

**JSS Academy of Higher Education & Research**  
(Deemed to be University) (Accredited A+ Grade by NAAC)

## COMPENDIUM ON SDG-2

### ZERO HUNGER

**Compendium of Activities in Achieving  
UN Sustainable Development Goals**



**2021-22**

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2 ZERO HUNGER



Freedom is meaningless if people cannot put food in their stomachs, if they can have no shelter, if illiteracy and disease continue to dog them.

— Nelson Mandela —

AZ QUOTES

## **ABOUT THE SDG 2- ZERO HUNGER**

Hunger has been a major crisis that takes a toll on the livelihood, health, and well-being of millions of people across the world. As per recent updates, around 821 million persons in the world, do not have access to sufficient food to lead a healthy and active life, with poor nutrition causing almost half of deaths in children under five.

The Sustainable Development Goal 2 focuses on ending hunger, achieving food security, and improving nutrition and promoting sustainable agriculture. The official wording is: "End hunger, achieve food security and improved nutrition and promote sustainable agriculture. The major targets of SDG2 is to end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round by 2030,.To end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons by 2030.

**JSS Academy of Higher Education & Research (JSS AHER)** has contributed towards achieving the targets of SDG2 through various activities such as creating awareness among the public by conducting various outreach programs and through guest lectures, and presentations. In addition, it has made an immense contribution to scientific knowledge related to malnutrition, through various research projects and publications.

### **What is zero hunger**

The UN's definition of Zero Hunger goes beyond a single number. A more complete rundown of the second Sustainable Development Goal (SDG) is to "end hunger, achieve food security and improved nutrition and promote sustainable agriculture."

To measure the success of achieving this, the UN outlines five targets to indicate our progress towards Zero Hunger (more on each of these below):

1. Access to safe, nutritious, and sufficient food year-round
2. End malnutrition in all its forms
3. Increase agricultural productivity
4. Sustainable food systems and agricultural resilience
5. Diversified crops and seeds

### **Why zero hunger matters**

Poverty and hunger go hand in hand sufficient food will develop malnutrition, causing low strength and energy leading to decrease work productivity

Hunger and Malnutrition affect physical and mental health thereby reducing the efficiency level which makes the individual more prone to diseases and thus often unable to earn more and improve their income.

During pregnancy hunger and malnutrition doesn't just affect the mother, but also the growing baby in her womb. The expenses of malnutrition may be felt over a lifetime: Adults who were stunted as children earn, on average, 22% less than those who weren't stunted. Extreme hunger and malnutrition act as barriers to sustainable development goals.

## **Why are so many people in the world hungry?**

Almost 821 million people in the world – one in nine – do not have access to enough food. The answer is multifactorial which includes global warming, floods, famine, locust crisis, war, population explosions, pandemics, the decline in food production, and higher food prices.

## **How does it matter?**

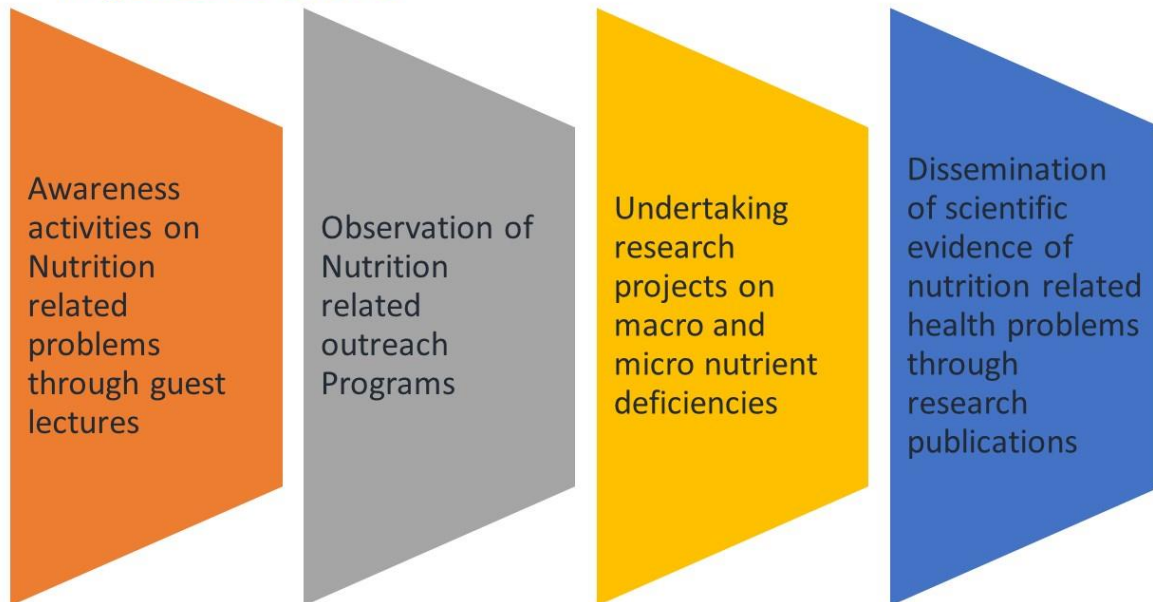
A world with zero hunger can positively impact the economy, health, education, equality, and social development.

**Hunger is the leading cause of death in the world. Our planet has provided us with tremendous resources, but unequal access and inefficient handling leave millions of people malnourished. If we promote sustainable agriculture with modern technologies and fair distribution systems, we can sustain the whole world's population and make sure that nobody will ever suffer from hunger again.**

## **Status in India**

- 3 in 10 stunted children are Indian
- 53% of women between 15-49 years are anaemic
- Over 40% of the total Indian workforce is employed in the agricultural sector
- Over 80% of infant and young children do not get minimum dietary diversity
- If global food prices double, India could lose up to US\$ 49 billion in GDP

## A glance at efforts



### **PREVENT AND MANAGE HUNGER**

JSS AHER's multi-dimensional approach toward ZERO HUNGER includes Sustainable Food, Access to Credit, Food Donations , Rural and Urban Farming, Access to Primary Education, Health Care & Health care Education, Vocational Training, Empowering Women, Child care centres and creche Collaborative Research supporting Zero Hunger , and Social Outreach.

Extending hospitality is the age-old tradition of JSS Institutions & the founding organisation JSSMVP. The residential school at JSS provides free food to about 4,000 children. More than 10,000 children are offered free meals. In 20 free boarding homes run under the aegis of the Math, meals are provided for the needy by JSS AHER with its Parent Institution JSSMVP.

Extreme hunger and malnutrition remains a barrier to sustainable development and creates a trap from which people cannot easily escape. Hunger and malnutrition mean less productive individuals, who are more prone to disease and thus often unable to earn more and improve their livelihoods.

JSS AHER with JSS Mahavidyapeetha, the Founder Organization of renowned educational institutions beginning from schools to several Higher Educational Institutions has been continuously striving to eradicate hunger among a large number of school students, visitors and especially poor and underprivileged under poverty line on everyday basis since decades.

## **DASOHA BHAVANA**

A magnificent Bhavana (Food serving hall with kitchen) has been constructed at JSS AHER with JSS Mahavidyapeetha, the Founder Organization to provide Free food to the devotees during their visit. Inaugurated by the Prime Minister of India, the Bhavan is clean, spacious, and has a well-equipped kitchen with modern appliances. The students, parents and visitors are provided with good quality meal thrice a day. Catering the daily nutritional requirements of the student, a wholesome menu is designed and authorized to meet the requirements for a healthy food, approved by Food Authority of India.

## **Food safety and security at the campus for students and faculty**

At JSS Academy of Higher Education & Research, the hostel committee which includes the representatives from students ensures that the food is served at the reasonable cost to all the students residing in the hostel. It is ensured that no student is deprived of food at point in time and no student sleeps hungry in the hostel due to food insufficiency.

The kitchens/pantries in all the hostels working round the clock to provide food to the students. The food court established in the campus helps in catering to the needs of faculty members during their duty hours. The hostel committee which includes the representatives from students decide on the menu of food on regular basis based on their choices and the same is followed. The food that is served is customized to the needs of the students.

The hostel committee and management keep surveillance on cost of the food and ensures quality of food that is served in the hostels and food courts.

The hostel committee ensures that the raw materials for the preparation of food are purchased from local vendors at the affordable cost without compromising the quality.



## PROGRAMMES AND ACTIVITIES SUPPORTING THE SDG GOAL 2

The nutrition camp was organized by Dept. Of Nutrition and Dietetics, Mysore, Mysore from 10:00 am to 1:00 pm in Hulikere. In this camp, the students created awareness about Malnutrition, Food habits, and health nutrition among village peoples. Around 400 people participated in the camp.

### The nutrition camp was organized in Hulikere by the Dept. Of Nutrition and Dietetics, Mysore

Nutrition camp was organized by **Dept. Of Nutrition and Dietetics, Mysore, Mysuru** from 10:00 am to 1:00 pm in Basthipura. In this camp the students created awareness about Malnutrition, Food habits, and health nutrition among village people. Around 300 people participated in the camp.



### The nutrition camp was organized in Basthipura by the Dept. Of Nutrition and Dietetics, Mysore

Department of Nutrition & Dietetics is continuously striving for reaching the goal of Zero Hunger. The strategy to meet the objective starts from the classroom teaching, which includes providing quality education to budding nutritionists/dieticians. The curriculum includes various papers focusing on planning menu with balanced diet for healthy & target population, very much imperative to eradicate both hunger & hidden hunger of malnutrition. Also the department is actively organizing various activities at classroom to community level to spread awareness and providing practical solutions for the hunger related problem.



## WORLD FOOD DAY-2021



part of commemoration of World Food Day-2021, Dr Sudha Sairam, faculty at Department of Nutrition & Dietetics delivered Guest Lecture on the topic 'Safe Food & Nutrition: For now & healthy tomorrow', on 21<sup>st</sup> October 2021 organized by Department of PG Studies in Swasthavritta, JSS Ayurveda Medical College, Mysuru, focusing on the importance of optimum nutrition for all age groups & effective approach that can be adapted to achieve zero hunger goal, food security and reducing malnutrition. The talk also included briefly about the FAO & WHO policies / strategies framed to achieve the goal of Zero Hunger and food security in developing / under developed countries.

The students at the department of Nutrition & Dietetics are trained for innovation & planning of cost effective locally available, nutritious foods for all target groups in affordable cost, which helps in reducing the hunger index. Few products developed at the department



Low-cost micronutrient & antioxidant functional food product with anti-hyperglycemic potential developed by MSc students – Ms Sanjana & Ms Vishmitha, under the guidance of Dr Sudha Sairam. Cost effective & nutritious Crackers.

## **OUTREACH PROGRAMMES CONDUCTED BY THE INSTITUTION**

### **BREAST FEEDING WEEK 2021**

As a part of World Breast feeding week 2021 programs were conducted in JSS Urban health centre and field practice areas of UHC in 1<sup>st</sup> week of August 2021. With the theme of “**Protect Breast feeding- A shared responsibility**” health education activities were held in all UHC and 5 anganwadis present in UHC area, where anganwadi workers helps along with pregnant and lactating mothers, their family members and mothers of under five participated. A total of 109 attended the programme, among them 76 were women and 31 children. In this programmes awareness was created on importance of breast feeding, benefits of it to babies and mothers. Social responsibility of family and Proper Nutrition in pregnancy and lactation was stressed. Taboos and myths related to breast feeding were addressed. Women interacted with resource persons shared their social and psychological problems associated with breast feeding and found solutions for it. Women were also screened for Anemia, malnutrition, hypertension and those suffering were referred to UHC and treated. Deworming tablets and iron supplements were distributed. UHC staffs, Postgraduate Students of Community Medicine department, OBG department JSSMC, ICDS supervisors attended and supported the programmes as resource persons.



## National Nutrition Month 2021



As a part of National nutrition month 2021, Programmes were conducted in Urban health centre and field practice area of UHC in the month of September 2021. As the theme was “Feeding smart right from the start” health education activities were held in anganwadis, government Higher primary and High schools and Urban health centre. A total of 228 people participated in the programmes among whom 164 were women 19 were children. Power point presentation on nutritional requirement, malnourishment, Anemia were held in anganwadis along with distribution of deworming tablets and iron supplements. UHC staffs participated in nutrition programmes conducted by ICDS and high school and higher primary schools and provided inputs on balanced diet, low cost, locally available nutritious food. Along with interactive sessions on nutritional requirements in schools, A Quiz programme was conducted in Government High school, Medar block on nutrition where 66 students participated and winners were awarded with prizes.




## Deworming Day – 14<sup>th</sup> & 15<sup>th</sup> Sept.2021

All the children were dewormed and Iron supplements distributed to Anemic students. Programme held in UHC include cooking demonstration conducted by staffs of NRC, Mysuru who demonstrated cooking low cost recipes for malnourished children to mothers. Health awareness programmes on balanced diet were also conducted for patients with co-morbidities like Diabetes Mellitus, hypertension and obesity. Use of Micronutrient rich, locally available low cost foods was encouraged. Importance of kitchen garden was stressed. Free camps Screening for anemia were held in the area and those suffering were treated. Post graduate students, Interns UHC staffs supported the programmes.





## GUEST LECTURES BY FACULTY

|                                                                                     |                                                                                |                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | <p><b>Dr.Praveen Kulkarni,</b><br/>Associate Professor, Community Medicine</p> | <ol style="list-style-type: none"><li>1. Delivered Guest lecture on "Oral Rehydration Solution with Dr.Praveen Kulkarni." in its show *People's Health, It matters* on YouTube channel CITIZEN HEALTH on 18<sup>th</sup> Nov.2021.</li><li>2. Delivered lecture on Kangaroo mother care and breast feeding in International on 04.05.2022.</li></ol> |
|   | <p><b>Dr.M.Mahesh,</b><br/>Professor, General Medicine</p>                     | <p>Delivered a talk on Importance of Micronutrients at Sponsored by Bayer Pharma on 31<sup>st</sup> Jul.2021.</p>                                                                                                                                                                                                                                    |
|  | <p><b>Dr.Bindu Annigeri,</b><br/>Sr. Resident, Dept. of Psychiatry</p>         | <p>Delivered guest lecture on Life style, Exercise and Diet in women's psychological well being on 22/03/2022</p>                                                                                                                                                                                                                                    |

## RESEARCH PROJECTS SUPPORTIN SDG2



| S.No | TITLE                                                                                                                                                           | Investigators                                                                          | Funding agency                       | Amount     | Duration |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------|------------|----------|
| 1    | Millet based diet fiber & allergic Asthma                                                                                                                       | Dr.Rajesh Kumar T.<br>Dept of Biochemistry                                             | ICMR                                 | 40 Lakh    | 2 years  |
| 2    | Micronutrient deficiency and cognitive dysfunction in tribal areas                                                                                              | Dr.Praveen Kulkarni<br>Dept of Comm.<br>Medicine                                       | DBT                                  | 27.5 Lakh  | 2 years  |
| 3    | Prevalence of Frailty and its association with Vitamin D, Calcium deficiency and nutritional status among elderly residing in Tribal areas of Mysuru, Karnataka | Mr. Vishal Juneja Dr<br>Praveen Kulkarni<br>Dept of Comm.<br>Medicine                  | ICMR<br>STS-2022                     | 50000.00   | 6 Months |
| 4    | Assessment of calcium and vitamin D levels in thalassemic children in a tertiary care unit                                                                      | Shika Aggarwal<br>(6th term Student Guide:<br>Dr.Ravi M D<br>(Professor of Pediatrics) | ICMR<br>STS 2021                     | 20,000.00  | 6 Months |
| 5    | Bone mineral density in children and RO water consumption                                                                                                       | Dr.Devanand<br>Biochemistry                                                            | ICMR                                 | 20.41 Lakh | 2 years  |
| 6    | Thyroid dysfunction and thyroid autoimmunity in women with iron deficiency anemia in early pregnancy                                                            | PI – Dr.Savitha.V<br>General Medicine                                                  | MPMRT<br>Karnataka API               | 30000.00   | 4 years  |
| 7    | Prevalence of Food allergy and nutrition in Mysore                                                                                                              | CO-PI<br>Dr. P A Mahesh<br>Pulmonology                                                 | Chicago<br>University,<br>USA        | --         | 3 years  |
| 8    | To develop a personalized meal plan for individuals with diabetes using artificial intelligence                                                                 | Dr H<br>Basavanagowdappa<br>Principal                                                  | CSIR-CFTRI<br>and JSS STU,<br>Mysore | 3.0 Lakh   | 3 years  |

### Students Projects related to SDG 2

|    |                                                                                     |
|----|-------------------------------------------------------------------------------------|
| 1. | Isolation of soluble fiber from fenugreek seeds powder using multienzymes complex.  |
| 2. | Partial purification of antimicrobial protein isolated from lactobacillus rhamnosus |
| 3. | Isolation of antimicrobial protein from lactobacillus rhamnosus                     |
| 4. | Studies on quality characteristics of selected millet based fermented food          |
| 5. | Shelf life of sprouted mung beans using ozone and chemical treatment                |

|     |                                                                                                                     |
|-----|---------------------------------------------------------------------------------------------------------------------|
| 6.  | Optimization of medium composition for biomass production of lactobacillus rhamnosus using different carbon sources |
| 7.  | Optimization of medium composition for biomass production of lactobacillus rhamnosus using different yeast extracts |
| 8.  | Microbiological and technological characterization of a probiotic fermented millet-based drink                      |
| 9.  | Isolation of lactic acid producing bacteria & development of novel probiotic limonia acidissima juice               |
| 10. | Optimization of substrate and characterization of traditional fruit wine of coorg                                   |
| 11. | Evaluation of functional properties of processed cereal-legume mix                                                  |
| 12. | Microbial analysis of silkworm pupae product (mayonnaise and pickle)                                                |
| 13. | Development of non-dairy fermented probiotic drink using finger millet                                              |
| 14. | Isolation & characterization of lactobacillus spp. From camellia sinensis and its biological activity               |
| 15. | Standardization and optimization of fermentation process of idli batter                                             |

## COLLABORATIONS SUPPORTING SDG 2

| Collaborator                                                                        | Area of collaboration                              |
|-------------------------------------------------------------------------------------|----------------------------------------------------|
|  | Artificial intelligence and Diabetes               |
|  | Prevalence of Food allergy and nutrition in Mysore |



## PUBLICATIONS RELATED TO SDG 2

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2. Renuka M. Study on mini nutritional assessment of pre and post nutritional counseling of the elderly with non-communicable disease/conditions residing in old age homes of Mysore city". *International journal of medical and health research*. 2022 Feb;8(2):1-7
3. Amoghashree., M R Narayana Murthy. Impact of malnutrition on scholastic performance among school children in Mysuru; *Clinical Epidemiology and Global Health*; 2021 Jul 1;11(100780).
4. Preetha Susan George., Narayana Murthy M.R. Prevalence of undernutrition among preschool children (3–6 years) attending anganwadi centers in urban Mysuru; *Indian Journal of Medical Specialities*; 2021 Jul 1;12(3);127-131.
5. Sareet Laxmi Nandeibam., Rashmi N., Ravi Dharti Mandyam., Chandrashekar Channanayaka., Prajwala Vasudev., Lakshmi Mounika Pichala. Anasarca in an Infant – An Unusual Cause; *Current Developments in Nutrition*; 2021 Jun;5(Supplement-2);855
6. Chandana Hombaiah., Madhu B., Dr Narayana Murthy M.R., Anil S Bilimale  
Ambivalence in distinguishing double burden of malnutrition among school children in three districts of south India; *Clinical Epidemiology and Global Health*; 2021 Jun 18;12;100-805.
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8. Mizba SK, Chiome TJ, Egbuna C, Srinivasan A, Achar RR. March 2022. Food System Application of Nanomaterials in the Food Industry. Nature Springer. DOI: 10.1007/978-3-030-98820-3.
9. Fathima A, Chiome TJ, Catherine AA, Egbuna C, Achar RR, Srinivasan A. March 2022. Smart Use of Nanomaterials as Sensors for Detection and Monitoring of Food Spoilage. Nature Springer
10. Adetuyi BO, Ogundipe AE, Ogunlana OO, Egbuna C, Estella OU, Mishra AP, et al. Banana Peel as a Source of Nutraceuticals. Food and Agricultural Byproducts as Important Source of Valuable Nutraceuticals: Springer; 2022. p. 243-50.
11. Manjunath A, Thumu SC, Kumar S, Halami PM. Bacterial heteroresistance: an evolving novel way to combat antibiotics. *Biologia*. 2021 Oct;76(10):3029-41.
12. Ashwini M, Ray M, Halami PM, Sumana K. Conjugal transfer of macrolide-lincosamide-streptogramin resistance from lactic acid bacteria isolated from food materials. *Materials Today: Proceedings*. 2022 Jan 1;51:707-14.
13. Patil SM, Kumari VC, Sumana K, Sujay S, Tejaswini M, Shirahatti PS, Ramu R. Sustainable development of plant tissue culture industry: The Indian scenario. *Journal of Applied Biology and Biotechnology*. 2021 Mar 10;9(2):1-7.