

Enclosure II

BVDU's Pioneering innovative initiative:

Addressing Nations' scorching health problems

MISSION: OMEGA-3 NUTRITIONAL SECURITY IN THE COUNTRY

I. PROBLEM STATEMENT AND ITS CAUSE and its health implications

1. STARTLING GLOBAL HUNGER INDEX (GHI),

After 74 years of independence, it is unbecoming for a country, aspiring to become 5 trillion economy in another five years, to rank 102nd out of 117 countries in GLOBAL HUNGER INDEX (GHI), when our neighboring countries have done better than us. India ranks below Pakistan (94), and Bangladesh (88). It is particularly alarming, because GHI is based on malnutrition, child stunting, child wasting, child mortality. Of course, this state of affairs is also due to poor nutrition of would be mother, during pregnancy and lactation. Obviously. the future of our children is bleak and the measures taken to rectify the situation is definitely not adequate.

Note: Our food is precariously low in omega-3 fatty acid and omega-3 fatty acids play key role in mother and child health. Bring Back omega-3 Fatty acids into food chain is the solution

2. EPIDEMIC OF NON-COMMUNICABLE DISEASE (NCD)

NCDs (NCDs include Diabetes, heart disease, cancer, respiratory diseases mental illness, pregnancy complications etc.) are the biggest cause of premature deaths in India. NCDs account for 63% of all deaths. We have program for treating the patients "AYUSHMAN BHARAT". More importantly we have to have program making people healthy "AYUSHWANT BHARAT".

Note: Omega-3 fatty acids are anti-inflammatory. One of the major factors that is responsible for the rise in NCD is that there is dominance of inflammation in our population because we consume very high amount of inflammatory omega-6 fatty acid and very little of omega-3 fatty acid. National Health mission is about providing

health care. BVDU has developed technologies to balance omega-6 to omega-3 ratio in edible oil.

3. COVID 19 PANDEMIC AND IMMUNITY

Coronavirus positive cases in India, continue to rise on a daily basis despite implementation of social distancing measures and extension of nationwide lockdown.

Note: Immune system protects us from virus and diseases. Good Nutrition is fundamental for improving immunity. GOOD FOOD, NO COVID, NO DISEASE. Complete nutrition (all vitamins, minerals) is a necessity (man is crippled evolution). As the modern food is precariously low in omega-3 fatty acid and therefore **Omega-3 fatty acids are crucial for human health today.**

4. SEVERE OMEGA-6: OMEGA -3 IMBALANCE

Man, as hunter-gatherer, *Homo sapien* has consumed equal amount of omega-6 and omega-3 fatty acid for nearly 10 lakh years. His genes have been conditioned to that life style. Comparatively very recently, 10 thousand years ago, he has adopted to agriculture. Further sudden changes in his life style has also taken place because of industrial revolution in last 150 years. Genes don't change so suddenly. Omega 6 fatty acids are inflammatory and omega-3 fatty acids are anti-inflammatory. The level of omega-6: omega-3 in our population is 20: 1 and in Delhi industrial belt 36:1. Therefore, there is dominance of inflammation in our population, a primary cause of rise in NCD and also lower immunity.

Note: There is terrible edible oil crisis in the country. 65% of our need is met by importing edible oil worth INR. 70 thousand crores. The irony is that good cooking oil is not a healthy oil and good healthy oil is not a good cooking oil. To make the things worst most of the oilseed grown in the country is dangerously high in omega-6 fatty acid. While reframing the policy for National Mission for edible oil, we need to take into account the fatty acid composition of the edible oil being domestically produced and also the edible oil being imported and its impact on the health of our people.

5. LACK OF CONVERGENCE OF AGRICULTURE AND NUTRITION

No doubt our policy of FARMER FIRST is commendable, however without proper planning neither the farmer nor the people are happy. Farmer is committing suicide as he is not getting adequate return for his produce and the people are dying because what is produced by farmer is not balanced in bulk food (carbohydrates, good protein and essential fat) and nutra-ingredients (vitamins and minerals). In our anxiety to feed our population, we have focused our agriculture on wheat and rice, dangerously rich in carbohydrate. Our food is also low in good protein. Recently, however some government measures have improved the situation with respect to protein. However, Fat is completely neglected with dire consequence to our health.

Note: So we need to urgently draw a road map to attain the convergence of agriculture with nutrition.

6. FLAXSEED (LINSEED) A NEGLECTED CROP

According to ICAR and IOR, nine annual oilseeds, which include seven oilseeds viz groundnut, rapeseed-mustard, soybean, sunflower, sesame, safflower, niger, are considered edible and castor and **LINSEED as non-edible**. Linseed is only the oilseed that has very high amount of omega-3 fatty acid. **Therefore, classifying linseed as nonedible and neglecting it as minor oilseed, is very unfortunate and detrimental for the health of our people.** In 1980s Linseed was grown in 20 lakh ha and today it occupies less than 3 lakh Ha.

Note: Last 15 years. realizing that omega-3 fatty acids are endangered nutrient, we at Bharati Vidyapeeth Deemed University (BVDU), Pune, in order to BRING BACK OMEGA-3 FATTYA ACID INTO FOOD CHAIN, pioneered, innovative “FLAX BIOVILLAGE CONCEPT” developed technologies to resource alpha-linolenic acid (the essential vegetarian omega-3 fatty acid) from linseed and enrich common food egg, chicken meat, milk, ghee, chocolate and other milk products. Good part of the research and development activities were carried out during 2007-

2014 ICAR.NAIP. world Bank assisted projects. We have continued our support to farmers by forming Linseed farmer's association for producing PKV.NL. 260, high omega, disease resistant variety and distributing to the farmers and establishing forward linkage with market (value addition by producing number of omega-3 enriched linseed derived products) at Real World Nutrition Laboratory Foundation, not for profit section 8, startup company in BVDU. In recognition of the much needed linseed value addition pioneering work ICAR has awarded ICAR.AICRP.Linseed value addition center. This needs to be strengthened and its scope widened to the whole country to fulfil its dream: HEALTHY WEALTHY WISE INDIA. Omega-3 fatty acid is brain food, regarded as hardware of the brain.

CONCLUSION: Linseed is a cash crop with the potential of boosting poultry, bakery, dairy, confectionary, edible oil industries. Creating millions of job and entrepreneurship. Producing linen and composite fiber, linseed straw would double the income of the farmer. Most importantly Mission: "Omega-3 Nutritional Security", if implemented on a large scale, will reduce disease burden and health care expenses.