

**Office of the Principal Scientific Adviser
to the Govt. of India**

Sub: Initiative on Nutrition

A Committee on Nutrition was constituted in July, 2017 by the Office of the Principal Scientific Adviser to the Government of India with the objective of drawing a national action plan on nutrition.

The first meeting of the Committee on Nutrition was held on August 25, 2017 in the Office of the Principal Scientific Adviser to the Government of India with DG, ICMR in the Chair. The meeting was attended by Dr. Vinod K. Paul, Member NITI Aayog and senior scientists from ICAR, ICMR, National Institute of Nutrition (NIN), CSIR, CFTRI, HESCO, Office of the PSA to Gol and an expert from International Food Policy Research Institute, New Delhi. Minutes of the meeting are attached as Annexure-I.

The Committee was constituted based on the earlier two meetings on Food and Nutrition held under the Chairmanship of the Principal Scientific Adviser to the Government of India in the Office of PSA to the Gol on July 7, 2017 and July 19, 2017. The lists of participants in these meetings are respectively annexed as Annexure-II & Annexure-III. Dr. Chidambaram, the PSA, *inter alia* mentioned about a US study that showed that an investment of one US dollar each year in nutrition interventions has the benefit-to-cost ratio of almost 13 to 1 over a 5-year period.

These two meetings stressed the need for the following activities / aspects:

- i) Inter-sectoral approach involving medical specialities, social scientists and experts in agriculture, health, nutrition and soil science, to comprehensively address the problem of under-nutrition.
- ii) Development of a roadmap with short term and medium term attainable goals in consultation with all concerned stakeholders.
- iii) Emphasise on individual and household nutritional security, leveraging agriculture for nutrition, food availability, affordability and awareness.

The meetings also endorsed the activity of conducting two pilot studies on two target groups, which can be easily tracked, to begin with:

- i) Adolescent group: Comprising students of Navodaya Vidyalaya, which is a residential school system spread across the country
- ii) 0-2 years target group: This may be preferably in a tribal belt having high malnutrition rates

The Committee considered for approval a proposal from NIN regarding the pilot study targeting **adolescent group**, comprising students of Navodaya Vidyalaya. The Committee also considered other national challenges of nutrition, fortification

of food, adaptation of bio-fortified seeds, local/regional specific challenges and finalized the following immediate action plan.

Immediate Action Plan:

1. The pilot study on adolescent group involving students in Navodaya Schools was observed as a potentially scalable model. The study would be conducted by National Institution of Nutrition (NIN) as a randomized trial, in consultation with Navodaya Samiti and a few experts. The study would establish the baseline dietary practices, preferences, nutritional status and daily dietary intake in adolescent girls and boys, from class 6 to 12. Intervention would consist of nutritional education and counselling, changes in recipes and food content and the impact studied over 1 year. A few changes in the methodology, nutrition assessment model and target regions were suggested. The proposal will be revised by NIN accordingly and will be submitted to the Office of the PSA to Gol within two weeks. The study could also later include a couple of other schools with students belonging to tribal groups. It will be of importance to understand the future reproductive health (including birth-weight) and birth outcomes of the subjects of the study. Therefore, the possibility of the female students being followed-up on a longer-term basis for these outcomes as well as growth and development and markers of non-communicable diseases needs consideration. Ideally, this can be a long term cohort. The study needs to be guided by a 'scientific advisory' group.
2. An analysis of research insights based on data set of all NFHS-4 districts, including the 100 focus districts identified by NITI Aayog, will be jointly reviewed by Dr. Vinod Paul (Member, NITI Aayog) and Dr. Purnima Menon, International Food Policy Research Institute (IFPRI). The study will also look at states which have performed especially well on nutrition outcomes, especially stunting.
3. A review on cash transfers and nutrition will also be done by Dr. Purnima Menon and Dr. Vinod Paul. The study will have a detailed literature survey and will examine the outcomes of earlier studies and government programs implemented by different agencies. Similar studies addressing policy relevant questions will be designed for India.
4. Operational research will be undertaken in a few districts focusing on convergence of schemes, community mobilization and participation through panchayats and exploring agricultural remedies for improving nutrition. This will be carried out by ICMR-DHR with involvement of inter-sectorial ministries, departments, agencies and other stakeholders.
5. Ministry of Women and Child Development (DWCD) to develop an online nutrition certification course for girl students in XI and XII

standards, in consultation with DHR, ICMR and DARE. (This is minuted in the meeting taken by the PM on July 18, 2017). This could also be first tried out in Navodaya Schools.

6. In order to ensure awareness about good nutrition and to inculcate good food habits among children, there is an urgent need to have appropriate school curricula in place for primary students upwards. This may be developed by DWCD in consultation with the Food Safety and Standards Authority of India (FSSAI), ICMR, NCERT and CBSE.
7. ICAR will prepare an evidence-based paper focusing on the volume of agricultural production and the food production patterns in select regions in different parts of the country, which are geographically endemic to under-nutrition; and explore the possibility of introduction of plants with improved nutritional content. The paper may be developed in consultation with Prof. Ramesh Chand, Member, NITI Aayog and involving the National Institute of Agricultural Economics and Policy Research (ICAR).
8. A review paper on agriculture-nutrition linkages focussing on the nutritional impact of millets will be jointly prepared by ICAR and NIN (ICMR).
9. A review paper on bio-fortified crops and potential for improving nutrition in India will be jointly prepared by ICAR and NIN (ICMR).
10. The pilot study on 0-2 year group may be taken up later.

It was decided that the Committee may hold periodic meetings to review the progress of the above activities and further action plan as appropriate.

**MINUTES OF THE 1st MEETING OF THE THREE MEMBER COMMITTEE HELD ON
25TH AUGUST, 2017 AT VIGYAN BHAWAN ANNEXE, NEW DELHI**

The following attended the meeting:

1. Prof. V.K. Paul, Hon'ble Member, NITI, Aayog, New Delhi
2. Dr. Soumya Swaminathan, Secretary, DHR & DG, ICMR, New Delhi--**Convener**
3. Dr. AK Singh, DDG (Horticulture) , New Delhi
4. Prof. Ram Rajasekaran, Director , CFTRI (CSIR), Mysore
5. Mr. BK Singh, Commissioner, Navodaya Vidyalaya Samiti, Noida
6. Mr. AN Ramachandra, Joint Commissioner, Navodaya Vidyalaya Samiti, Noida
7. Dr. Meenakshi Singh, CSIR, New Delhi
8. Dr. Anil P Joshi, Dehradun
9. Shri Suresh Kumar, Scientist 'F', Office of the Principal Scientific Adviser to the Govt. of India
10. Dr. G.S. Toteja, Scientist 'G' & Head, Division of Nutrition, ICMR, New Delhi
11. Dr. Bharti Kularni, Scientist 'F', NIN, Hyderabad (ICMR)
12. Ms Zian, Scientist B CNRT, ICMR, New Delhi

Dr. Soumya Swaminathan, Secretary DHR and DG, ICMR welcomed all the members and briefed them about the initiative taken by Prof. R Chidambaram, Principal Scientific Adviser, Government of India, to address 'Nutrition and Health'. She further briefed about the last two meetings held on 7th July 2017 & 19th July 2017 wherein it was recommended that a vision document on Nutrition is to be prepared both with a short term (year 2020) and longer term (year 2032) perspective. Dr Soumya Swaminathan also said that in last meeting following recommendations were made:

"To begin with projects need to be formulated for two target groups having trackability. This will ascertain quantification of the impact of nutritional intervention on the target group. The intervention could be a combination of the utilization of modern and traditional knowledge along with appropriate region-specific variation. Two such target groups identified are as follows:

- i) **adolescent group**: Navodaya Vidyalaya which is a residential school spread across the country, catering to the disadvantage section of the society could be a possible option
- ii) **0-2 years target group**: This may be preferably in the tribal belt having limited number of people for effective tracking"

She then requested Prof. VK Paul, Hon'ble Member, NITI, Aayog, to give his remarks.

Dr. VK Paul, also appreciated the initiative taken by the PSA and highlighted the issue of under nutrition in children with special reference to stunting and anaemia. He further mentioned that nutrition needs to be addressed with intersectoral approach focusing on agriculture, dietary diversification, food fortification and hygiene.

Dr. GS Toteja informed the members that since Prof Ramesh Chand, Hon'ble Member of NITI Ayog, informed that he will not be able to attend the meeting, he along with Mr Suresh Kumar met Prof Ramesh Chand on 24th August 2017 and brief him about the agenda. Prof. Ramesh Chand said that ICDS scheme should be revisited; nutrition supplementation should be region specific. He also said that nutrition education campaign

in organized manner should be carried out in both urban and rural areas. Prof Ramesh Chand also supported proposed study in Navodaya Vidyalaya, however suggested to have a control arm.

Dr. Swaminathan, then asked Dr. Bharti Kulkarni, Scientist 'F', NIN, Hyderabad, to make a presentation on the study protocol to be taken up in Navodaya Vidyalayas. Dr. Kulkarni then gave a presentation on study protocol 'Development and impact evaluation of an integrated nutrition intervention program to reduce under nutrition and anaemia in Jawahar Navodaya Vidyalaya (JNV) students.' She mentioned that the study aims to establish sustainable mechanism for improvement in health and nutritional status and alleviation of anaemia in adolescents studying in JNVs. Mr. Singh, Commissioner, JNVs & Mr. Ramachandra, Jt. Commissioner, JNVs also briefed the members on the existing system of JNVs.

Dr. Paul suggested that the term 'under nutrition' in the objectives of the study could be defined; dietary intervention on fats and starch may not be excessive; local recipes to be emphasized; and intervention outcome such as overweight and obesity should also be measured. The members also suggested that the study may be restricted to two JNV regions in consultation with Commissioner, JNVs.

Dr. Swaminathan, then requested Prof. Ram Rajasekaran, Director, CFTRI, Mysore, to make a presentation on success stories of nutrition intervention among children in Anganwadi centres of Mysore, Karnataka. Prof. Rajasekaran then gave a brief presentation on nutrition intervention among children in Anganwadi centres of Mysore, Karnataka where fortified foods developed by CFTRI were provided to the children. He also briefed the members about the situation of Mid Day Meal Programme in 2400 schools of Mysore, Karnataka.

This was followed by a presentation from Dr. Anil P Joshi on changing pattern of Indian food habits with less dependency on millets. He mentioned that in the past, dependency on millets was around 40% whereas the present dependency is around 4-5%. He also emphasized that production and consumption of millets should be promoted. He further stated that regional and economy based approach in food systems is needed for sustainability.

Dr. AK Singh, DDG (Horticulture), ICAR also supported the view that millets should be promoted as it has high nutritional values. **Dr. Poornima Menon, Senior Research Fellow, IFPRI** was of the view that evidence of millet's impact on nutritional outcomes seems limited and would be worth doing a literature review to examine the scientific evidence. She further mentioned that millets have better nutritional properties than cereals like rice or wheat, but in the end, they are also a staple food and do not add additional dietary diversity beyond the cereal food group. **Prof. Rajashekhar** also expressed his concern on processing of millets and its acceptability among industries.

This was followed by a detailed discussion among the members expressing their views on how to strengthen the nutrition situation of the country. **Dr. Menon**, mentioned that India's average improvement on stunting progress is masked by state variability – several states have made excellent progress and these should be looked at carefully. In addition, IFPRI analysis of high- versus low-stunting districts in NFHS-4 suggested that women's well-

being (BMI, education, early marriage and access to antenatal care) together account for close to 45% of difference. She also mentioned that on district-focused efforts, it would be useful to look at the extent to which existing schemes, programs and services have the potential to close important gaps in determinants of nutrition, in addition to examining potential for new actions. In many places, the challenge is limited implementation and coverage/quality of existing programs.

The members also deliberated on agriculture-nutrition linkages. **Dr. AK Singh**, was of the view that nutrition intervention should be linked with agriculture. **Dr. Menon** also mentioned that there are a few studies that are ongoing that would be worth reviewing to know what the interventions are, what outcomes they are examining and in what agricultural contexts. She offered to provide an overview of ongoing impact evaluations/trials on agriculture-nutrition linkages if needed.

Dr. Paul suggested that whether cash transfer or vouchers could be one of the interventions to address undernutrition. **Dr. Menon** informed that there are recent findings from cash transfer plus nutrition behaviour change supporting impacts on stunting in other South Asian countries and can be looked as an option for India too. She also offered to provide overview on cash transfers and nutrition with the idea of potentially doing a test of cash transfers for nutrition in India.

Dr. Soumya Swaminathan also mentioned that better delivery of existing programmes, Swacch Bharat Abhiyan, biofortified gardens needs to be focused to improve the existing nutrition of the country.

After a detailed discussion, the members concluded the following:

- I. The evidence based document on millets may be prepared by NIN, Hyderabad (ICMR) with ICAR help.
- II. Success stories on nutrition linkage with agriculture intervention may be prepared by Dr. Purnima Menon, Senior Research Fellow, IFPRI with inputs from ICAR on agronomic situation of high burden districts of malnutrition.
- III. The Study protocol on Navodya Vidyalaya may be modified as suggested and may be submitted to the office of PSA within couple of weeks.
- IV. All focus should be made for now to address I to iii above

The meeting ended with a vote of thanks to the Chair.

-s/d-

(Dr. Soumya Swaminathan)
Convenor

Annexure-II

LIST OF PARTICIPANTS FOR THE MEETING UNDER CHAIRMANSHIP OF PSA TO GoI TO IDENTIFY AND PRIORTIZE THRUST AREAS IN SCIENTIFIC RESEARCH ON 'FOOD SECURITY AND NUTRITION' HELD ON JULY 7, 2017 AT VIGYAN BHAWAN ANNEXE, NEW DELHI

13. Dr. R. Chidambaram, Principal Scientific Adviser, Government of India
Chairperson
14. Prof. Ramesh Chand, Member, National Institution for Transforming India, NITI Aayog, New Delhi
15. Dr. Soumya Swaminathan, Secretary, Department of Health Research and DG, ICMR, New Delhi
16. Dr. Swati Basu, Scientific Secretary, Office of the Principal Scientific Adviser, Govt. of India
17. Smt. Sarita Mittal, Joint Secretary, DHR
18. Dr. Vinod Paul, Professor & Head, Department of Paediatrics, AIIMS, New Delhi
19. Dr. Anura Kurpad, Professor, Department of Physiology & Nutrition, St. John's Research Institute, Bangalore
20. Dr. Manoj Nesari, Adviser, Ayush
21. Dr. Sutapa Mukherjee, Joint Technical Adviser, Food and Nutrition Board, Ministry of Women and Child Development
22. Shri Suresh Kumar, Scientist 'F', Office of the Principal Scientific Adviser to the Govt. of India
23. Dr. Bharat Bhushan, Scientist 'D', Vigyan Prasar, DST
24. Dr. Priyanka G Bansal, Scientist-'C', Division of Nutrition, ICMR, New Delhi

LIST OF PARTICIPANTS OF THE MEETING UNDER CHAIRMANSHIP OF PSA TO GOI ON 'NUTRITION AND HEALTH' HELD ON JULY 19, 2017 AT VIGYAN BHAWAN ANNEXE, NEW DELHI

1. Dr. R. Chidambaram, Principal Scientific Adviser to the Govt. of India **Chairperson**
2. Prof. Ramesh Chand, Member, NITI Aayog
3. Dr. Trilochan Mohapatra, Secretary, DARE & DG, ICAR
4. Dr. Swati Basu, Scientific Secretary, Office of the Principal Scientific Adviser to GoI
5. Dr. Girish Sahni, Secretary, DSIR & DG, CSIR
6. Dr. Deepak Pental, Director, Centre for Genetic Manipulation of Crop Plants, University of Delhi
7. Mr. Rajesh Gera, Deputy Director General, National Informatics Centre (NIC), New Delhi
8. Dr. Joykrushna Jena, Dy. Director General (Fisheries Science & Animal Science), ICAR, New Delhi
9. Dr. A. K. Singh, Dy. Director General (Horticultural Science), ICAR, New Delhi
10. Dr. A. K. Tripathi, Director, ATARI (ICAR), Guwahati
11. Dr. G. S. Toteja, Scientist 'G' & Head, Division of Nutrition, ICMR, New Delhi
12. Dr. T. Longvah, Director-in-Charge, National Institute of Nutrition (ICMR), Hyderabad
13. Dr. Ashok Kumar, ADG (AH), ICAR, New Delhi
14. Dr. Randhir Singh, ADG (Agriculture Extension), ICAR, New Delhi
15. Dr. A K Singh, Head & Principal Scientist, IARI, PUSA, New Delhi
16. Shri Suresh Kumar, Scientist 'F', Office of the Principal Scientific Adviser to the Govt. of India
17. Shri Sunil Kumar, Scientist 'F', NIC, New Delhi
18. Dr. Bharat Bhushan, Scientist 'D', Vigyan Prasar (DST), Noida
