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Food Fortification through Spirulina

Key Driver to achieve Food Security

In the shadows of the current Global Food Crisis as the world would celebrate the World Food Day in the year 2008, it would also be a time for a conscious introspection by all the stakeholders involved in the pursuit of attaining food security. No pronouncements from lofty platforms can bring back the lives lost or mitigate the immense suffering of the people for whom 'The Right to Food' is still a four-lettered sentence and the wind that goes with it.

The statistics on undernourishment are appalling and abysmal considering the fact that significant wealth at global level is being generated because of an increasing rate of economic globalization and interdependence of countries. As the world leapfrogs into the twenty-first century; the question that gets lost time and again in the debates of modernity and development, is what stops the local governments in conjunction with other international bodies, to provide food energy (measured in kilocalories per capita per day) necessary for the average person to stay in good health while performing light physical activity.

Traditional approaches by the international bodies since their inception in the last century have delivered little to achieve the food security. The issues related to the procurement and distribution of food have been the bedrock of the policies adopted by these bodies alongside the traditional Calorie based definition of 'food' that is a somewhat limited manifestation of a vast concept. Moreover, it does not take into account the extra needs of people performing extraneous physical activity, nor seasonal variations in food consumption or other sources of variability such as inter-individual differences in energy requirements.

The United Nations World Health Organisation (WHO) noticed that more than starvation, the real challenge today is malnutrition-the deficiency of micronutrients (vitamins, minerals and essential amino acids) that no longer allows the body to ensure growth and maintain its vital functions. Present forms of food aid by various agencies focus on fighting hunger rather than treating malnutrition especially in the context of the needs of young children that are most at risk. The access to food aid by people that suffer because of malnutrition is also limited because of the limited reach of the programmes. How shall the international bodies and national governments meet with their obligation towards the peoples of the world in the mis-match of processes and efficiency?

The answer is, by incorporating innovation in approaches and application, to generate a better value through enrichment of traditional diet. An optimum mix of tradition with modernity through food fortification by Spirulina would be the key to achieve food security and bridge the health divide.

For centuries micro algae Spirulina (*Spirulina Platensis*) has been a traditional food in many countries. A small quantity of Spirulina, when mixed with traditional foods, tremendously increases its inherent nutritional value besides making the food easily digestible that can be readily assimilated by the human body. Spirulina is being produced in over 22 countries and consumed in over 77 countries across the world.

The United Nations World Food Conference in the year 1974 recognised the potential of Spirulina and lauded it as possibly the best food for the future. The United Nations World Health Organisation (WHO) found Spirulina to be an interesting food for multiple reasons, rich in protein, iron and essential nutrients; and able to be administered to children without any risk. Scientific studies have explored its uses to counter a wide array of pathologies successfully that range from night blindness to cancer; and the micro-algae has exhibited a significant potential to be a panacea in many cases such as in the victims of radiation sickness in Belarus or patients or Bitot's spot in Chennai..

With malnutrition wreaking havoc and severely diminishing the human capital especially of the Developing and Least Developed Countries, it is imperative that Spirulina be included in the global food security agenda at the earliest. Along with other approaches, enrichment of food through Spirulina would be a key-driver to achieve food security; bridge the health divide; and towards the universal achievement of the United Nations Millennium Development Goals. Enrichment policies have been quite successful in the past such as to counter Goiter and its effects by enriching salts with iodine. Spirulina being a viable option has special relevance for the Developing and Least Developing Countries because of its capability to deliver a multi-tiered empowerment by focusing on an approach that centers on the human populace; and addresses the issue of malnutrition and its impacts right at its initial stages.

The Developing world can gain from its competencies to cultivate Spirulina as most countries are endowed with physical conditions that are conducive for the successful cultivation of the micro-algae. Local cultivation, procurement, and distribution of the same would not only lead to an empowerment process that has its roots based in the locale but would also lead to build lasting capacities and capabilities that will contribute towards the achievement of the United Nations Millennium Development Goals.

The United Nations Department of Economic and Social Affairs (DESA) recognizes the trend in many countries in the developed world where food

resources are being diverted towards the production of bio-fuels in order to satiate and secure their respective energy needs, its overall impact would soon be felt on the global food aid scenario. In such a situation where there is a squeeze on the food supply, the developing countries would be left with no other option but to pay an immediate heed towards food fortification approaches that target traditional foods such as Spirulina, in order to fulfill their social obligations.

It is high time that international bodies and local governments realize that to secure the Right to Food and bridge the health divide, they would have to emphasize on their own responsibilities and exhibit due diligence by adapting themselves to the challenges of the modern times. It starts with realization and the courage to take the first step in the journey of a thousand miles.

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