

National Tech Excellence Award

Technology Development Board, a statutory Body of the Department of Science and Technology, on the special occasion of Azadi Ka Amrit Mahotsav, has instituted the award to honour the outstanding contribution of women scientists and entrepreneurs in commercializing innovative indigenous technologies.

Applications have been invited from Indian Women Scientists and Entrepreneurs to felicitate a select few with the prestigious India National Tech Excellence Award for Women 2022 for pursuing, prevailing, creating an impact, and etching out stories of inspiration for future young girls.

The awards will be presented on International Women's Day on 8th March, 2022.

The awards are categorized under two categories National Women Scientist Award for Excellence in Translational Research and National Women Entrepreneur Award. Both the awards will be presented in two distinct subcategories of Senior (45 years and above) and Young (Below 45 years). The awardees will receive a cash award of Rs 3 Lakh and Rs 1 Lakh for senior and young, respectively, and number of awards will be two in each category.

The contribution of Indian women in the science & technology and entrepreneurship has been exemplary, and they have proved that they can own businesses, work tirelessly to show that they are adept and successful in the entrepreneurial space. In rural India, too, women entrepreneurs have made their way and emerged as leaders across different sectors, proving that they are capable mentors for future generations.

The contributions made by women across sectors have been evident over the centuries, science and technology being one of the most benefitted. Women like, Leelavati, a mathematician and astrologer; Janaki Ammal, first Indian scientist to have received the Padma Shri Award in 1977; Kadambini Ganguly, one of the first female physicians of South Asia to be trained in western medicine; Anna Mani, an Indian physicist, and meteorologist, also the former DDG of the Indian Meteorological Department; Indira Hinduja, the first Indian women who delivered a test tube baby; Kiran Mazumdar Shaw, Chairman & Managing Director, Biocon Limited, Kalpana Chawla, a first Indian woman in space, Dr. Renu Swaroop, first Woman Secretary to lead DST and Dr. Alka Mittal, first woman CMD of ONGC have made significant contribution to sectors such as aerospace, medical science, biotechnology, meteorology, and many others, they have proven it time, and again, that opportunity and access to knowledge & resources can make all the difference. The Government of India has been continuously focusing on women empowerment in Science and Technology, through various schemes and initiatives like Beti Bachao, Beti Padhao, "KIRAN" (Knowledge Involvement in Research Advancement through Nurturing), "GATI" - Gender Advancement for Transforming Institutions and many other women scientist schemes. All these aim to support the talents of Indian women, and the Department of Science and Technology has played a key role in supporting talented women in science.

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Learning to overcome mental pollution

There is much debate on different kinds of pollution – water, soil, air and other elements. But the most dangerous of them all is mental pollution that is rarely acknowledged and hardly discussed in public forums. Any kind of mental affliction is left to either psychiatrists or religious masters, whereas it really needs to come out into the open and discussed freely in educational institutions and work places, as well as in homes.

The Dalai Lama has talked at great length about destructive emotions that are caused by having a self-centred attitude and by believing that reality is as it appears. The antidotes to destructive emotions are compassion and the realisation that nothing exists as it appears. Once we are able to ward off negativities, we can obtain the perspective required to embrace all that is good, overcome all that is destructive, and enjoy peace and harmony and experience love at all levels.

The root of all unpleasantness and unhappiness is lack of kindness and compassion, the base qualities on which one can build a life of happiness. It is said that anyone who causes you to feel anger, is in fact wielding power over you. And one of the ways by which we can protect ourselves from getting overpowered in this manner; is to practise compassion that creates acceptance and understanding, then there is no scope for anger.

Emotions per se are not destructive; they become so only when we express them in inappropriate ways. Becoming self-aware but not self-centred is the first step towards recognising one's emotions for what they are and learning to detect what is toxic to mind, body and soul. Once we allow mental pollution to take place, it can spread and tighten its grip over our lives, ruining it not just for us but for all those around us.

Suppressing negative

emotions may make things worse. Hence, scientists and masters advise us to acknowledge and accept those emotions, first, and then slowly overcome them. To understand our emotions better, scientists are trying to map them, so that navigation becomes possible. Creating an 'atlas' of emotions, they identify the varying degrees by which anger could manifest, as annoyance, frustration, exasperation, argumentativeness, bitterness, vengefulness and fury.

Once we begin to use one or more of these manifestations as the prism through which we perceive people and situations, the trouble starts. In order to stand outside of these manifestations, we need to detach ourselves from emotions and see things as they are, but lovingly, with a compassionate eye. Response is far superior to reaction – you respond in an informed manner, whereas your reaction is based on extreme emotion.

At a party, there was heated discussion on a controversial topic of current interest. Reactions ranged from call for bans, ostracisation and punishment to severe sanctions. An elder, who was sitting quiet, was asked what he thought the solution could be. He said, "Yes, things will fall into place and storms will abate in due course, if not now, perhaps in a year or two." The amazed audience of youngsters could not grasp the import of what he said. Of course, an emergency situation would call for instant action but festering issues really need to be seen in the backdrop of time and context. There may not be instant solutions.

Philosophical platitudes may not work in dire situations that call for emergency measures but by and large, most issues that are blown out of proportion need to be given time to settle down, and appropriate action taken in due course.

- Narayani Ganesh

The happiness and peace attained by those satisfied by the nectar of spiritual tranquillity is not attained by greedy persons restlessly moving here and there.

-Chanakya

Bye-Bye 2022 and Welcome 2023

■ OMKAR DATTATRAY

The year 2022 which was more or less like other previous years came to an end and the New Year 2023 took its birth and we woke up in the New Year and embraced it with great enthusiasm and joy. Like all other years the bygone year 2022 was a mixed bag of achievements as well as failures. As we embrace the New Year 2023 and bade good bye to year 2022, we have the memories of the bygone year fresh in our mind and welcome the New Year with great fanfare and fervor. The occasion of the New Year provides us the opportunity to resolve and make New Year resolutions and pledge to work for the unity, integrity, sovereignty, peace, security and development. We also resolve to weed out corruption, drug addiction, militancy and hatred from the country. On the New Year eve while we celebrate the New Year with gaiety, we also will have a look on the achievements and the failures of the year gone by and resolve to make the new year more fruitful for us and the country.

There were key positives and negatives of the bygone year and the union budget 2022. There were various positive points in the budget of the bygone year. It has listed some first time initiatives with emphasis on digital technologies and climate action while it had been criticized for being capitalistic budget with negligible mention for the poor people of the country. The budget 2022 had received various mixed reactions from experts, politicians and the common citizens. Ranging from the 5G auction which was conducted in 2022 and the announcement and implementation of National Tele Mental Programme is an outstanding achievement of year 2022. Digital revolution in education and catering to the removal of gaps which had come due to COVID 19 and due to closure of schools in imparting the classroom education is another milestone of the year gone by along with the implementation of on

line education. Digital university was established to extend world class education for all. The schools were opened in the year 2022 as the country under the leadership of Modi had fought coronavirus and won victory over the pandemic. Indian efforts of fighting coronavirus which started in 2020 and were carried to 2021 bore its fruits in 2022 and the year saw almost all elimination of COVID 19.

The normal activity took momentum and this is a plus point of year 2022. However at the end of the year and close of December there were some positive cases of the new variant of coronavirus, but the country is armed to combat the new variant of coronavirus. This is no small development. 5G auctions and increased connectivity was another feather in the cap of the people.

The implementation of PM Gati Shakti plan was an important priority of the budget 2022.

E-Passport and digital banking ,digital payments and fintech innovations was another achievement of year 2022.

One of the limitations of the budget 2022 is that it was bound to make rich, richer and poor; poorer.

Inflation ,soaring prices of the essential goods and services was the failure of the government.

The inflation has broken the back of the common man, Joblessness and unemployment is also a main minus point of the year which has gone. We faced terrible inflation and there was no tax relief for the middle class. Digital and crypto currencies was another innovation in the economy of the country.

PM Modi made a significant announcement in June of providing 10 lakh government jobs to the educated unemployed youth and its implementation began in October 2022. The centre government is thinking to revive and restore the old pension scheme for its employees and it will benefit government employees on a big scale.

The nation has celebrated 75th year of independence themed as 75th Azadi Ka Amrit Mahotsav.

Azadi Ka Amrit Mahotsav has been celebrated in the nook and corner of the country with fanfare. We have excelled in many areas but have failed in some others.

The country has failed in key areas that include poverty, health, education, equality and fraternity.

India has become a fifth growing economy in the world.

Recently we have been decorated with the crown of the presidency of G20 and this is a very big achievement which we have got in the year 2022 as India will be in a position to lead the world.

The mantle of G20 presidency is a matter of pride for the countrymen and it has given India an opportunity to lead the world.

There was calm on the Indo-Pak border and the LOC .There was complete silence between India-Sino LOC throughout the year baring the efforts of crossing the line by the Chinese troops recently but they were sent back by our brave army Jawans.

The peaceful assembly elections in UP, Punjab, Goa, Manipur; Uttarakhand, HP; Gujarat is also a great democratic achievement.

The nation has also elected the first woman Dalit as the president of the country and it proved that anyone can assume the mantle of presidency in the country .It is the empowerment of the weaker section of the society.

The killing of 56 foreign terrorists in J&K is not an ordinary feat.

To the close of the year four local terrorists were neutralized in December in Jammu.

Modi diplomacy and foreign, bilateral and multilateral relationships were cemented with different countries during 2022. The friendship with Russia, USA was strengthened.

The year 2022 showed that the Indian say matters in the international spheres and the status of India has increased because of the diplomacy of Modi .While there have been a number of plus points of 2022,the failures are not hidden from anyone .There was an increase in the road accidents in various parts of the country and thousands of the people have died because of road accidents .In Jammu and Kashmir we have witnessed an unprecedented spurt in the road accidents and a big number of precious lives have been lost due to these accidents.

The country has witnessed brute silting of the throat of a number of youth belonging to the majority community at the hands of radicalized youth of the Muslim community.

The hatred has increased in the country .Due to the cases of love Jihad and live in relationship many women had been brutally killed their partners and it has shamed the relationships. The case of killing and cutting the body of a girl named Shraddha into 35 pieces by her living partner is unprecedented and it has brought down shivers in the people.

The radicalization, extremism and fundamentalism was on increase and so was the hatred and this hints towards our failure.

We were back with our annual list of the worst technologies of the year:

Think of these as anti-breakthroughs, the sort of mishaps, misuses, miscues and bad ideas that led to technology failure.

There was and is tension and war between Russia and Ukraine and the tension between India and China.

The clouds of world war third are still hovering over our heads. Thus in short the year 2022 was a mixed bag but we should welcome new year 2023 with open arms.

(The author is a columnist, social and KP activist).

■ DR. PARVEEN KUMAR

Nutrient-rich, drought-tolerant and multipurpose; Millets are rightly being called as 'Super Foods' and 'Food of Future'. They are nutri-cereals that provide most of the nutrients required for normal functioning of human body. The International Crop Research Institute for the Semi-Arid Tropics (ICRISAT) estimates that more than 90 million people in Africa and Asia depend on millets in their diets and 500 million people in more than 30 countries depend on sorghum as a staple food. However, in the past 50 years, these grains have largely been abandoned in favor of developing more popular crops like maize, wheat, rice, and soybeans.

In the Indian subcontinent, these are recognized as traditional grains, grown and consumed in the Indian subcontinent from the past more than 5000 years. These are one of the oldest foods known to humanity. Millets owing to their unique characteristics have been identified as a major category of food commodities to be propagated and promoted for enhancing nutritional levels of the population. Millets are a group of small grained cereal food crops which are highly nutritive, tolerant to drought and other extreme weather condition; do not require much input and most of them are natives of the country. These crops are called as 'Nutri-cereals' as they provide most of the nutrients required for normal functioning of human body. Millets are classified into major millets and minor millets based on their grain size. They are Pseudo millets also and are so called because they are not part of the Poaceae botanical family, to which 'true' grains belong, however they are nutritionally similar and used in similar ways to 'true' grains.

MILLETS AS NUTRI-CEREALS:

Recognizing the importance of millets in the nutritional security, the Ministry of Agriculture and Farmers Welfare, GoI has declared millets comprising of Sorghum (Jowar), Pearl Millet (Bajra), Finger Millet (Ragi/Mandua), Minor Millets i.e., Foftail Millet (Kannagi/Kakum), Proso Millet (Cheena), Kodo Millet (Kodo), Barnyard Millet (Sawa/Sanwa/Jhangora), Little Millet (Kutki), Brown top millet and two pseudo millets i.e., Buckwheat (Kuttu), Amaranth (Chaulai)) as 'Nutri-Cereals' for production, consumption and for trade and commerce. Millets are gluten free and non-allergenic and non acid forming foods. Millet consumption decreases triglycerides and C-reactive protein, thereby preventing cardiovascular disease. All millets are rich in dietary fibre. Dietary fibre has water absorbing and bulking property. It increases transit time of food in the gut which helps in reducing risk of inflammatory bowel disease and acts as detoxifying agent in the body. Millets act as a probiotic feeding for micro flora in our inner ecosystem. Millets hydrate our colon to keep us from being constipated. Niacin in millet can help lower cholesterol. Nutritional status of millets: These nutri-cereals contain about 7-12% protein, 2-5% fat, 65-75% carbohydrates and 15-20% dietary fibre. The essential amino acid profile of the millet protein is better than various cereals such as maize.

Millets contain fewer cross-linked prolamins, which may be an additional factor contributing to higher digestibility of the millet proteins. Small millets are good source of phosphorus and iron. Millets contributes to antioxidant activity with phytates, polyphenols, tannins, anthocyanins, phytoesters and pinacocanols present in it having important role in aging and metabolic diseases. All millets possess high antioxidant activities.

Major Millets: Sorghum (Jowar): It is rich in protein, fibre, thiamine, riboflavin, folic acid, and carotene. It is also a good source of potassium, phosphorus and calcium with sufficient amounts of iron, zinc and sodium. A major portion of protein present in Sorghum is prolamin. Prolamin has a unique feature of lowering digestibility upon cooking which might be a health benefit for certain dietary groups.

Pearl Millet (Bajra): Pearl millet contains considerably high protein

portion of proteins (12-16%) as well as lipids (4-6%). It contains 11.5% of dietary fiber. It increases transit time of food in the gut. Hence, reduce risk of inflammatory bowel disease. The niacin content in pearl millet is higher than all other cereals. It also contains foliate, magnesium, iron, copper; zinc and vitamins E and B- complex. It has high energy content compared to other millets. Pearl millet is also rich in calcium and unsaturated fats which are good for health.

Finger Millet (Ragi): Finger millet has the highest mineral content and is the richest source of calcium (300-350 mg/100g). Finger millet proteins are unique because of the sulphur rich amino acid contents. The grains have excellent malting properties and are widely known for its use as weaning foods.

It has high antioxidant activity. Minor Millets: Foftail millet (Kakum): It is considered to be one of the most digestible and non allergic grains. It also contains minerals such as copper & iron.

Kodo millets (Kodon): It has high protein content (11%), low fat (4.2%) and very high fibre content (14.3%). Kodo millet is rich in various B vitamins especially niacin, pyridoxine and folic acid as well as the minerals such as calcium, iron, potassium, magnesium and zinc. Besides, it also contains a high amount of lecithin and is an excellent for strengthening the nervous system.

Little millet (Kutki/Shavan): Little millet, as its name goes, is smaller than other millets; but is high in iron content and also has high antioxidant activities. It contains about 38% of dietary fiber: Barnyard millet (Sanwa): It is the richest source of crude fiber and iron. The grains possess other functional constituents i.e., Gamma amino butyric acid (GABA) and Beta - glucan that are used as antioxidants and in reducing blood lipid levels. Proso millet (Chenna/Barri): This minor millet has the highest amount of proteins (12.5%) with a significant amount of carbohydrate and fatty acids. It is cheaper source of manganese as compared to other con-

Shrinking agricultural land on account of construction of residential settlements: Its impacts and remedies

■ SHAFEEQ MALIK

Cultivable land in the country has marginally declined but the trend of increasing agricultural production is still expected to continue. Replying to a question in Rajya Sabha, the then Agriculture Minister Radha Mohan Singh said that cultivable land in the country has marginally declined from 182.7 million hectares in 2005-06 to 182 million in 2012-13 which fell further to 17.65 hectares in 2022-23.Whereas the population graph of India has reached to 139.34 crores (2021) which was 107.50 crores in 2001 whereas it was 125.03 crores in 2011. If the rate of decline remains same; within a short period of time, we will lose a considerable stretch of the agricultural land and shall have to strive hard for finding the alternate land and shall have to do a lot of work to make it fit for agriculture. It will have disastrous impact on economy of the country and shall have reciprocal consequences on account of the fast-growing population. The decline in agricultural land is the resultant of the human activity which is considered as an interference in the natural ecosystem. It involves construction of roads and railways, construction of buildings for urbanisation and housing, establishment of the industries,ports and airports etc to keep the development abreast with the global standards. In changing world with such a pace; infrastructure is required for comprehensive development of the country which involves numerous projects completion; it becomes unavoidable to use the agricultural land. It is therefore inevitable to be kept in mind that the

roads and railwayscannot be avoided to pass through the land of agricultural importance as they provide connectivity to the produce, human resource and the infrastructure used for storage or processing units, equally. The airports (being the huge infrastructural units)too cannot be constructed without using the agricultural land but the other factors which include construction of buildings for urbanisation & housing and establishment of the industries may be kept on a check especially in hilly areas where the agricultural land is not abundantly available. For such constructions areas falling in and around the stretches of non-agricultural land may be taken into consideration and planned clustered settlements may be allowed to flourish. In this regard architectural endeavours are highly recommended to keep the structures raised for the purpose at par with international standards that fulfil all the basic amenities as we are living in 21st century. The villages and hamlets in far flung countryside too deserve development on such pattern that satisfies architectural fundamentals. It is observed that in the hilly areas the agricultural land is already under threat as the construction of houses to live in is indiscriminate and is going on a very high pace which has destroyed the agricultural land drastically whereas a huge area of barren land is kept untouched, unnoticed and untended.In recent past, with mushrooming of the small towns, the unplanned housing colonies (which can be rightly said as concrete slums) have come up in such areas which were considered as the grain bowls. It is reciprocal to the increasing

population which is destroying the natural balance of demand and supply of the grains. Thanks to the green revolution which increased the produce per hectare many folds otherwise it would be difficult to cope with the situation arising out of the declining agricultural land on account of such constructions. Green revolutions do not happen time and again!

In order to keep a check on further decline of the agricultural land and minimise its impact the remedial measures are to be taken as soon as possible. Some of the measures that can be taken may be listed as under;

1. Identifying the barren/non-agricultural land for construction of Housing colonies:-Appropriate and suitable land (the land which is not in agricultural use) for construction of the housing colonies and settlements may be established with all basic facilities that could satisfy the demand of modern life.

2. Construction of the Housing colonies: - The housing colonies are to be constructed on such pieces of land which are not productive by agricultural point of view and all the basic facilities including approach roads and connecting roads etc may be provided to give an opulent connectivity to the area with outside world. It may include providing flawless power supply, water supply and sewerage treatment to the inhabitants of the so-called advanced level colonies.

3. Provision of advanced facilities: - The provision of advanced facilities may be warranted so that resources may be utilised efficiently. To encourage the people to live in such housing

colonies the advanced level assistance may be ensured to the inhabitants of the colonies and they may be given preference in all the fields of life. It may also be helpful in discouragement of the sporadic construction of the residential houses. To add to it the advanced level facilities may include sufficient provision of the education system that include establishment of the learning centres for contemporary education or technical education, sports facilities and any other such centres that may enhance the overall capacity of the people.

4. Concentrated Hamlets: -In remote areas the concept of concentrated hamlets may work hence the residential areas may be developed by allowing the construction of the houses at a well-defined place and the facilities may be provided accordingly. The public may be provided with the satellite connection of the net services, e-libraries, solar power, indoor sports facilities, distance education etc.Though it seems to be unrealistic for a huge country like ours (India) but it has to be started as soon as possible to set a precedence so that the facility for the future generations may be established. To start with a pilot project for some selected areas at first instance may be kick started on war footings. It has to be taken into account on the pattern of MGNREGA and PMGSY etc which proved to be a huge success and lifted both India's economy and her face. Such programs will not only help in retention of human resources at the hamlet level but will also stop brain drain.

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