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LEAD *for* LIFE

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"The divine being of human, the Soul, brings the light and love to life.
Let us live the wisdom and grace in this world."

-Sasmita Samanta

Leader OF THE MONTH

Mr. Elon Musk
Founder & CEO, SpaceX
CEO, Tesla, Inc., USA

In 2021, Elon Musk eclipsed Jeff Bezos, Founder of Amazon, becoming the world's richest man. According to the Forbes' Real-Time Billionaires List, Musk's fortune stands at $246 B, a vast majority of which is on account of a dream rally in shares of Tesla, the electric vehicle manufacturer that he serves as CEO.

He founded SpaceX in 2002 with a futuristic vision of making humanity a multi-planet species. Musk is widely hailed as a visionary, innovating and making efforts to take the world into the future. He was in the news last month for acquiring the popular microblogging and social networking service Twitter to further the cause of free speech. This column presents snippets of his wisdom that provide a peek into the thinking of this iconic entrepreneur.

When something is important enough, you do it even if the odds are not in your favour.

Don't confuse schooling with education. I didn't go to Harvard but the people that work for me did.

It is possible for ordinary people to choose to be extraordinary.

The first step is to establish that something is possible, then probability will occur.

Failure is an option here. If things are not failing, you are not innovating enough.

Life is too short for long-term grudges.

I could either watch it happen or be a part of it.

Take risks now and do something bold. You won't regret it.

Some people don't like change, but you need to embrace change if the alternative is disaster.

Patience is a virtue, and I'm learning patience. It's a tough lesson.

World Leadership Academy

Connecting Thinkers...

World Leadership Academy

Prof. Sasmita Samanta

Editor

- **Academician**
- **Author**
- **Speaker**
- **Writer**
- **Visionary**
- **Leader**
- **Social Worker**

From

EDITOR'S DESK….

People in a community live, work, build, grow and continue to grow up to infinity with the strength of relationships, trust, love, compassion, kindness and faith. The incidents and pieces of information bombard them with challenges and force them to pick and choose from the most relevant alternatives. Learning stimuli, fellow feelings, and respect for others come from within the individual. Pressure, motivations, targets, and the energy to meet the target come from within the group or community and the leader pulls ahead with his/her determination, commitment and vision. The external uncertainties, insecurities, risks, and fear are created because of the external environment.

Boundary permeability, metasystems perspective and developmental maturity come into the learning horizon through an adaptive, generative and transformative system. The broadness of heartfulness brings the last person in the line into the global and multicultural learning environment, which adds value to the whole of humanity and confidence in lives to march ahead in search of their life goals.

A burning lamp can lighten another lamp and the process can continue till the light is alive. Teachers, mentors and guides can continue their job till the moment they are learning by themselves and enriching their knowledge with the new experiences and new realizations either through their actions or intellectual engagement. Engagement with those people keeps the aspirations of the learners and workers alive.

A leader continues to explore new opportunities, ways, and systems to bring newness to the world and lives. Connect himself/herself to the world, understands the environment, understand the people, empathize with their necessity, their future from a particular perspective, innovate and execute. Disrupts to shepherd humanity from poverty, miseries and ignorance to create a world of pride, happiness and satisfaction of ownership. The strong purpose drives the aspirations and a well-designed system transforms millions of dreams into reality.

"Follow your Dreams and live your strengths"

-Sasmita Samanta

CONTENT

01	**Lead for Life: Search for Spiritualism, Opportunities, Truth...**	Prof. Sasmita Samanta KIIT Deemed to be University, Odisha, India
07	**Mathematics Every Where**	Prof. Sudarsan Nanda KIIT Deemed to be University
11	**VISION ZERO** **Safety. Health. Wellbeing.**	Prof. Karl-Heinz Noetel International Section of the ISSA on Prevention in the Construction Industry, Germany
13	**World Overview**	
17	**Technology Development Prospects for Rural India**	Prof S R Samantaray IIT Bhubaneswar, India
23	**Pradeep Kumar Mohanty** **Man Behind Odisha's Emerging Coffee Hub**	Interview by Satyabrata Dash Bhubaneswar
27	**Revolution in Electric Vehicles**	Dr. H.Mohan, IIT Roorkee, India & Dr. S. Dwivedi, Danfoss Power Electronics A/S Denmark
31	**Technology Trends of the Precision Agriculture in Korea**	Prof. Gyoo-Soo Chae, Baekseok University, South Korea
35	**Intelligent sensors for an intellectual future...**	Dr. Naeem M.S Hannoon. UiTM, Malaysia
37	**Solar Vision for Tomorrow: A Discussion**	Prof. Biswajit Ghosh Neotia University, Kolkata, India
43	**Mahaprasad: Rosaghar (Kitchen) and Sevaks**	Pitabas Rautaray Jagannath Researcher, Odisha
51	**Daringbadi- Kashmir of Odisha**	Dr. Pradeep Kumar Mallick KIIT Deemed to be University, Odisha, India
54	**United Nations Security Council: Relevance in Today's World**	Dr. Jyotiranjan Gochhayat KIIT Deemed to be University, Odisha, India

58	**Vulnerability of Global Sustainability - how can we identify and bridge the gaps between thoughts and actions?**	Debasis Mohapatra Sustainable Outreach and Universal Leadership (SOUL) Limited, Odisha, India
60	**World Health Organization (WHO) strategy for transforming the health sector in India**	Dr. Ranjit Kumar Dehury Hyderabad Central University, Telengana, India
61	**Corruption: A Global Cancer**	Dr. Itishree Gita Kumari Berhampur University, Odisha, India
63	**Poverty in Africa : The Case of Tanzania**	Michael A. Mabawa, Tanzania, Africa
65	**Learning from Global Economic Crisis: A must for India to take a Diversion**	Dr. Sukant Chandra Swain KIIT Deemed to be University, Odisha, India
67	**Budget 2022 and Cryptocurrency: Is it a reception or farewell for Indian cryptomaniac?**	Dr. Debasis Pahi, KIIT Deemed to be University, Odisha, India. and Romely Mukhopadhyay, Punjab National Bank, India
69	**Sustainable Heating, Ventilation and Air Conditioning (HVAC) for Building**	Prof. Chinmoy Kumar Panigrahi KIIT Deemed to be University Odisha, India
75	**Path of Happiness**	Prof. Arun Kumar Ray KIIT Deemed to be University, Odisha, India
77	**Spirituality**	Prof. B. P. Singh Delhi School of Professional Studies and Research, Delhi, India
81	**A Step Towards Green Machining for Sustainable Manufacturing**	Prof. Ashok Kumar Sahoo KIIT Deemed to be University, Odisha, India
85	**Ghost or Paranormal: A Belief or Science**	Prof. Prasant K. Pattnaik KIIT Deemed to be University, Odisha, India
90	**WLA Events**	

Lead for Life: Search for Spiritualism, Opportunities, Truth...

Sasmita Samanta

India holds the beauties that manifest in its sacred centres of worship, places of pilgrimage, mountains, springs, hills, jungles, and scenic locations reflecting eternal calmness, peace and bliss. In this country, rivers, hills, and mountains are sacred, trees symbolize Gods or Goddesses, and morning and evening times are meant for worship and spiritual engagement. The nature in this country is never considered as the source for fulfilling necessities. Rather, it is always a source for realization of spiritualism through sense of abundance of knowledge of Vedas, sense of magic music of flow of springs, sense of empowerment with forceful presence of its mountains, sense of energies in the current of rivers, and as a whole the spiritual union or sacred devotion to the Universe. Beauties reflected in different art forms of this country are mostly feministic, which combine intellect with aesthetics that are much beyond the boundaries of physical power. People see the world not with its physical presence but with the sense of sacredness, values and the pervasiveness that symbolize and feel its connectedness with the soul.

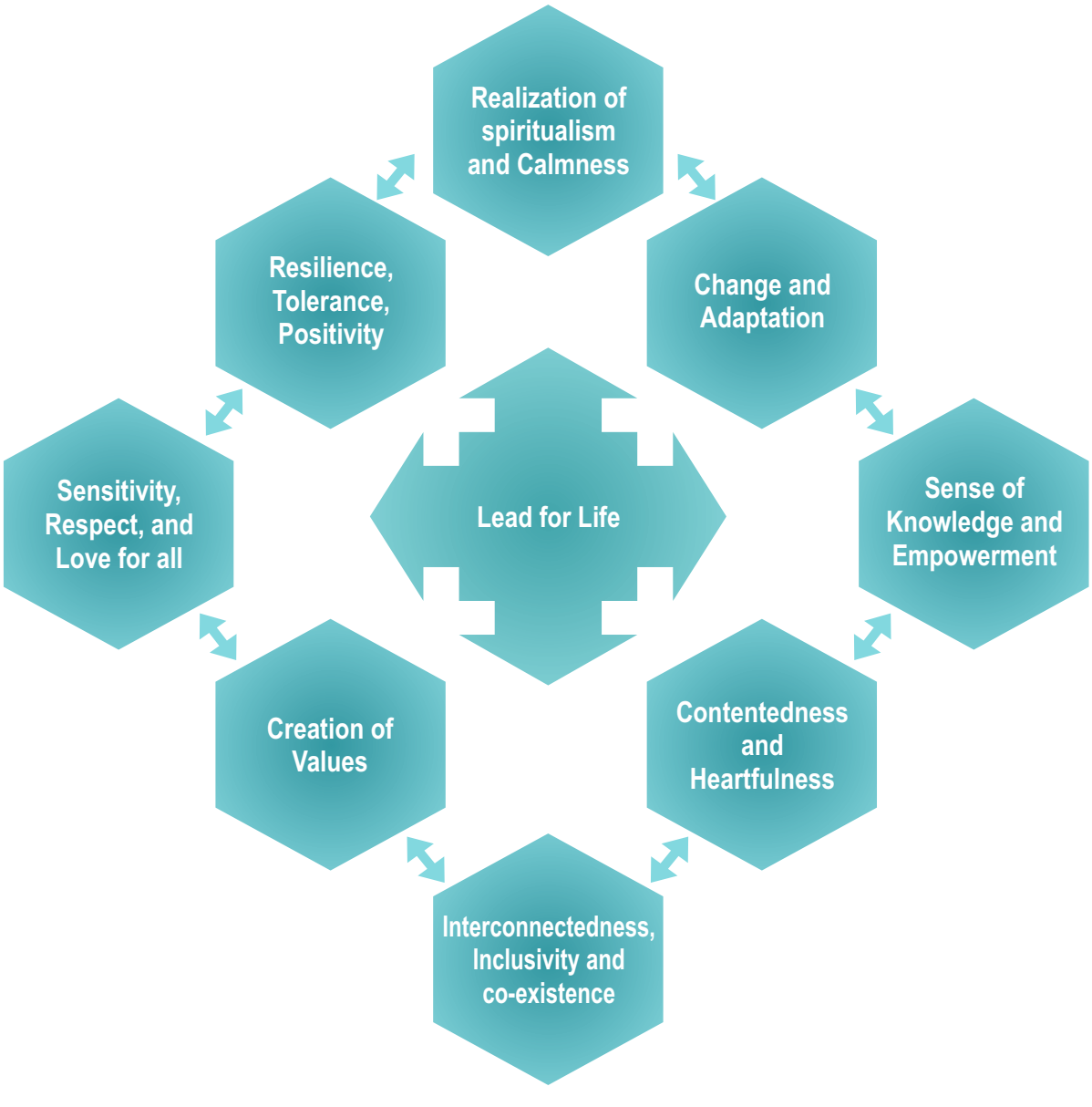
In this land, Vivekananda, the Hindu monk, described education as the manifestation of 'goodness' in a human being. This brings humility, empathy, and inclusivity to education with the knowledge. His concept of 'universal consciousness', the realization of soul in every human being, is pure, omniscient, omnipresent and binds the whole humanity. The concept of interconnectedness, strong ties, networking and controlling the minds not with physical power but with spiritual power for the benefit of the whole humanity conveys universal brotherhood and eternal love for all, and motivates all with love and compassion.

Creation is the result of sacrifices and it beholds joys and pains in itself. The deepness of love, like blue of sea, the brightness of success, like rays of sun, and the limitlessness of darkness, like long winter nights, unfold the truth in the world with its utmost austerity for the establishment of peace radiating happiness and covering all pains in its lap. In Indian stories, happiness is reflected in the strength of weaver birds' nest in the face of storm and is narrated forcefully paying little attention to the struggles, the long efforts made by the bird for constructing the nest or the risk involved for the nest during the storm. The efforts are always made to create positivity, calmness, sense of bliss in each and every situation of human life.

The truth of our life depends upon the attitude we possess for handling the situation; and not the situation itself, which we call it temporary, disruptive, and ever changing. So the core of human civilization in India is mostly based on the thoughts, beliefs, attitudes, and commitments which are human-centric, and can be achieved through the spiritual practices and meditations.

Design thinking, one of the newer concepts in the field of leadership based on empathy, aims at creation or co-creation in thinking through the minds and realization through the hearts. The necessity and desire to fulfil it together create strong willpower to achieve, to possess, and to conquer. The spiritual institutions are engaging the humanity for accomplishment of spiritual and emotional aspirations through different proven methods of physical and mental practices, involving worship, hymns, and theologies. The social or commercial institutions, engaged in fulfilling the environmental, social or human aspirations, are connecting the minds and hearts to contribute passionately for the accomplishment of higher order human needs, as described in Maslow's Need Theory.

The seas stand as the symbol of continuous fight between land and water, at the same time complementing each other for increasing the beauty in the world with its pervasiveness. The large long sand patches narrate the fate of stones of the mountains, interested to stay connected with Earth. But they have gone through tides and currents to come to the level for getting connected



to Earth and being helpful for the people to raise the trees and crops to lead a fulfilling and happy life. The people living on the seashore swim in the tide, ride the mountains across the sea, trek inside the jungle, sail the ships inside the sea for catching fishes or for search of food or resources. The continuous fight between nature and human for survival is the truth, and the fight between poverty and dream to be rich is continuous.

'Rich' always does not denote the possession of physical or material goods. Many a times it stands for staying connected to the ocean of knowledge, spiritual accomplishments and many more. The relationship between strengths and weaknesses, hopes and accomplishments, and dreams and realization, narrates the consequences. Those consequences build the experiences and those realizations create wisdom, which drives the whole generation forward for establishment of a world best fit for the time and the people. The whole journey from imagination to ideation, ideation to conceptualization and conceptualization to execution is continuous and uninterrupted.

A yogi, meditating in the bank of the sea or in Himalayan range of mountains, meditates uninterrupted despite continuous disturbances by the ants and flies because of his/her connectedness with the Supreme. The focus on ultimate goal creates the path automatically. We call it as leadership driven by purpose. Leadership is motivation, it is inspiration, it is the energy to drive. It is meditation to have control over all material desire or control on sense organs and to link to the higher order of human aspirations or ultimate panacea.

World is at work. There is no scope for anyone to remain idle. Through work, we get realization of being alive, being relevant and being consequential. The busy cities, where life is fast because of the high demand for work, necessity to travel a long distance, and lots of demands for time and

We come to love not by finding a perfect person, but by learning to see an imperfect person perfectly

-Sam Keen

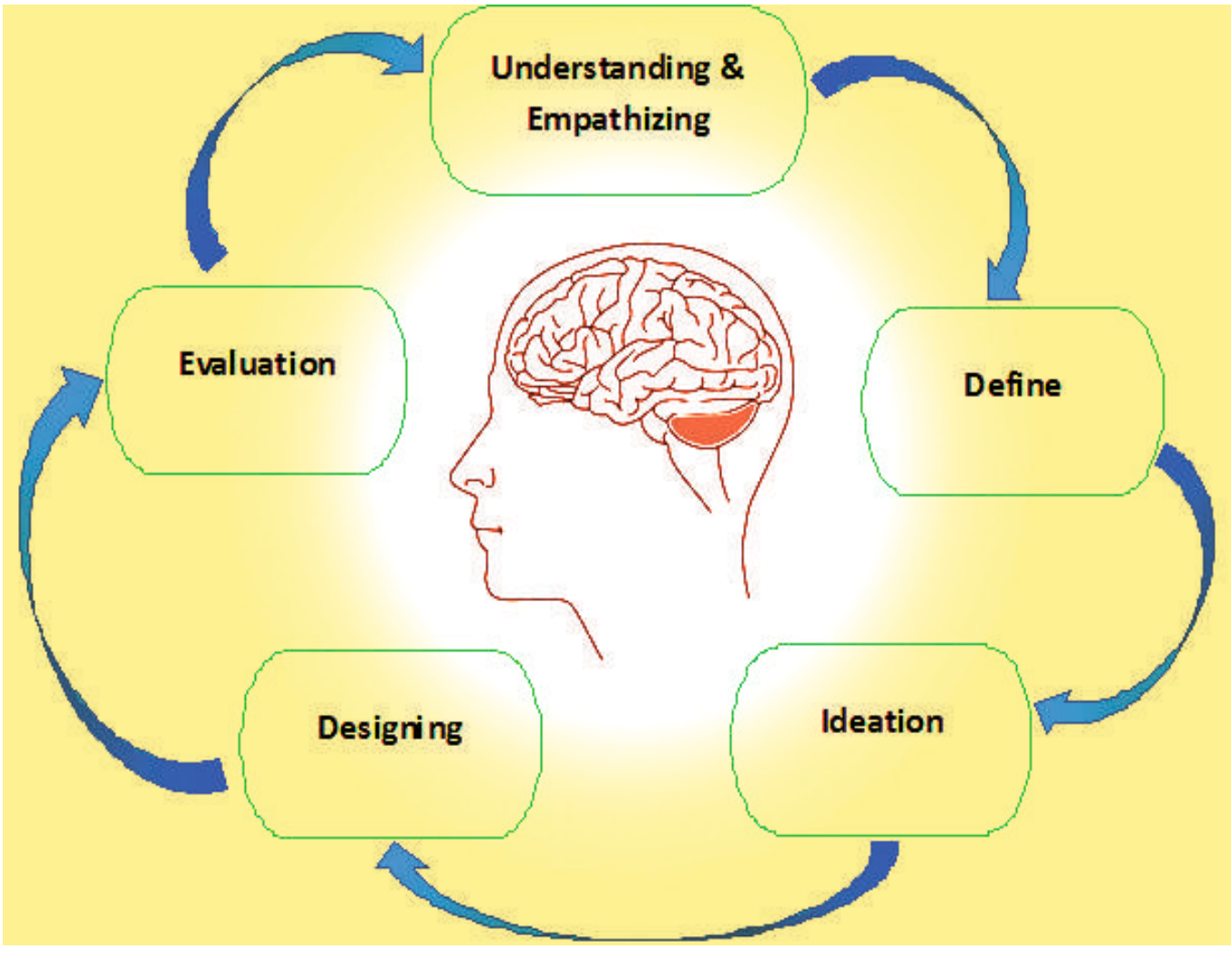
money, have no time to sit aside and think about the things, where people live in work, derive pleasure out of their work and get success through work. Self actualization, the highest order of necessity, is random, not sequential. Strategizing for a particular assignment with examples of histories, analysis of statistics, assimilation of knowledge does not become fruitful, because of the change of time, the nature of business, and the people at work, which make the differences in the work place. So the strategies are to be present, now and evolutionary with time because of its relationship with society or humanity. The past experiences may not be relevant in a disruptive world, where only present is important, past is lived, and future is uncertain. The way out is building resilience to adapt to the present and raising sufficient flex in and around to evolve with time.

The famed Taj Mahal Palace Hotel in Mumbai stands tall and strong, despite the terrorist attack of 11th November 2008 that costed 40 precious lives. Yet hundreds of lives were saved because of sincere and passionate efforts of officers of the Hotel and also police and military personnel. Everyone forgot about lives saved by brave officers of this nation, but remembered only the fearful fights between terrorists and officers and lives lost in this fight. Human mind only remembers the incidents, facts and figures, which touches their eternal core, not all. Create the reasons to be remembered by setting examples in different fields is what really each and every human wants to do. Work place ambience, facilities, resources, and human dignity need to be protected systematically from outside negative forces through exemplary work for the cause of larger population and creation of values, which can be very big, scale, impactful and motivating.

Nokia mobile, the pioneer of mobile technology in the globe, was sold after a few years. It was number one in the world for innovations in mobile technology and the impact it created in our social, human and cultural value chain. Suddenly, it vanished from the market. Android and i-Phones took the pioneering position in the world market. The flex to adapt to the time and technology was not in place and it did not take decision at the right time to go for the change of technology. Disruptions made disasters. Samsung from Korea and Apple from USA designed the disruptive technologies for present very sincerely and brought it to the market at regular intervals to match the technological dreams of the contemporary generation. They became leaders because they empathized the change and systematically designed it. Every season, different types of fruits and vegetables are produced according to prevailing environment and soil conditions. New flowers and fruits replace the old ones, but those do not destroy the old ones. Both coexist. The disruption is seamless because it is natural. Always effort is there to bring such seamless changes to the organization.

Farmers, while working in the paddy field, put their sweat and blood for raising the crops. They get very little money, while selling those in the market. But they look confident and content as they are linked to the purpose, the farmer is aiming at, i.e. feeding the humanity. The farmers derive energy from the smiles of the kids, a sense of fulfillment after consumption of food, which symbolically honours farmers' work. Intrinsic satisfaction is much above the extrinsic rewards, monetary or non-monetary. Elimination of extrinsic values or means will take away the tools or systems, which help a person to create values that help in survival and growth in this worldly value chain. The productive counts and eternal satisfactions pull the human being forward in the journey of life. The challenges of work, the difficulties and struggle in the journey motivate the people to put more focus and attention to the job by connecting heart and soul for achievement of superior goals in life, which bring unique distinction in the job, in the society to enrich their core. Such distinctions or consequences build the course of action in and around and leave no space for manipulation.

In a storm or cyclone, all the birds, animals run towards their nests to protect themselves from the speed, but eagle flies high not to be touched by speed. It increases its own height. The willingness transforms the organization to grow to the greater heights, and, as such, many challenges can be avoided. The safety, security, continuation and excellence can be achieved without any disturbance. Recently, Honorable Prime Minister of India was talking about heartfulness to contribute for the world, being compassionate for the



humanity. The heartful thoughts to transform the system, processes and organization for benefit of the mass create lots of values and bring success. Such successes are universal, transparent and human. It spreads much faster than the most robust supply chain or information chain. It connects heart to heart and a sense of togetherness is created, away from all insecurities, and fear of losing. Feeling of togetherness brings completeness in lives, where happiness persists.

Frederick W. Taylor's scientific management of optimizing the process and maximizing the production by developing expertise at individual level could not bring best results because of division of manpower according to the skill sets, which resulted in lack of optimization of resources, and serious dis-coordination among series of actions. Compartmentalization and isolation created frustration, lack of confidence and lack of skill for building relationships with people so as with the organization created mental fatigue and stress. Larry Page, CEO of Google, once speaking in a conference was discussing about how much time, people were separated from their own family and relations. It emitted lots of anguish and restlessness among people. He developed the platform to connect the world. The sense of togetherness and oneness was core of his activities. Slowly his migration to cash-rich Alphabet companies working in the high-end technologies from artificial intelligence to space, agriculture to advertisement brought the core principle into the practice. Ratan Tata, launched the Tata Nano in 2009. His intent was to provide an affordable car, priced at one lakh, to the middle-class Indian families. Soon the company realized that it was spending more on materials than gaining on sale of cars. Later on, the price of the car was increased with functionality but the core principle to serve the middle-class Indian customers with optimum price continued in

improvised versions of the Nano car.

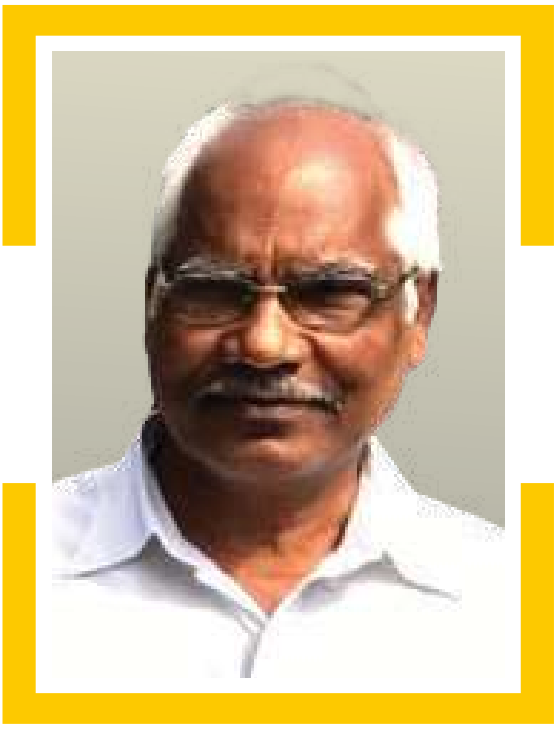
Jeffery Muller while talks about capitalization of human resources for increasing the effectiveness of the organization and bringing the human talents and skills to the purview of strategy and cognitive actions rather than being a part of human cost centre and supply chain. Steve Job's vision to sell the dreams to the dreamers has created values for Apple. Indian saints, gurus were designing the curriculum and learning processes for the individual students and connecting them to that. They were being given utmost autonomy to sail in the journey of knowledge acquisition, which is much beyond the prescription based mass fitting education model. Because human beings are unique, and each and every individual is having different talents and strengths, education will be meaningful, if it fits to their uniqueness.

United Nations' Peace Statement indicates to establish a world free from hunger, poverty, illiteracy and building a humanity of tolerance, respectfulness and love for all irrespective of geographical, religious and ethnic boundaries. The essence of Veda, Universal consciousness, feel of life is in each and every living being and being respectful to all lives can combine together to attain universal happiness for all. Connecting self, soul and super being at individual level and the soul with universal power create trust, love, and commitment for the globe.

"Sarbe Bhabantu Sukhinah
Sarbe Santu Niramaya
Sarbe Bhadrani Pasyantu
Maa Kaschit Dukha Bhag Bhabet.
Om Santih, Santih, Santih ... "

Mathematics Every Where

Sudarsan Nanda



I start with the English version of a Shluka from Yajurveda which reads as follows:
As are the crests on the heads of peacocks,
As are the gems on the hoods of cobras,
So is Mathematics, at the top of all sciences.
- The Yajurveda, 600 BC.

Therefore some people say that Mathematics is the queen of all sciences. Mathematics is useful for every branch of knowledge and at every walk of life. This is a logical process and makes the brain logically and intellectually so strong that one can understand, other branches of knowledge by self study and can switch over to other areas of Science.

Bertrand Russell said 'Mathematics takes us into the region of actual necessity, to which not only the actual world, but every possible world must conform'.

Mathematics is axiomatic, we assume certain axioms and postulates and derive some results which explain certain phenomena.

We can explain one concept X with the help of some other concept such as Y, Z etc , then one can explain 'Y' and 'Z' in terms of some other terms and so on. Ultimately we reach a stage where we fail to define / explain / prove, such concepts are called axioms and postulates over which every mathematical structure stands. For me there is no difference between mathematics, for that matter science on one hand and spiritualism on the other hand, since mathematics and science are based on certain axioms and in science we are till now not able to explain nature completely, therefore the existence of God, Divine Force, can be considered an axiom. Prof. Abdus Salam, Nobel Prize winner in Physics for in the year 1979, was a mathematician, his 'Grand Unification' conjecture states that there exists one and only one force in this Universe and all the other forces are the different manifestations of the same force.

To be a successful leader in any sphere of life one need to have Intellectual mind, emotional maturity, esthetic and social values , and ethical values. For this one needs to develop concentration and confidence. Those who can develop these values as such it is fine, otherwise one goes for prayers and meditation etc.

Mathematics and logic help to develop concentration, and confidence.

Some management experts say that there are four types of people such as those who

i. Concentrate on profession neglecting own health and family.

ii. Balance between profession, health and family

iii. Concentrate on self, family and neglect profession,

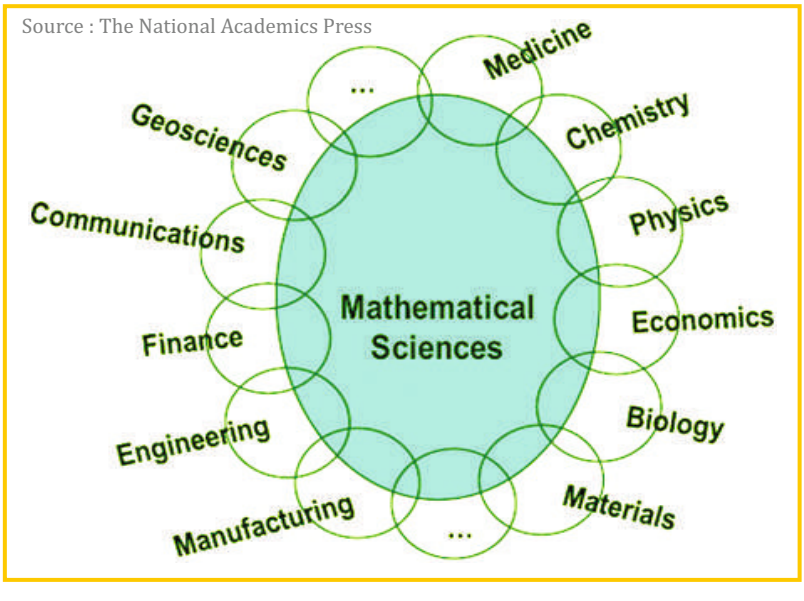
iv. Do neither, neglect everything.

It is evident that persons belonging to category (ii) are the best and are most successful professionals, and leaders.

Budha's Madhyam Marg', Better to choose the middle' Path' makes a leader most successful. Good leaders / administrators provide good governance. Good governance means consensus, participatory, follows the rule of law, effective and efficient, strategic vision, equitable and inclusive, responsive, transparent, accountability and follows ethical means.

It is not known when the set of positive integers or natural numbers were introduced. Before introduction of positive integers, the early men used to replace one stone or put a search on the wall when one cow or goat was going out to search for food. In this manner, the person had a pile of stones. In the evening when one cow or goat was returning to the house he / she was replacing again one stone from the pile of stones. If some stone was left unreplaced he / she was coming to the conclusion that some cow has not returned. When numbers were introduced, it was assumed to be undefined. Therefore Kronecker once said ' God made the natural numbers, all else is due to men.' But when set theory was introduced by Cantor, Italian mathematician Peano brought certain axioms which explained natural numbers and since then set was considered as axiom instead of natural numbers. When set theory was initially introduced by Cantor, there were some logical inconsistencies which Bertrand Russell pointed out in the form of a paradox popularly known as Barbar's pradox. Russell stated in the following manner so that common people ignorant of logic and mathematics will be able to understand.

Source : The National Academics Press



'There was one and only one Barber in a village. His principle was to shave those and only those who do not shave themselves'.

Russell then asked the question: to which set the Barber belongs? Whether to the set of people whom Barbar shaves or to the set who shave themselves.

After this paradox set theory was modified, many new theories came such as Class Theory - Theory of types, Set Theory etc.

Discovery of set theory brought a revolutionary change in the field of logic, mathematics and science. This concept unified, axiomatized the whole of mathematics and helped in mass production of results. It gave rise to several new areas / disciplines during the first half of twentieth century which never happened before. Set is like the divine eye which Lord Sri Krishna gave to Arjun with which Arjun could see the divine form of Lord. This is from chapter 11 of The Bhagavat Gita. Arjun desired to see the divine form of Lord Sri Krishan and said 'O Lord, if you consider me capable of beholding it, then reveal to me your imperishable form'. Sri Krishna said 'you cannot see me with those gross eyes of yours, therefore I vouchsafe to you the divine eye, with this you behold my divine power of yoga'.

Euclid Geometry was probably the first axiomatic concept in Mathematics. There were some logical inconsistencies which was understood after the discovery of set theory by Cantor and Bertrsnd Russel was the first person to criticize Euclid. Russell's criticism was as follows: 'Even in the first proposion of all when Euclid constructs an equilateral triangle, he (Euclid) assumes two

circles to intersect. But he never mentions whether and where they do so. I (Russell) know some situations where they do not. Therefore it is nothing less than a scandal that Euclid still should be taught to the boys of England'. Soon after that Euclid ceased to be a taught to the students of England. Later modified version of Euclid Geometry, known as 'Axiomatic Geometry' came into existence'.

Certain mathematical concepts were discovered as logical processes and were studied as intellectual pursuits. Some people call this as Pure Mathematics and thought that these may not be useful in science. This proved to be false and became very much useful at a later stage to explain nature.

Some other mathematical concepts were discovered for the sake of necessity to explain scientific phenomena. For example, Newton discovered Differential calculus to explain rate of change of motion and Fourier Series was discovered to explain Wave Motion. Of course it was acknowledged later that Madhab one outstanding mathematician from Kerala introduced calculus three hundred years before Newton did it, of course this was not known to Netwon and Leibritz. At this point it is worth mentioning that ancient India was much ahead of other civilizations in mathematics and science. Actually speaking as stated by Reimann 'Physics became a science only after the discovery of calculus'.

With this background let us come to specific career opportunities for students who take up mathematics as their major. As stated at the beginning of this article a student of mathematics besides taking career as a Mathematician can become a good computer scientist, a good operations Researchers, a good manager, a good Economist, a good physicist, a good leader and good administration. A good number of Nobel prize winners of Physics and Economics are with masters in Mathematics.

Many people with Ph.D. in Mathematics are teachers and researchers in Economics, Physics, Computer Science and Management, are in IT, Defence, ISRO etc. We now come to some specific applications of Mathematics in some areas of Science, Computer Science and Social Science, and a student of mathematics can choose any such area or discover new areas.

1. Cryptography

Mathematics is the queen of all Sciences, Arithmetic / Number theory is the queen of Mathematics. Number theory was considered to be the oldest and purest of pure mathematics. The great genius Srinivas Ramanujan did some outstanding work in this area. Many researchers are still struggling to prove certain unsolved problems form the Ramanujan's note book. After several years this area helped to develop the concepts of cryptography, security issues and coding theory.

2. Fractional Calculus

We differentiate a function once, twice, thrice, i.e, n numbers of times where n is a natural number (positive integer). A fundamental logical question arises whether we can differentiate a function fractional time such as one half time. There were some works in this area by G.H Hardy and others, but like Numbers Theory it remained for a long time as a logical and mathematical interest.
After a long time it was observed that, although nature is beautiful, but not as beautiful as Mathematics is. Scientists were not able to explain and study nature only with conventional calculus. This area became so much useful for Scientists, Engineers and Social Scientist that in this area there are more research papers and patents by the scientists than mathematicians.

3. Fractal Theory

We have regular figures like lines, triangles, rectangles, squares, circles, spheres and cones etc.
But clouds are not spheres,
Mountains are not cones,
Coast lines are not Circles,
Lightning's are not straight lines.
The curves for oscillation during earth quakes, the curve representing, share prices and curve representing load on a power station do not obey any normal mathematical structures and hence such phenomena cannot be explained with usual mathematical knowledge. The concept of Fractal Geometry / Fractal calculus explained all such phenomena stated above.

4. Wavelets and Frames

Fourier series was used to explain wave motion, but what about the study of small waves? So the theories of Wavelets and Frames help to handle the properties of small Waves.

5. Optimization and Equilibrium Theory
Euler once said and I quote

'nothing takes place in this, world and in nature where there is, no concept of minima or maxima. 'The concepts of Linear Algebra, Calculus and Analysis etc, are used in these areas and hence mathematicians working in these areas are in Management Schools, Economics and the Stock markets.

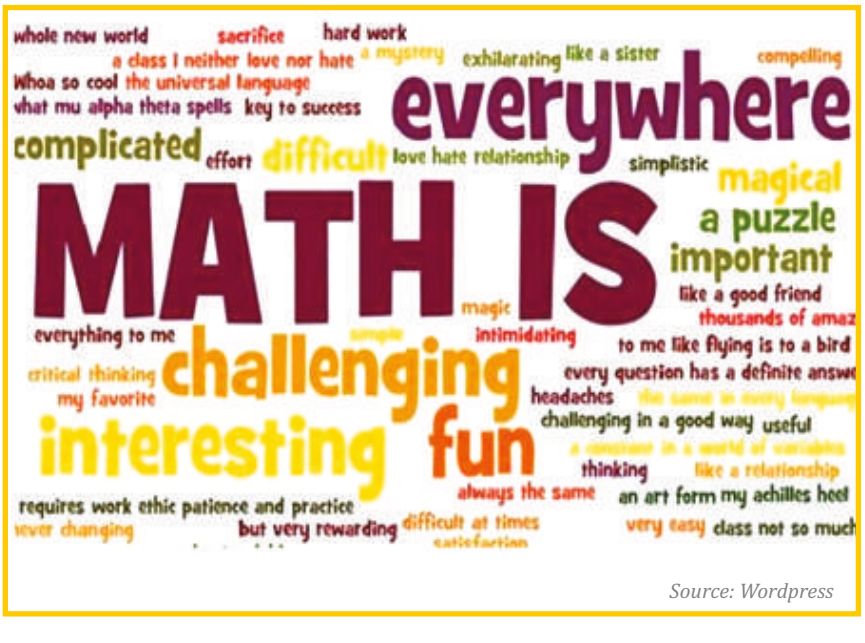
6. Imprecision: Randomness / Fuzzy Logic
Usual Mathematics gives exact solutions since it is based on Set Theory which has its foundation in two - valued logic (Law of excluded middle). But nature is not exact and hence usual mathematics can not solve the problems coming from nature which are not exact. Therefore theory of Probability and statistics were discovered to get approximate solutions of the problems which are not precise but random in nature. According to Andrew Lang 'statistics is used as a support just as a drunken man uses lamp post for support rather than illumination'. But it is always better to get some approximate solutions rather than not being able to get any solution.

Another form of impression is the qualitative in nature. Most of the times, human thought processes, experimental data, data available from natural sources do not obey two - valued logic, most of these are not quantitative, but qualitative. Handsome person, tall men, softsoil, hard rock, number near zero, number close to one, brilliant student, etc are qualitative statements, these are imprecise, not crisp and do not obey the usual mathematical laws.

Therefore Johnvon Neumann once said ' Language of mathematics is not the language of human beings' and according to L.A. Zadeh 'Can computer be made to think like Human beings'. Therefore the theory of fuzzy sets and fuzzy logic were discovered by Zadeh in the year 1965 (L.A. Zadeh, Theory of fuzzy sets, Information and Control (1965)). This mathematical theory became suitable for applications in every branch of knowledge and could solve many problems which were unsolved without this theory. It became most useful in Computer Science, Artificial intelligence, Image Processing, genetic algorithm, pattern recognition, signature verification, traffic control etc etc. This theory helps the leaders, decision makers, legal experts, administrators, teachers etc. who deal with human beings to take better and appropriate decisions. One of the axioms for the existence of God is that 'God is Omni present'. According to set theory (two - valued logic) an object cannot be at two places at the same time, whereas fuzzy logic allows any object to be present at more than one place simultaneously at any point of time. Thus fuzzy logic is more natural than two - valued logic.

There has been a misunderstanding among some people that mathematics is a dull subject, difficult and does not have applications in real world and have no good job opportunity.

But in conclusion I would like to say that mathematics is easy, interesting, most useful, having highest job opportunities, easy for horizontal switch over to many other areas of study and helps to become good leaders and good managers.



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VISION ZERO

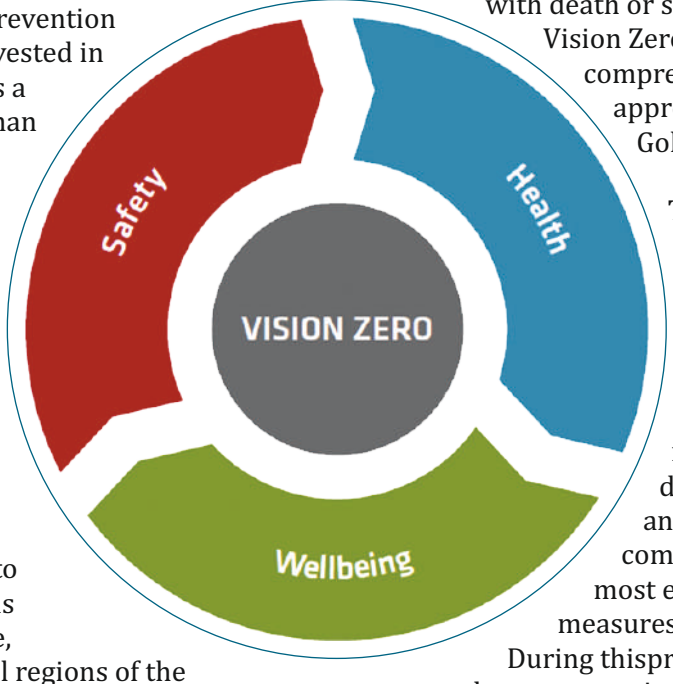
Safety. Health. Wellbeing.

Karl-Heinz Noetel

Vision Zero is the vision of a world without accidents at work and work-related illnesses. The highest priority is the prevention of fatal and serious accidents at work and occupational diseases. Vision Zero aims at a comprehensive culture of prevention.

"Vision Zero" is a transformational approach to prevention that integrates the three dimensions of safety, health and well-being at all levels of work.

Safe and healthy working conditions are not only a legal and moral obligation – they also pay off economically. International research on the return on investments in prevention proves that every dollar invested in safety and health generates a potential benefit of more than two dollars in positive economic effects. Healthy working conditions contribute to healthy business.



The ISSA's Vision Zero concept is flexible and can be adjusted to the specific safety, health or well-being priorities for prevention in any given context. Thanks to this flexibility, Vision Zero is beneficial to any workplace, enterprise or industry in all regions of the world.

Basic maxims are

1. Life is non-negotiable!
2. People make mistakes!
3. Tolerance limits are the physical limits of man!
4. People have a fundamental right to a safe working environment!

If life is non-negotiable and people make mistakes, then it is ethically unacceptable to pay for mistakes with death or serious injury.

Vision Zero is a strategic, comprehensive and qualitative approach based on the 7 Golden Rules.

To support employers and managers to continuously improve thesafety and health conditions in their enterprise in line with VisionZero, the ISSA has developed a practical management tool for developinga strong safety and health culture, based on comprehensiveresearch of the most effective preventive measures.

During thisprocess, over 1,000 employers, executives, managers, prevention experts, workers' representatives and labour inspectors have beenasked about best practices. As a result this practical and effectiveVision

Zero Guide has been created, structured around 7 Golden Rules.

Each Golden Rule in the Guide has a brief overview followed by aseries of principles and supported by a simple checklist. In this wayyou can quickly measure which of the 7 Golden Rules already areimplemented in your enterprise, where you have room for improvementor whether you need to take corrective action.

Join the Vison Zero campaign!
You are invited to consult the Vision Zero website(www.visionzero.global) for further information and good practiceexamplesand to sign up online to join the global community ofVisionZero Supporters.

The goal of zero accidents may seem difficult, but it is the only ethically correct goal we need to work towards in the future. Vision Zero provides the strategy for this. Under Vision Zero, safety and health at work are values that are recognized and aspired to in companies, organizations and society.

https://visionzero.global/

WORLD OVERVIEW

Ukraine War:

Source : NDTV

The war between Russia and Ukraine has thrown the world's politics, economy, and global market systems into uncertainty. The leaders of the world are at talks with diplomatic efforts to address the issue, without any success. Russia and Ukraine had been at loggerheads for long over several issues as the annexation of Crimea by Russia and its its international recognition, the dispute over Donbass and Luhansk as well as disputes over maritime incidents, cyberwarfare, and separatists in Ukraine. The dispute escalated after the Ukraine proposed to join NATO leading to the launch of an Russian invasion n Ukraine on February 24, 2022.

The west has accused Russia for a military build-up around Ukraine's borders and escalting the tension and creating a situation for an invasion. On the other hand, Russia has been apprehensive about NATO's Expansion to Ukraine and accused the west for threatening Russia's Security. The consequences of the war has been devastating for Ukraine with loss of lives and property. Despite much diplomatic efforts, economic sanctions on Russia, The battle still going on on its 67th day.

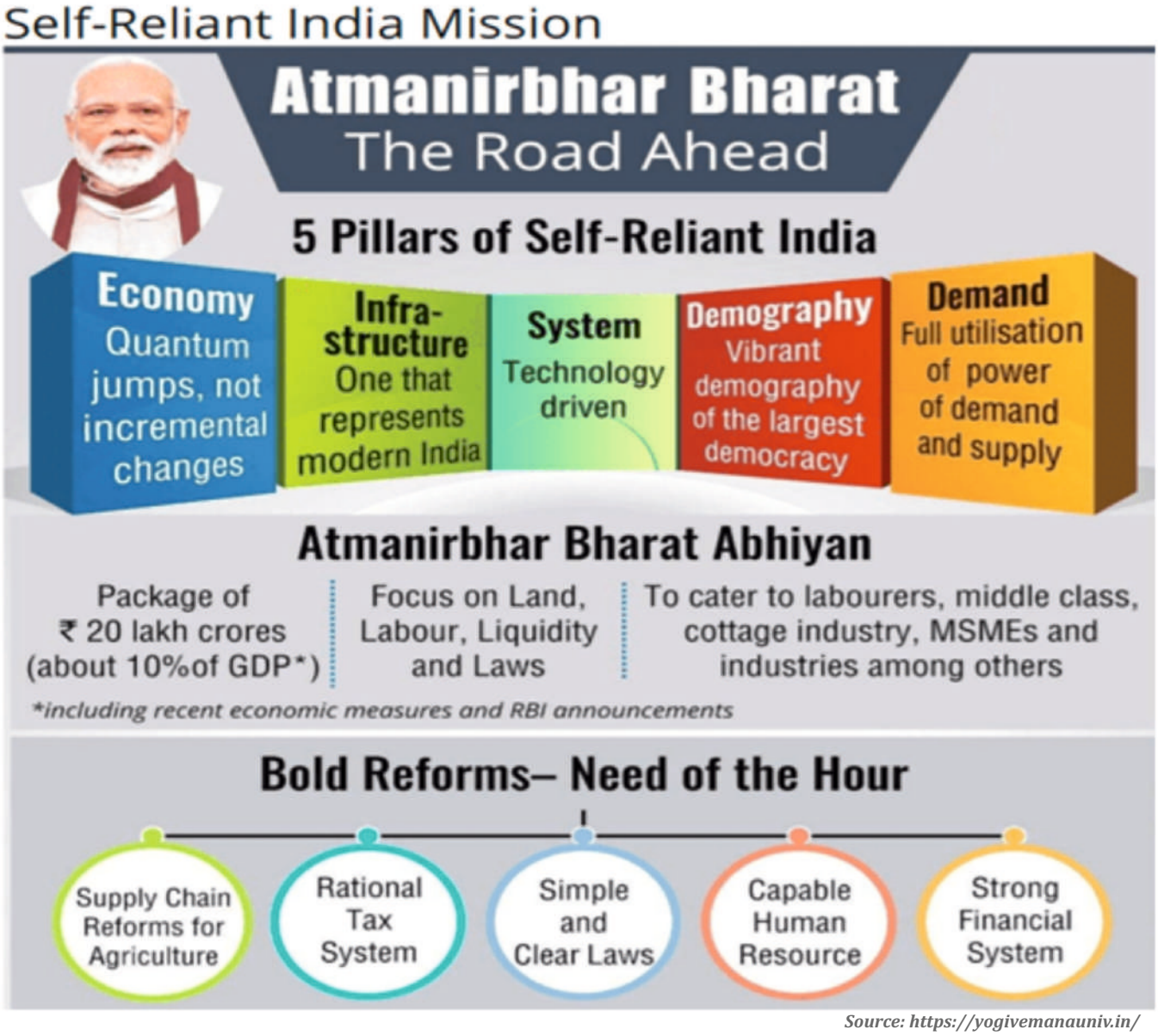
Source : India Today

Covid-19

The COVID-19 (SARS-CoV-2) has began in 2019, and has become a pandemic. The World Health Organization (WHO) declared a Public Health Emergency of International Concern on January 30, 2020, and a Pandemic on March 11, 2020. As of 2 May 2022, the pandemic had resulted in approximately 513 million illnesses and 6.23 million fatalities, resulting in one of the most fatal events in history.

The pandemic wreaked havoc on human beings at every sphere-economy, health, mental ability, psychology, emotions and even lives. Widespread supply shortfalls, particularly food shortages, were caused by supply chain instability. Many educational institutions and public spaces were partially or entirely shut down, and many events were cancelled or postponed in a number of counties. Four waves of the virus have already affected the globe. Though most of the countries are observing a decrease in the number of positive cases, in some countries the number s still on rise. The pandemic is not yet over and can not be treated lightly. People need to preach and practice caution and preventive measures at equal seriousness as during ts peak. Else the virus has all the potential to derail the human life again that seems to be coming back on line slowly.

Atmanirbhar Bharat Abhiyan



Source: https://yogivemanauniv.in/

The Atmanirbhar Bharat Abhiyaan, or Self-Reliant India campaign, is Prime Minister Shri Narendra Modi's vision for a modern India. Prime Minister of India launched the msson on 12th May, 2020. n lne with the mission, the Prime minister announced a Special Economic and Comprehensive Package of INR 20 lakh crores – equivalent to 10% of India's GDP – to combat the COVID-19 pandemic in India.

To give a boost to the the mssion, the Finance Minister of India uggested government reforms in areas such as agricultural supply chain improvements, sensible tax systems, simple and clear legislation, capable human resources, and a robust finance structure were all adopted by the government.

WORLD OVERVIEW

Srilanka Current Ecinomic Crisis

Sri Lanka economic crisis resulted in record levels of inflation, near-depletion of foreign exchange reserves, shortages of medicinal supplies, and growing costs of critical commodities. Reasons from tax cuts, to the statewide push for organic or biological farming have all been blamed the crisis. The concomitant economic difficulties led the population to openly express their discontent, resulting in one of the largest demonstrations in Sri Lankan history in 2022.

Source: The Convesion

Sri Lanka was on the verge of declaring sovereign default since the country's residual foreign assets, valued at US$1.9 billion as of March 2022, would not be enough to meet the country's US$4 billion in international debt obligations for 2022. By July 2022, the government must return $1 billion in International Sovereign Bonds. Sri Lanka has a total of US$8.6 billion in debt repayments due in 2022, according to Bloomberg, that ncludes both domestic and foreign debt. However, Sri Lanka eventually declared default in April 2022, marking the country's first sovereign default since its 1948 independence.

Afghanistan's Economic and Humanitarian Crisis:

Afghanistan's Economic and Humanitarian Crisis has been a serious concern. Afghanistan's economic collapse was driven by a number of events and actions made by governments and international institutions, as well as the failure to reach an agreement among all stakeholders to avoid the humanitarian consequences of the change of power in August 2021.

Loss of lives, jobs, income, production factors such as severe drought and other effects of decades of fighting, have added to the country's economic and humanitarian disaster though economic shocks have been the primary cause of the worsening situation. Since the United States departed and the Taliban took over in August 2021, Afghanistan has been trapped in a growing and ever deadly humanitarian disaster. Lack of food, and insufficient food consumption have lead to malnutrition affecting 95 percent of households. Afghan children die of starvation almost every day. Humanitarian organisations have expressed worry about the scope of the situation and its potential to deepen on a daily basis.

Source: Business Insider

Source: United Nation News

According to the International Rescue Committee, "the current humanitarian crisis may result in more deaths than twenty years of conflict." According to a Save the Children survey conducted in February 2022, 82 percent of Afghan families had lost wages since August 2021, and nearly one-fifth of them were sending their children to work (for pitiful wages), while 7.5 percent said they had resorted to begging or requesting money or food from charities. "The economic crisis has created a large jump in prices, leaving many families unable to purchase food.". Almost everyone in Afghanistan is affected by these unsafe conditions, but females are differently affected because they have more difficulty in getting their basic need fulfilled starting from food, to healthcare facilities. As in the new regime, loss of jobs and income have been huge for them, food insecurity affects nearly all female-headed households, according to a World Food Program poll conducted in February 2022, with 85 percent resorting to "extreme techniques" to obtain food. For women, Taliban restrictions such as having a male family member are frequently prohibitive.

Source: Hindustan Times

Technology Development Prospects For Rural India

S R Samantaray

1. Statistics on rural India: Population, Economy and infrastructure:

Rural sector is a vital part of the India's economy and shares around 46% of the national income. India would be developed when the rural sector can advance as it contributes to the large part of population. Rural population in India was recorded to be 65.07 % according to a 2020 report by World Bank collection of development indicators. Despite the sharp increase of urbanization, rural India will constitute a considerable portion of country's population in the upcoming years. Commonly, the problems that hinder the progress of rural India can be termed as low productivity; less investment in agriculture and non-farm rural employment; deficit of sufficient infrastructure; lack of occupational security;poor health and working

environments; and limited access to services.Despite of these challenges, the rural economy accounts for significantprospective for economic advancement, employment creation and promotion of various farm and non-farm activities.

The development can be attained in various ways, such asbuilding various infrastructures, electrification of villages, mechanization for services etc. Rural infrastructure is critical for improving the rural economy and realizing the United Nations' Sustainable Development Goals (SDGs) by 2030. Studies show that a 1% rise in the stock of infrastructure accounts for 1% rise in gross domestic product (GDP) for various countries. A recent study infers that in the statesof Punjab, Madhya Pradesh, Gujarat, Uttar Pradesh, Bihar, and Odisha, three indicatorsdescribe most of the agricultural developmentwhich includesaccess to infrastructure such as irrigation, road connectivity,reliable and availability of quality power.

Rural power and housing is quantifiedby means of the (i) percentage of households with access to electricity; (ii) percentage of villages electrified; and (iii) percentage of households with pucca housing. The percentage of rural households with electricity access in India has a significant increase from 14.7% in 1981 to 55.3% in 2011. Access to electricity in rural India is reported at 96.7% of Indian households in 2019, with another 0.33% relying on off-grid electricity sources. Rural electrification infrastructure generally facilitates the needs of agriculture and other activities which includes irrigation pumping, small and medium scale industries in villages, cold chain storage system, healthcare and education system. Hence, improved rural electrification infrastructure is essential to enhancethe lives of rural people.

Out of the 87 million rural households in India, around 40% have no access to modern energy and not more than 30% have access to modern cooking fuels. The people of the rural areas still depend on kerosene for lighting purpose and biomass fuels such as wood, animal dung and agricultural residues for cooking due to inadequate and unreliable power availability. The inadequate access to modern energy has a negative impact on social and economic growth and on the lives of the underprivileged people. The issuethat villages of many states faceis that grid connectivity required in centralized generation cum distribution system which is either not attainable or is not cost-effective. Various natural renewable sources of energy available can be productively utilized to provide severalfacilities in the rural regionssuch as power generation, cooking, irrigation, and water heating facilities.Although Government has introduced new schemes and funding assistance to incorporate such projects in rural India, further enablers are required for effective implementation of new schemes in a broad manner.

2. Need forTechnology development in rural sector

In many regions of rural India, an insufficiency of technology application in various farm and non-farm activities is quite alarming. There are still known and recognized significant scarcities in power, water, health solutions, road connectivity,

etc. in rural areas. However, the role of technology in resolving these and other problems is but barely acknowledged, and the actual availability of technology in rural areas is, at best, marginal. Hence, Crop yields are far lower than those in demonstration farms with the incorporation of science and technology. Post-harvest technologies for processing and adding value could greatly enhance rural employment and incomes. Thus, there are immense scopes and potential benefits in implementing technology to farm and non-farm activities in rural regions.

2.1 Water Distribution: In irrigated areas, managing the release and distribution of water is vital for maximizing the productivity. Advanced power distribution systems utilizing information and communication technologies (ICT) for effective optimization and monitoring of electricity distribution. In the current era, there is scarcely any utilization of ICT in water distribution which needs to be addressed in coming times.

2.2 Water-harvesting structures: In rain-fed regions, there is a requirement to construct bunds and check-dams. To choose the appropriate location for such water-harvesting arrangements, use of satellite remote sensing data can play a vital role as revealed by previous pilot projects.

2.3 Automatic Pumping System: The technology for automatic switching of pumps during power availability is quite common in urban areas where well-water is used for irrigation. But this simple technology is still not installed in rural areas and, manual switching on the pump is required, sometimes during midnight. Techniques to lessen power consumption of pumps are also important. However, application of such technologies is rare in current scenario and need serious attention to drive rural socio-economic status.

2.4 Reliable power supply: Currently, power is an essential requirement in rural regions for agricultural, non-agricultural and domestic purposes. Recent technologies are able to provide reliable power at low cost in a decentralised way for few regions. Upgradation and big way scaling of such technologies are essential along with increased penetration of renewable and non-polluting technologies.

2.5 Water Purification and Sanitation: It is well-known that unhygienic water is a reason for majority of the health issues in rural regions. Although several techniques are available for water-purification, it is required to develop ideal, low-cost, reliable and power-independent technologies in order to provide safe drinking water. Sanitation is also another important domain not covered by the existing technologies.

2.6 Fuel for cooking: Efficient smoke-less cooking techniques and solar-cookers have been developed. However, it is required to design cost-efficient technologies for fuel for cooking to fulfil socio-cultural needs. This will have a quantum jump in socio-economic paradigm.

Thus, looking at the emerging need of carbon-free energy systems as a mandate for sustainable environment policy recommendation, Renewable Energy Systems finds a large space in energy domain. Furthering the technology solutions and making it cost effective for rural application, will definitely drive rural economy to a larger altitude.

3. Renewable energy Status in India

India is world's thirdhighest consumer of electricity and with production of 136 GWfrom renewable sourcesin 2020, out of 373 GW, the total installed energy capacity, it has beenworld's thirdhighest renewable energy producer.India's Central Electricity Authority has put a target in 2018 to produce 175 GW by 2022 and 50% of the total electricity from renewable energy sources by 2030. As of September 2020, 89.22 GW solar power installations are found to be functional,

implementation of several projects to install 48.21 GW solar energy is in progress and tentatively projects of 25.64 GW capacity are under process. World's largest 2255 MW Bhadla Solar Park in Rajasthan, world's second-largest solar park of 2000 MW Pavgada solar Park Tumkur in Karnataka and 100MW Kurnool in Andhra Pradesh are among three of the world's top largest solar parks in 2020. Talking about wind power, India has a strong manufacturing base with 20 manufactures of 53 different wind turbine models of excellent quality up to 3 MW in size with exports to several countries including Europe and United States.

As solar, wind andhydroelectricity are eco-friendly cheaper power sources and utilized as "must-run" sources in India to accommodate for the base load. Gradually, the polluting and foreign-import dependent coal-fired power is being eliminated from the "must-run base load" power generation and moved to the load following power generation to cater for the peaking demand only. The renewable peaking hydro power capacity is already being used to meetsome of the daily peak demand in India. Solar and wind power with 4-hour battery storage systems, as a source of dispatchable generation in comparison with newly built coal and gas plants, is already cost-efficient in India without subsidy.

3.1 Adaptation of renewable in Rural India

The main goalto incorporate renewable energy in rural India is to bring socio-economic progress, enhance energy security, enhance access to energy, and eradicate climate change. The centralized grid system is not always the most effectivechannel for energy distribution to remote rural areas and isquite unfavourable to the environment, requring moreadvanced infrastructure. Advent of renewable energytechnology comes as a solution to these problems. Reportsshow that installation of a decentralizedrenewable energy technology in providing electricity is more cost-efficient in ruralareas than extending power from transmission grid from a centralizedsystem\ at remote end.

Recent innovations in the energy domain haveparticularly focused on developing appliances powered by renewable energy. These are rapidly creating entrepreneurship andchangingrural life in India. Be it solar freezers which improves the validity of dairy products, or solar-powered computer labs in schools to enhance learning system, or mini-grids powering the whole community. These kind of innovations exhibits the huge potential of renewable energy systems in reshaping rural India, not only by increasing access to electricity, but also by utilizing that electricity so as to improve rural economy.

Few examples are cited here presenting adaptation of renewable energy in India to explore the range of possibilities in energy usage. The Gujarat government has initiateda solar power scheme—SuryashaktiKisanYojana (SKY) which has enabled the farmers to produce electricity for the required consumption and also sell the surplus power to the grid.Solar-Powered Drip Irrigation is gradually reshaping agriculture in a remote village of the Sundarbans. The Energy and Resources Institute (TERI) has implemented an innovative institutional model and worked on to manufacture clean energy products that local women-based self-help groups can afford. Over 60,000 households across Bihar have been benefitted by this program and are provided access to solar home lighting system and clean cook-stoves.With an aim to lessen hazardous emissions by cutting down key sources of emissions, as well as to resolve the muddle of inadequate energy access to rural areas. Solar mini-grids are installed in Narotoli, Jharkhand and the energy for domestic and productive purposes are sold in rural communities. Partnership of TERI with a local micro-finance institution has helped to bring clean cooking and lighting technology into under-privileged homes in a village in Bihar. Solar irrigation program working in the states of Bihar, Gujarat, Madhya Pradesh, and Uttar Pradesh has

benefitted over 2,800 villages andnearly 1.6 million people, and has helped farmers double the yield. These kind of initiatives are opening gates for new innovations and investments for small scale and large scale entrepreneurs and gradually it can bring changes in development of rural sector by enhancing the self-sustainability, job opportunities along with standard of life.

4. Impact of such technologies in driving rural economy

There has been increased penetration and global incorporation of renewable energy(RE) in recent times. RE electricity sector has grown by 26% between 2005 and 2010 globally and presently supplies around 20% (includes hydro power) of the world's total power. Rural regions have attracted the major part of investment related to renewable energy technology implementation. The areas would tend to be sparsely populated but with adequate accessto RE sources. It is observed from several case studies that incorporation of renewable can render hosting communities with certain advantages as follows:

4.1 New revenue sources: RE increments the tax base for introducing benefit provision in rural sections. It can moreover produce additional wage for land proprietors and land-based exercises. For illustration, agriculturists and woodland proprietors who introducing renewable energy generation into their exercises have broadened, expanded, and settled their income sources in rural segments.

4.2 New job and commerce openings: In spite of the fact that RE tends to have a restricted effect on neighbourhoodlabour markets, when RE implementation is implanted with the local economy, it can generate profitable employment openings for individuals in areas where there are constrained job openings. RE can generatedirect jobs in operation and maintenance of installed equipments. But, most long-term employments are indirect, emerging along the renewable energy supply-chain, and following the subsequentrequirements of renewable energy.

4.3 Innovation in product, practice and policy in rural sector: In facilitating RE, rural regions are the places where modern technology is examined, issues are resolved, and modified policy schemes are trialled. From several case studies, subsequent innovations in renewable energy technology have been observed.

4.4 Capacity building and community empowerment: A number ofrural areas have created particular organizations and specialists to tackle with RE implementations in response to large-scale ventures and top-down national policies. These dynamics have been found both in locales where neighbourhood communities completely favours RE and in regions where the mass is against possiblehazardousimpacts of certain conventional sources.

4.5 Cost-effective energy: RE gives farther rural areas with the opportunity to create their own energy (specifically electricity and heat), instead of bringing in traditional energy from far generation souces. Being able to create dependable and cost-effective energy can trigger financial advancement.

5. Future scope for furthering the socio-economic status

The above-mentioned analysisdirect to a dire requirement and a crucial challenge, indicating a unique three dimensional amalgamation of technical ability, financial opportunity and societal requirement. Currently, as a consequence to the development of India's technology base, more prominent capability to meet the necessities has been created. At the same time, financial development in spite of the fact that it is skewed has made a financially attractive market in rural sector. However, there are certain drawbacks considering societal requirement. Understanding societal requirement from a socio-cultural aspect

isn't straightforward, particularly as the need for implementation is mostly not acknowledged. Many decades prior, India's dynamic program of applications of space innovation had an expansive group of social researchers, committed to understanding the genuine needs of rural areas and it acted as a connecting link between villagers and technologists. Now-a-days, a comparable exertion is required to design user-friendly innovation programs to tackle the issues of rural sector. The knowledge-driven community can play a key role for development enriching the rural economy. This can be another enormous thing for techno-entrepreneurs and enterprisingcorporate in coming times.

An increasedaccess to energy for domestic purposes and power utilizing renewable energy technologies can have a noteworthy effect on lives of rural people. Cleaner utilization of conventional fuels can essentially enhancehealth by decreasing intense respiratory disease and conjunctivitis, commonly originated by indoor contamination. More extensive health benefits can be procured as well; cooking with more productive technology can improve food habits and make boiling of water more reasonable. Particularly ladies and children in turncan devote more time for education, relaxation and financial activities. Access to electric power can essentially decrease the required time to commit to any household activity. For instance, electric water pumps can supply cleaner water, lessening the exertion required for collection. Power supply can make facilitate the refrigeration of vaccines and operation of therapeutic equipments in rural health clinics. Increased connectionto television and internet can enhance knowledge and learning opportunities. Electric lighting can provide high qualityillumination than kerosene-basedlamp lights. It can assist the workers to extend their working hours as well as provide superior security, comfort and safety.

Enhanced health and education opportunities along withsufficient time for non-energy related exercises are vital objectives for socio-economic advancement. In any case, access to modern carbon-free energy servicescan assist the rural people to engage themselves infund-raising activities. Increased demand for services associated with renewable energy technologies can offer assistance to create local financial activities, and can be further extended to encourage local industries. Several implementations of RE technology for any profitable activity have come into picture varying from mechanical wind-powered water pumping to motorized processing machines for pounding grain. Internet and radio services can give farmers, agriculturists and fishermen with climate forecasting and telecommunication services can give producers with data on crop prices. These services and applications can createemployment opportunities and enhanced livelihoods, both of which can add to noteworthy increments in socio-economic status in rural India.

6. Conclusions

The burning issue of energy crisis in rural India can be unravelled to a greater degree by the adaptation of renewable energy sources for electrification and to meet other energy requirements, reducing carbon foot prints. Hence, expanded focus is being laid on the implementations of renewable energy which most probably shall account for about 5% within the electricity-mix by 2032. Substitute fuels, basically bio-fuels, are suggested to be utilized for mixing with diesel and petrol, primarily for transport purposes. However, particular measures ought to be progressively followed to promoteincorporation, development, fundamental researches and studiesregarding renewable energy innovations for rural India.Hence, it can resolve the obstructions for successful implementations and commercial incorporation of biomass, hydropower, solar-powered and wind technology and innovations. It can facilitate community based energy distribution systems to improve the traditional tariff system. Based upon the effective implementation of renewable energy in recent times, it can be inferred that it can render huge benefits for Indian rural sector, not only to improve the livelihoods of rural people but also to ensure the economic growth of the nation as a whole.

References:

[1] en.wikipedia.org(Internet Source)
[2] economictimes.indiatimes.com(Internet Source)
[3] rise.mahindra.com(Internet Source)
[4] ssir.org (Internet Source)

Interview by: *Satyabrata Das*

Pradeep Kumar Mohanty Man Behind Odisha's Emerging Coffee Hub

Pradeep Kumar Mohanty, a botanist-turned farmer, put Odisha on the coffee map of India through painstaking entrepreneurial effort spanning over three decades; and in the process led the socio-economic transformation of the predominantly tribal block of Semiliguda in Koraput district. Today his farm sprawls over 210 acres of land producing the premium Arabica variety of coffee and employing mainly tribal women. His success story has inspired over 50 agricultural ventures in the district. Pradeep Kumar Mohanty spoke to Satyabrata Das about his enterprise, struggles and plans.

Q **Satyabrata Das (SD):** You ventured into Organized Coffee plantation about two decades ago. When you started, how popular was this plantation crop in Koraput district?

A **Pradeep Mohanty (PM):** No, I went for coffee plantation in Koraput district during 1985. That is three decades of a half ago. During that time, only Government's Soil Conservation Department had established coffee plantation in Padua, Chatua and Machhkund areas. Unlike Traditional areas of coffee in India, Odisha, along with Andhra Pradesh, was considered non-traditional area of coffee. Government's idea was to see whether coffee could be grown in the first place; and if it did then use it to stop 'Podu' practice among the tribals and save forest. Until that time, very few considered coffee could be commercially grown in the State. Low productivity in the state-owned coffee farms did not encourage entrepreneurs to try.

Q **How has the Covid-19 pandemic impacted your operations?**

A Yearly cultural operations for coffee are elaborate as the coffee bushes are to be nurtured and taken care of to serve us for 50 years or more. Pandemic restrictions hindered man, labour and material movement so much so that the productivity and even marketing got affected to a certain extent.

Q **Who is your inspiration?**

A My long gone Dad! He always used to say whatever you do, do it passionately and in the best possible way. That is what I have been doing all these years.

Q **What are your future plans?**

A All these years, I have been selling coffee green. That is without any value addition. I sold it at a premium in Italy and Germany; but my country nor my state could share its taste. So now I have got a coffee roaster and will be roasting coffee in the garden. The sole idea is to share the "Taste of Deomali Coffee" with the local people that they

have nurtured so beautifully to this day! The pleasure would obviously be ours!

Q Is your experiment replicable? What is the scope of similar initiative with coffee and other crop is in other districts of Odisha?





A Yes, it is replicable. Scope of coffee might be limited to Koraput, Gajapati and Kandhamal districts, but with other crops to spice it could brilliantly be demonstrated in most of the western districts where there is scope for a comparatively affordable stretch of land.

Q How has the plantation contributed to tourism in the area?

A No hardly any. But it has added to the tourist map and is a must see for the visitors touring the Dudhari Fall, Gumandi Hills or ecotourism village at Putisil on the way to Deomali Hill.

Q Which Cottee varieties are you growing? Where is the demand for these varieties?

A Broadly two varieties of coffee are grown - Arabica and Robusta. Arabica coffee tastes better and is far more in demand than the Robusta coffee. But Arabica is delicate and prone to a variety of fungal diseases, whereas Robusta is harsher in taste but could be grown comparatively with less effort. All my coffee belongs to the Arabica variety.

Q What made you think about coffee and not some other crops?

A My visit once to Chikmagalur had fascinated me for coffee farming. But it took shape in the library of National Rice Research Institute. During my stint as a Rice Researcher at the Institute, I got hooked to a book by A. E. Haarer on Modern Coffee Production.

Q Efforts have long been made to introduce coffee plantation in Koraput district, but with limited success. How your initiative was different?

A Andhra Pradesh Forest Development Corporation and Girijan Societies had huge areas under coffee and in a way they had nicely established coffee as a plantation crop in the Eastern Ghats. Taking a cue from them, State Govt.'s Soil Conservation Department had grown coffee in Koraput district successfully. But they never ever tried increase productivity to set an example so that an entrepreneur could exploit it commercially! That is what I did precisely and now at present more than 50 people are in the coffee plantation scene in Koraput district; after me!

Q Did your background as a botanist contribute to make a difference?

A Yes, in a way it did.

Q What support you got from Govt. and the district administration?

A During those times, up to 1994, coffee was an excisable commodity and the land grown under coffee must have permission from the district collector. I too was granted permission by the DM in 1987. Basing on that, I would apply to the Senior Liaison Officer, Coffee Board of Central Govt. functioning at Koraput for requisite coffee seeds, certified by the Coffee Board.

Q SD: What challenges you faced in implementing the project?

A Institutional finance from Scheduled Commercial Banks was very hard to come by. All needed collateral for the quantum of money that my project demanded, which I did not have and the banks would not consider my 60 acres of purchased land on which coffee was to be grown as collateral. The second hurdle was my projected productivity of 350 kg of coffee per acre was way bigger than the Soil Conservation Department's 156 kg/Ha, to which the banker's did not take seriously.

Q What is the area under plantation? What goes in to take care of the plantation in such a large area?

A The garden is 210 acres. Yes, a lot of effort and manpower is required to maintain it healthy and in good productivity year after year. In a nutshell, on an average 150 people are employed (mostly tribal women) daily to train and prune the coffee bushes and the black pepper vines. Around 200 to 300 tractor loads of farm yard manure 30 MT of complex fertilizers are spent on the garden.

Q What is the coffee production from the estate? How it compares with the average yield in the estates of Karnataka & Kerala?

A The average production of my estate is 70 MT. This is the best average figure of productivity for any state.

Q What other crops or spices are you growing? Do you see the same success in these also ?

A I grow black pepper and am an equally a large pepper producer of the State. But productivity wise, I lag behind Kerala and Karnataka. There is nothing wrong as such, but our approach all these years have been on the extensive side rather than intensive cultivation of black pepper.

Q How has your initiative motivated others to develop coffee or other plantation crop in the district ?

A When I started, there was no success story or example basing on whom entrepreneurs would come or bankers would lend. Now, we have a whole plantation ecosystem. There are 50 plus private planters, 2000 plus tribal coffee growers as well as Govt. and institutional finance and support. This motivates more number of entrepreneurs and business houses to try.

Q How many people are employed in your estate. What is the proportion of tribal women in the work force?

A Most of my labour force, says around 75%, are tribal women belonging to Bada Paraja, Sana Paraja, Kandh and Dishari. Out the non tribal, 50% would be of Dama, a Scheduled Caste.

Q How has the estate impacted community which is mainly tribal?

A On a general note, the impact is perceptible and conspicuous. But a little scrutiny reveal a lot of aspects, like their emphasis on modern day farming methods; lands no larger remain fallow throughout the year, in their dress sense and attire, being conscious of their family's health and hygiene, improving their lot in modern methods of living so on and so forth.

Q What Social change in the villages in and around the plantation you witness, in terms of livelihood, lifestyle, health and education status? Can you tell us what was the area

and socio-economic condition of people like, when you entered the scene about decades back?

A I purchased the 60 acres of general caste land at a village known as Sundhput in the first instance in 1987 (August). This came after a search for nearly two years. The villagers sold their land because this stretch of land was far from their village of dwelling. There was no road to the village, although it was only 12 km from the block headquarters of Semiliguda. The road was just a tail. I could drive my mobike through a lot of effort and without its front mudguard as I ran the risk of getting stuck on the mud. The rain used to pour in drizzles, 8 months in a year and I had difficulty in drying my clothes. The villagers depended on the weekly market during the Sunday at Semiliguda and they all went walking. The men flocks use to have carrying bars on their shoulders with slings balancing on either side to sale and purchase goods of utility. Usual dress code was just a loin cloth. Malaria and diarrhea was rampant. The daily labour wages was only Rs. 6/- and was very hard to come by. Snake bite, related hospitalization and death was frequent. People use to wake up early and by sunset all were indoors. Tiger and bear attacks to bovine and human were regular. There was no or very few attendance in one or two Govt. Primary & High Schools. Drudgery on women folks to fetch water and fire wood was cumbersome.

Mali belong to the general caste and are considered privileged in these areas. They had irrigated lands besides perennial stream. The tribal and Scheduled Caste communities dwellings are always separated from the 'Mali' homes. But socio-economically all languished in poverty and relied on ragi and sweet potato dishes, much like all other western Odisha, Jharkhand and Chhattisgarh-based tribes. Celebrations during 'Chaitra' Parab or 'Pausa' Parab culminated in a grand feast followed by home brewed liquor, which gradually used to silence the deafening beats of drums. All in all they were and are a simple and kind hearted lot and crime was unheard off.

The scene after three decades and a half is now different. In the mean time three generations of people and labour have worked in my field and are gone. The skilled labour of my garden were absorbed in the NALCO's horticultural drive as gardeners with a basic salary of Rs. 18,000/- months. Rest semi-skilled labour from the nearby villages to those we have imparted training on diesel pumps for irrigation or sprinkle setting in the farm or to whom we taught simple masonry work or carpentry got jobs in the HAL or NALCO urban setups in the Semiliguda and Damanjodi. Contractors took them under their guidance and further helped them to acquire requisite skill.

Every house in the villages surrounding my garden, such as Sundhiput, Nuaput, Aligaon, Kandaguda, Dumaguda and Dalaiguda are now bustling with activity. Village primary school or high school are now much in demand for admissions. Each household boasts now a TV set, a motorcycle, cots to sleep and knows the use of mosquito nets at night. Health and hygiene have improved both from the Govt.'s initiative and of NALCO's. The road in front of my garden is now a major district road which looks like a National Highway. Govt. conducted an ecotourism camp near Putisil Mountain and showed to the people a new avenue to earn their livelihood to open roadside dhabas and hotels to cater to the tourists. Govt.'s Covid-19 initiative for vaccination too helped people to remain conscious health wise.

Modern methods of fertilizer and farm yard manure use helped them to have good yields of ginger and vegetables. Youth of the area are now on to trading in the wholesale market and some have tractors and trucks. During Sundays, it's a pleasant surprise to see a young family going to their weekly market in their own car.

Revolution in Electric Vehicles

S Dwivedi & H. Mohan

Countries all around the world have resorted to renewable energy sources as a result of global warming and the impending depletion of fossil resources. As a result, major automobile manufacturers have begun to concentrate on the development and production of electric and hybrid cars. After they were initially designed in 1835, work on electric automobiles began with the creation of the electric motor and battery. Electric vehicles created at the time faced issues such as limited range and battery life. Over the last 20 years, electric and hybrid cars have re-entered the global automobile industry, solving distance and fuel challenges. Microcars, which are based on electric vehicles, are reacting to a growing problem with standard automobiles: overheating. Microcars are built on electric motors, with engine technology centred on them. They have lowered the size of traditional automobiles, which will be another answer to cities' fast increasing pollution, traffic congestion, and other issues.

Alessandro Volta pioneered battery charging in electric autos, which may save energy by using chemicals. Sibrandus Straiting built the first model of electric automobile in 1835 after finding Michael Faraday's operating mechanism for electric car and electric generator in 1821. Carlo Benz, on the other hand, patented the Motorwagen, the first automobile powered by an internal combustion engine (IC) in 1885. The automobile was going at a rapid rate at the time, with a peak speed of 16 km/h and a 0.55 kW engine. However, the automobile made a lot of noise and the starting motor was broken. As a result, it had to be done by hand. In the early twentieth century, electric automobiles were more popular than internal combustion engines. Another difficulty with IC-powered vehicles was pollution. For all of these reasons, IC engine automobiles sold at a lower rate than electric vehicles. Electric cars made up 20% of New York's 4,000 automobiles in 1903. In 1912, these electric automobiles were marketed alongside steam cars and IC-engines.

Electric automobiles ruled the road until 1920. Cars with internal combustion engines are cheaper than their electric equivalents, thanks to Ford Motor Company's mass manufacturing and evidence of development in the fuel sector. Electric vehicles vanished in 1935, about 100 years after their initial appearance in history, and were unable to participate in mass manufacturing owing to the war and economic crisis of 1929. No attempt was made till the end of the 60-year period. With a few exceptions, it was created for the design and manufacture of electric cars. Environmental issues, such as air pollution, climate change, and global warming, have existed since the 1960s. Air pollution has been a topic of

discussion, particularly in large cities. Issues such as excellent lead emissions, carbon monoxide and nitrogen oxide emissions, and smoke creation are among them. Environmental issues were regarded as local issues that could not be resolved on a local level. A personal automobile Electric cars were created as a remedy to IC engines, which were identified as one of the primary causes of pollution. Aside from their involvement in environmental difficulties, private automobiles with IC engines also caused a space difficulty owing to the demand for a high number of IC engines.

motor, power converters, and power controllers.

Large electric vehicle systems, such as EV propulsion, battery charging, and power supply, rely on powerful electrical appliances. Electric motors and transformers, in particular, provide a wide variety of charges for use in electric vehicles, emphasizing the requirement for a constant and regulated power flow. Figure 1 also depicts the interconnected structure of the electrical components of the various subsystems of the automobile system. However, the effectiveness of these transformers in automobile systems

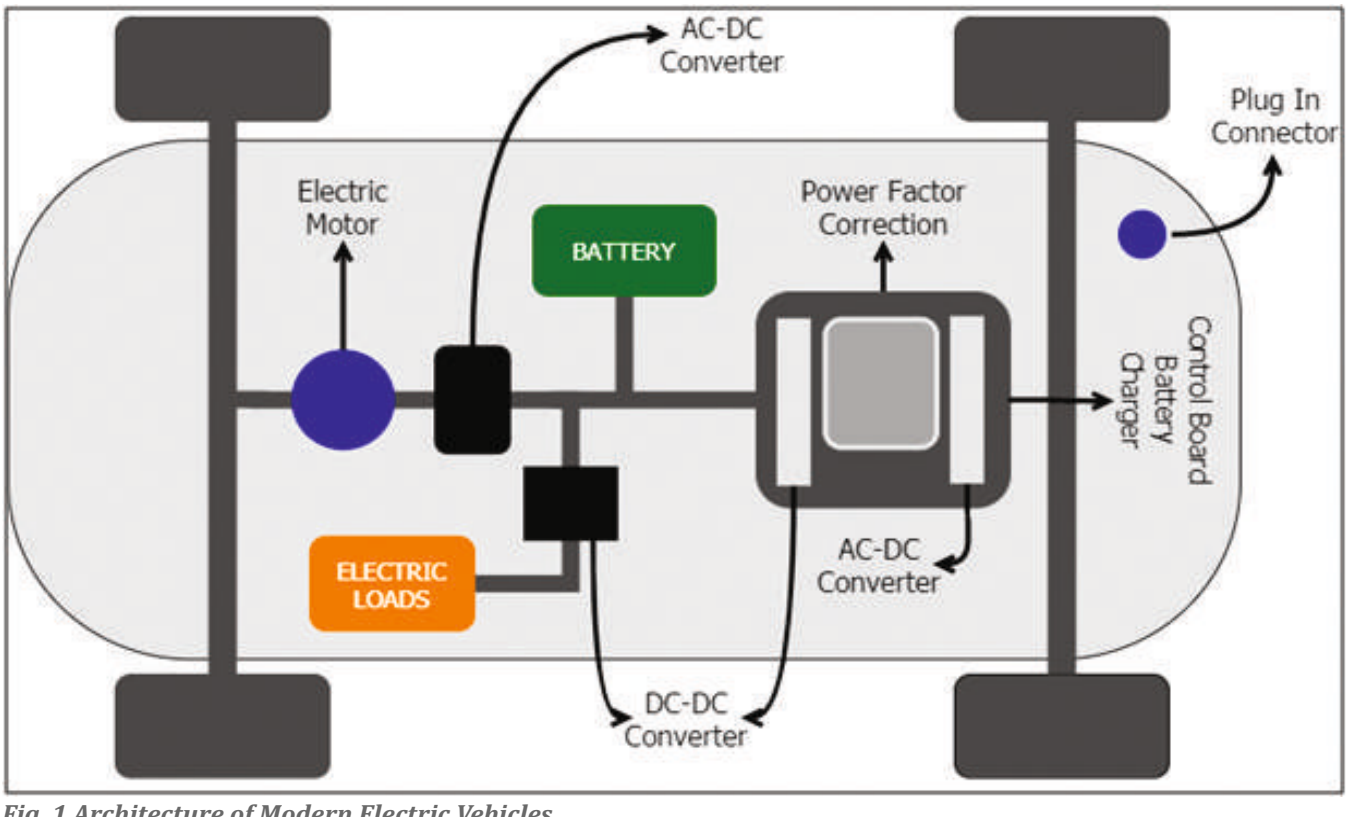


Fig. 1 Architecture of Modern Electric Vehicles

In terms of renewable energy, decreasing greenhouse gas emissions, and improving urban air quality, electric vehicles (EVs) have a bright future. These variables hasten the development of energy systems that are efficient, dependable, and long-lasting. The United States Council for Automotive Research (USCAR) has established a set of reliable criteria for integrated next-generation electric cars in collaboration with the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). Its goal is to improve system dependability, energy efficiency, and cost effectiveness. As indicated in the diagram above, the EV system comprises of an electric

necessitates taking into account a variety of designs and visual obstacles, including:

- High Efficiency
- Compact Size
- Low EM Noise-Based Interference
- Amplifies Voltage Property
- Low Current Wave Drawn from The Battery System
- Converter Power Flow Control for Varying Voltage Distribution

Induction motors are particularly common in electric vehicles because of their dependability, durability, lifespan, low cost, and high efficiency of

up to 95%. Various control approaches, such as v/f control and Blaschke based (FOC) control, can be used to modify the import machine. With these settings, precise torque can be obtained, which is ideal for usage in drag situations like highways and hill climbs. Despite their widespread use, complex FOC software and algorithms continue to be a significant barrier. Direct torque control (DTC) is generally recommended because it has a simple control structure that improves performance and flexibility. The error signal is used by the DTC to choose the stator voltage space phasor necessary between the electromagnetic torque and the stator flux connecting values and their ordered signals. Stator flux and torque are directly regulated in typical DTCs by selecting the appropriate inverter switching field on the table. Small variations in vector during electric field selection might cause a substantial phase shift in the command torque and extra starting fluctuations. In normal DTCs, this results in torque and current ripple. This non-linear variability is managed utilizing universal measuring techniques and a variety of controllers, such as artificial network networks (ANNs). The primary goal of ANN is to quantify indirect mapping in a specified way. An ANN-based speed control method with a torque reference limiter is developed in this article. This method improves the flexibility and dynamics of the input motors used in electric vehicles by reducing torque ripples.

In electric vehicles, battery management systems, or BMS, are critical for considering battery life, dependability, and safety. The BMS is a microprocessor-based unit that integrates a variety of functions with sub-modules that are not physically separate but are distinguished by the specification presented in Figure 2. Sensors, actuators, and controls are all part of the EV BMS. Battery capacity, battery endurance while charging / charging, and actual battery performance are all measured by BMS and provided to customers in real time. A unit of measurement of electrical power is presence and current, which is used to quantify the quantity of electricity in a single cell over a cable. A temperature control device is attached to compute battery and coolant

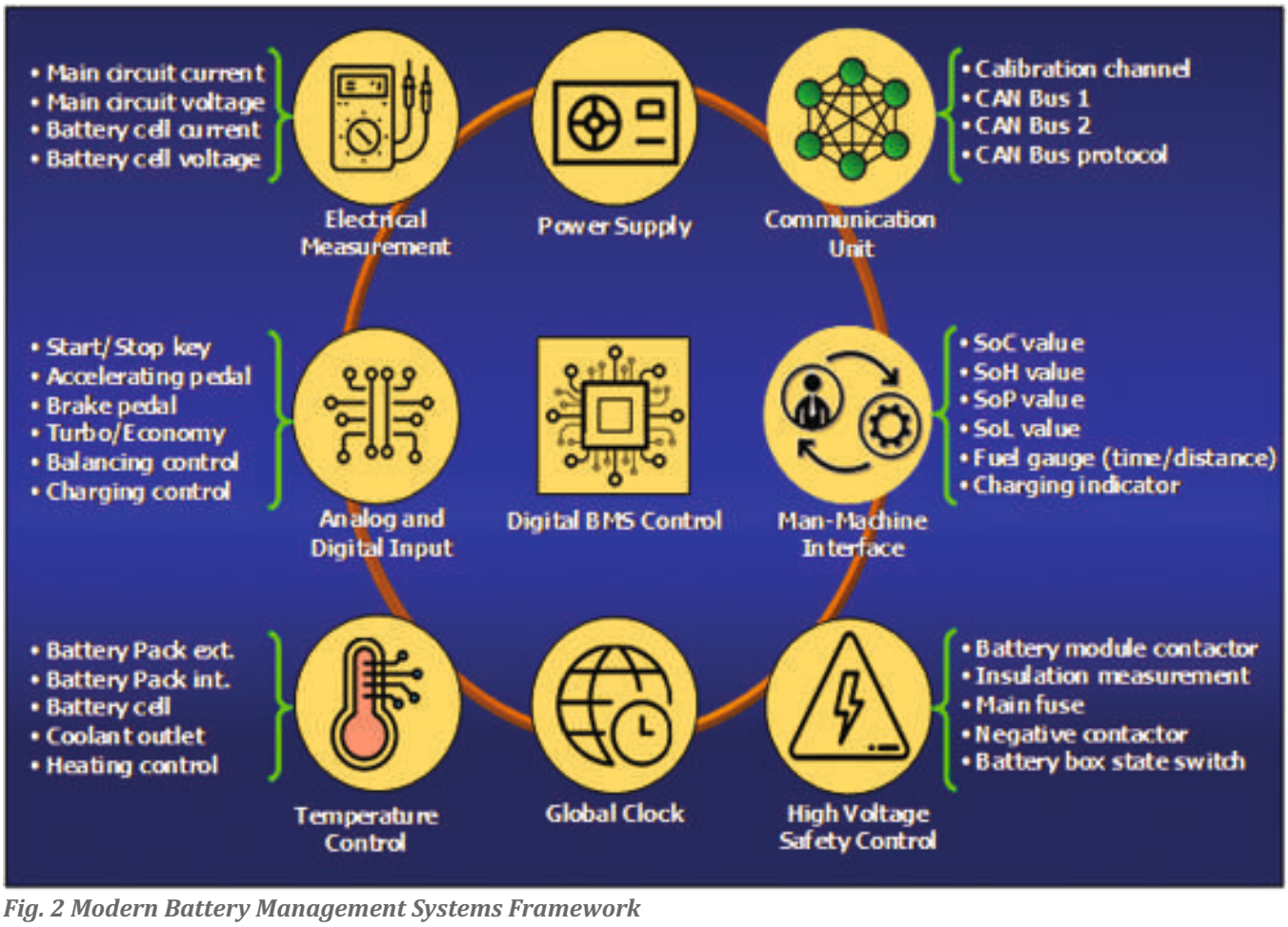


Fig. 2 Modern Battery Management Systems Framework

temperatures, allowing the temperature of the battery system to be monitored and controlled.

A quick-click sensor and brake, charging controls, and an on/off engine are among the analogue and digital inputs included in the system. Capacitors and power dissipation elements make up the measurement control unit, which is used to monitor the charging status of the battery in the battery pack. To safeguard the battery pack from physical harm, a high voltage protection device is employed. The battery pack is also protected against overcharging and peer pressure with this gadget. The BMS is responsible for determining the number of active batteries in high-performance electric cars, as well as battery monitoring and control. Charging and discharging, cell balancing, high-power line connections, and cooling are all controlled by the BMU. When dealing with the power grid and tough driving circumstances, an effective BMS is one of the critical components of EVs to ensure efficient and long-lasting battery life.

The active BMS provides battery status information such as Available Power (SOP), Charger Status (SOC), Health Status (SOL), and Health Status (SOH). The SOC battery model is an algorithm that responds to numerous internal and external factors to determine battery behaviour. The SOC model keeps track of history for servicing purposes, such as predicting battery state or calculating the car's driving distance until it has to be recharged. The CAN bus data sensor is used to calculate the distance travelled. In the above-mentioned systems, calculating the battery's SOC is a crucial part of the battery model. SOC is estimated by taking a reading of current flow over time and subtracting it from the fully charged battery level. Calculate the battery's current capacity so that it may be safely charged and drained to the proper amounts to extend its life cycle. Charging capacity, output power, duration, operating temperature, power source, and user profile all influence battery capacity. The SOC of a battery may be measured using a variety of ways. There are three sorts of measuring methods: electromechanical, electromechanical, and adaptive based. Electrochemical methods are difficult to translate to software or hardware, notwithstanding their uniqueness, because they clearly relate to the battery's material features. Model-equivalent batteries and solution algorithms, like as Kalman filters, abstract intelligence, and neural network algorithms, are used in orientation approaches.

Transportation is responsible for 23% of worldwide carbon dioxide emissions (as of 2018). Consumers and business must embrace sustainable transportation that conforms with the United Nations Sustainable Development Goals of enhanced energy efficiency and lower greenhouse gas emissions to combat the oncoming threat of climate change. In order to achieve these goals, a new class of cars has just emerged: smart electric vehicles, which are expected to lower carbon dioxide emissions by up to 43% when compared to diesel engines. However, supporting architecture is required to bring these cars to the mainstream in a sustainable manner. The contemporary architecture for smart electric vehicle use cases, such as motor control, vehicle design, battery management systems, and vehicle power electronic converters, is highlighted in this paper.

Technology Trends of the Precision Agriculture in Korea

Gyoo-Soo Chae

Introduction

In a word, precision agriculture is the use of ICT technology in agriculture. It is a system that optimizes the efficiency of agricultural production management by collecting information on factors affecting the cultivation of crops, analyzing them, and minimizing unnecessary agricultural materials and work. There is a phrase that expresses the basic concept of precision agriculture in one sentence. It is 'Doing the right treatment, at the right times, in the right places'. In other words, it means that agriculture is an optimized method suitable for the characteristics of soil and crop growth.

Precision agriculture proceeds through a total of four stages: 'observation' and 'prescription', and 'agricultural work' and 'feedback'. In the first stage, the observation stage, various sensors are used in the overall agriculture such as farmland, crops, and agricultural machinery and in the second stage, the prescription stage, low-input and high-efficiency agriculture can be achieved by adapting AI and big data and making appropriate prescriptions. Next, in the third stage of agricultural work, it is a step to perform agricultural work using various hardware such as drones, tractors, combines, and in the final fourth stage, the feedback stage, the results of agricultural work carried out through three steps database to be used as basic data for agriculture in the next farming season. This is the stage to build a system and analyze overall agriculture, including prescription guidance and agricultural management.

Why does precision agriculture matter to you?
As for why precision agriculture is attracting attention, experts point out that it is an agricultural method that can respond to a shortage of labor, that it can reduce uncertainty, and that it can achieve both eco-friendliness and economy. The reason that it can respond to the shortage of labor is that agriculture is operated in the form of smart farms. Using smart devices, you can check the status of crops in real time and take appropriate actions. In addition, with the development of automatic driving technology, even agricultural machinery can be automated and can be operated with a minimum of manpower. According to this trend, in the case of the United States, it was found that 40% of all farms adopted the precision farming system. In addition, the Netherlands, which is famous as an advanced

Source:DailyNK

Source:Analytics Insight

agricultural country, overcame the crisis in which the labor force rapidly decreased in the late 1990s with precision agriculture. Reducing uncertainty can be said to be the strength of precision agriculture that compensates for the weaknesses of agriculture. As a map is made by visualization of information on the soil, and various sensor technologies enable management of insufficient nutrients and vulnerable pests and pests, uncertainty is reduced.

What innovations are driving precision agriculture in Korea?

1. Development of intelligent agricultural machinery

Advanced overseas companies have developed their own sensors through sensor fusion, commercialized. Based on this, Korea is implementing a precision agriculture solution, and it is necessary to review the applicable items in advance and analyze and apply the expandable items. The technological level of overseas unmanned autonomous driving agricultural machinery is at the level of autonomous driving (Level 2), research on autonomous work (Level 3) is under way. The level of autonomous driving technology for agricultural machinery in Korea is still in the automatic steering (Level 1) stage and currently conducting research on the autonomous driving (Level 2) stage. The technology gap with the top-tier countries is about 5 years or more.

2. Drone localization and technology advancement
The domestic drone market is growing rapidly, but it is difficult to secure competitiveness due to the lack of platform technology, parts and software companies' capabilities. Currently, the commercial drone market is mostly dominated by Chinese companies. Since China has a large-scale drone industry complex, it can be produced in large quantities at low prices, so the unit price of Chinese products is relatively low. Through localization of various core parts and software,

precision agricultural drones can be used as one of the important technologies for the popularization of agriculture, and can be used as a core technology for a comprehensive Korean precision agriculture solution through cooperation with major domestic agricultural machinery manufacturers.

3. Agricultural software technology development
ETRI(Electronics and Telecommunications Research Institute) has developed a crop disease recognition platform technology based on machine learning/deep learning. When a disease occurs in the fruit or leaves of a crop, the type of disease is classified using the photograph of the crop, and the name of the disease is provided to the user. ETRI also developed a 'smart farming platform' with EZ Farm Co., an ICT solution company in the agricultural and livestock sector, and the developed platform consists of an IoT-based 'intelligent bed' for greenhouse cultivation and an AI and cloud-based 'greenhouse cultivation

Source: TechBullins

management platform'.

LS Mtron is launching 'LS SmartTrek', an autonomous tractor, and 'iTractor', a remote management service. The LS Smart Trek is a state-of-the-art tractor in which the tractor works on the farmland by itself without the driver. iTractor is a service that remotely monitors the status of the tractor in real-time and delivers the necessary maintenance information to the user. LS Mtron plans to develop a system that can build agricultural work, crops, maps, and environmental information as big data using drones and IoT sensors in the future, and make more efficient decision-making through AI analysis.

4. Data sharing platform

Advanced companies have completed the development of precision agriculture technology for each manufacturer and have built an interface that allows data sharing between different manufacturers. Therefore, farmers who have agricultural machines from different manufacturers can comprehensively collect agricultural data, and appropriate prescription and farm management are possible. On the other hand, major domestic agricultural machinery manufacturers are developing software solutions using an interface that can share data between others. For large scale farms, tractors, combines, harvesters and various attachment working machines are used, and various types of agricultural machinery brand products can be used at this time. Therefore, through the development of

Source: Geospatial World

a data sharing platform between major agricultural machine manufacturers, it is possible to comprehensively manage the data of the entire agricultural cycle to ensure proper prescription and farm management.

Summary

The expansion of precision agriculture infrastructure, support for start-ups, and support of ICT companies and farmers are requested to create a mid- to long-term ecosystem for the development of precision agriculture. Because precision agriculture is data-based agriculture, the value of precision agricultural solutions will be increasing as more data is collected and accumulated in various environments and conditions. Therefore, it is important to distribute precision agricultural solutions to more farmers in order to collect data under various conditions. In order to spread precision agriculture, various supports such as government subsidies or designation of rental projects are required. In addition, it is recommended that various public relations are needed to reduce the negative mind of farmers, who are actual consumers.

PLANET INFRASTRUCTURE MANAGEMENT PRIVATE LIMITED

Planet
Making things possible

B. S. CHHABRA CEO

ABOUT

PLANET INFRASTRUCTURE MANAGEMENT PRIVATE LIMITED IS AN ISO CERTIFIED SYSTEM INTEGRATION COMPANY WITH NICHE EXPERTISE AND FOCUS ON THE LATEST TECHNOLOGIES. SINCE 2011, WE HAVE BEEN HELPING OUR CLIENTS ACHIEVE THEIR GOALS WITH EFFECTIVE, INDUSTRY-SPECIFIC STATE OF THE ART SOLUTIONS

MISSION & BUISNESS GOALS

MISSION

OUR MISSION IS TO BUILD A HEALTHY RELATIONSHIP WITH OUR CLIENTS BY PROVIDING THEM WITH THE BEST SERVICES, THUS INCREASING OUR PORTFOLIO FOR MAXIMUM BUSINESS GROWTH AND PROFITABILITY.

BUISNESS GOALS

AT PLANET INFRA WE WANT TO GO BEYOND THE EXPECTED TO PROVIDE WORLD-CLASS AND HIGH QUALITY STATE OF THE ART SOLUTIONS.

ABOUT US

WHO WE ARE

FOUNDED ON 28TH OF JULY 2011, PLANET INFRA HAS ESTABLISHED ITSELF AS ONE OF THE TRUSTED SYSTEM INTEGRATOR'S IN INDIA.

PLANET INFRA OFFERS A DIVERSIFIED RANGE OF IT AND ITES SOLUTIONS DELIVERED WITH THE HIGHEST STANDARDS OF PROFESSIONALISM, ETHICS, QUALITY AND CUSTOMER SERVICE

OUR SERVICES

- IT INFRASTRUCTURE
- FACILITY MANAGEMENT
- BUILDING MANAGEMENT
- ENTERPRISE SECURITY

OUR SOLUTIONS

DATA CENTER SOLUTIONS

DATA CENTER SOLUTIONS REFER TO THE PRODUCTS AND SERVICES NEEDED TO CREATE AND MAINTAIN A DATA CENTER. PRODUCTS INCLUDE IT EQUIPMENT, LIKE SERVERS, ROUTERS, STORAGE SYSTEMS, AND FIREWALLS, AS WELL AS SUPPORTING INFRASTRUCTURE FOR THE PHYSICAL DATA CENTER, LIKE COOLING SYSTEMS, BATTERIES, GENERATORS AND CABLING.

POWER SOLUTIONS

UNEXPECTED POWER INTERRUPTIONS MAY CAUSE MAJOR DATA LOSS OR SERIOUS BUSINESS DISRUPTIONS TO YOUR DATA CENTERS AND TELECOMMUNICATION EQUIPMENT. OUR SPECIALTY SERVICES AND WELL ENGINEERED PRODUCTS AVAILABLE IN VARIOUS RANGE OFFERS OUR CUSTOMERS RELIABLE PERFECT MINIMUM DOWNTIME BACKED BY OUR TIMELY SERVICE.

NETWORK SOLUTIONS

WE HELP ORGANISATIONS DESIGN, IMPLEMENT, AUTOMATE AND MANAGE NETWORKING FUNCTIONS THAT ENABLE DIGITAL AND CLOUD TRANSFORMATION. OUR NETWORK SOLUTIONS WILL ENSURE THE BEST MANAGEMENT IN THE BEST INTEREST OF YOUR BUSINESS.

SURVEILLANCE SOLUTIONS

SURVEILLANCE IS THE CLOSE OBSERVATION OF SOMEONE, OFTEN IN ORDER TO CATCH THEM IN WRONGDOING. AN EXAMPLE OF SURVEILLANCE IS A PRIVATE DETECTIVEHIRED TO FOLLOW A CHEATING SPOUSE BEFORE DIVORCE PROCEEDINGS. CLOSE OBSERVATION OF A PERSON OR GROUP, ESPECIALLY ONE UNDERSUSPICION.

OUR PILLARS OF STRENGTH
TEAM PLAYERS OF PLANET INFRA

Intelligent sensors for an intellectual future...

Naeem M S Hannoon

1. Introduction

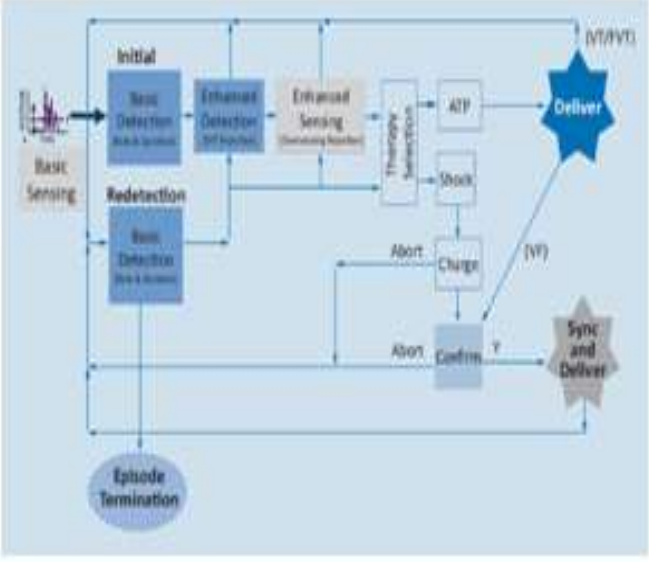
For smooth and efficient functioning, the existing power grids are taking the advantage of information and communication technology. In addition, intelligent methods comprising of machine (ML) and deep learning techniques (DL) are being introduced in the grid system for decision making. This modified grid system is being termed as Smart Grid. In this type of grid smart sensors are also being employed for sensing voltage, current, temperature, humidity etc. which are required in the grid system. To deliver secured and sustainable power economically, the source of electricity and the consumers need to be integrated intelligently.

2. Smart Grid

Smart Grids have the potentiality to monitor the grid activities in a reliable and stable manner. This objective can be achieved by introducing smart sensors and actuators. For real time monitoring and management of power, the intelligent sensor plays a vital role. A failure in one of the sensors, due to aging and internal nonlinearity, could lead to potential malfunction or even power failures. This can have dramatic consequences to both continuity and economy of power system, therefore with an appropriate and efficient smart sensors algorithms, correct measurement can be achieved which result promising application in power system monitoring.

3. Intelligent Sensors

We need to use diverse sensors to sense the diverse world as human beings where technology products become increasingly intertwined and dependent, so that these innovations can produce more appropriate relative solutions for real-time problems. Biometric identification, humidity, magnetic, optical, temperature, and other physical and environmental data can all be sensed by intelligent sensors. These data can be used to create comparable functionalities on a variety of platforms. Biometric sensors, for example, may detect pulses via PPG, humidity and temperature sensors can monitor temperature and humidity in household and industrial settings, and magnetic sensors can identify whether doors and windows are open. Object detection and persons' proximity detection can both be accomplished by optical sensors. Wearable devices and objects driven by Internet of Things frequently use these sensors as well. Using technology, such as a contactless wrist temperature sensor, to detect whether an individual is within an acceptable temperature range, for example, is one strategy to deal with the present COVID-19 pandemic. It is a realistic, useful technique and an affordable



approach to screen an individual for fever before any symptoms occur during isolation or social distancing. Smart sensors are well-known in the industry for advanced and prompt sensing, including PPG-based biometric sensors that focus on power consumption without sacrificing performance and range from integrated modules to individual sensor products, providing a series of easy-to-use and design-flexibility products for optical heart rate (HR) monitoring and electrocardiogram (ECG) in a variety of wearable applications. Individual sensor devices with first-class power and performance are available, as well as entire monitoring solutions that combine integrated modules with LED, photodiode, and analogue front-end, as well as algorithms and wireless MCUs for transferring heart rate information over Bluetooth. Smart sensors, which are used in micro electro-mechanical systems, deal with a growing number of different and very precise inputs. Intelligent sensors are anticipated to perform complex multi-layered tasks such as collecting raw data, changing sensitivity and filtering, motion detection, analysis, and communication. HVAC systems, traffic control, air conditioning systems, and agriculture are all examples of where they are applied. By combining a set of sensors and a communication network, devices share information with one another and are improving their effectiveness and functionality.

4. Electric Vehicle Technology

The recent advancements of the electric vehicle technology is driven by electric motors industry, utilizing the energy stored in light rechargeable batteries. Electric cars do not require gas therefore theses BEV's are entirely charged by the electricity provided. Due to its several merits such substantial amount of savings, no emissions, more convenience to drive, Safe to Drive and low Maintenance, these Vehicles are becoming popular particularly from start of 21st century. With the surge of electric cars demands that lead to increase in the manufacturing of electric vehicles, according to statistical record. It is found that great deal of gas emissions and air quality are improved in the BEV regions; therefore Electric vehicles portrait an excellent impact of technological advancements the environment since carbon emissions intensity have been reduced, which curbed the implications and negative impacts towards the 'greenhouse effect' and global warming.

5. Sensors in Healthcare

Denmark midfielder Christian Eriksen has implanted Implantable Cardioverter Defibrillator (ICD), which can reset the heart after a cardiac arrest that led to his miracle returned to football after he collapsed to the field late in the first half of his team's game against Finland at Euro 2020 on Saturday, a frightening moment that played out before a stadium filled with fans and broadcast to a live global television audience, is the sensor circuitry.

Solar Vision For Tomorrow: A Discussion

Biswajit Ghosh

Since December 2019 and or beginning of 2020 the human civilization is fighting with a highly infected virus known as Coronavirus and was presented as COVID-19, which created a pandemic atmosphere all over the globe. It throws major challenges to the survival of human beings. In addition to this coronavirus there is the origination of some other virus that infected the birds causing their death. Thus, viruses are become the unseen weapons in taking the life of the living beings. The exact sources for these viruses are not detected and the scientists are throwing stones in the dark space to detect their sources, ways and means for their destruction, but till date nothing was confirmed. The researchers reported that coronavirus is a kind of sub microscopic infectious agent that replicates living cells of an organism and affect the function of organs of living beings. It is one of the 6000 virus species found in almost every ecosystem on our earth and are the most numerous type of biological entity. Protection of human beings from virus requires major actions in destroying its sources for generation and at the same time methods for destroying them either at source or at sink.

In general, the virus was discovered by the Russian botanist Dmitri Ivanovsky in 1892 as the non-bacterial pathogen and millions types of viruses are found in almost every ecosystem in our earth. The sources for their origins may be during evolutionary period of life. Some of them may have originated from genetic material plasmids, the pieces of deoxyribonucleic acid (DNA) or ribonucleic acid (RNA) and some other originated from bacteria. The plasmids can have ability to move between the cells. Researchers further reported that they carry a life form genetic materials, reproduce, and evolve through natural selection as self-replicators. They mainly evolved through changes in their RNA / DNA structure. The researchers further projected that the RNA virus are especially prone to mutations and responsible for human disease. The COVID-19 is a RNA virus.

Now the question arises, viruses are there but why they were not able to penetrate rapidly into the human health like the present days. Who was responsible for protecting the living beings from virus infections, environmental

quality, incoming solar radiation dose or the quality of air, water and land, the ecology where the living beings exists. However, there is no proper answer we are venturing every doors and corners but unable to reduce the degree of disorder as the 'Entropy' of the world is increasing day by day.

With the increase in population and in enhancing the quality of life, the human being has imposed stresses on the ecological systems which is the main reason for increasing entropy. As a result of stress, the strain originated in the ecological systems and since the earth has finite material resources and biological capacity, humans must live within the carrying capacity of the earth. As we exceed the carrying capacity of the earth's ecosystems, over time they are stressed, then go into decline, and finally collapsed. They are expended rather than renewed. The human activities in the sectors like; industry, transportation, agriculture etc. are loading on the environment and the mother earth have finite carrying capacity which is about $27.778x10^3$ kWh or 100 Giga Joule per hector per year. When we are exceeding this limit our ecology is going to deform and loses its capability to protect the living beings from external stresses like diseases, natural calamities etc.

The COVID-19 may have took its birth presumably due to the ecological strain. One of the cause for the ecological strain is the accumulation waste items those were generated due to human activities. Mathematically this can be represented that the human has integrated themselves in the two boxes. One box containing air, water and land, the natural resources and other one is the use / operation of manmade system. The manmade system is consuming resources (R) from the nature and in converting these resources into useful work and at the same time it is emitting wastes (W) into the nature, causing the load on air, water and land. The relationship of R and W represented in terms of ecological efficiency as [1- W/R]x100%. The parameter [1- W/R] is known as Carnot factor and it represent ecological efficiency the value of the which is depend on W/R. For sustainable development the value of W/R should have the tendency towards 'Zero' otherwise this will trigger back on the sustainable living.

The air surrounding our mother earth consists of different gases and also some particles. This layer of air, known as the Earth's atmosphere, and is retained by the gravity. The two major components of the air are nitrogen (N2), which is about 78% and oxygen (O2) which is about 21%, the rests are the other gasses. The O2 is an essential component for sustaining of living beings and other organisms. In addition to these the atmosphere has a number of other features such as absorption of ultraviolet (UV) radiation from the Sun by the ozone (O3) layer and heat retention known as the greenhouse effect. The atmosphere also contains small suspended solid and liquid particles. Some aerosols and other small dust particles are also floating in the atmosphere. They result mostly from the chemical reactions between gaseous air pollutants, rising sand or sea spray, forest fires, agricultural and industrial activities and vehicle exhausts.

Aerosols affect many aspects of human health and the environment, visible in the case of strong smog or haze events. Aerosols influence Earth's climate both directly, by scattering and absorbing sunlight, and indirectly, by altering the reflectivity of clouds. In general, aerosols have a cooling effect on climate, which partially counterbalances the heating effect of greenhouse gases. Under certain circumstances, however, they may cause additional heating, such as the case of black carbon (C) in soot.

The gases and dust particles thrown into the atmosphere during human activities as well as volcanic eruptions have influences on climate and cool the planet by shading incoming solar

radiation. The cooling effect can sometimes last for months to years. Accumulation of these in the atmosphere not only enhancing greenhouse effect but also encouraging the growth of the viruses. The scientific fact behind it that the oxides when absorbed by the water vapour created an acidic ambience which encourages the growth of viruses, inhaling of which attack the living organisms. Now question arises why it is not every time being is there any influence of solar radiation which is further influencing the growth of viruses. Studies on anatomy of sun indicated that sun changes its body structure after eleven years and during that period sun is very violent due to the variation of sunspots and many unwanted effects are observed in the earth during this time.

In fact, the Sun is a huge ball of electrically-charged hot gas. This charged gas moves, generating a powerful magnetic field. The Sun's magnetic field goes through a cycle, called the solar cycle. Every eleventh years or so, the Sun's magnetic field completely flips. This means that the Sun's north and south poles switch places. Then it takes about another eleven years for the Sun's north and south poles to flip back again. During this time evolution of ultraviolet get changed and is presented in fig.1 below.

The solar cycle affects activity on the surface of the Sun, such as sunspots which are caused by the Sun's magnetic fields. As the magnetic fields change, so does the amount of activity on the Sun's surface. One way to track the solar cycle is by counting the number of sunspots.

The beginning of a solar cycle is a solar minimum, or when the Sun has the least sunspots. Over time, solar activity—and the number of sunspots—increases. The middle of the solar cycle is the solar maximum, or when the Sun has the most sunspots. As the cycle ends, it fades back to the solar minimum and then a new cycle begins.

Giant eruptions on the Sun, such as solar flares and coronal mass ejections, also increase during the solar cycle. These eruptions send powerful bursts of energy and material into space (Fig. 2). This activity can have effects on Earth. This eruption can cause lights in the sky, called aurora, or impact radio communications. Extreme eruptions can even affect electricity grids on Earth.

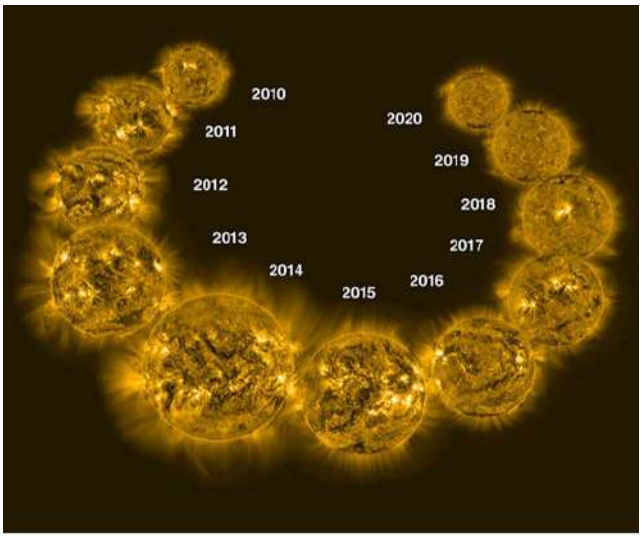


Fig. 1. Evolution of the Sun in extreme ultraviolet light from 2010 - 2020. (Adopted from NASA),

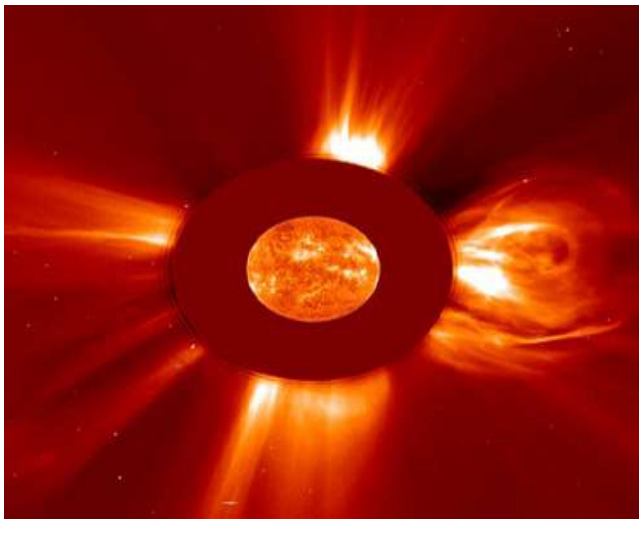


Fig. 2. An image of a coronal mass ejection as observed by NASA (Adopted from NASA),

Some cycles have maximums with lots of sunspots and activity. Other cycles can have very few sunspots and little activity. Scientists work hard to improve our ability to predict the strength and duration of solar cycles. These predictions can help them forecast these solar conditions, called space weather. Forecasting of the solar cycle can help scientists protect our radio communications on Earth, and help keep NASA satellites and astronauts safe, too. Sunspot data were analysed by the Solar Influences Data Analysis Centre (SIDC) of the Royal Observatory of Belgium, Brussels, Belgium. The SIDC calculates and broadcasts the sunspot index, called the '*International Sunspot Number' (ISN),* for each day, month, and year.

The sunspot number represents the number of observed sunspots and sunspot groups on the solar surface and is computed according to the Wolf Sunspot Number Formula: $R = k\,(10g + s)$, where g is the number of sunspot groups / regions, s is the total number of individual spots in all the groups, and k is a scaling factor that corrects for visual conditions at various observatories. The SIDC collects the observations from as many stations as possible worldwide, determines the appropriate k factor for each of them, and then extracts an overall *ISN* from all these observations. The temperature verses the solar activity along

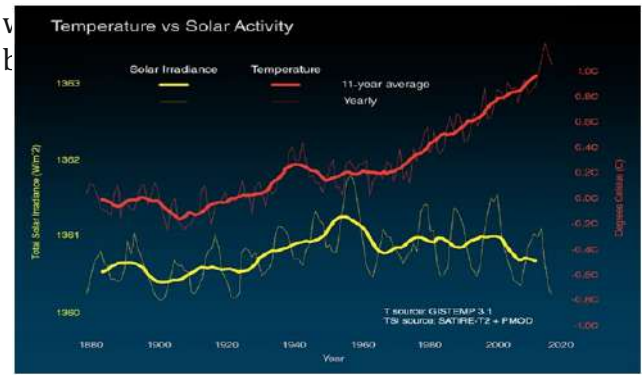


Fig.3b.: Variation of Solar activities with year (Adopted from Wikipedia).

The figure above indicated about the variation of incoming solar irradiance along with temperature and ISN data. It has been observed that at the beginning of year 2020 ISN has the tendency towards the zero, which presumably the reasons for emission some radiation those have influences in increasing the acidic ambience rather than an alkaline one, that influences the rapid growth of viruses. Although there is no experimental evidence on this reasoning, but local incidental data support this plausible fact.

It was further projected that ISN will reach to its optimum value by June-2022 and hopefully as well as it is expected that the world will get relief from the influences for the dreadful viruses. However, it may repeat again after the

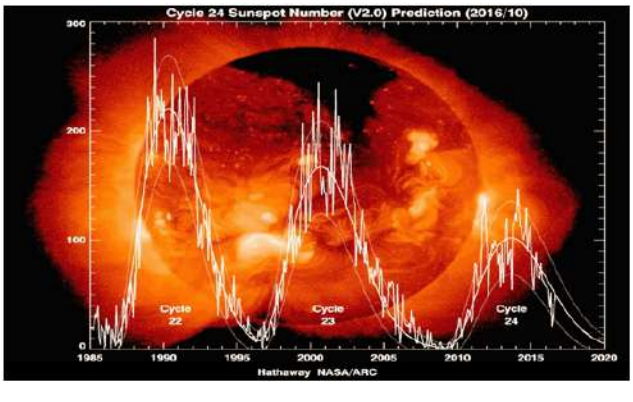


Fig.3a: Variation of Solar activities with year (Adopted from NASA).

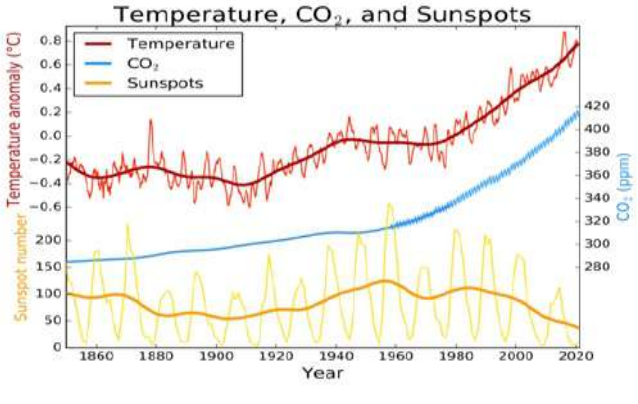


Fig.3c: Details on variation of Solar activities year wise (Adopted from Wikipedia).

eleven-year solar cycle that may in other form also. The above reasons advocated about the influences of solar radiation on the living organisms.

Influence of sun in life was conducted by the author while he was working in a 500 MWp solar park in arid region of Western region of Gujarat state in 2011. After the installation of a 10 MWp grid connected ground mounted photovoltaic power plant in arid zone of Gujarat following the effects were observed:

- Greeneries came out over the arid land surface below the PV modules after its operation.
- Evaporation rates from the soil surface under the PV modules deceased as a result the humidity level of the land surface increased.
- Soil temperature was increased.
- Arid soil surface became a fertile one.
- Agricultural activities were conducted on the land below the PV power plants.

The plausible reasons for conversion of arid soil into agricultural one may be due to flow of leakage current between the earthing link (active anode) and the other supporting metallic structures (passive cathodes) those are holding solar PV modules.

This flow initiate the electro-kinetic effect in the humid soil and change the ambience in the bulk region of the soil. Preliminary studies indicated that the flow of leakage current has several impacts and these are; a. Change in soil surface pH value, b. Change of soil characteristics, c. Enhancement of soil temperature. The results of studies were published in '*Renewable Energy', vol. 114, pp. 1238-1246, 2017.*

The above studies opened up a new avenue in integrating the solar power in developing the possibilities of food security. This aspect has internally implemented in Sahara as the 'Sahara Forest Project', the desert can be converted into a green area.

Integration of solar power and agriculture is emerged as the 'Agrivoltaic' effect where Agriculture and Energy generation can be possible from the same land. It will have big impact to the developing countries due to the increase in population and meeting the demand for food and energy. Both of them can be emerged from the same land through 'Agrivoltaic' applications.

In integrating the solar power with agriculture there are the possibilities for using solar power to safe the plants and vegetables also those are growing below the solar PV power plants. Due the evapotranspiration in the partially shaded region the ambience encourages the growth of pests. The pests have the harmful impact on the plants and vegetables.

However, solar power can further convert the harmful effect into a helpful one. The plants and vegetables under the shaded areas can be exposed with blue-UV mixed radiation through LED systems powered by solar PV power. The blue-UV mixed radiation is able the kill the pests by tearing their DNA and the dead body of the pests can be the food for the trees and vegetables.

It is projected that in coming 2050 there will be 9 billion of population which demand for 60% more food, 50% more water and 80% more energy with respect to the demand at the present time. Forthcoming Solar Vision can safe this world by meeting the above demand. It is very difficult to project about the future but there needing planning how we will make the world as the habitat for our future generation, the Solar Vision can show this path.

VISHAL DIGITAL

Mr. Pratap Roul
MD

OBJECTIVE AND PRINCIPLES

The main objective of the company is to serve customers both in public and private sector in such areas as production, trade, banks, government institutions and NGOs. The idea of its creators is to offer its customers complete solutions from the study, design, hardware and software supply, tips on what and where to be Purchase, Sales and Service.

There are 10 highly qualified employees working in the company, specializing in the following areas: Information Technology, Telecommunication, Broadcasting Industries,Digitalization of work station, system integration and Annual Maintenance of any IT Equipment. In order to ensure the successful business, the company founder is committing to the following main principles:

- QUALITY - VISHAL DIGITAL INVESTS TIME, MONEY AND RESOURCES NECESSARY TO ENSURE THE DESIRED QUALITY AND GROWTH IN TERMS OF RAPIDLY EVOLVING MARKET.
- SERVICE - THE SERVICE MUST COMPLEMENT QUALITY. ONLY BY UNDERSTANDING THE NEEDS OF ITS CUSTOMERS THE COMPANY CAN PROVIDE HIGH QUALITY SERVICES AND MAINTAIN ITS LEADING POSITION ON THE MARKET.
- EFFICIENCY – THE COMPANY BELIEVES THAT THE BEST WAY TO IMPROVE PRODUCTIVITY IS TO PROVIDE ITS PEOPLE WITH THE OPPORTUNITY TO LEARN AND IMPROVE THEIR PERSONAL SKILLS, CONTRIBUTE TO THE WORK PROCESS AND BE SATISFIED WITH THEIR ACHIEVEMENTS
- INNOVATION – LONG-TERM SUCCESS CAN ONLY BE ASSURED BY CULTIVATING NEW IDEAS. THAT'S WHY THE COMPANY ENCOURAGES ITS EMPLOYEES TO BE CREATIVE, AND GIVES THEM THE MEANS TO SEE THEIR IDEAS REALIZED.

BUSINESS SOLUTIONS

IT SOLUTIONS

- Fulfillment of Systems and Software
- IT Infrastructure
- Collaborative & Interactive Meeting and Classroom Solutions
- Storage and Backup Solutions
- Cloud Storage & Solutions
- Surveillance Monitoring

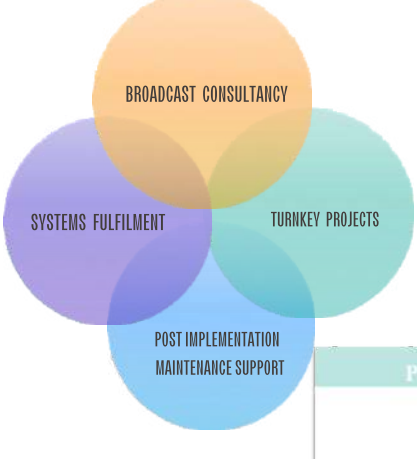
BROADCAST SOLUTIONS

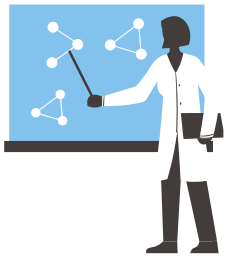
- TV & Radio Broadcast System
- Play-out and Automation Transmission System
- Automated Digital News Room System
- Non linear Editing System
- Studio Production System
- Media Asset Management System

AUDIO/VIDEO SOLUTIONS

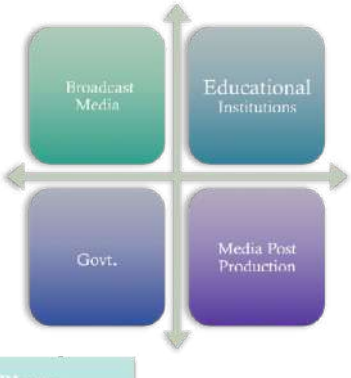
- COMPLETE STUDIO SETUP
- MANUAL/ MOTORIZED PROJECTIONSCREEN
- VIDEO/DATA PROJECTION SYSTEM
- PROFESSIONAL SOUND REINFORCEMENT SYSTEM
- INTEGRATED REMOTE TOUCH SCREEN CONTROL SYSTEM

OUR SERVICES





BUSINESS DOMAINS



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Mahaprasad: Rosaghar (Kitchen) and Sevaks

Pitabas Rautaray

The majestic temple of Lord Shree Jagannath is a major attraction for the tourist visiting Puri,the town situated in the eastern part of India in the State of Odisha.The present Jagannath temple ,known as white pagoda,dates back to the 12th century .Lord Jagannath,Lord Balabhadra and Godess Subhadra are the main deities popularly named as Trinity to whom the food of different varieties named as Mahaprasad cooked in the divine kitchen are offered at different intervals from morning to midnight. The visitors to Puri and specially to the temple crave for this divine food and the demand for the Mahaprasad has made the temple not only as a religious place but a food industry!

Why it is called Mahaprasad ?

In most temples of India,the holy food offered to Lord is named as Prasad but only at Puri ,the holy food is named as Mahaprasad.The various reasons ascribed to this naming are as under.
The dictionary meaning of Maha is great. The holy food offered to Lord Shree Jagannath is named as Mahaprasad.

There are 26 old scriptures (Purans) where the Mahaprasad has been held in high esteem .It has been said that partaking Mahaprasad is equivalent to having Darshan of Lord Jagannath. By partaking

Mahaprasad all sins are washed away. Having Mahaprasad one gets salvation after death. Mahaprasad is so powerful that irrespective of caste, creed,religion and sex all can eat together form one pot.

It is said that Godess MahaLaxmi herself cooks for Lord Jagannath in disguise and it is prepared in most sacred manner.

The kitchen fire is called Vaisnaavagni, because it is the fire in the kitchen of Lord Jagannath and used to serve Vishnu Himself, it is never put out. Charcoals are kept burning day and night by one worshipper called Akhand Mekap.

Another name of Mahaprasad is called Kaibalya that which gives Mokshya ie salvation or liberation. It is said that, if one takes this food of Lord Jagannath, he will have no rebirth.

Even today the taste of Mahaprasad cannot be duplicated outside. It is also the direct experience of devotees inside the temple that when the cooked food is carried from kitchen to the temple it has no fragrance, no sweet aroma but after the offering when it is carried from the temple to Anand Bazar, the place of sale, it smells divinely sweet.

Mahaprasad is so intimate to the day to day life of a devotee that it is taken in all major events of life. It is taken and distributed at the time a child's birth, at every holy ceremony throughout his life and even after and at the time of death also Mahaprasad is needed.

Types of Mahaprasad

There are three types of Mahaprasad.
1.Sankhudi Mahaprasad includes items like rice, ghee rice, mixed rice and dishes like dal, plain dal mixed with vegetables, mixed curries of different types leafy vegetables porridge etc.

2. Sukhila Mahaprasad consists of dry sweetmeat and cakes like khaja made of maida,Gaja made of wheat flour,Ladoo made of wheat,sugar and ghee, kanti,rice flour and ghee etc

3 .Nirmalya;-Besides Sankhudi and Sukhila Mahaprasad,another type of dry Mahaprasad is Nirmalya. In spiritual recognition Nirmalya is equally important as Mahaprasad. Nirmalya is commonly understood as dry rice ie cooked rice dried up in hot sun inside a separate place earmarked for drying. This is further packed in small cloth bags. In the absence of Sankhudi or Sukhila Mahaprasad, Nirmalya is treated at par and is invariably found in every Hindu's house as it is needed in all occasions.

All these are offered to the Lord in a ritualistic way except Nirmalya. Every day 56 type of Prasad are

offered to the Lord during the time of worship and all these are prepared in the kitchen of the temple. Four types of cooking are done in the kitchen of Srimandira. They are Bhimapaka, Nalapaka,

Sauripaks and Gauripaka In the kitchen of Srimandira, four types of rice are prepared. These are Salianna, Khiraanna, Dadhianna and Sitalaanna. Fine variety of rice (Sunakhila rice) cooked with ghee, phalatabha, and salt to get Salianna rice. For Khiranna rice, Basumati rice is mixed with cow milk, ghee and salt. For Dadhianna rice, plain rice is mixed with Curd. For Sitalaanna rice, the rice is mixed with tabharasa and salt.

Daily Rituals in the temple with offering of Mahaprasad.

Daily offerings to the Lord include:

Gopala Vallabha Bhoga: The first offering to the Lord in the morning that forms his breakfast.
Sakala Dhupa: The Sakala Dhupa forms his next offering at about 10 O' clock in the morning. This generally consists of 13 items including the Enduri cake and Matha puli.
Bhoga mandapa bhoga: The offerings are made in the bhog mandapa, about 200 feet from the Sanctum Santorum. This is the major offering which is meant for the public.This is offered around 11.30AM. This was introduced by Adi Shankaracharya in the 8th century to help pilgrims share the temple food.
The Madhyanha dhupa forms the next offering at noon.
Sandhya Dhupa: This offering to the Lord is made in the evening at around 8 o'clock.
Bada Simhara Bhoga: The last offering to the Lord.around 10.30pm
Except Gopal Ballav Bhog and Bhog Mandap all other 4 Bhogs are offered near the Ratnabedi(Sanctum Santorum)

VARITIES OF MAHAPRASAD
The popular items of Mahaprasad are described as under :

RICE PREPARATIONS
1. Sadha Anna - simple rice water, 2. Ghee Anna- rice mixed with ghee, 3. Kanika- rice, ghee, and sugar, 4. Khechedi rice mixed with lentils, 5, Dahi Pakhal- curd rice and water, 6. Mitha Pakhal- rice and sugar water, 7. Ada Pakhal- rice, ginger, and water, mixed, 8. Oriya Pakhal- rice, ghee, lemon, and salt, 9. Thali Khechedi- lentil rice with sugar and ghee.

SWEETS
10. Khaja- made of maida, 11. Gaja- made of wheat and sugar, 12. Ladu- made of wheat, sugar and ghee, 13. Magaja Ladu, 14, Ladu, 15. Jagannath Ballava- made of wheat, sugar, and more ghee, giving it a black color, 16. Khuruma- made of wheat, ghee, and salt, 17. Mathapuli- made of ghee, ginger, and a kind of bean ground into a thick paste, 18. Kakara- made of ghee and wheat, 19. Marichi Ladu- made of wheat and sugar, 20. Luni Khuruma- made of wheat, ghee and salt.

CAKES, PANCAKES AND PATTIES
21. Poda Pitha made of Rice, Urad Dal ,coconut,jaggery and ghee, 22. Chittau - rice, coconut, sugar, ghee, 23. Jilli- rice flour and ghee and sugar, 24, Kanti- rice flour and ghee, 25. Manda- made of rice,coconut,jaggery,cheese and ghee, 26. Amalu- made of wheat, ghee, and sugar,

27. Puri- made of wheat and ghee and deep-friend like a small thin pancake, 28. Luchi rice flour and ghee, 29. Bara- made of curd, ghee and a kind of bean, 30. Dahi Bara- urad dal,and curd, 31.. Arisa- a flat cake made of rice flour , ghee, jaggery32, Tripuri- another flat cake made of rice flour and ghee, 33, Rosapaik-cake made of wheat and ghee.

MILK PREPARATIONS

34. Khiri- milk and sugar with rice, 35. Papudi- prepared only from cream of milk, 36. Khua- prepared out of pure milk slowly boiled over many hours to a soft custard -like consistency, 37.Rasabali- made of milk, sugar, and wheat, 38. Tadia- made of fresh cheese, sugar and ghee, 39. Chhena Khai- made of fresh cheese, milk and sugar, 40. Malpua- made of maida, milk, sugar, and ghee, 41. Khira - made of milk, cheese, sugar, and ghee, 42. Sarapulli- this is the most famous and most difficult milk dish to prepare.made of cream, milk, and sugar.

DAL and SIDE DISHES

43. Sweet Dal, 44. Biri dal, 45, Chana dal, 46. Muga dal/muga dalma (the above three preparations are types of lentil dal), 47, Dalama - this is one of the most typical dishes in an Orissan home. It is a combination of dal and vegetables, usually eggplant, bean, sweet potato, but no tomatoes, as tomatoes are not used in Jagannath temple's food preparations. Coconut and a dried rootvegetable are added. 48. Mahura- mixed vegetable curry, 49. Besara- mixed vegetable curry with black mustard seeds, 50. Saga - a spinach dish 51. Potala Rasa - an Oriyan vegetable, potato, with coconut milk, 52. Goti Baigana- small eggplants with a shredded coconut sauce, 53. Khata - a sour side dish made of cooked mango, or apple, and grape mixed and cooked together. 54. Raita a yogurt-like dish with cucumber, and radish, A number of ritual functionaries are associated with the preparation process, offering of Mahaprasad before the Lord. They have been assigned with special and specific duties as described below:-

1) Paalia Mahaasuara-Supervise cleanliness of the kitchen and preparation of food in the kitchen. They have been assigned the duty to offer the prepared food in the divine kitchen to the Lord .This duty is for every ritual of the day starting from first offering in the morning to last offering in the late night.

2) Pithaa suara- Prepare cakes made from urd for all the daily offerings to the Lord and after the cake preparation is over hand over the cakes to Tolabadu sevak.

3) Binduaa-Making dough from the ingredients for the preparation of different types of cakes and handing over the dough to Pitha Suara for final making of the cakes.After the cakes are prepared they keep them separately to hand over to Tolabadu sevak.

4) Chanaapuaa- They prepares small types of sweetmeat like ladoo, parijataka etc from flour and rice powder.

5) Pagua-They prepare a special type of cake from rice like enduri and manda. They fry the ingredients required for cakes which are put inside the cake.After the cakses are prepared they keep it separately to handover to Tolabadu sevak.

6) Tolabadu- Collection of food items from Bindua and Paagua sevak from the kitchen and carrying from kitchen to temple for offering to Dieties..

7) Tuna Suara- Cooking of all types of curry, kanika(special type of rice) and kheer for all the rituals throughout the day.

8)Thali Suara- Cooking of Rice, Khichdi, Watered rice and Oria for offering to the Dieties. .
9) Amalu Suara- Prepares Amaalu (a type of sweetneat)for offering to Dieties.
10)Bidua Pantibadu- For morning Dhupa and Midday dhupa once Thali suara hands over the cooked food, Bidua Pantibadu adds ghee and ginger to the food to make it tastier. They also distribute the share of the ritual functionaries after the offering to Lord is over.

11)Pantibadu-Basically, they are responsible for separately keeping and offering the cooked food to the Deities. Paalia pantibadu offers the food to Lord Balabhadra,Bidua pantibadu offers the food to Godess Subhadra and Behera Pantibadu offers the food to Lord Jaganath.They also carry the food from kitchen alongwith Tolabadu sevak. the cooked food from kitchen to the temple for offering to Lord.

12) Chandrakanti Mahasuara- They carry a special type of cake named chandrakanti cake for the morning Puja.

13) Rosa Paika – Supervise the cleanliness of the kitchen. They collect all cooking materials from the jogania (supplier) and handover to the Amin or Jagia Mahasuara, who are in the ultimate charge of kitchen.

14)Biribuha- Collect urd or biri for the kotha bhoga and handover to kothabhoga suara.

15) Bahar Deuli Suara- Supplies all the cooking material for the food cooked for Maha Laxmi.

16) Bahar Deuli Binda- They makes round balls for the cakes to be cooked for Goddess Maha Laxmi.

17) Bahardeuli Belaa- They roll the soft balls of food item brought from Bahardeuli Binda sevak.

198) Bahar Deuli Jogania- Collecting all cooking material from godown and handing over to Suars of Bahar Deuli.

19) Handi Jogania- Supplies earthen pots for Kotha Bhog.This includes pots for cooking as well as various types of earthen serving materials for keeping the cooked food for offering to the Dieties.

20)Gandhan Nikap- They collect required quantity of coconut,ghee and other spices required for the Kotha Bhoga from the store. They wash the ginger and spices and handover these items to Rosa Paika for cooking inside the kitchen.

21) Kotha Bhog Pania- Supply water drawn from the well and handover in the kitchen for preparation of kotha bhoga meant for offering to Lord.This work continues throughout the day.

22)Dho Pakhal- Cleaning of the kitchen.

23)Jagia Mahasuara- The word Jagia in the local language is to watch. These type of sevak supervise the cooking for Kotha Bhoga inside the kitchen and supply all the cooking materials to Badu Suara.

24) Ballav Jogania- Everyday brings the food offering to Lord for Gopal Ballav Puja and other Deities inside the temple.

25) Pradhani They are responsible for calling the priest for the Yagna before the starting of cooking. They accompany the Behera Pantibadu sevak for offering to Godess Bimala.They also distribute Khei (the divine food given to the ritual functionaries as a part of remuneration) to all the functionaries including the King of Puri.

Why for cooking of food in earthen pot is preferred?

Cooking is done in earthen pots inside the kitchen of the temple. The earthen pots are used once only

for cooking that means everyday new earthen pots are required by the owner of the hearth. The main reason for sticking to earthen pot is as follows:

1) Earthen pot is a bad conductor of heat. Therefore the food cooked in an earthen pot remains hot for a longer period. It has been observed that in case of rice pot, even if the top portion gets cool the bottom portion remains warm for a longer period.

2) There is flexibility in cooking in earthen pot. If there will be sudden excess flow of crowd, then additional number of earthen pots can be used to cook more prasad. Since every time the cooking pot has to be new, it is not possible to use the metallic pot or utensils.

3) As per the study in Ayurveda, the food cooked in earthen pot is tastier and healthier than the food cooked in metallic pot.

4) If one cooks in metallic pot there is problem of cleaning everyday for it's re-use but in case of earthen pot since it is a disposable system this problem never arises as every time the cooking pot has to be new.

5) The earthen pots are bio-degradable materials hence environment friendly.

6) The earthen pots are prepared and supplied by the local villagers and they are getting an alternative source of employment to support their family.

7) The cost of the earthen pots is very less in comparison to the metallic utensils.

8) The fire ovens or chullas are specifically designed for cooking in earthen pots in which less quantity of fire wood is used. The hearth (Fire oven) There are three types of hearths (fire oven) in the kitchen of Srimandir. They are Anna Chuli, Ahia Chuli and Pitha Chuli. The dimension of the hearth where rice is prepared is known to be Anna Chuli is of 4'x 2.5'x 2'.

Each hearth can accommodate 9 earthen pots at a time which is sufficient for 100 people. They are not dug out in the ground. At the base of this triangle shaped structures are built and firewood is placed inside it in two stages. Around 20 to 30 kg of firewood can be given at a time.

The other type of hearth is a rectangular in shape which accommodates 27 earthen pots at a time. The sizes of this type of hearths are (9' x 3'). Here the hearth does not need any firewood. These hearths are called Ahia chuli where the remnants of burning wood from the rice hearth are used for preparing dal and other curry items. There are 45 numbers of Ahia ovens in the kitchen. The balance 20 hearths are used for preparation of cakes and other food items for the Raja Bhog or Kotha Bhog. The first two categories of hearth is basically meant for offering to Lord and then it is available for the devotees and visitors. The last category of hearths is for exclusive cooking for the Lord for different rituals starting from early morning to late night as per the pattern and tradition of rituals. This food after being offered to Lord is distributed among the ritual functionaries; it is a part of their remuneration and called as Khei. Normally 200 kgs of firewood is required daily for the preparation of kotha bhoga or raja bhoga.

The fire in the kitchen is called Vaisnabagni because it is the fire in the kitchen of Lord Jagannath and the foods prepared is believed as per the scriptures to serve Lord Vishnu himself. Firewood used in the kitchen. The wood to be selected should not have been eaten by pest, and nails must not have been pierced into the wood and they should not be very hard .The variety of local wood are preferred but casuarinas is the most preferred wood.

Water used in the kitchen

Water is drawn from two wells inside the temple premises towards the northern side of the kitchen. They are named as Ganga and Jamuna as per the two famous perennial rivers in India.These wells are very old, probably they were dug during the construction of the temple itself.

The Holy Kitchen.

The Holy kitchen where the Mahaprasad is prepared is an institution by itself. It is not only vast, well organized, and disciplined but also permanent in nature. Basic features and old values are scrupulously prescribed here. The fire in Holy kitchen never extinguishes. It is a continuous process. Traditionally it is believed to have been

continuing since time immemorial.

The width of the kitchen is 80 feet and length is 100 feet. There are 240 hearths in it. The hearths are of 3 categories. For cooking Rice only there are175 hearths, for Dal and curry 45 hearths and for preparing cakes and other dry mahaprasad 20 hearths are used.

Vegetables not allowed for cooking in the temple. Usually Potato, tomato, drum sticks, ladies finger, onion, garlic, green chillies, red chillies, cauli flower, cabbage, bean, bitter gourd and capsicum is strictly prohibited for use in the kitchen while preparing this Mahaprasad.

Hygienic maintenance of the kitchen.
To keep the kitchen hygienic and make the food preparation as holy offering to the Lord strict discipline is maintained inside the kitchen. The following principles are followed strictly inside the kitchen.

a) The cook has to come inside the kitchen only after taking bath.

b) The cook has to wear neat and clean cloth.

c) The cook cannot grow moustache or beard.

d) The cook cannot wear iron ring or thread round the arm.

e) They cannot chew paan (Betel) or any type of intoxicating material.

f) They should not sing or shout or crack jokes inside the kitchen.

g) While carrying cooked food they have to wear a cloth mask around the mouth.

Persons associated with the process and earning their livelihood from Mahaprasad

A) Sevaks or ritual functionaries – There are 25 types of ritual functionaries working in various roles for cooking and offering Prasad to the Deities.

B) Supplier of earthen Pots of various sizes both for Cooking and selling- Every normal day 3 truckloads of earthen pots are brought to the temple area for cooking as well as for selling Mahaprasad to the devotees. It may be noted that the pots used for cooking are not fully used for selling unless there is bulk order. For serving the general devotees who come in thousands need different types of combination of Mahaprasad as per their choice. Therefore they are supplied with different types of earthen pots and plates. Nowhere utensils are used inside the temple complex for preparation or selling.

C) Firewood – On an average 100 quintals firewood comes to the temple for cooking .Normally casuarinas trees are selected for firewood purpose.

D) Supplies of various types of Mahaprasad - Everyday rice to the tune of 70 quintals are used for cooking. Apart from the general public the general order from nearby areas within a radius of 100 kilometers prefer Mahaprasad for any social occasion in their village/town.

E) Cook- There is around 200 cooks engaged daily for the purpose of cooking different types of Mahaprasad.

F) Helpers to cook- As stated earlier there are around 400 helpers for 200 cooks who help the cooks to perform their duties perfectly.

G) Persons carrying the Prasad.- Whatever is cooked inside the kitchen has to brought before the Lord for offering. Normally this work is given on contract basis for example the person who carries one big pot of rice gets Rs 50 /- per pot. Normally the person carries two Big pots on both side of the soldier hanging from a balance. He charges Rs 100 for onward trip as he carries 2 Pots at a time that is from kitchen to Bhoga Mandap of the temple.

H) Person carrying the Prasad to the selling point- The same thing is repeated after offering the Prasad to the Lords for taking to the selling point Anand Bazar.

I) Sellers of Mahaprasad- There are 100 points where permission is given to sell the Mahaprasad to the general public/Devotees. Here the persons associated also get their dues.

J) Persons selling plantain leaf for eating in Anand Bazar. The Mahaprasad which is sold to the devotees are to be taken by spreading the plantain leaf and has to be eaten by sitting on the floor.

There are sellers for selling plantain lef along with salt, lemons and green chilly to the people who come to have food in Anand Bazar.

K) Sellers of dry Prasad.- The dry Prasad are in great demand specially Khaja and Gaja which are sold from 50 licensed shops. People visiting Puri and the temple invariably carry the dry Mahaprasad with them to be distributed among their friends and relatives. This business keeps the Anand Bazaar very busy from dawn to dusk.

L) Packers of Mahaprasad for carrying to distant places outside the temple and outside Puri. The Mahaprasad kept in the earthen pots cannot be carried as such safely. There are a group of packers who pack it in palm leaf packets .They are also busy in packing for the devotees who carry Mahaprasad for less number of people in small quantities to far of places inside and outside of the state..

M) Transporters to carry bulk order to various places inside and outside Puri- Vehicle are parked to carry the bulk orders to be loaded in the mini truck and carried to the nearby places for any social function. The number goes up to a great extent during the festive days.

N) Seller of Nirmalya (dried Mahaprasad) Nirmalya is dried rice which are packed in small cloth packing which is invariably found in every house as it is required for every auspicious occasion. It serves as the substitute of fresh Mahaprasad. There are many small shopkeepers who sell inside and outside the temple premises round the year. Since Nirmalya is prepared from cooked rice the same has a lot of sentimental and emotional value.

O) Pasartia- There is a system of reward offered by the temple administration to the ritual functionaries who perform the ritual assigned to them on the appointed day's .They get cash award and also get the Mahaprasad i.e the divine food of a particular quantity called Khei. The ritual functionaries do not collect the khei and take home for the family. In turn they authorize selected persons to collect their share and sell it in the Anand Bazar where Mahaprasad is sold. The categories of people who perform this job are called Pasaratia. They are not the ritual functionaries but have been doing the job from generation to generation. If we take on an average 10,000 people taking Mahaprasad and taking Rice,Dal, 2 types of curry, one leafy vegetable and khata (typical sour preparation) then the cost per day will be Rs10,00,000/- .which excludes sweet and other type of food items. If we take a conservative estimate of 10,000 per ordinary day and 15,000 for holiday then the turnover per annum will be around 50 crores of rupees .

CONCLUSION

Mahaprasad having the divinely distinctive features has kept the inflow of pilgrims for hundreds of years. This flow has been increasing year after year. The persons associated with the Mahaprasad have been immensely benefitted from sale of Mahaprasad. There is no scope in bringing reforms in the cooking system as the food is prepared with utmost devotion and sincerity following the cleanliness standard as per God 's own requirement. However there exists a scope to modernize the eating and marketing place called Anand Bazar, which needs lots of reform. Attempt should be made to rationalize the system for improvement and modernization..

Daringbadi- Kashmir of Odisha

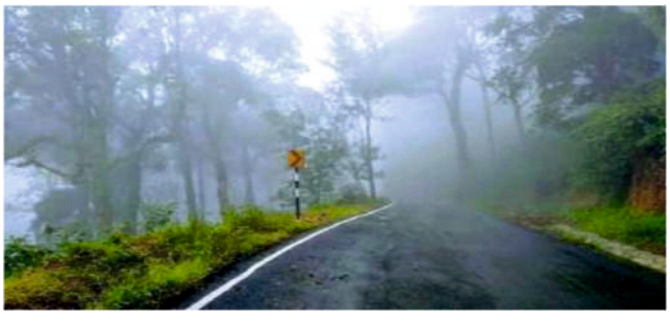
Pradeep Kumar Mallick

Hill stations have a special place in the hearts of Indians. Most regions in India are so hot that people are often looking for a way to cool down. While well-known hill stations such as Shimla, Manali, Mussoorie, Ooty, and Nainital receive a large number of people each year, there are a number of offbeat, lesser-known hill stations that are so attractive and tranquil that they can serve as excellent vacation destinations. Daringbadi, in the state of Odisha, is one such highland station.

Odisha is well-known for its history and culture, but it is less well-known for its stunning natural beauty. The hidden jewel of Daringbadi, affectionately known as the "Kashmir of Odisha," is a wonderful surprise. Daringbadi is a scenic hill station in Odisha's Kandhmal district, at roughly 3000 feet above sea level. Because of the climate's closeness to Kashmir, it is known as "Kashmir of Odisha".

Daring Saheb was the British officer who was in charge of this place during the British rule.. After his demise over the years this place was named Daring Badi with Badi meaning village. In this area, more than 50% of the residents are members of ST communities of aboriginal tribal races..

Daringbadi is easily accessible by train and bus from the state capital Bhubaneswar on a regular basis. The distance between Daringbadi and Bhubaneswar is 246 km. In addition, Brahmapur, 119 km away from Daringbadi, is the nearest railway station. Getting to Daringbadi from Brahmapur is possible via Sorada (NH-59)



approximately 120 kilometres (75 miles), or via Bhanjanagar - G.Udayagiri (NH-117) approximately 180 kilometres (110

miles) or via Mohana-Brahmhanigan approximately 145 kilometres (90 mi).Daringbadi is also closest with Phulbani . A route from Daringbadi to Phulbani is approximately 105 kilometres (65 miles), a route from Balliguda is roughly 49 kilometres (30 miles), and a route from Raikia is roughly 30.5 kilometres (19.0 miles).

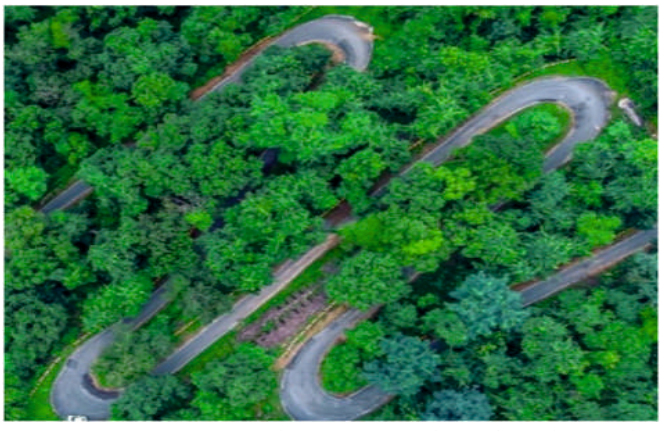
The local dialect is known as "Kui.". The bulk of the village's people are from the "Kuthia Kondo" and "Dongia Kondo" tribes. They dwell deep in the woods and are generally afraid of modern society. As a result, they are rarely seen outside of their immediate surroundings. Tattoos adorn the faces of the "Kuthia" tribes. Legend has it that the King used to separate the tribe's lovely tribal ladies. As a result, people's faces were tattooed while they were young to protect them from the evil monarch. The other residents in the area are friendly and helpful.

The fact that Daringbadi receives snowfall every year is one of its most stunning features.Basically in winter, it is the only place in Odisha that experiences snowfall Some residents who are aware of this have begun to use Daringbadi as a winter vacation destination. Odisha Chief Minister Naveen Patnaik has built a tribal museum in Daringbadi's hill-view park, which could soon become a popular tourist destination. Daringbadi also includes a nature camp to promote eco-tourism. It is also famous for its production of organic turmeric of the best quality because of its natural conditions and also it is famous for ginger harvesting.

The land's unspoiled splendour will captivate you. Dense rainforests, pine trees, coffee plantations, black pepper fields, turmeric gardens, and breathtaking waterfalls are among the natural wonders found in the land of God. The entire area exudes an untainted grandeur.It is also surrounded by lush green valleys that are cloud-shrouded during the monsoon season, and the hill station offers opportunities for tribal tourism. According to locals, British tourists used to come to Daringbadi in the summer to appreciate the natural beauty.The abundant flora and fauna that contribute to its pristine condition are left to their own devices.

On the journey to Daringbadi, there are several sights to see. The road's tight and narrow bends make it tough to drive because it twists a lot because it is 3000 feet above sea level. The fact that the path is two-way is a tremendous relief,

(Figure- Water fall and hill station of Daingbadi - *Source: india.com*)



(Figure: Road view of Daringbadi- Source: The News insight**)**

since it makes driving a little easier. Monkeys can be observed on both sides of the road, warily staring at the tourists. They appear upset by visitors since their privacy is occasionally breached. The magnificent waterfalls cascade down leisurely, waiting to be discovered. The water's leisurely drift and serene flow will make you feel as if you've arrived in another world.These are the spots where nature's peaceful beauty stands still for all time.

The coffee garden is a sight to behold in and of itself. The aroma of freshly brewed coffee emanating from the plant is a sensory delight in and of itself. Madhuca longifolia trees, often known as "Mahua" trees, can be found in abundance throughout the forest. It is a fast-growing tree that can be found in abundance in the woods and warm temperatures of northern and eastern India. The blossoms of Mahua trees are used to manufacture alcoholic beverages.

You can explore this place the best by renting your own four-wheeler and roaring through the jungle for a truly fantastic experience.

Come to Daringbadi and rediscover your love for piety, innocence, calm, and, most importantly, Godly love. Daringbadi should be your next stop. Come experience and feel nature's unspoilt beauty while you rediscover yourself.

(Figure: Daringbadi coffee garden - *Source: Odisha Tourism* **)**

United Nations Security Council: Relevance in Today's World

Jyotiranjan Gochhayat

The United Nations Security Council (UNSC) is one of the six principal organs of the United Nations. It is primarily responsible for the maintenance of international peace and security, recommending the admission of new UN members to the General Assembly, and approving any changes to the UN Charter. In the current structure, it has 5 permanent members and 10 rotational members elected for a period of 2 years. Though each member has one vote, the UN charter directs that every substantive decision has to be taken with “the concurring votes of the permanent members”, giving them the power to block any resolution, popularly known as 'Veto'. Accordingly, it has also the ability of preventing anyone from becoming the secretary general of the United Nations.

During the establishment of the United Nations, the big and powerful countries argued for the veto power for them. Without the big powers, perhaps the formation of the United Nations would not have been possible. Over years, the big five permanent members, with the veto power, have blocked many resolutions (299 times by 31st Aug 2020; 145 by USSR/Russia, 86 by US, 32 by UK, 18 by France and 18 by ROC/PRC) from being passed in the UNSC.

Out of all the veto used, 29 times, a veto was used when 13 members voted in favor of a resolution, and 25 times, a veto was used when the rest 14 members voted in favor of a

Photo Source: https://unsmil.unmissions.org

resolution in the 15 member UNSC. Similarly, before the expansion of the UNSC in 1965, 28 times a veto was used when the rest 10 members voted in favor of the resolution in an 11 member UNSC (https://www.securitycouncilreport.org/). This clearly indicates towards the fact that, the big five permanent members do not vote primarily for global peace and security, rather they vote to protect their own national interest. Such operational practices are gradually decreasing the relevance of UNSC in an increasing unstable global situation and the failure of the UNSC is reflected in situations such as Russia-Ukraine war, where the UNSC has been unsuccessful in containing the war, and maintaining the peace and stability.

In the last decade, to name a few, the veto against resolutions on Counter-Terrorism (on 31 August 2020), on Israel/Palestine settlement activities (on 18 February 2011), referendum in Crimea (15 March 2014) have been against the wider understanding and agreement among the UNSC members. Before the 2005 World Summit, the High-Level Panel on Threats, Challenges and Change insisted on taking a pledge by the permanent members to refrain from the use of the veto in cases of genocide and large-scale human rights abuses. The group of Small Five (S5), that includes Switzerland, Liechtenstein, Singapore Jordan, Costa Rica advocated for permanent members not to use a veto to block Council action for the purpose of preventing or ending genocide, war crimes and crimes against humanity.

Accountability, Coherence and Transparency (ACT), a cross-regional group of 27 states has proposed a code of conduct to encourage the permanent members to voluntarily agree to refrain from using their veto in situations involving mass atrocity crimes (https://www.securitycouncilreport.org/).

At the time of formation of the United Nations, after the devastation effect of World War-II, the role of the big five permanent members and specifically, the role of US and the then USSR in bringing the world together and in creating a world order for international peace and stability was understandable. However, with time, the world has changed a lot.

The world has moved from two superpowers to have multiple regional powers that have gained significant political, economic, military and socio-cultural influence over different parts of the world. They are quite ready to take up the responsibility and to contribute to world peace and stability at the highest level. Accordingly many countries are arguing to reform the UNSC and to expand it to include developing influential countries such as Brazil, Germany, India and Japan as permanent members to have wider and appropriate representation of the people of the world. However, UN Charter says, any reform to UNSC such as this, would require the concurring votes of the permanent members.

It seems very unlikely, as all these permanent countries are very apprehensive about the rise of certain other countries aspiring to be included in the UNSC as permanent members, and secondly, this will reduce their influence and control over world order. Even if we get fortunate enough to get the votes of all such permanent members for this reason, it may not solve the purpose, as the new permanent members are more likely to use the veto power in the same old fashion to protect their own national interest. Furthermore, the reform will silence the world for few more years until some other potential countries aspire for it.

In the backdrop of such a scenario, the great power "veto" seems to be a concept that does not meet the needs of the contemporary world with multiple regional powers that want equal representation in world affairs and decision making. The council may be reformed to operate on a democratic principle to have better representation of and influence over all the countries.

Expansion of the permanent members would be a good way out. In place of the provision for "the concurring votes of the permanent members" or the veto power, the permanent members can be allotted higher weightage in the decision making system. This will enable the council to work effectively, democratically, to ensure global peace and security for all irrespective of their wealth and influence. The world cannot afford to wait for such reform; else the UNSC will lose its relevance.

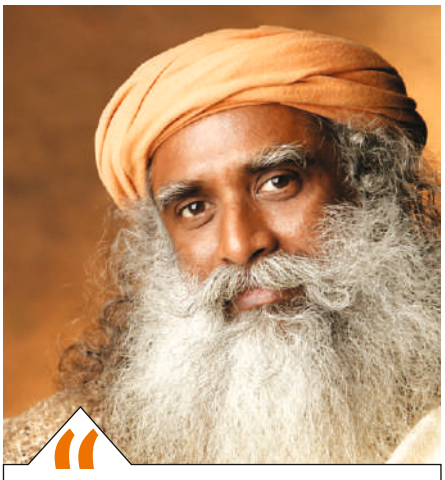
Leaders' Thoughts

With peace comes development and the Northeast (of India) has seen this in the last few years.

-Narendra Modi

I invested in Twitter as I believe in its potential to be the platform for free speech around the globe, and I believe free speech is a societal imperative for a functioning democracy.

-Elon Musk



First and foremost thing is to understand soil is a living entity. The largest living system, not in this planet, in the known universe is the soil.

-Sadhguru
(On Save our Soil)

Giving quality education to the deprived is like giving sight to the blind.

-Achyuta Samanta

Lockdowns are tricky, and we should be studying them. They make people move; it's tricky. There are many types of lockdowns and the way that humans respond to.

-Bill Gates

Vulnerability of Global Sustainability - how can we identify and bridge the gaps between thoughts and actions?

Debasis Mohapatra

Extreme natural catastrophes have caused significant economic losses in recent decades, according to data. These facts, which are considered to be the result of environmental changes combined with ineffective management and policies, emphasize particularly vulnerable and exposed locations around the world. By 2050, the world's population will reach nine billion altering the demands on the environment and their consequences. With the change in the structure and function of the biosphere with an increase in population, there has been a major global environmental change which increases the vulnerability of global sustainability. The major changes can be broadly categorised as climate change, health, disasters that include biodiversity loss, land degradation, ocean acidification, water scarcity, heat waves, floods and storms, altered patterns of infectious diseases etc. To address all of these issues, sustainability science was created to develop a better understanding of environmental conditions, with two major goals in mind: meeting the needs of people (or society) while also preserving the planet's life support systems. Various agendas were introduced to support these objectives, including the Sustainable Development Goals (SDGs) in collaboration with the United Nations, COP26 by the United Nations Climate Change Conference in 2021, and the introduction of the ESG framework, which includes economic, environmental, and social pillars. These indicators aid in the achievement of long-term goals and the development of a competitive spirit among governments and states.

India being the world's second-most densely populated developing country, is heavily reliant on natural resources, which must be carefully monitored and preserved for future generations. As a result, in 2018, NITI Aayog released its index to track the country's progress on goals using data-driven analysis and has mandated the adoption and monitoring of the SDGs across the country, promoting competitive and cooperative federalism among states and UTs. The index primarily illustrates the articulation of the global goals' comprehensive nature under the 2030 agenda while being responsive to national priorities. The index calculates goal wise scores for each state and UT on the 16 SDGs, which are then compared to previouseditions due to a wider range of targets and indicators and better alignment with the National Indicator Framework (NIF). In the recent two years, India's states and union territories have seen tremendous progress in the SDGs regarding sustainable energy, urban development, and health, as compared to previous years. Kerala, for example, has always ranked first in the third edition of the index (2020-21), followed by Tamil Nadu and Himachal Pradesh. Such performance indicators assist other states and countries in improving their performance and achieving the top ranking, ultimately assisting in the achievement of the SDGs. Similarly, in 2021, at COP 26, 46 nations committed to Global coal to clean energy transition statement, agreeing to move away from unabated coal power generation by around 2030 for "major economies" and a global transition by around 2040. The key goal was to achieve a global net-zero by mid-century and limit warming to1.5 degrees Celsius. India aimed to reconstruct future environmental and economic plans during this climate change conference, stating that the country will reach net zero emissions by 2070, cut carbon intensity by 45 per cent by 2030, and reduce predicted carbon emissions by 1 billion tonnes from now to 2030.

In a country, private players/corporates are the largest contributors to the economy and also have a significant influence over the majority of the population. As a result, investors who seek not only financial gain but also social benefit are increasingly concerned about company sustainability resulting in the ESG Framework (i.e. environmental, socially responsible and governance). Reduced carbon footprints and wasteful activities can help businesses enhance their environmental sustainability. The social responsibility pillar includes actions that help the company's employees, customers, and the community as a whole. The economic pillar, also known as governance,relates to adhering to ethical and transparent accounting methods as well as regulatory compliance. EV penetration and clean energy initiatives are among the emerging initiatives to contribute to global sustainability.

Despite several actions to improve sustainability, we notice increasing vulnerability of societies, communities and the overall demography of the world being increasingly vulnerable to the negative impacts of climate changes. Because of increasing geo-political, economic and cultural differences, it is becoming challenging to draw up coherent actions that would align environmental change and human well-being. The socio-economic consequences of environmental stresses linked with global environmental change are heavily influenced by how societies are organised. Vulnerability of sustainability implies the failing outcomes of disjointed actions by nations and the populace of the world, despite establishment of international and national policy guidelines to address the sustainability related challenges.

Anticipatory societal responses to improving sustainability must be 'mainstreamed' into existing national and subnational policies and practices in areas like urban development, natural resource management, bio-diversity management and land-use management. It is how initiatives are developed, how they reach out to society on a community level, and how they are genuinely accepted by the people, especially the vulnerable communities, to ensure a long-term sustainable future, will determine how sustainability improvement actions result in positive outcomes. Therefore, nation-heads, policy makers, intelligentsia of the world, activists and the general citizens of the world should align their thoughts and actions for lowering the vulnerability of sustainability and making the world a better place for the human kind.

World Health Organization (WHO) strategy for transforming the health sector in India

Ranjit Kumar Dehury

The WHO India Country Cooperation Strategy 2019–2023 helps in achieving the goals for Indians, Southeast Asian nations, and the world at large. The international bodies help in gaining value for the global citizens. The current strategy focuses on four subsections particularly, accelerating progress on Universal Health Coverage (UHC), promoting health and wellness by focusing on determinants affecting health, protecting firmly the population against health emergencies, and enhancing the leadership of India in health. The WHO helped India with technical support and handholding for the Implementation of Ayushman Bharat, monitoring and evaluation of health programs, digitization of the health ecosystem, controlling of tropical diseases, vaccine-preventable conditions, and vector-borne diseases. Off and on WHO initiates plans and programs focusing on determinants like controlling non-communicable diseases (NCDs), Environmental health, Mental health programs, nutrition-related safety protocols, road traffic issues, end game to tobacco, and integration of information technology. To protect the population against health emergencies WHO help In disease surveillance and detection of epidemics, implementation of integrated disease surveillance program, preparation of health emergency plans, and proactively elimination of antimicrobial resistance in any part of the globe. If required the International Health Regulations could be clamped to address the issue urgently. WHO also enables India to enhance the quality of medical products, share innovations and strengthen its leadership in a highly digitized world.

The vision and mission of WHO helped in gaining a lot in the past and in the coming future India can achieve a steep target of containing many life-threatening diseases. WHO with technical expertise create values in reducing disease burden and enhancing the quality of life for millions of peoples. Financial aid many a time help in the health and wellness of vulnerable people across geographies. The strategies of the WHO integrate many silos and help tide out the major health and wellness issues within a miraculous time. The work of voluntary agencies, multilateral bodies, and national governments with WHO has been well documented in the literature pertaining to the prevention and cure of diseases. The WHO India Country Cooperation Strategy if implemented well in its right spirit and required resources, India may become a healthy county by transforming the economy of the nation. One step to successful health sector achievement would lead to many cascading benefits across the families and social groups. We must work in tandem with the requirements of the nation and global progress by working with WHO.

CORRUPTION: A Global Cancer

Itishree Gita Kumari

No matter where you go, how much people earn no matter what the political systems are, corruption is found everywhere. It is the misuse of private or public power and authority for personal gain. “Fakellakia”, are the little envelopes, that someone gives to someone in order to get things done a little faster. This thing more or less became norm, not the exception. Corruption can happen anywhere, it can involve anyone. Corruption is cancer for the society; it destroys trust, weakens social equality, hampers economic progress and further aggravates difference, poverty, social separation and the environmental crisis.

The **Global Corruption Barometer (GCB)** has assessed, the opinion of general people's experience regarding the frequency of confronting corruption around the globe. According to the report of GCB, 1 in every 4 people bribe to access public service. After the disastrous COVID 19 pandemic, current year's Corruption Perceptions Index (CPI) explains that corruption levels around the world remain idle. Despite various measures, 131 countries have not made considerable progress in the fight against corruption over the past decade, with 27 states reaching historic falls in CPI scores this year. In the meantime, human rights and democracy are being attacked all over the world.

In the annual report of **Transparency International (TI),** which publishes the corruption report, covers various features of corruption to disembark conclusion. TI includes bribery, distraction of public money, efficient trial of corruption issues, suitable legal skeleton, and access to information and authorized shield for whistleblowers, journalists and investigators. However, financial crime issues such as tax evasion and money laundering are not covered. Corruption takes many forms across the globe, but this year's reports show that the fight against corruption in the public sector in all parts of the world is stagnant.

Corruption costs our freedom, law and order (Political), our participation and trust in government (Social), even our opportunity to build and growth in wealth (Economic), and last but not the list it costs our chance for a healthy and sustainable future (Environment). Corruption and impunity supply to a harmful environment in favour of human rights supporters to function in. After examining the data composed by **Frontline Defenders (2020),** the **CPI** reports that 98% of the 331 human rights protectors killed in 25 countries in 2020 happened in 23 nations having higher corruptions in public institutions or countries having less than 45 **CPI** score. In addition, at least 20 of all cases were reported as murders of anti-corruption civil rights supporters

handling anti-corruption matters.

Corruption is a worldwide crisis that needs global solutions. We must have to adapt transparency in order to fight against Corruption. But transparency is merely the starting point to restrict corruption. Transparency is defined as knowing who, why, how, what and how much. It describes shedding light on formal and informal regulations, strategies, procedures and actions. This helps the general public to hold all powers responsible for the public interest.

Looking for and obtaining information is a human right that protects us from corruption and builds reliance in decision maker and public authorities. Still, transparency is not just about assembling information, but also about making it effortlessly accessible, comprehensible, and usable by the public.

We must endorse accountability and integrity at all points and across all sectors of society to stop corruption. Sometimes people are ideologically blind which makes them unable to gather information or sometimes information is too costly to gather. Lack of information is one of the reasons of corruptions in a developing country. Everyone must be knowledgeable well enough to fight against the corruption.

When tackling the fight adjacent to corruption at the nationwide, it is significant to introduce institutional structures and inducements to avert corruption in the first place. Prevention also involves accountability and credible deterrence, backed by a strong enforcement mechanism sufficient to send messages to potential fraudsters about the potential costs of fraud.

Public should demand below mentioned measures to their governments to stop the nasty sequence of fraud, human rights breach and democratic decline

1. **Endorse the rights essential to hold power to account**. The government should withdraw some inconsistent restrictions on freedom of speech, association and assembly that have been in place since the beginning of the epidemic.

2. **Re-established and strengthen institutional controls on power**. Public regulatory organizations, such as anti-corruption agencies and Supreme Auditing Agencies, must be autonomous, well-equipped, and authorized to identify and sanction fraud. Parliaments and benches also need to be attentive not to overdo executives.

3. Fighting foreign bribery**.** Governments in developed countries need to address orderly flaws that prevent cross-border corruption from being detected or punished. They must seal the loopholes in the law, standardize the initiators of professional financial crimes, and prevent corrupt people and their collaborators from escaping integrity.

4. **Maintain the right to know about government expenditure.** As part of COVID19's revival efforts, the government ought to fulfil the commitments made in the June 2021 UNGASS Political announcement, consists of anti-corruption defends in open procurement. Utmost lucidity on public expenses guards lives and livelihoods.

**“People's indifference is the best breeding ground for corruption to grow.
Only by working together can we hope to end impunity for corruption and the corrupt.”**

Delia Ferreira Rubio

Poverty in Africa : The Case of Tanzania

Michael A. Mabawa

According to Copenhagen Declaration of 1995 , defines poverty as a condition characterized by severe suffering of basic human needs, including food, safe drinking water, sanitation facilities, health, shelter, education and information. The concept of poverty doesn't depend only on income but also on access to social services. Fighting poverty is the main agenda of discussion in African continent. Most of countries, poverty alleviation programs have been prioritized to a higher extent. Economic planning departments in the country in collaboration with the Non-Governmental organization from different parts of the world have been finding a solution from their researches trying to come up with general Policy to address the issue of poverty Alleviation.

Tanzania is among of the poor countries in Africa having $ 290 as the percapita income in 2017 and $1080 as it was in 2020. In fighting and addressing the issue pertaining poverty, it has become a very serious concern to be included and discussed in the all various agenda related to development since 1960s immediately after the independence. 1961 is the year Tanzania, Tanganyika by then got her independence. In Tanzania a person is said to be below poverty line if lives on or less than $1.1 Mwalimu Julius K. Nyerere, the first leader after the independence named poverty in the three enemies of the country's economy together with ignorance and diseases. Therefore some initiatives and efforts focusing on poverty fighting started been initiated since 1961.

Tanzanian government by its efforts to fight poverty planed several distinguished policies namely policy on Socialism and self-reliance policy of (1967-1985), the economic growth policy of 1985 to early 1990s and that of "National Strategy for Economic Growth and Reduction of Poverty" popularly translated in Swahili as Mkakatiwa Kukuza Uchumina Kupambanana Umasikini (MKUKUTA I&II) in the year 2000s.

Firstly, the policy for poverty alleviation launched on February 1967 in Arusha Tanzania and popularly known as Arusha Declaration was based on the principle of Socialism and self-reliance. The policy aimed at putting the ownership and control state farms, common natural resources such as mines, water resources, land under state control, in this regard all the private investments had to be nationalized and taken to the public ownership through which was planned to contribute to human development in a given short time. It is in this policy where Agriculture was highly prioritized and basic public services like education, water, health received high investment. All of these initiatives were centrally invested under government programs such as Universal

Primary Education programs of 1967, Agriculture for Death and life 1974-1975, Villagization policy of 1974. While some of positive outcomes were observed, still there were stumbling blocks towards implementation of the programmes. By the end of 1970s, resources allocation in the agriculture sector noticed declining meanwhile administrative controls such taxation in this sector had led to low benefits to the peasants and farmers. The political war between Tanzania and Uganda had also accelerated to the failure of these programmes as immediately after the war Tanzania experienced a tremendous fall of economy. Macroeconomic variables such as employment, Balance of payment, investment, international trade and general price level were deteoriorated.

Policy for growth and efficiency of 1988 to 1995, Tanzania started to undertake several programs for recovering the crisis under IMF and the World Bank in their Structural adjustments programs. Tanzania began to move in the comprehensive direction towards poverty reduction strategy in the mid-1990s. Under the Economic Recovery Program of (1986- 89), major macroeconomic policies such as trade and exchange rate regime Tanzania adopted measures such as currency devaluation to stabilize the situation.

Another strategy to fighting poverty was adopting the economic recovery policy known as "National Strategy for Growth and Reduction of Poverty" popularly pronounced in Swahili language as MkakatiwaKukuzaUchuminaKupunguzaUmaskini Tanzania (MKUKUTA)I&II). Officers for Policy making in local level authorities have to diversify data in ranges of categories like income level, gender, age group and occupation type for the community findings to be made.

Tanzania Action Social Fund (TASAF) was initiated for helping the extreme poor country by providing monthly pay for rescuing them from extreme poverty. The introduction of the Comprehensive Development Framework by the World Bank was another effort aggravated empowered Tanzania to address the poverty alleviation concerns. Through considering social, economic and political processes International financial institutions IFIs introduced the idea of Poverty Reduction Strategy Papers subject to Highly Indebted Poor Countries (HIPC). Tanzania promptly started to prepare a PRSP for it to benefit and access the HIPC debit relief resources. More efforts have been made to establish the Decentralization by Devolution (D by D Policy) to give greater degree of freedom to local government and authorities to participate in development activities such as delivery of services and eventually poverty reduction.

Through D by D policy, authorities have been delegated to District Local to improve service delivery for poverty reduction hence the government to channel resources to these Local level Government Authorities (LGAs) for development. The Local Government bodies are now the hub of political and administrative authority in Tanzania.

Challenges hindering the smooth implementation of the poverty alleviation policy and strategies

(I) Most of the poverty alleviation initiatives in Africa fail to work because of cases of governmental officers involving themselves in corruption matters.

(ii) Another problem is that Tanzanian government as it is for most African countries depend external creditors and donors in large proportionate part of their development budget as a result;it has to pay attention toits finding agencies in order to survive and fight poverty.

(iii) Massive illiteracy.

(iv) Civil wars and ongoing terrorists attack in some African countries example Jamā'atAhl as-Sunnah lid-Da'wahwa'l-Jihād, but popularly known as BOKO HARAM is still another problem hindering the initiatives to fight poverty in Nigeria

(v) Lacking political will and commitments and proper coordination of all the stakeholders involved in poverty alleviation intervention programs.

(vi) Problem of policy implementation due to lack of clear framework and policy tools to fight poverty

(vii) Existence of asymmetry information due to lack of extensive research on poverty level. In Tanzania, poverty research has focused on absolute measurements and very little research on poor people's own views, causes and dynamics of poverty (Cooksey 1994)

Learning from Global Economic Crisis: A must for India to take a Diversion

Sukant Chandra Swain

Economic crisis, which may crop up either due to natural factors or improper management or both, is a part and parcel of any economy. World has experienced many crises in the past like the Great Recession of 1930s and the USA's sub prime mortgage crisis of 2008. Sri Lanka's experience at present is the prominent and fresh one which other countries should not take lightly. Standing tall amid the inevitable or accidental crises makes an economy sustainable and sound. Ad hoc steps or politically intensified steps to address any crisis is fatal. The best example is the populist strategies of four Euro-zone countries; Portugal, Ireland, Greece and Spain (PIGS) post 2008 sub prime mortgage crisis that led to Euro-zone debt crisis. In order to address the effect of sub prime crisis, the leaders of those countries, owing to be popular and greed of sticking to power, relied mostly on freebies. For the sake of supplying essential goods and services to people, they had to go for huge borrowing, improper management of which forced them to be bankrupt in 2011. At present, Sri Lanka is in a very peculiar situation; experiencing 21.5 % of inflation rate (Consumer Price Index) in March 2022 with towering budget deficits and huge debts. Sri Lanka is paying the price for lavish expenditure by government on economically irrelevant projects like Matala Rajapaksa International Airport, Colombo Port City Project and Hambantota Port funded by China. All these steps put enormous strain on forex reserve of the country. Added to that, government's "only organic" agriculture practice during Covid-19 pandemic created apprehension among the farmers, leading drastic fall in harvest of exportable agricultural products. This, in turn, widened the gap between exports and imports causing extra strain on forex reserve of the country.

It's inferred from both the instances that mounting freebies or transfer payments and large external borrowings for economically inefficient projects are the prominent reasons for economic crises. In India, all the political parties, to remain in power, are following the short-cut and providing goods and services either free or in an extremely subsidized prices. Huge transfer payments have started making the beneficiaries parasite and their intent to work has been ruined. The consequence has been felt in rural economy as owing to lack of labour, many cultivable fertile lands have been kept barren. It will definitely put toll on economy in the long run. Similarly, for the sake of passion or to have a record on own credit, taking up irrelevant projects will definitely push the economy on the track of crisis. Be it providing free ration to people living poverty line or free

electricity and drinking water up to a certain quantum, the long-run consequence is counter productive. There is no second opinion that this sort of moves of any government has helped the government to secure the vote box and extend the tenure. However, it has killed the potent of beneficiaries to doing something. In fact, political parties in India have been competing among themselves in presenting lucrative transfer payments in their election manifesto. Similarly, the would-be beneficiaries of those transfer payments have been judging the candidates in election on the basis of their election manifesto embedded with the types of freebies.

On taking up public projects, India is no less than Sri Lanka. Government ignores the benefit cost ratio of some of the projects for which it is highly passionate about. In fact, it does not ascertain the opportunity cost of the resources involved in taking up those projects. With no offense to any political party, on economic front only, we can site the case of the project - 'Statue of Unity'. It is a matter of pride for India that it has got a place in world map for being the tallest statue of the world. By taking up this project, the government has achieved dual objectives of giving respect to Indian statesman and independence activist Vallabhbhai Patel and getting world recognition of having the tallest statue. This project may recover the cost in long-run by generating revenue through entry ticket prices, but the public projects need to optimize benefits rather than revenue. Moreover, resources used in this project could have generated more benefits had they been utilized in some other economically viable projects in the domain of education or health which need priority concerning the attention of the government. The motive behind taking up this project is precisely sacred and pious, but the welfare out of the resources used in this project could have been bettered, had they been used in the best possible heads. This project is just an example. There have been good number of such projects that different governments of the country have been taking up since independence. If this trend of providing freebies and wrong selection of public projects continues, India won't take much time to follow suit Sri Lanka. Thus, it is high time for India to rationalize the transfer payments and take up such projects which are viable as per benefit-cost ratio in order to take a diversion from the would-be path of crisis.

Budget 2022 and Cryptocurrency: Is it a reception or farewell for Indian cryptomaniac?

Debasis Pahi

& Romely Mukhopadhyay

The cryptocurrency bonanza in India (the home of world's second-largest community of crypto investors) may be change of course into a flop. As per the CEO of WazirX (India's biggest cryptocurrency trading exchange) "In general, we have seen trading volumes [on Indian exchanges] come down by 30%-40% in the last two to three weeks after the budget 2022,". With the imposition of a new, higher tax rate on crypto earnings and refusal from banks to transmit payments to exchanges due to regulatory uncertainty, trading of cryptocurrency has plummeted. Lets now understand how crypto investors in India are affected after budget 2022.

Cryptocurrency, a digital currency, that was designed to work as a currency by computer network brought a revolution in the investment industry worldwide, along with its share of risks and speculations. Over the years, cryptocurrency became a hot cake for bold and young investors. India too witnessed a prodigious growth of crypto investors with Bitcoin serving as the major booster reaching its peak of $67,000 last September before encountering its downfall. Despite the uncertainties over the future of the digital currencies, its investments in India, surged in 2020. While retrieving the data from various domestic cryptocurrency exchanges, the picture portrays that more than 1.5-2 crore Indians have invested in the asset class, and hitting the $10 Billion mark in November 2021. The unparalleled growth of the virtual currency portrayed a shift in the investment paradigm in the country that is known for investment in safer assets and in gold. The demonetization of 2016 gave an unintended boost for investment in cryptocurrencies.

However, the risk and uncertainties and price volatility associated with cryptocurrencies make it more troublesome for regulators and RBI. The persisting thrust towards the virtual currencies and digital assets among the Indians and specifically millennial investors, lead the RBI and

the Financial ministry to issue a warning and issuing a clarification, that these currencies were not the legal tender. In the budget of 2018, RBI restricted the banks, NBFCs and payment system providers in dealing with cryptocurrencies which resulted in a heavy blow to crypto exchanges. Thereby the trading volumes fell by 99%. The ban which was a massive setback to the crypto investors led them to file a writ petition in the supreme court and the decision was ruled in their favour and lead to further boom in the crypto market.

The battle of the crypto investors in India continued with the government and the later announced on Jan 29, 2021to introduce a bill to create a sovereign digital currency. In November 2021, the Standing Committee on Finance, along with Blockchain and Crypto Assets Council (BACC) and other cryptocurrency representatives concluded that cryptocurrencies should not be banned but regulated.

Considering the upward trend in investment in the digital currencies, the Government of India, has now declared a flat tax of 30% on the revenue in the budget session of 2022. The higher end tax rate is applicable on profits irrespective of the holding period. The tax rate that the government has sought to charge comes at par with the incomes that are being generated from gambling's and all speculative earnings. Further the government, in order to track the money trail, has implemented TDS of 1% on payments made for transferring digital assets beyond the threshold limits from 1st of July 2022.

Further to worsen the scenario, the government has prohibited to setoff any losses that arises out of trading of digital assets with any other incomes and has made imperative to file income tax return even if the income doesn't exceeds 5Lakhs. Thus clarifying that the government won't allow sneaking away of any revenues to be taxed, and also withholding its intention to legitimise trading of the digital currency for the moment. Even though the introduction of taxation of the crypto currencies seems to be a major step the government has taken towards identifying crypto currencies as a significant budding area of investment but the cumbersome process of charging TDS and its deposit and monitoring it further remains a vision out of the purview. All these major tax policies changes on cryptocurrencies have created a havoc among the Indian crypto investors and most of them are selling their crypto assets. Further it is evident from the Google search volume index that "crypto" and "cryptocurrency" have lost popularity in India after 90 days of the curptocurrency tax announcement under the union budget 2022. On the contrary, crypto platforms and experts believe with the clarity in the taxations, the participation from those who have been sitting on the sidelines is likely to increase, despite the higher tax rate.

In spite of all the hardships that the government has brought in for the crypto investors in this budget session of 2022, we hope the government continues the endeavour of developing and regulating the crypto market, making it transparent and easier to transact. The taxation rule is just the first step forward to make the digital assets ligalised in India and the added visibility of taxationgive adequate clarity and should boost investments. It will boost the investors confidence and make it more suitable for investors to diversify their investment and get on the roller coaster of cryptocurrency ride.

Sustainable Heating, Ventilation and Air Conditioning (HVAC) for Building

Chinmoy Kumar Panigrahi

1. Introduction

Energy is one of the major inputs for the economic development of any country. Amid the ongoing geo-political tensions around the world, the energy crisis has reached new heights throughout various frontiers. In order to provide healthy, energy-efficient, and cost-effective options for various building types, it is essential to understand and consider various parameters related to the sustainability of new and existing Heating, Ventilation, and Air Conditioning (HVAC) systems as the respiratory system of buildings. With the help of software's like eQuest, Energy Plus, and others, it is possible to simulate actual energy use in real time. The most cost-effective method to achieving ECBC compliance is to optimize energy usage in building components and systems, such as the building envelope, lighting systems, heating and cooling systems, and other similar products.

2. Energy usage in Building

It is estimated that the building industry, which includes both residential and commercial properties, accounts for up to 36 % of worldwide energy use. The International Energy Agency predicts that global home and transportation energy consumption will continue to rise at a rate of 1.1 % per year through 2040. Between 2015 and 2040, the International Energy Agency predicts that worldwide business sector energy consumption would rise at a pace of 1.2% each year. Developing countries are predicted to experience a greater rise in energy consumption as a result of construction. As a result, making our country's buildings as energy efficient as possible has become a primary concern.

A number of elements, including the building's occupancy, heating and cooling loads, climate zone, and the construction of the building envelope, influence energy efficiency management in buildings as shown in Figure1. In India, there has been nearly 8% growth in energy expenditure in commercial and residential sectors. The energy requirement due to energy consumption in buildings is rising manifold with rapid urbanization. The energy utilization of a building depends on building components, building materials,

occupant behavior, level of occupancy, use of energy consuming appliances and the climate/environment in which the building is situated. Its main focus is on the flow of heat, air and moisture. With increasing measures to save energy, it has become a necessity to study the energy utilization in buildings and suggest ways to minimize the energy consumption on account of buildings. Almost all developed countries have building codes prescribed for the construction of buildings for efficient electrical energy utilization. Many variables are taken into consideration when calculating a building's energy consumption, including the structure's geometry and orientation, its materials, the facade's design (such as its window-to-wall ratio), the climate, the conditions of its occupants' habitations (including their habits),

Figure 1 (Building Management system)
Source- https://www.indiamart.com/proddetail/building-management-hvac-system

3. Green Building

Buildings can become more environmentally friendly by reducing their use of energy. The concept of green buildings will immensely help to solve the issues of energy efficiency, water efficiency, better waste disposal management system and conservation of natural resources as shown in Figure 2. The most substantial advantages will be reduced requirements of water and electricity. The other significant benefits of green buildings will be improved air quality, optimum use of day lighting, better overall health of building occupants, mitigation of Urban Heat Island Effect, conservation of scarce natural resources.

Figure 2 (Green Building)
Source- https://www.enicbcmed.eu/projects/greenbuilding

According to a 2015 Smart Market World Report, the green building construction is 24% of the total construction. It is worthwhile to mention that India is among the countries where building projects are above the market average of 24%. In India, there are two rating systems for green buildings- India Green Building Council (IGBC) and Green Rating for Integrated Habitat Assessment (GRIHA). In a building, different phenomena may take place, which causes variation in temperature level inside the building.

Figure 3 (Heat Flow in HVAC System)
Source- https://www.uti.eu.com

4. Heat Flow

Heat flows from hot to cold region whereas air moves from higher to lower pressure region and moisture moves from wet to dry area. Heat flow into the building or out of it can occur by three ways like conduction, convection and radiation as shown in Figure 3. Conduction implies flow of heat through a solid material.

We can take the example of heat flow through the walls of a building. Convection implies flow of heat by the movement of air/fluid. Radiation implies flow of heat from a hot to a cold surface without any physical contact between the two surfaces. For radiation we can take the example of heat gain in a building due to solar radiation.

5. Air Flow

Air flow out of the house requires two conditions to be met - one is the presence of air pressure since air moves from higher to lower pressure and the second condition is the presence of area for penetration such as windows, vents etc.

6. Moisture Flow

Moisture flow in buildings can occur either in the form of liquid or vapor. Moisture flow into buildings in the form of liquid can be through rainfall or through plumbing defects. There may also be flow of moisture into buildings due to the capillary action through porous materials like concrete, insulation etc. Diffusion of moisture can also occur through walls or roofs which are not properly insulated. Buildings located in humid climates face this problem of water vapor trapped in structures which adversely affects the comfort of its occupants. Water vapor can also enter a building through air coming into the building.

7. Effect of Climate on Occupancy

The building and its occupants are also affected by weather and environmental conditions. a) Hot and Dry b) Warm and Humid c) Temperate d) Composite e) Cold as

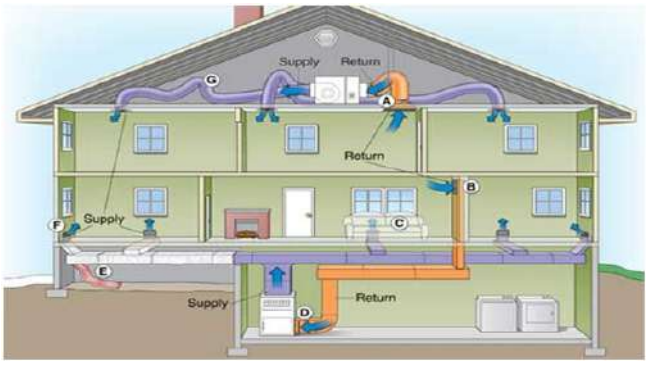


Figure 4 (Effect of Climate in HVAC System). Source- https://www.ces.ncsu.edu/

shown in Fig 4.

For studying a building coming under any of these climate zones, it is crucial to collect relevant data about the following parameters: temperature, temperature difference between outdoor and indoor areas, relative humidity, precipitation levels, wind velocity. The materials used in the construction include concrete, bricks (which can be either clay or fly ash type), insulation, and cavity walls. The thickness of the walls and the roofing is also very important to consider.

8. R-Value and U-Value

The understanding of R-Values and U-Values of the construction materials used in buildings is critical in addressing the energy requirements of the building's construction. The thermal resistance of a material is represented by the R-Value, which indicates the resistance of the substance to heat flow. Increased insulation capabilities of the material and a more energy-efficient construction are both facilitated by a higher R-Value of the material. The U-Value of a material, on the other hand, is a measure of the rate of heat transfer; hence, the lower the U-Value of a material, the higher the energy efficiency quality of the material. U-Value is the reciprocal of R-Value in terms of mathematics. The U-Value of a building is commonly used to describe the thermal performance of a structure in terms of

energy efficiency. Suppose a wall of certain thickness is constructed of different materials like gypsum plaster, concrete etc. then the total thermal resistance of the material can then be calculated by adding up the separate R-values of each substance. The U-Value of a wall will be equal to the reciprocal of the overall thermal resistance of the wall.

9. Urban Heat Island

It is noticeable during summer and winter periods and more at nighttime than at daytime. It causes due to alteration of land surfaces, waste heat generated due to energy usage (in the context of high-rise buildings, UHIs are created when heat is trapped on the lower levels and not allowed to escape into the night sky due to the presence of high- rise buildings), loss of vegetation on account of new buildings and construction. Due to UHI effect Increase in energy consumption on account of cooling or air conditioning during summer takes place. Also increase in greenhouse gas emissions and air pollution causes abnormal weather and climate changes.

10. HVAC system

The HVAC system is responsible for

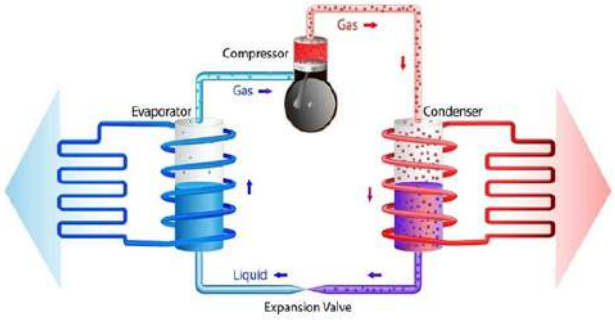


Figure 5
(Flow of energy in Heating and cooling cycle)

transferring heat energy from one location to another. Electricity or heat can be transmitted from one body to another in the form of energy from low energy level to high energy level or vice versa, and this is known as thermal energy transfer. The transfer of energy during a cooling and heating cycle is depicted in Figure 5.

Initially when the liquid refrigerant in the evaporator is exposed to low pressure and temperature, it absorbs sensible heat from the surrounding environment. During this process, the heat transfer from liquid to gas occurs, and the product exits the evaporator in a superheated state.

Figure 6 (HVAC System) Source- http://www.skgvalves.co.in/blog/hvac-system/

When the superheated vapor is forced via a compression process, it enters a compressor, where the pressure and temperature are boosted as a result of the energy transferred to the refrigerant during the compression process. Then, the high-pressure, superheated gas is pushed through the condenser to cool down further. The superheated gas is converted into a liquid in this step. Further temperature decrease occurs in the liquid receiver or accumulator, resulting in sub-cooling of the refrigerant liquid when it enters the expansion device after it has passed through the receiver. This causes the pressure to be reduced, which in turn regulates the flow of water into the evaporator. Because heat pumps are capable of both heating and cooling, the heating cycle is just the opposite of the cooling cycle. When the hot and cold coils are switched in the opposite direction, the heating mode is started, and the heat pump draws in fresh air from the outside, transferring the heat from the outside to the inside of the dwelling. As heat pumps are capable of both heating and cooling, the heating cycle is just the opposite of the cooling cycle. Heating mode is activated when the hot and cold coils are switched backwards, and the heat pump draws in fresh air from the outside, thus carrying the heat from the outside into the residence. Figure 7 illustrates the significance of heating and cooling loads in a building.

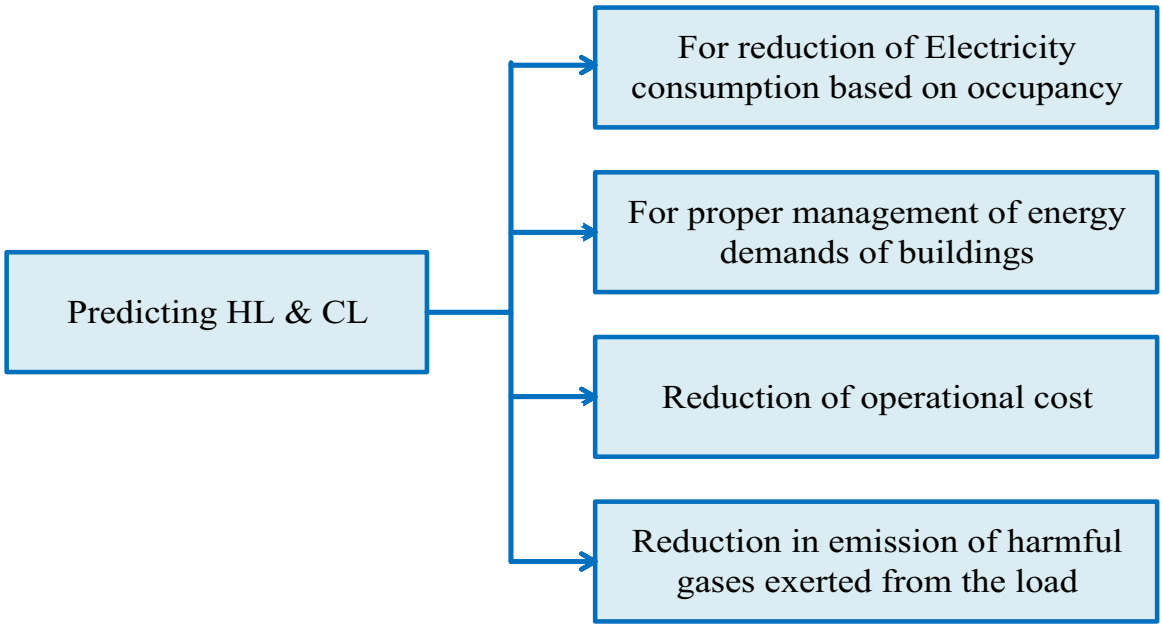


Figure 7 (Importance of heating and cooling loads)

11. Energy Conservation Building Code (ECBC)

Bureau of Energy Efficiency (BEE) is a central organization at the national level that coordinates the implementation of the Act's measures. The Bureau of Energy Efficiency has developed a variety of energy-saving programmes in compliance with the Energy Conservation Act of 2001. ECBC establishes rules and benchmarks for energy consumption of buildings and the building constituents based on the climatic zone in which the buildings are located. Overarching purpose of the ECBC is to establish the minimal minimum requirements for energy conservation measures and building construction, with a special emphasis on commercial organizations.

The ECBC is also in charge of the building's heating, ventilation and air conditioning systems, as well as the interior and exterior lighting systems, hot water distribution, electrical power distribution, and motors, in addition to the building's envelope as shown in Figure 8. According to the National Electric Code, building complexes should have a connected load of 500 kW or greater, as well as contract demand of 600 kVA or greater. The requirements for thermal comfort in structures, as well as the design of the buildings themselves, are heavily influenced by the climatic features of the location in which the building is located. In terms of building components and systems, the ECBC establishes prescriptive requirements. There are prescriptive regulations in place for the building envelope, lighting systems, HVAC system, electrical power, and other aspects of the construction process, among other things.

12. Energy Management

The goals of Energy Management are to keep energy bills as low as possible while also minimizing environmental impact.

When it comes to energy auditing, it is defined as the process of verifying, monitoring, and analyzing energy consumption, as well as the submission of a technical report containing recommendations for improving energy efficiency, as well as a cost benefit analysis and an action plan for reducing energy consumption.

Figure 8 (Energy Conservation Measures) https://government.economictimes.indiatimes.com/news/technology

13. Conclusion

The greatest opportunities for improving the sustainability of HVAC systems exist at the design stage of new facilities and the retrofitting of existing equipment. In order to validate compliance with the ECBC criteria, it is necessary to simulate the energy consumption of a building while using HVAC, lighting, and pumping systems. HVAC systems shows a critical role in the field of energy conservation in buildings because they can reduce electricity consumption depending on the occupant living in the building, manage energy demand of buildings efficiently, and provide accurate predictions that can help to reduce both operational costs and harmful gas emissions.

Figure 9 (Energy Management) https://www.classicmaintenance.in/energy-management/

Path of Happiness

Arun Kumar Ray

"Happiness is the meaning and purpose of life, the whole aim and end of human existence." – Aristotle

A man one day got lost in the forest while returning home and it was evening. He heard the roar of a lion and later chased by it. Out of fear he started running around and fell from a cliff. While falling down he caught hold of a small tree on the cliff. In the meanwhile, the lion also appeared searching for the man. One can imagine the situation of the person; death is waiting above and below. It was better for him to hang on with help of the tree. Again, two rats were cutting the root of the tree. In the meanwhile, he is enjoying the nectar from a beehive the tree. He is licking the droplets and getting pleasure. The lion in the story represents fear. These two rats represent day and night reducing the length of life.

This is the situation of every human being in this world; getting temporary pleasures with fear similar to the situation of the person in the story. The pleasure is due to sense perceptions, mind and intellect. It is not happiness. The moment one become conscious of happiness, it immediately disappears. Therefore, it is not happiness, it is pleasure confused as happiness as it is temporary.

It seems that human beings are not destined to be happy and peaceful. One primarily tries to survive and live like other creatures fighting for our existence. It seems to be fairly natural as one observes the things happening around. One is always challenged and threatened by the life situations. Peace is not a natural outcome of living rather earned through decisive wars and divisive politics. It is discouraged by the nature to extent possible as perceived. As rightly told by Charlotte Bronte a western writer of 19th century that *"Human beings never enjoy complete happiness in this world. I was not born for a different destiny to the rest of my species: to imagine such a lot befalling me is a fairy tale -- a daydream."*

Bronte is apprehensive about enjoying happiness and she realizes it as a daydream. Human beings seem to follow other species living a life without contentment. George Bernard Shaw also said that *"We have no more right to consume happiness without producing it than to consume wealth without producing it."*

The western philosophers and thinkers could not able differentiate between happiness and pleasure other than creating a linguistic fallacy. Perhaps this is the reason why everybody seems to be unhappy during their life. It has to be renewed every time as it is fleeting.

A king was sitting on the throne and took a nap as he was quite tired. During this blink of eye he started dreaming. He saw himself fighting with neighboring king. It was a fierce fighting and finally he lost the battle, kith and kin, and left the kingdom. He was very hungry and he had nothing to eat and drink. In a far away kingdom, he saw a beggar searching for food and invited him for the food which the king of that kingdom was distributing. The king was serving food on his birthday. He along with other beggars went to the palace to beg for food. There was a long queue of many beggars. Finally, they collected the food and clothes. He then thought to have a bath before eating and kept the food packet near the pond and took bath. In the meanwhile, a dog took the food packet and ran away. Looking at this, he started running behind the dog to snatch the food packet and he could not get it. He was terribly upset as he was very hungry. While running behind the dog, he was hit by a boulder and fell down. He suddenly woke up from the dream trembling. And he found himself on the throne. He was very surprised as the dream was very real.

The king was actually distributing food to the poor on the same day as it was his birthday. But he was very upset about the fear, anger, hopelessness as these appeared as real.

In the meanwhile, one saint appeared in his court and started conversing with the king. He said to the king about the dream and tried to clarify the confusion which was haunting the king. He said neither the dream world nor the waking world is true. Only you (self) are the truth who was present in the dream and also in the waking state. The king was very wise and he immediately understood what the saint was saying. He became happy immediately. This story is about the great saint Astabakra and the king Janaka.

A small nap of a king made him a beggar with suffering and unhappiness. Nothing the king could do as this was a dream. He had left with no options but to follow the sequence of events in the dream and during this nap many incidents happened. Time also appeared to be too long. In this waking world everything seems to be very much real including one's presence and the presence of the universe with its story. Therefore, reality and truth are important to become wise and connect to the self.

The important question remains is to perceive the reality as truth. Because reality also expresses illusions put together by thoughts as notions, ideas, and manifestations. Reality also includes something not put together by thought at all such as tree, sun, moon and so on. It can more evident from the following story.

A milkman was going to sell milk and on his way he saw a beautiful girl. As he was unmarried, he was moved by it. He stopped on the way started thinking about how to have more money so that he can get married to this girl. He thought to have purchased more cows and sold more milk and got lot of money. He developed the courage to propose the girl and finally he got married. The dream continued and he had beautiful children. One day one of his children was sitting on his lap playing with his beard. The child suddenly snatched the beard. Out of anger the milkman hit the child. Everything ended there. The milk can which he was holding fell down. The reality for a while for the milkman shattered in a moment.

The whole universe appearing in the waking or dream world represents the reality. It is important to find out truth in this reality. The ability to find out truth in this reality is supreme intelligence. When that intelligence operates, one becomes wise. The wisdom alone can lead somebody to self knowledge.
"Knowing your self is true wisdom. " – Lao Tzu
Self knowledge is the truth and it connects to happiness, bliss and eternity. It is through such self knowledge one can transcend happiness. Self knowledge alone leads to life else illusions will confuse everyone on this planet for forever. The attainment of happiness requires an unflinching look into the face of a reality as truth.

"There is no path to happiness: Happiness is the PATH. "– Gautam Buddha

Spirituality

B P Singh

Pulitzer prize-winner Annie Dillard famously said:

"How we spend our days is, of course, how we spend our lives."

This also implies one's workplace in a world where businesses are fast-growing.

The hustle and bustle demands one's peace of mind. And, to achieve it, business leaders and corporates are embracing the path of spirituality for better work outcomes.

For example, Arianna Huffington, the Greek-American author, meditates for 30 minutes a day. Oprah Winfrey, producer and actress, has publicly spoken about her daily spiritual practice. Suzi Ashworth, mindset and business coach, meditates daily to create the space for inspiration that comes from beyond logical thinking, and the list goes on and on.

To imply spiritual practices at the very core level, business schools and universities in India, such as the IIMs in Kolkata and Kozhikode, Universal Business School (Mumbai),

DevSanskritiVishwavidyalaya (Uttarakhand), North Eastern Regional Institute of Management (Guwahati), are integrating spirituality within their management courses. They are doing this to make the young minds practice activities like meditation, self-awareness, vipassana, yoga, etc.

Narayana Murthy
The founder of Infosys, a business consulting and IT company, Narayana Murthy's secret to success is yoga and meditation. He also follows other spiritual practices such as honesty and transparency in his organisation.

"One should be serious at work but should not take oneself too seriously. Meditation and yoga help us to ease the stress and thus work more effectively," he said.

What is Spiritual Wellbeing

- Spiritual wellbeing is life-transforming.
- If there is wellbeing of the body and the mind, of course, we live a good life.
- But spiritual wellbeing is true wellness that goes beyond the wellbeing of the body and the mind. It makes life meaningful and purposeful.
- It leads us to a life of peace and bliss.
- It connects us with the Supreme Immortal Power of God.
- **It eradicates all misery and suffering as it enlightens us with the truth, liberating us from the triple suffering of the pain of the body, the misery of the mind (fear, stress, worry, anxiety), and the agony of the ego (anger, hatred, jealousy, arrogance).**

Spiritual wellbeing is the result of living a spiritual life, as opposed to a material life. How can we even experience spiritual wellbeing, unless we live a spiritual life?

• We experience spiritual wellbeing when we overcome the cravings of the body, we transcend the mind, we drop the ego, and we live as the Divine Soul, realising that we are all one.
• We realise who we are, what the purpose of life is.
• When we live with the realisation of the truth, when we live with meaning and purpose, and love for one and all, it opens the doors to everlasting bliss.

• Unfortunately, most of us live a material life. We are driven by material desires.

• We become slaves of the material world. Our need becomes our greed. We experience negative emotions.

• We set material goals and we only see the outer surface of life. We are unable to go beyond and deeper to realise the spiritual world.

• We are covered by layers of ignorance that act as dark clouds that stop us from seeing the clear blue sky and the beautiful sunshine that lie beyond.We live as the body only to die; **we don't realise our true self.**

A spiritual life is an entirely different experience.

• We realise that material pleasures make us sink in misery, life after life.

We realise that material pleasures make us sink in misery, life after life.

• We realise that we are not the body that we wear.

• We are the ones that wear the body.
• We realise that we must tame the monkey mind and make it still by observing it. It is only when we tame the mind, make it silent, thoughtless, that we experience peace.

• We come to know that we are not a human being who is having a spiritual experience, but rather the Spirit having a human experience.

Journey to spiritual wellbeing
• The journey to spiritual wellbeing often starts with being religious and believing in God.

We live with faith, hope, trust and enthusiasm.

• Even those living a material life may live with these positive emotions as they live in the material world. But a spiritual life takes one deeper.

• It makes one ask questions and investigate the basis of our existence. It tries to go deeper to understand the Soul or the 'Atman'.

• One slowly transcends the body and the senses knowing that these are the cause of sufferings.

• We attain spiritual wellbeing when we discover the meaning of life as we overcome the illusions of the material world. We accept death as a reality.

• We realise that whatever is happening in life is a result of one's own actions, one's own 'Karma'.

• We accept and surrender.

• We realise that the world is a cosmic drama, that we are actors who come and go, that we must learn to enjoy this 'Leela of God', this cosmic show.

• We realise that nothing belongs to us, so we live with **the art of 'Detached Attachment'.**

• We live in Yoga. Yoga is not about asanas or pranayama, but being in union with the Divine, the Supreme Immortal Power we call God.

• We realise that neither are we the body, nor the mind, and ego. We are the spirit, the 'Atman', the Soul.

• This realisation of the truth frees us from all sufferings when alive, and from the Karmic cycle of death and rebirth after we die.

• When we live in the Consciousness of the truth, we experience seamless bliss, 'Ananda', 'SatChitAnanda'.

• The eradication of ignorance, the elimination of all negativity, misery and pain creates spiritual wellbeing, wherein we experience unparalleled peace and bliss, unknown to the common man.

• This is the ultimate wellbeing. One is at peace with oneself and with the world.

How a spiritual journey changed the 'Undecided, Unguided and Unclear' life of teenager Narendra Modi

While growing up, he had a lot of curiosity but very little clarity. He would see army men in their uniforms and think that this was the only way to serve the country. But as his conversations with the saints and sadhus at the railway station grew deeper, he realised that this too was a world worth discovering."

He was undecided, unguided and unclear -He didn't know where he wanted to go, what he wanted to do and why he wanted to do it. But all he knew, was that he wanted to do something. So, he surrendered himself to God and left for the Himalayas at the age of 17. He bid goodbye to his parents as his mother gave him a sweet dish before he left and put a tilak on his forehead to bless his journey.

He went wherever God wanted to take him -- it was an undecided period of his life but still, gave him so many answers. He sought to understand the world, to understand himself. He travelled far and wide, spent time at the Ramakrishna Mission, met sadhus and saints, stayed with them and began a discovery, inwards. He moved from place to place –He had no roof above his head, but still never felt devoid of home.

He would wake up during Brahma Mahurat, between 3 and 3:45 am and take a bath in the freezing waters of the Himalayas, but still feel the warmth. He learnt that peace, oneness and Dhyan can be found, even in the simple sound of a waterfall. The sadhus he lived with taught him to align himself with the rhythm of the Universe.

He said that " I aligned and experienced revelations that help me till today. I realised that we're all tied down by our thoughts and limitations. When you surrender and stand in front of the vastness -- you know that you're a small part of a large universe. When you understand that, any trace of arrogance you have melts and then life truly begins. That's when it all changed. After two years, I returned home with clarity and a guiding force to lead the way."

How does faith or spirituality help when we are having trouble finding hope?

• Hope is not the same as optimism.

• Hope finds a place in our lives when we can live beyond ourselves and trust that there is a Power, a Goodness, a Merciful Presence that is ultimately reliable and is always working for our good.

• Times of crisis can lead us to despair or can invite us to use all the resources within us and outside of us

• Hope is not always a feeling, it is a choice.

• And when we intentionally make that choice from moment to moment and begin to act on it, even when the feelings aren't there, it begins to seep into our spirits and we begin to see life from a very different perspective.

• Sometimes this takes incredible monitoring of our wayward minds that can lead us to negativity and despair.

• St. Teresa of Avila had a bookmark in which was written the following words that may be our "go-to" to tame our worrying minds and spirits:

Let nothing disturb you,
Let nothing frighten you,
All things are passing;
God only is changeless.
Patience gains all things.
God wants nothing.
God alone suffices.

SUSTAINABLE OUTREACH AND UNIVERSAL LEADERSHIP LIMITED

VISION-

- Care for citizens and society as a whole and reflection of the same in each of our service offering
- Commitment to the professional development of our people, driventhrough objective performance measures, while ensuring adequate work-life balance
- Responsible, sincere, fair and trustworthy organization culture and reflection of the same in our dealings with our customers and partners

SOUL is part of the KIIT University ecosystem and therefore, have the access to the resources of the KIIT University, specifically the academic think tank, centres of excellence and other research & development (R&D) facilities, which provides SOUL an unparalleled advantage of conducting several activities related to its engagements, efficiently and effectively, by leveraging such assets.

Introduction

Sustainable Outreach and Universal Leadership Limited (SOUL), established in 2021, advises its clients on strategy for business transformation, focused on sustainability through delivery process realignment, organization restructuring, skill development, smart negotiation & contracting, and digitalization, to achieve improvements in operational efficiency, capital productivity and workplace harmony. We also support our clients implement such strategies and help them achieve the desired outcomes.

We have expertise in the designing & deployment of educational aid, including enterprise solutions to manage the business processes of all kinds of educational institutions.

We also focus on the IT and ITES enablement, covering business solutions starting from infrastructure services to IT-enabled services covering digital, analytics and IoT & Robotics.

Objective

- Creating a better environment to live, work, grow and sustain safely.
- Identifying issues and helping people, organizations, systems and society to get sustainable solutions.
- Designing quality products and services to built and lead a community with trust and confidence.
- Empowering people through transparency and autonomy.
- SOUL solutions helps in decision making(wisdom, knowledge, process & system).

Our Products and Services

CONSULTING | EDULEAD | SMART CAMPUS | IOT | ROBOTICS

Results

Corporate wing

- IoT Product Development – IoT Smart City/Campus
- Customized Robots & Humanoid Robots
- Smart Infrastructure Solving Societal Problems
- Technical Consulting

Education wing

- Career Path Guidance
- ERP and Learning Management System. (All type of Schools and Institutions)
- Smart Class
- Robotics Program (Grade 1 to 5 & Grade 6 to 10) (Phase I & II)
- Artificial Intelligence Program (Grade 8 to 10)
- ATL Program for School (Grade 6 to 10)

Top Use-case EDULEAD'S

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Student Exchange Program | Assessment Management | Report Card Generation | Bulk Data Management | HR Management | Materials Management

ROBOTIC'S :

Your Educational Companions
Teaching assistants in schools. Can be assembled and programmed by students.

Your front Desk Assistants
Help you in various spaces such as banks, shopping malls, airports; help desks; answering and guiding you.

Your Surveillance Assistants
Help you monitor zones that need special attention and monitoring on a regular basis. Also, alert the concerned in case of any turbulence.

Your Analysts
Learn and understand data; analyse patterns and generate reports.

Your Entertainers
Can engage people asking various questions, can entertain kids with tricks and dances; conducts games on special occasions.

Your Hosts
Can be MC in seminars, shows, events; inaugurate and conduct.

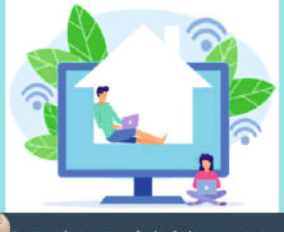
Your Companions
Understand your likes and dislikes; help you with your daily chores.

Your Health Care Assistants
Monitor heart rate, pulse; alert when patient is in distress.

Your Visitor Managers
Recognise people when known and remember them when they visit again.

Many more in the making...

IOT'S



Smart environment monitoring for large campuses.

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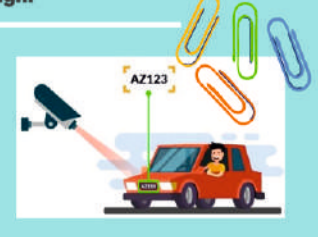
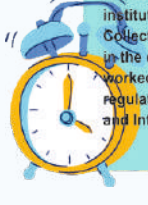


Smart Campus Security

SUMMARY

Sustainable Outreach and Universal Leadership (SOUL) Limited is led and staffed by eminent academicians of the KIIT University, and experienced professionals from leading management and technology consulting firms. SOUL's management have previously worked with clients in multiple sectors and in large and complex engagements involving policy making, policy implementation, business strategy formulation & implementation, information technology enablement and digital transformation, organization restructuring, institutional strengthening and capacity building. Collectively, We are significantly experienced in the development sector projects and have worked with policy makers, governments, regulators, government agencies / departments and International Donor Agencies.



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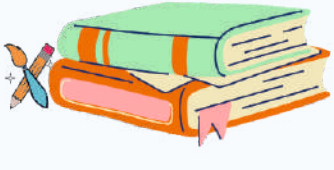


A Step Towards Green Machining for Sustainable Manufacturing

Ashok Kumar Sahoo

1. Introduction

Machining is the process of removal of unwanted materials from the preformed blank in the form of chips to yield desired products of shape, size and accuracy of good surface quality and dimensions with the help of cutting tools that moved past in a machine tool. Industrialization from industry 1.0 to industry 4.0 have some major benefits towards human life and ensures high material removal rate/productivity, zero defect, time and cost savings and improves efficiency of the manufacturing process. Apart from the benefits, machining processes suffer rapid failure of cutting tool, excessive lubricant/coolants and energy consumption, severe health issues to the operator at the shop floor and environmental concerns/footprints. In order to overcome these limitations in traditional machining process, newer machining technique such as green machining concept is evolved which is of prime importance to the manufacturing industries now-a-days as well as for the researchers and engineers for innovations.

2. Green machining towards sustainable manufacturing

Environmentally conscious machining i.e. green machining technology is the newer concept of 21st century evolved due to strict environment regulations. Green machining techniques have several benefits in the manufacturing process for sustainability as far as economical, technological, environmental and social issues are concerned. It reduces the wastage, improves productivity and process efficiency, reduces the machining cost, imparts safety and minimizes the health hazards for the operator, reduces emissions/carbon footprints and thus enhances sustainability. Some of the green machining technique includes dry machining, near-dry machining or machining with minimal cutting fluid application/minimum quantity lubrication (MQL), mist cooling, vegetable-oil based

cutting fluids/lubrication, green cutting fluids, textured cutting tool treatments, heat and vibration assisted machining, compressed air cooling and cryogenic cooling to ensure environment clean and green. The traditional flood lubrication application in machining have significant effects on the environment, economy and health. Thus, the recent green machining approach such MQL has brought the attraction worldwide as a reliable substitute to flood lubrication process for sustainable manufacturing because of its eco-friendly characteristics and effectiveness. An novel experimental set up for green machining through minimum quantity lubrication is shown in Figure 1. Another preferable solution for cooling in machining is a high-pressure cooling technique, where due to better penetration of fluid at interface zone; it produces segmented chips, lowers cutting forces, superior tool life and surface quality. Cryogenic cooling is also an emerging technique for turning applications where tool life improves due to better penetration of coolant into narrow gap at chip-tool interface and worked as both lubricant and cooling. Use of solid lubricant and vegetable oils as coolant applications were also popular in machining. High-pressure spray cooling is also an environmentally conscious machining which not only reduces the temperature and the cutting forces, but also reduces the requirement of cutting fluids. It is treated as an emerging technology in cutting fluid applications to minimize friction at the chip-tool interface, controls the temperature, enhances the transfer of heat and improves the machining performance.

Cryogenic cooling is emerged as a newer technology to attain sustainable machining by replacing the conventional coolants with non-toxic, non-hazardous, and odorless gases. Basically, in cryogenic assisted machining, two known gases (CO_2 and N_2) in liquid form were maintained at a negative temperature and supplied to the cutting zone. Rapid cooling takes place that reduces the cutting temperature efficiently and enhances the tool life.
Nano-fluid assisted machining is the newer concept of green machining application to improve the machinability characteristics in recent years and also in the research stage. Nano-cutting fluid contains nano-particles like carbon nano-tube (CNT), TiO_2, Al_2O_3, MoS_2, Graphene oxide, diamond etc. which is applied to the machining zone through MQL nozzle system in the form of mist with pressurized compressed air. It is the excellent medium to enhance the thermal conductivity and tribological characteristics of the base fluid. Substantial improvements of tool life have been observed using nano-fluids assisted machining in recent days where grinding is the

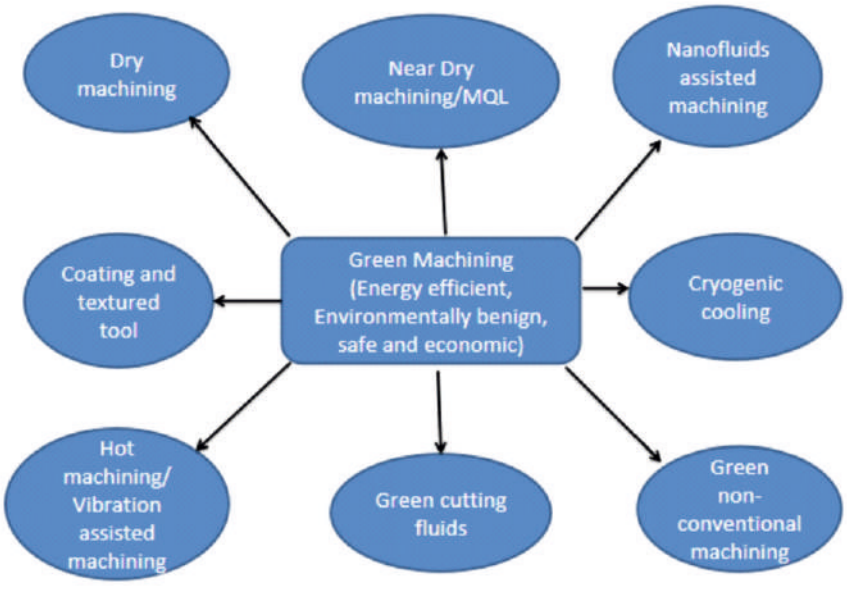


Figure 1: Green machining techniques

major application of nano-fluid assisted MQL green machining.

1. Conclusions

This articles addresses some of the green machining techniques towards sustainable manufacturing in the Industry 4.0 transformation. Some of the green machining approaches like dry cutting, MQL, cryogenic cooling, application of green cutting fluids/solid lubricants, nanocutting fluids assisted MQL environment and textured tools are used in machining for enhancement of machinability and sustainability. It is believed that the green machining techniques which are under research and development stage will be in the forefront in the manufacturing industries very soon. Machining parametric optimization, process and product life cycle assessment, investigation on hybrid nanocutting fluids in MQL machining and methods to yield energy efficient are some of the future scope of the research in green machining which needs attention towards successful implementation in the manufacturing industries.

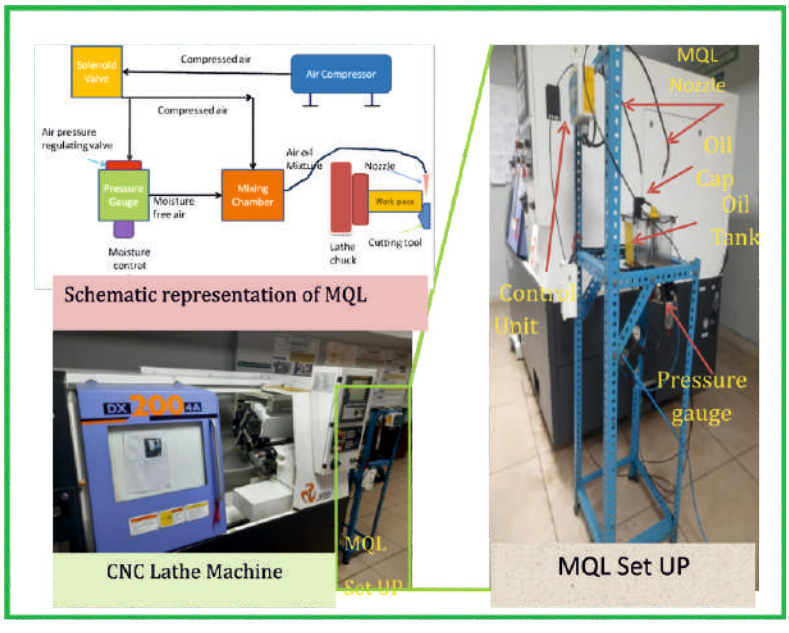
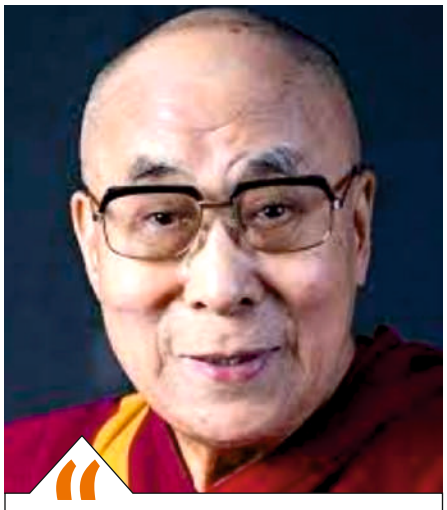


Figure 2: Green machining setup through minimum quantity lubrication (Courtesy: Machining Research Lab, School of Mechanical Engineering, KIIT Deemed to be University)

In recent years, hard machining is considered as an emerging technology which can replace traditional cylindrical grinding operation in many industrial applications. In hard machining, heat occurs due to the friction between the tool and workpiece at flank and chip-tool interface and plastic deformation lowers the shear strength by softening and cutting force as well. It eventually favors hard machining. However, achievable tool life and surface finish suffer a lot. Further, chip sticks to the tool and work surface deteriorating surface quality accelerates tool wear with built-up-edge (BUE) formation if machining is undergone without lubrication and cooling application. In another way, flood cooling application is normally avoided due to the rise of cutting force and thermal stress that leads to catastrophic failure and fracture of the tool-tip. In stipulations to accomplish improved surface quality and minimization of tool wear, MQL is an intermediate methodology between dry and flood cooling to get the benefits of sustainable machining. This technique has been attracted because of its eco-friendly characteristics and effectiveness. Also, high cutting temperatures in hard machining are detrimental to overall machining performance and consequently affect product quality and economy. This needs to be controlled or minimized with the application of effective lubrication/cutting fluids in order to enhance the machining performance through the reduction in the localized heating zone, thermal expansion, and distortion of the workpiece. It also prevents re-welding, corrosion protection, reduces the energy consumption of the machine, and improves the tool life.

Leaders' Thoughts



People need to take urgent steps to reduce their reliance on fossil fuels and to adopt renewable sources of energy such as those that rely on the power of the Sun and the wind... The threat of climate change is not limited by national boundaries, it affects us all

-Dalai Lama

We must put our world on a fair, safe, sustainable path—and now. How? Invest more in green infrastructure, tech, energy, Correctly assess & disclose climate risks, Make everybody everywhere part of the transition, incl. using carbon revenues for people.

-Kristalina Georgieva

Focus your life solely on making a buck shows a certain poverty of ambition. It asks too little life of yourself. Because it's only when you hitch your wagon to something larger than yourself that you realize your true potential.

Barack Obama

I dedicate my last years to health

-Ratan Tata

Imagine the vulnerability of being sick of even treatable disease & imagine the horror of needless death, of lives cut short by not having access to medicine.

-Dr Tedros Adhanom Ghebreyesus

Ghost or Paranormal: A Belief or Science

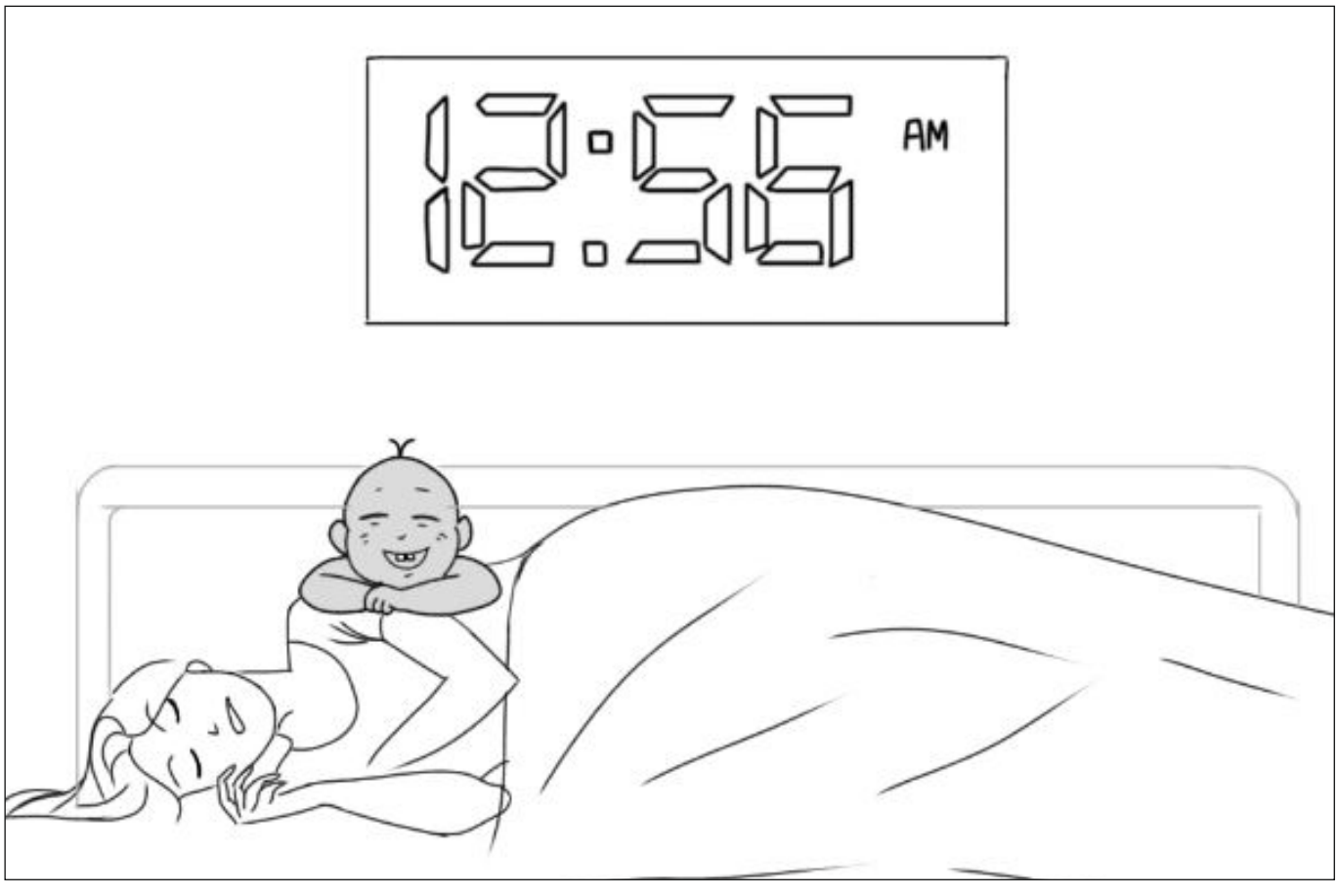
Prasant K. Pattnaik

Ghosts are in all places - yet no way. Cultures of worldwide accept as true in spirits that live after death stay in another sphere. As a matter of fact, ghosts are surrounded by the most commonly whispered of paranormal phenomenon. A ghost is the soul or spirit of a deceased human or animal or tree that can come into sight to way of life. It communicates to ghost believers and non believers search for ghost's existence.

Many person have attempted to—or claimed to—communicate with ghost or spirit over the centuries; “Ghost Clubs” were created at prominent universities including Cambridge and Oxford, to investigate the ghostly indication and the most famous the Society for Psychical Research, was established in 1882. Ms Sidgwick was researcher of that society and the world's 1st lady ghost investigator. In the interim across the pond, many Investigators of USA affirm that they can talk to the dead and were uncovered as deceit by disbelieving investigators such as Harry Price and Harry Houdini.

Paranormal research is highly complex by the data that there's no accord about what a paranormal is—justified among ghost investigators and specialists. Some people accept as true, and says, that ghosts are soul of the deceased who gone on their way to world other than every day world; others are believe that ghosts are paranormal objects anticipated into the world, or tough emotions in some way recorded and afterward replayed in the living world know as Stone tape theory Still others forms their own classifications for different types of ghosts, such as vampires, agile spirits and shade person.

There are many negations inborn in ideas about ghosts. Say ghosts material or not? Whether they can move through fencing and solid obstacles without breaking them, or they can sweep doors shut and throw physical entity in a room. If ghosts are human-like spirits, why do they come into view with cloth and with nonliving constituent such as headdress and different type cloth dresses , or ghost motorcycles, trains, cars, and cabs? If instead ghosts are the consequence of uneven deaths, why are not solved murder cases, ghosts are said to interact with paranormal mediums, and



capable to determine their killers for the law enforcement agency.

Ghost hunters use many inventive methods to identify ghostly proximity, including paranormal activity. Some of equipments are given below:

- Still photography and video: using digital, night vision, infrared
- EMF Measurement device : to detect fluctuations in electromagnetic fields.
- Tabs: to record data, audio, video
- Ultrasonic motion sensors: to detect possible irregularity within a given terrain.
- Infrasound monitoring equipment: to catch the level of sound feelings.
- Interviews : collecting evidence and accounts about alleged hauntings.
- Historical Data: researching the past associated with the site being investigated.
- Digital and analog audio recording: to capture any noises.
- Geiger : to calculate fluctuations in radiation.
- Night vision and full spectrum photography: These are used by ghost hunters to think about areas of the light spectrum.
- Thermo graphic cameras, supportive in analyzing and visualizing temperature changes during an investigation.
- Kinect camera: A gadget that uses a outline of Infrared dots to detect objects in inclusive darkness.

Many ghost hunters assertion that ghosts haven't been verified real because they yet have not the exact technology to identify the spirit world. It's not stunning that despite the attempt of thousands of ghost hunters for time period, no sure evidence of ghosts has been established.

M.A. Persinger and his team published in a journal on the extraordinary case of the girl who said she'd been implanted by the spirit and felt the unseen existence of a baby on her

left shoulder. The girl had faced a brain injury earlier in her life, Next to her cot was an electric clock that cause magnetic impulses similar to those used to activate epileptic seizures in rats. One time the clock was distant, the existence of baby feeling gone.

French and his team had participants watch in some versions of the experiment on the telepathic by keeping the key on the desk and asked, "If the participant come across closely, they can observe its bending. The key was not at all bending. But 45 percent of participants who got the oral hint that it was bending informed that it is moving.

"If you've got one very sure but really inaccurate witness, it can manipulate the memory of other witnesses,"
Many experiment find that people with beliefs of paranormal inclined towards rich imaginations.

A Boy began having curious experiences. He would wake up from sleep and unable to move at night . And he learned that it is known as sleep paralysis. In this situation where one may awake but paralyzed for some moment in that place. He unable to move or talk or inhale deeply. He may observe, perceive sound or sense that are not really there. Alternatively a hallucination.

If energy neither be created or destroyed but only change its form as a principle of thermodynamics suggested by Albert Einstein , then what happens to our body's energy when we pass away? Could that someway be indicating as a ghost?

In the end, it doesn't issue what all the scientists, critics, and paranormal hunters think. If ghosts are real, and are some type of unidentified energy, then their reality earlier or later will be revealed and confirmed by scientists through research, not by every day ghost investigator moving in the region of dumped houses at night with cameras and flashlights.

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Introduction

Lumens Digital Optics Inc., a Pegatron Group company, is a leader in optical products. Lumens' product offerings include portable document cameras, desktop document cameras, a ceiling document camera, HD PTZ cameras, and projection engines. Founded in 1998, the company was created by a team with a deep technological heritage of image processing, video electronics, and optical technology. With the support of the Pegatron Group, Lumens is continuously improving product designs to be used in Virtual / e-Classrooms or Meeting / Conference Room scenarios or Auditoriums or Video Conferencing Setups and OT Setups.

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- **Email Address: Shubhra.Sharma@lumenseu.com, support.india@lumenseu.com**

World Leadership Academy

World Leadership Academy (WLA) is established to bring people, culture, ideas, technologies, teachers, students, researchers, investors, innovators together who are committed to transform the world for establishment of peace, justice and sustainable development.

KEY FUNCTIONAL AREAS

Journals

Publishing journals in various fields of Engineering and Management such as Kalinga Kruti (an Odia Journal); International Journal of Finance, Entrepreneurship & Sustainability (IJFES); Journal of Decision Making and Leadership (JDML), etc.

Books

Publishing books such as A Handbook of Education for Sustainable Development; Computational Theory and Applications; Mobile Robots Path Planning Using Evolutionary Techniques; Impact of Armed Conflict on Women in Jammu and Kashmir, etc.

Academic Events

Organizing conferences, conclaves, seminars, conventions, training programmes, and awareness programmes. Recent events: Leadership Conclave, International Conference on Sustainability and Equity, etc.

Project Repository

Creating a repository of thousands of research articles, and projects, which can be accessed.

Services

Providing services such as Editing Services, Patent / IPR Services, and Publications services.

Indexing

It has also started its own index L-Index for indexing the research articles and journals in various languages. It has already indexed journals in languages such as English, Hindi, Odia, Bengali and Sanskrit.

Digital Library

It has created a digital library where the contents can be accessed freely. WLA aims to enlarge its digital library for free access to information and knowledge.

World Leadership Academy

Campus-1, KIIT, Patia Bhubaneswar, Odisha-751024 E-mail : info@worldleadershipacademy.live Web : worldleadershipacademy.live

WLA Events

1st World Leadership Convention on World is One

The 1st World Leadership Convention on 'World is One' was organized by World Leadership Academy (WLA) in association with KIIT Deemed to be University on 5th February 2022. Speaking at the convention, Dr. Ramesh Pokhriyal Nishank, Hon'ble Member of Parliament (L.S.) and Fmr. Union Minister of Education said, India was the world leader in ancient times, and it will again lead the world in the 21st century.

"India has a rich culture, heritage, literature, history, and values. People from all over the world came to India to get knowledge. At that time, we had world-famous institutions like Takshila and Nalanda. India believes in 'Vasudeiva Kutumbakam' policy - it is the Indian culture. We see the entire world as a family. The World Leadership Academy will act as a platform to create leaders in various sectors from culture, heritage to science and technology", he stated. Inaugurating the Convention, Shri Ram Madhav, Eminent Thinker & Writer said, the world is one from the perspective of geology, sociology, and other branches of knowledge. While the 'world is one' is a piece of common knowledge, wisdom is needed to keep it one, he stated.

"Educational institutions should not be factories of degrees and certificates. The real purpose of education is to impart wisdom and values. We need people who can keep the world one and keep

humanity going on. Educational institutions should not only prepare students to earn their livelihood, but also inculcate human values which can transform their lives", Shri Madhav added.

Speaking on the occasion, Dr. Achyuta Samanta, Founder, KIIT & KISS said, KIIT has been based on humanity and compassion since its inception. It practices the core values of humanity and compassion in the true sense, he stated.

Prof. K. K. Aggarwal, Chairperson, National Board of Accreditation (NBA) said, Knowledge is one; so the 'world is one' should be in our thought process always.

Earlier, in her welcome address, Prof. Sasmita Rani Samanta, VC, KIIT-DU & President, WLA said, World Leadership Academy (WLA) is established to bring people, culture, ideas, technologies, teachers students, researchers, investors, innovators together who are committed to transforming the world for the establishment of peace, justice, and sustainable development.

WLA's 'L-Index', indexing English as well as regional language journals; free access Digital Library; and Project Database were also launched on the occasion.

Among others, Justice Dr. Sanju Panda, Former Acting Chief Justice of Orissa High Court; Dr. Ajit Kumar Mohanty, Director, Bhabha Atomic Research Centre (BARC); Shri Harekrishna Ratha, Director, DRDO, ITR; Prof. Ashok Kumar Das, Vice Chairman, Odisha State Higher Education Council; Prof. Gyoo Soo Chae, Professor Smart IT Engineering, Baekseok University, South Korea; Prof. Valentina E. Balas, Professor, Aurel Vlaicu University of Arad, Romania; and Prof. Rajendra P. Srivastava, Professor Emeritus of Accounting & Information Systems, School of Business, University of Kansas, Lawrence, USA expressed their views on the occasion. Prof. Jayanta Kumar Parida, Executive Member, WLA and Director, School of Commerce, KIIT proposed the vote of thanks.

Seminar On
Relevance of Education in Building a Sustainable Society

A one-day seminar on 'The Relevance of Education in Building a Sustainable Society' was organized by World Leadership Academy (WLA) in association with KIIT Deemed to be University on 17th April 2022. Presiding over the seminar, Prof. Achyuta Samanta, Founder, KIIT & KISS said, discipline is essential for education and social development. KIIT has been providing the necessary support to more than a hundred colleges in the state to increase the standard of education and enable them to get NAAC accreditation. In addition, free e-libraries, e-labs, etc. are being provided by KIIT for improving research, he stated. On the occasion, Prof. Samanta gave a four-point mantra for the development of education to the educationists present on the occasion.

Speaking on the occasion, Prof. Sasmita Samanta, Vice-Chancellor, KIIT-DU and President, WLA said, a lot of aspirations have been created in the field of education during the last two years. A strong educational system has the capacity to change the world, she asserted, adding that two things important in today's education system are human resources and intellectual resources.

The event was attended by more than 500 principals and professors from various colleges and universities in the State, including the Vice-

Chancellor of various universities. The participants included: Prof. N Nagaraju, VC, Gangadhar Meher University; Prof. Prafulla Kumar Mohanty, VC, Khalikote University; Prof. Harihar Hota, VC, Shri Jagannath Sanskrit University; Prof. Sanjay Kumar Nayak, VC, Ravenshaw University; Prof. Arka Kumar Dasmohapatra, VC, Odisha Open University, Sambalpur; Prof. Byomakesh Tripathy, VC, Utkal University of Culture; and Prof. Deepak Kumar Behera, VC, KISS Deemed to be University. More than 20 MoUs were signed between KIIT-DU and participating colleges for the development of education.

As a part of the Seminar, a panel discussion was held on the topic which was moderated by Prof. (Dr.) Prasant Kumar Pattnaik, Professor, KIIT School of Computer Engineering & Secretary, WLA. It was followed by Hands-on-Training on digital library & Interactive Session by Dr. Pradeep Kumar Mallick, Associate Professor, KIIT School of Computer Engineering & Director, WLA, and Dr. Jyotiranjan Gochhayat, Asst. Professor, KIIT School of Rural Management, & Director, WLA. The Seminar also had tutorials by publishers such as Bentham SC, EBSCO, Proquest, Balani Infotech Pvt. Ltd., and Annual Reviews.

Prof. Jayanta Kumar Parida, Director, School of Social, Financial & Human Science, KIIT-DU & Executive Member, WLA delivered the welcome address, while Prof. Chinmay Kumar Panigrahi, Joint Secretary proposed the vote of thanks.

Kalinga Institute of Industrial Technology (KIIT)

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KIIT (Deemed to be University) has only one permanent campus in Bhubaneswar, Odisha.
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THOUGHT OF THE MONTH

“Human Existence is Pride”

Human beings are bestowed with unlimited Power and Energy by the Universe. Achieving excellence in professional and personal life and being successful is the objective of each individual. The ultimate purpose of life is to realise the universal power of human consciousness. , attainment of Siddhis. Invoking the beauties of life like love, compassion, truth etc Being free from all negative emotions and attitudes awakens the soul; Celebration of Life is the intense expression of Truth and Beauties.

-Sasmita Samanta

WORLD LEADERSHIP ACADEMY

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