual wisdom resides in the understanding of the interconnected whole. In the context of education, training and research, this can be translated into a need for an interdisciplinary and

transdisciplinary approach, allowing systems and holistic thinking to excel. We need to introduce the kind of education and training programmes that allows us to understand how things influence one another as a whole, a singular unit or entity. Only with this kind of understanding can we hope to successfully finding effective and nature-benign solutions to our planetary problems and acquiring the necessary ability to maintain mutualism and pluralism with Nature. In order to unlock nature's wisdom, we need to step up our effort especially in the area of research and development and this is where a dedicated research institution like ISSM is needed. Concomitantly, this research and development together with that of the environment, sustainability and AI learning, all placed under one roof, will allow a renewed transdisciplinary science discipline to emerge, a succinct criterium for knowledge enhancement and for the adsorption of Aithroep.

It is about time we change our worldview on Nature, not only as a resource we can extract but as a library of books where all wisdom of life resides and to live sustainably can be found



The Centre

ESI GROUP

The ESI Leadership Academy (ESILA) and the Institute of Sustainability and Singularity Malaysia (ISSM) belongs to the ESI Group of Companies, founded by Francis CW Wong, one of the top leading transdisciplinary experts in the fields of safety, environment and sustainability in Malaysia. He hopes with the formation of ISSM, Malaysia can be better prepared to embrace the sustainability agenda and Net-Zero by 2050. He also hopes that the Industrial Revolution R4.0 can be better anchored to instil positive singularity and to expediate the adoption of Aithroep Paradigm of Living and Working. ISSM will chart the clear pathway for a Renewed Thinking, Science and Technological Advancement for all Malaysians.

ISSM EDUCATION & TRAINING ROADMAP

