

## Deepening Food Crisis

*Food crises is going to be a serious concern*

**F**amines, which were once the vestiges of the past, threatens to soon resurrect. Wars, conflicts and climate change would force millions into a state of food emergency.

According to the annual report of Global Network against Food Crises, food crises will affect tens of millions of people across the world this year, after war, extreme weather and economic woes in 2018 left more than 113 million in dire need of help. Conflict and insecurity were responsible for the desperate situation faced by 74 million people, or two-thirds of those affected, in 2018.

Global food scenario is fragile. People on the verge of food deficit stares at a near possibility of famine. The report analysing 53 countries, used a five-phase scale with the third level classified as crisis, fourth as emergency and fifth as famine/catastrophe. The margin that separates the different classes are so thin, that a catastrophe may push more people into the fatal categories of famine. In that sense, millions more are now at the risk of reaching level three and above. A drought or conflict may make another sizeable population, about 143 million, vulnerable to food crisis.

When the famines of the yore stemmed from food shortage, the food crisis of today are the result of inaccessibility. Human factors have considerably influenced the availability of food to the marginalized sections. Of countries that suffered food crises in 2018, the worst affected was Yemen, where nearly 16 million people needed urgent food aid after four years of war, followed by the Democratic Republic of Congo at 13 million and Afghanistan at 10.6 million. This is the third year running where the number of people in food crisis hit more than 100 million, but it is slightly lower than in 2017, when 124 million were in need of help. The decrease is mainly because in 2018, countries did not experience the same levels of drought, flooding, erratic rains and temperature

rises they did in 2017. However, climate shocks and conflicts would continue to cause hunger in 2019 as per the report. Dry weather and El Nino conditions are likely to affect southern Africa, Latin America and the Caribbean, while the needs of refugees and migrants in Bangladesh and Syria would remain high. The study excluded 13 countries and territories including North Korea, Venezuela and Western Sahara due to a lack of recently validated data.

Hunger is emerging as a serious concern in world today. The number of hungry people in the world is growing, reaching 821 million in 2017 or one in every nine people, according to 'The State of Food Security and Nutrition in the World 2018'. Besides hunger, malnutrition is another serious concern and the problem has remained so affecting millions. Climate variability affecting rainfall patterns and agricultural seasons, and climate extremes such as droughts and floods, are among the key drivers behind the rise in hunger, together with conflict and economic slowdowns.

Climate change is an important factor that has been continually interfering with the food systems around the world. If we have to align ourselves on the path of achieving the Sustainable Development Goals on food security, we need to accelerate our efforts on developing climate resilient technologies in agriculture. Analysis in the report shows that the prevalence and number of undernourished people tend to be higher in countries highly exposed to climate extremes. The harm to agricultural production contributes to shortfalls in food availability, with knock-on effects causing food price hikes and income losses that reduce people's access to food.

The focus of agriculture must also shift towards nutrition from the conservative approach of augmenting yield. Such systems of agriculture must be encouraged in vicinities of vulnerable and marginalized sections of the society. Policy support can play an important role in popularizing these farming systems. Immediate and concerted efforts at a global level is required in this direction.

## Farmers Will Decide

*This election farmer's choice will be the deciding factor*

**C**aste, religion and communal fault lines have conventionally ruled the poll strategies. Corruption and patriotism too have managed to sneak into the fray this election. However, a strong determinant in this election would be farmers. They are an important decisive factor who are strong enough to swing the results in their favour. The election results would speak volumes about this government's hits and misses.

The past few years have seen the farmers rise in unison to voice their concerns in agriculture sector. Although doubling farmers' income remained an important prerogative of the government, the means to achieving that end scarcely bore any tangible result. Instead, the income factor of the farmers persistently went down seriously inviting introspection by the government regarding their schemes. Most of the schemes of the government were robust and were kept in mind bearing the farmers and their problems. They were all meant to positively address the farmers' concerns and long term development of agriculture sector. The MSP increments and PM AASHA have upped the hope of the farming community, but couldn't provide any immediate relief to the farmers. Probably in this context, Prime Minister had to introduce something drastic and radical that showed immediate benefits. And PM KISAN had its genesis. However, the timing of the unveiling of the scheme, closer to election definitely made many question the real intention behind its implementation.

Direct income schemes are success stories. Getting cash in hand is much better than to wait for subsidies that are often late or absent. The direct incomes spur spending capacity and improve rural incomes. Beyond giving an assured income every month, it will be of immense benefit to the farmers in supporting their families and in enhancing the productivity of agriculture. The extra amount can be used in investing in better inputs, technology and innovation. Besides, increasing the production

of current farming operations, this will also help in investing in ancillary enterprises and expanding the income of the farmers. Thus it will increase the avenue of farmers to derive income. The same can also be used to obtain training in specialized operations or that which is intended in skill development. This again will create more avenues for income generation. In general this direct income support positively will influence in increasing the living standards directly and indirectly.

This is also the logic behind the Congress Party's promise of 'Minimum Income Guarantee Scheme' (MIGS), formally called Nyuntam Aay Yojana (NYAY), to five crore 'poorest families' covering 25 crore people by assuring them a guaranteed minimum income of Rs.6,000 per month or Rs.72,000 a year. This scheme also assures minimum income to the people. The loan waivers also indirectly act as direct incomes. Through loan waivers, farmers are spared the burden of repaying the loans. The promise of loan waivers are already flying high in the election scene.

In the diverse canvas of politics, one thing is clear. All the parties have one thing in common. Neither one of the parties believe in addressing the real challenges of Indian agriculture. They are not yet ready to augment the storage capabilities for agriculture produce. They are unsure if farmers would get the prices they deserve in the markets. They lack the will to introduce new technologies and innovation in the field of agriculture. They have conveniently forgotten that India once rose from the shackles of famine to the freedom of food security.

Income of the farmers need to be raised. They deserve a life with dignity. The food producers of the country should not go to bed hungry. So while increasing income to the farmers are important, it should also mean that they should have a job to look forward, a land to till, a granary to fill and a market to sell. Direct incomes may help the farmer in short run, but agriculture will suffer in the long run.

## Seed Sediton

*India should create awareness among farmers regarding seed patents and rights.*

**G**rowing certain plant varieties are prerogative of certain recognized entities. Growing them without any conferred rights might end up in court proceedings and legal battles. The proposition might seem odd and anomalous. But it is true.

Three farmers from Gujarat ended up in court as the US food and beverages giant Pepsi-Co sued them for illegally growing and selling a variety of potato exclusively registered by the company. PepsiCo claimed it has sole rights to grow them to manufacture chips of its brand - Lay's. Accordingly, the court had stayed the farmers from growing and selling the potatoes. The court has also sought reply from the three over company's claims of infringement on its rights.

PepsiCo India Holdings Pvt. Ltd uses the registered variety of potatoes called FL 2027, which is a hybrid of FL 1867 and Wischip varieties, for manufacturing chips for its brand. The company is the registered breeder of FL 2027 under the Protection of Plant Varieties and Farmers' Rights Act, 2001. In India, this variety was first put to commercial use in 2009 and is traded under the trademark FC5. It has granted license to some farmers in Punjab to grow the variety on the buyback system. Growing these potatoes without license, meant violating its statutory rights.

PepsiCo's relationship with farmers in India goes back 28 years and they have been working along with 24,000 farmers across 14 states through various agri programs. PepsiCo India was the first corporate to introduce collaborative farming of process-grade potatoes in India in 2004-05. PepsiCo presently works with farmers, spread across West Bengal, Maharashtra, Punjab, and Gujarat, UP, Karnataka, Bihar, Haryana and Chhattisgarh. More than 45 percent of these are small and marginal farmers with a land holding of one acre or less. Under the collaborative farming model, Pepsico procures around 45 per cent of its current total

annual requirement of 2.40 lakh tonnes of potato by working with farmers and the rest 55 per cent from the open market. The company works with farmers throughout the crop lifecycle and this includes the supply of planting material, offering plant protection programmes and assistance in securing soft loans under the collaborative farming model.

However, the inputs provided to the farmers who are associated with them in the collaborative farming are meant for their use and the permission to cultivate the plant variety was theirs' alone. The three farmers therefore has surely transgressed the company's territory and in doing so has invited legal proceedings.

Farmers illegally growing varieties is not new in India. The recent controversy regarding farmers raising Herbicide Tolerant (HT) varieties too is another example, although on a different note. Situations as these arise mainly due to the ignorance of the existing laws in the country. More than that, it stems from the time honoured practices of growing crops and exchanging varieties and planting materials among farmers. With globalization and entry of multinationals, the scenes have radically changed. Although India opted the sui generis option that gives WTO member countries a way out if they do not want to allow patents on plants in their national jurisdiction, it only allows farmers to save, use, sow, resow, exchange, share or sell his farm produce. He does not enjoy the freedom to practise the same with seeds of others.

The Protection of Plant Variety and Farmers Right Act, 2001 (PPVFR Act) was enacted to provide for the establishment of an effective system for protection of plant varieties, the rights of farmers and plant breeders, and to encourage the development and cultivation of new varieties of plants. To avoid situations such as these, the government machinery must create awareness of these laws among farmers. It will avoid situations such as these, and in future may help farmers to protect their own varieties from being hijacked by others.

## Soil Free- Guilt Free

*With diminishing resources, it is time for India to explore non conventional farming*

**D**iminishing resources are increasingly becoming a concern for agriculture. The pressure of producing more from less have become the norm of today's agriculture. The developing technologies have thus been emphasizing on methods that emphasize this principle.

Urban farmers are becoming suitable candidates for trying these technologies. Hydroponics are slowly and steadily emerging as a powerful technology in this category as it efficiently utilise space and water. Hydroponics, a method of growing plants without soil in which plants get their nutrients from a mineral solution, has been gaining more acceptance in the last few years due to its low water usage — about 20 per cent of conventional method. World over, the technology has been gaining grounds. Around 50,000 acres are estimated to be under hydroponic production around the world, according to Green Acres Foundation. India is yet to capitalize on this technology on a larger scale. However, there are certain companies catering to this technology on a grandiose manner for raising certain 'foreign greens'. It requires less labour, and yields are said to be much higher as plants grow faster (due to direct access to required nutrients) compared with regular farms. The most alluring aspect to urban farmers and entrepreneurs is it is feasibility in smaller space. However, on the financial front, things are towards the pricier side. The recovery depends on the crops grown. Currently only high value crops are feasible.

Soil less cultivation has some inherent advantages. There is minimal environmental impact as controlled agriculture is less resource-intensive. In terms of water consumption too, there is considerable reduction as eighty percent of water is recycled. Since precise quantity of nutrients go into raising these crops, the produce is believed to be of improved health and nutritional

value. Moreover, there will be limited chemical interventions in managing diseases and pest, and hence the yields can easily be categorized under organic produce. Since space is not a constraint, the agricultural operation can be scaled up to any size of facility making it ideal for practicing urban agriculture. But most importantly, the whole operation sans soil.

India, which has over 17 per cent of the world population with limited land resources, warrants immediate attention and urgent remedial measures to sustain agriculture. India is also facing another challenge of deteriorating soil quality that has the potential to affect future of agriculture. India has varied geology, climate and vegetation, which gives it different soil types. It takes thousands of years to make one metre depth of soil. It is estimated that about one millimeter of top soil is being lost each year with a total loss of 5,334 million tonnes annually due to soil erosion. Having said that, soil has thus emerged as precious natural resource. The continued cycles of agriculture with scant regard to the health of the soil has destroyed the vitality of the soil. Even repeated application of fertilizers have been not able to guarantee good results. Even though India is a major agricultural producer excelling as the major produce in different crop categories, we are still tight on the productivity front. Our yield per unit area is probably lowest in the world. Hence it becomes important in investing in technologies that utilize minimum resources and produce maximum yield.

Soil less farming although in the near future may not change the way India is farming, but can possibly generate interest among agri entrepreneurs. With better technology and improvisation, soil less farming may be able to create many low cost options. It is definitely an avenue to look forward to for India, albeit it needs some serious fine tuning and significant amount of research.