

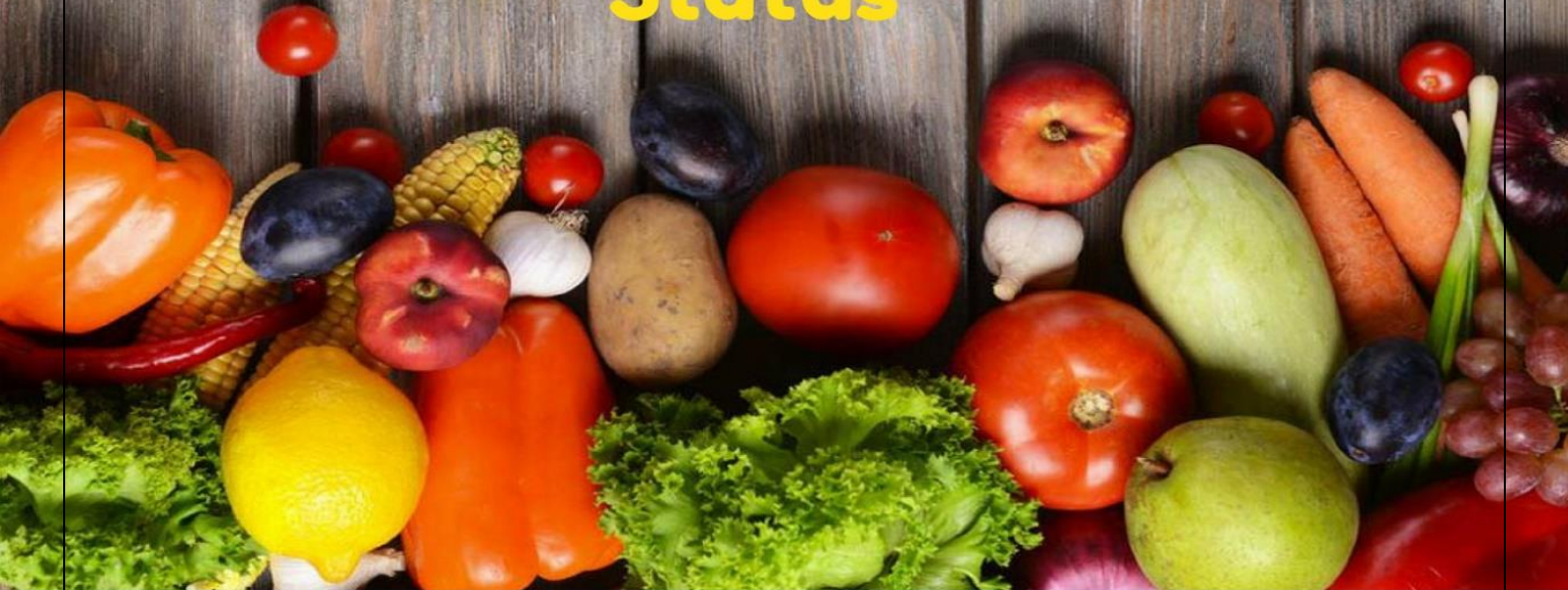


May, 2018

IASbaba.com

The YK Gist

India's Nutrition Status



TECHNOLOGY FOR RURAL DEVELOPMENT



Preface

This is our 38th edition of Yojana Gist and 29th edition of Kurukshetra Gist, released for the month of May 2018. It is increasingly finding a place in the questions of both UPSC Prelims and Mains and therefore, we've come up with this initiative to equip you with knowledge that'll help you in your preparation for the CSE.

Every issue deals with a single topic comprehensively sharing views from a wide spectrum ranging from academicians to policy makers to scholars. The magazine is essential to build an in-depth understanding of various socio-economic issues.

From the exam point of view, however, not all articles are important. Some go into scholarly depths and others discuss agendas that are not relevant for your preparation. Added to this is the difficulty of going through a large volume of information, facts and analysis to finally extract their essence that may be useful for the exam.

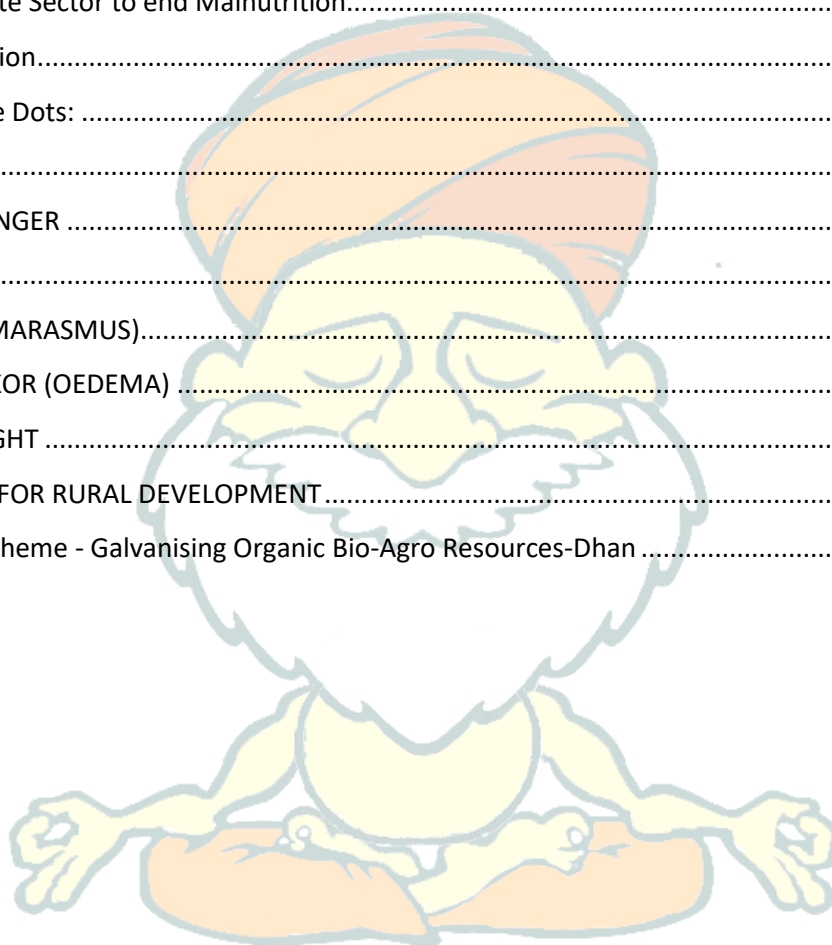
We are not discouraging from reading the magazine itself. So, do not take this as a document which you take read, remember and reproduce in the examination. Its only purpose is to equip you with the right understanding. But, if you do not have enough time to go through the magazines, you can rely on the content provided here for it sums up the most essential points from all the articles.

You need not put hours and hours in reading and making its notes in pages. We believe, a smart study, rather than hard study, can improve your preparation levels.

Think, learn, practice and keep improving! You know that's your success mantra ☺

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India & Nutrition

India's ranking in the International Food Policy Research Institute's (IFPRI's) 2017 Global Hunger Index – India has slipped to 100 among 119 countries in the 2017 Global Hunger Index, down from 97 among the 118 countries in 2016

An estimated 35.7% children are underweight and 38.4% are stunted in that age group. The body mass index of 22.9% women aged 15-49 indicates chronic energy deficiency.

Kuposhan mukt bharat (Malnutrition Free India) – WHY?

Poor nutrition = Poor economics

There is an urgency to address underlying causes of malnutrition in India as

1. *Economics is related to nutrition*

- **World Bank:** India loses 2-3 of its annual GDP due to lower productivity (malnutrition being the underlying cause)
- Some of the highest economic returns to public investment in human capital in India lie in maternal and early-life health and nutrition interventions”
- **Copenhagen Consensus:** Identified several nutrition interventions as some of the most high-yielding of all possible development assessments

2. *Dream of India as global player in manufacturing is dependent on nutrition*

- One out of every three children is born underweight
- Low level of productivity due to inability to realise full potential for physical growth and cognitive development
- Thus, India's population dividend is turning out to be liability.

3. *Humanity is related to nutrition*

Art 47 of Constitution of India

- “Duty of the **state to raise the level of nutrition** and the standard of living and to improve public health.
- The state shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties.”

Causes of Malnutrition

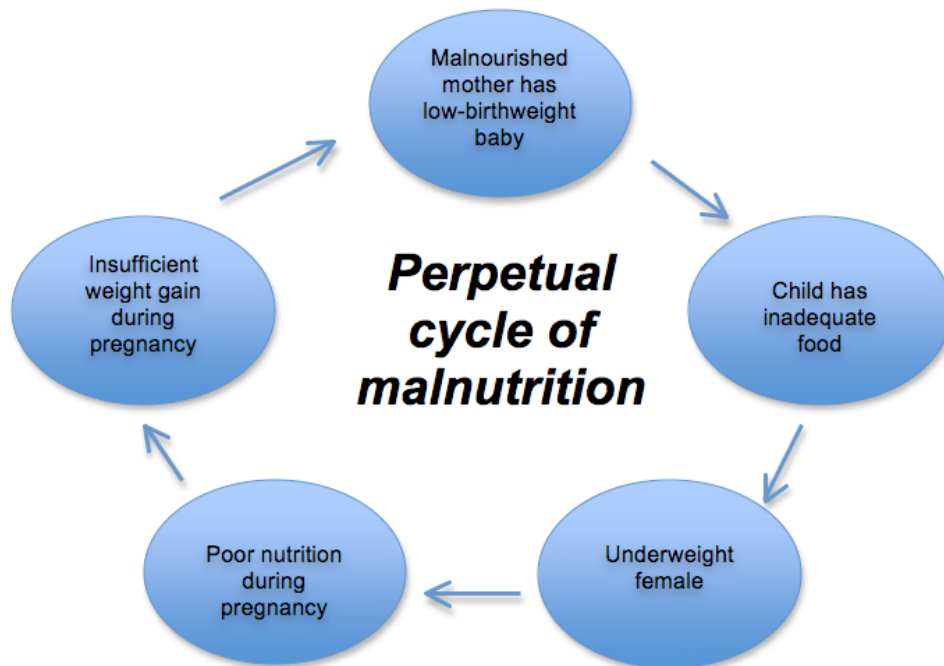
Malnutrition in Uterus: Low status of women, low level of education, being underweight during pregnancy and anaemia affects her reproductive health which can lead to higher rates of morbidity, mortality or pregnancy outcomes such as low birth weight, birth defects and haemorrhage of the new-born.

Micronutrient Deficiencies: Deficiencies in key vitamins and minerals—iron, vitamin A, zinc, and iodine; are associated with disease prevalence and severity.

Breastfeeding Practices:

- Raises the risk of decreased immune function + Increased morbidity + Mortality + Blindness
- WHO has identified ‘poor infant feeding’ as a risk factor for the survival of the child, contributing to neonatal death. Experts are of the opinion that exclusive breastfeeding for the first six months of life should be followed by continued breastfeeding until two years of age
- *Lack of improvement in infant and young child feeding practice:*
 - Aggressive promotion of baby foods by companies
 - Lack of support to women in the family and at work places,
 - Inadequate healthcare support,
 - Non-review of the maternity benefit laws,

- Neglecting infant feeding in its disaster management programmes
- Weak overall policy and programmes

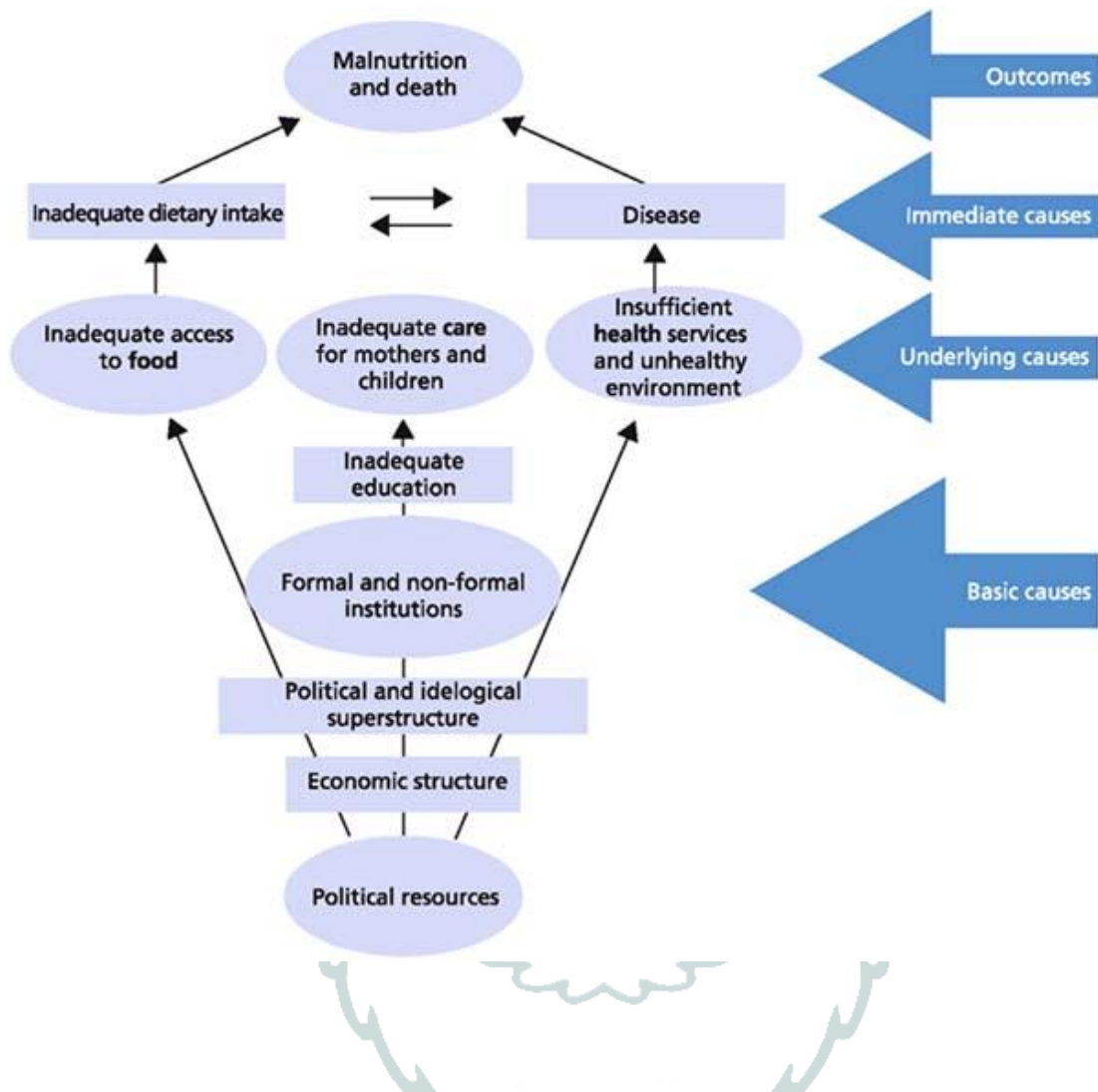


Poor Sanitation:

- About half of Indians defecate outside without using toilets and from here, children pick up parasites and chronic infections that impair the ability of the intestines to absorb nutrients
- UNICEF reports death of almost 117,000 Indian children per year from Diarrhoea

Tribal Issues:

- Report of deaths due to starvation, diseases like hypertension and diabetes rising and incidences of Malaria, TB, Diarrhoea
- Open defecation + Lack of clean drinking water + Illiteracy + Lack of Health Education, Infrastructure and health professionals (naxal belt, if any or hilly terrain)



Strategy for Malnutrition Free India

Every third child of the country is undernourished which leads to several diseases, child death and maternal mortality. Recognising that India pays an income penalty of 9-10% due to a workforce stunted during childhood, the National Nutrition Strategy aims to bring nutrition to the centre-stage and remove all forms of malnutrition by 2030.

4 Pillared-Strategies

1. Improving health services
2. Food
3. Drinking water and sanitation
4. Income and livelihood

National Nutrition Mission

In India, the nutrition problem is in the younger age group from 0-6 years' group, adolescent girls and lactating mothers. The aim is to try to reduce the level of stunting, under-nutrition problem, anaemia problem and low birth weight problem in these groups (10 crore beneficiaries). This has to be reduced by at least 2 - 3% per annum.

Regulation: Will have an apex body which will monitor, supervise and fix the target and guide the nutrition related intervention across all the ministries

A change from the past

- Mapping of various Schemes contributing towards addressing malnutrition
- Introducing a very robust convergence mechanism
- ICT based Real Time Monitoring system – Main thrust is on use of ICT tools to monitor the real time basis implementation of the programme. Now there will be synergy of schemes, achievements of targets and real time monitoring by using the IT tools.
- Incentivizing States/UTs for meeting the targets- There will be competition between different states to achieve the targets faster.
- Incentivizing Anganwadi Workers (AWWs) for using IT based tools and also when they fulfil the target
- Eliminating registers used by AWWs - Till now it was operated through manual registers with anganwadi workers. Now they will use smart phones, laptops and computers to register the data. The idea is to coordinate and monitor the schemes on IT basis and supervise in real time and compile reports. The move will be a deviation from the old practice of maintaining registers and will also help to reduce pilferage.
- Introducing measurement of height of children at the Anganwadi Centres (AWCs)
- Social Audits - Except for MGNREGA, no other scheme has social audit. The government has brought in transparency, accountability through social audit. When there will be constant monitoring, there will be compliances to the standards as well as work done.

- Setting-up Nutrition Resource Centres, involving masses through Jan Andolan for their participation on nutrition through various activities. Creating IEC materials like posters, videos, doing street plays etc. will involve the public as well as create environment for awareness.

India gets \$200 million loan for nutrition mission: India and World Bank signs agreement for a \$200 million loan for implementing National Nutrition Mission.

To achieve the goals of the National Nutrition Mission, the following 5 areas need concurrent attention –

1. Overcoming calorie deficiency through the effective use of the provisions of the National Food Security Act 2013
2. Overcoming protein hunger through the increased production and consumption of pulses and milk and poultry products
3. Overcoming hidden hunger caused by micro nutrient deficiency through the establishment of genetic gardens of bio-fortified plants and promoting a Farming System for Nutrition programme
4. Ensuring availability of clean drinking water, sanitation and primary healthcare
5. Developing a cadre of Community Hunger Fighters who are well versed with art and science of malnutrition eradication



Poshan Abhiyaan: PM's Overarching Scheme for Holistic Nourishment

A flagship programme of the **Ministry of Women and Child Development (MWCD)**

Focus of the Abhiyaan: On the first 1000 days of the child and preventive care for adolescent girls, women and mothers

Jan Andolan: Incorporates inclusive participation of public representatives of local bodies, government departments of the state, social organizations and public at large

Behaviour change communication is the key component of POSHAN Abhiyaan for converting it into Jan Andolan.

Key agents of change: Mother-in-law and husband; Mission is designed to develop orientation of these key members towards healthy mother and child through proper nutrition.

Key Nutrition strategies and interventions are –

- Supplementary nutrition
- IYCF (Infant and Young Child Feeding) immunisation
- Food fortification
- Adolescent nutrition
- Dietary diversification and maternal health & nutrition

Activities to be undertaken by States/UTs as part of POSHAN Abhiyaan:

- Implementation of Convergence Action Plan at State/UT Level.
- Procurement of Smartphones, Tablets and Growth Monitoring Devices by States/UTs.
- Roll-Out of ICDS-CAS (Common Application Software).
- Implementation of ILA (Incremental Learning Approach) and CBE (Community based events)

Community Mobilisation for Jan Andolan

Mobilisation of Children

Participation of Children at the AWCs e.g. wearing dresses depicting vegetables, fruits, etc

Nutrition Messaging

SMS to Beneficiaries through ICDS-CAS, Ringtones, Callback Tones etc.

Messaging through Folk Songs

Nutrition message from folk songs and songs on WASH etc.

Yoga at AWCs

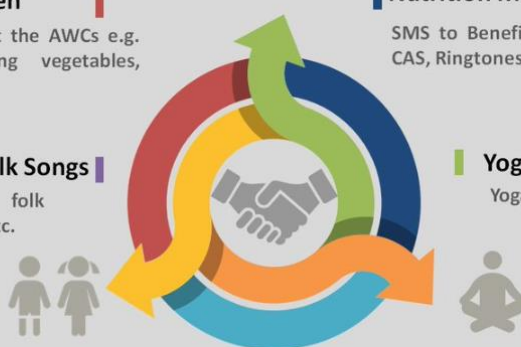
Yoga to be promoted at the AWCs

Encouragement Initiatives

Photographs of healthy mother and child to be Displayed at AWCs

Messaging through Cultural Activities

Programmes for Adolescent Girls; nutrition subject to be linked; local drama groups, self help etc; Tithe Bhoj (Community Feast) etc.



GOVERNMENT INITIATIVES TO ADDRESS MALNUTRITION

The Government has accorded high priority to the issue of undernutrition and is implementing several programmes of different Ministries/Departments through State Government/UT Administration, which have the potential to improve the current nutritional situation in India.

Target Group	Schemes	Major Services from Schemes
Pregnant and Lactating Mothers	Integrated Child Development Scheme ICDS	ICDS: Supplementary nutrition, counselling on diet, rest and breastfeeding, health and nutrition education.
	Indira Gandhi Matritva Sahyog Yojana IGMSY	Conditional Maternity Benefit
	Reproductive Child Health RCH-II, National Rural Health Mission (NRHM), Janani Suraksha Yojana (JSY)	NRHM: Antenatal care, counselling, iron supplementation, immunisation, transportation for institutional delivery, institutional delivery, cash benefit, postnatal care, counselling for breast feeding and spacing of children etc.
Children (0-3 years)	ICDS	ICDS: Supplementary nutrition, growth monitoring, counselling health education of mothers on child care, promotion of infant and young child feeding, home based counselling for early childhood stimulation, referral and follow up of

		undernourished and sick children.
	RCH-II, NRHM	NRHM: Home-based new born care, immunisation, micronutrient supplementation, deworming, health check-up, management of childhood illness and severe under-nutrition, referral and cashless treatment for first month of life. Care of sick newborns, facility-based management of severe acute malnutrition and follow up.
	Rajiv Gandhi National Creche Scheme	Rajiv Gandhi National Creche Scheme: Support for the care of children of working mothers.
Children (3-6 years)	ICDS	ICDS: Non-formal preschool education, growth monitoring, supplementary nutrition, referral, health education and counselling for care givers.
	RCH-II, NRHM	NRHM: Immunisation micronutrient supplementation, deworming, health check-up, management of illnesses and severe undernutrition
	Rajiv Gandhi National Creche Scheme	Rajiv Gandhi Creche Scheme: support for care of children of working mothers
	Total Sanitation Campaign	TSC/NBA: Household-level sanitation

	(TSC)/Nirmal Bharat Abhiyan (NBA)	facilities
	National Rural Drinking Water Programme (NRDWP)	NRDWP: Availability of safe drinking water
School going children (6-14 years)	Mid-Day Meals (MDM),	Mid-day meal: Hot cooked meal to children attending school.
	Sarva Shiksha Abhiyan (SSA)	SSA: Support knowledge dissemination on nutrition by inclusion of Nutrition related topics in syllabus and curriculums for formal education, school health check-up, mid-day meal.
Adolescent Girls (11-18 years)	Rajiv Gandhi Scheme for the Empowerment of Adolescent Girls (RGSEAG), Kishori Shakti Yojana	RGSEAG: Supplementary Nutrition, Iron Folic Acid supplementation, vocational training of adolescent girls.
	NRHM	NRHM: Weekly iron and folic acid supplementation
	Total Sanitation Campaign (TSC)/Nirmal Bharat Abhiyan(NBA)	TSCINBA: Access to sanitation facilities
	National Rural Drinking Water Programme (NRDWP)	NRDWP: Access to safe drinking water
Adults and Communities	MNREGS, Skill Development Mission, Women Welfare and Support Programme, Adult Literacy Programme, TPDS, AAY, Old and Infirm Persons Annapurna, National	MNREGS: Employment Guarantee for 100 days per financial year for adult member of rural household. NRLM: Poverty alleviation in BPL families through self-employment

<p>Rural Drinking Water Programme (NRDWP) and Total Sanitation Campaign(TSC)/Nirmal Bharat Abhiyan(NBA), schemes/programmes in the agriculture sector such as the National Food Security Mission (NFSM), National Horticulture Mission(NHM), Rashtriya Krishi Vikas Yojana (RKVP), Integrated Scheme of Oilseeds, Pulses, Oilpalm, and maize (ISOPOM), and efforts towards augmenting Animal Husbandry, Dairying and Fisheries.</p>	<p>TPDS: Food subsidy for rice, wheat etc</p> <p>NIDDCP: Promotion of use of iodized salt</p> <p>NFSM: Increased production of rice, wheat and pulses</p> <p>RKVP: Supports states for creation of infrastructure, essential to catalyze the existing production of food grains.</p>
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Note: Updated list from government website. Please keep updating the various schemes.

3 parameters widely used for assessing nutritional status:

1. Height
2. Weight
3. BMI (Body Mass Index is the indicator of current energy adequacy)

Iodine Deficiency Disorder: Public health problem in India

- Due to deficiency of iodine in water, soil and foodstuffs
- National Iodine Deficiency Disorders Control Programme (NIDDCP)

Engaging Private Sector to end Malnutrition

For more than 40 years, governments have intervened with food transfers in pre-school Integrated Child Development Services (ICDS) centres. These infant food transfers were mandated as legal rights first by the Supreme Court and then by the National Food Security Act 2013. If we are to meet South Asia's SDG target of ending malnutrition by 2030, we must engage the private sector to accelerate progress.

Benefits of engaging the private sector:

- Business/private sector can play on key strengths such as large-scale production capacity, product and business model innovation, marketing expertise and extensive distribution networks and supply chains, to complement government and social sector efforts.
- Comparative analysis of different countries highlighted that businesses can leverage their product development expertise and production capacity to manufacture supplements and fortified food products (zinc-fortified rice, vitamin A-fortified edible oil, iodised salt).
- They can partner with governments and CSOs for distribution through social programmes.

In addition to supplements, there are **five tangible opportunities to engage the private sector** in driving up nutrition outcomes in South Asia:

1. Nudging (to attract or influence) customers to purchase nutrition products:

- Large and progressive retailers/retail chains can proactively carry nutritious products, display them prominently, and educate consumers on their benefits.
- They can be a key channel of influence as consumers often rely on retailers for information and point-of-purchase decision-making.

2. Tech-enabled nutrition awareness and service delivery:

- Technology and telecom businesses can build platforms to deliver nutrition-related information, track diets and key nutrition indicators.
- These will help in early identification of deficiencies, and connect consumers to relevant health services.

3. Influencing cooking practices:

- Media and food companies can help spread awareness on the nutritional value of different foods and improve cooking practices, through interventions such as health food TV shows.
- Celebrity chefs can be key influencers.

4. Workplace nutrition programmes:

- Companies can be effective channels for distributing nutritious food and building awareness among employees and their communities.

5. CSR support for nutrition:

- Businesses that are not directly related to nutrition can also become “nutrition champions” by backing the cause as part of their social responsibility efforts.
- It can be used to generate awareness and deliver nutritious food through their social programmes.

Therefore, it is important to catalyze private sector engagement through ecosystem level changes and enabling policy environment. This could include reduced import duties on fortification machinery, tax holidays/incentives, introduction of “fat tax”, input subsidies, among others.

Funding support in the form of grants and other sub-commercial debt options can also crowd-in private sector investment in nutrition. For businesses lacking knowhow to produce nutritious/fortified food items, CSOs could provide the necessary technical expertise.

Food Fortification

Fortification is adding vitamins and minerals to foods to prevent nutritional deficiencies. The nutrients regularly used in grain fortification prevent diseases, strengthen immune systems, and improve productivity and cognitive development. Wheat flour, maize flour, and rice are primarily fortified to:

- Prevent nutritional anaemia
- Prevent neural tube birth defects
- Increased productivity
- Improve economic progress
- Fortification is successful because it makes frequently eaten foods more nutritious without relying on consumers to change their habits.
- Vitamins and minerals often used in flour and rice fortification and their role in health include:
 - Iron, riboflavin, folic acid, zinc, and vitamin B12 help prevent nutritional anaemia which improves productivity, maternal health, and cognitive development.
 - Folic acid (vitamin B9) reduces the risk of neural tube birth defects
 - Zinc helps children develop, strengthens immune systems, and lessens complications from diarrhoea.
 - Niacin (vitamin B3) prevents the skin disease known as pellagra.
 - Riboflavin (vitamin B2) helps with metabolism of fats, carbohydrates, and proteins.
 - Thiamine (vitamin B1) prevents the nervous system disease called beriberi.
 - Vitamin B12 maintains functions of the brain and nervous system.
 - Vitamin D helps bodies absorb calcium which improves bone health.

- Vitamin A deficiency is the leading cause of childhood blindness. It also diminishes an individual's ability to fight infections. Vitamin A can be added to wheat or maize flour, but it is often added to rice, cooking oils, margarine, or sugar instead.

Nutrition is a challenge full of complexity. There is plenty of evidence globally and in India suggesting that poor nutrition affects early childhood development, learning and earning potential with life-cycle effects on national health and economic growth.

For an emerging country with one of the fastest economic growth rates, India needs to implement its announced strategy with a focus on evidence, results and learning, not just spin. That calls for a true commitment at the level of the states and communities with a focus on improved outcomes for the poor and accountability for those in governance, and the solutions need to go far beyond the expansion of sanitation, important as that is.

Connecting the Dots:

1. Is India an economic powerhouse or nutritional weakling? Examine.
2. India suffers from a "double burden" of pervasive under nutrition and deficiencies in key vitamins and minerals (micronutrients) along with growing rates of obesity and Non-Communicable Diseases. Discuss
3. Would India have not been considerably better-off in terms of health, nutrition and welfare if instead of spending thousands of crores on food subsidies, India had spent money on essential public goods like sanitation? Discuss.
4. What is food fortification and bio-fortification? Discuss how fortification can be a major strategy of the government of India to reduce malnutrition in India.

National Family Health Survey (NFHS)

The survey provides state and national information for India on fertility, infant and child mortality, the practice of family planning, maternal and child health, reproductive health, nutrition, anaemia, utilization and quality of health and family planning services. Each successive round of the NFHS has had two specific goals:

CONCEPTS

HIDDEN HUNGER

- Food may contain enough calories but lacks crucial vitamins and minerals
- Affects physical and mental development
- Quality of food people eat does not meet their nutrient requirement

STUNTING

- Chronic malnutrition that starts before birth
- Occurs over time; Child is shorter than his/her age
- **Reasons:**
 - Poor maternal nutrition
 - Poor feeding practices
 - Poor food quality
 - Frequent infections
- Worse in villages where a higher percentage defecate in the open

WASTING (MARASMUS)

- Alterations in skin's and bone's appearance; like an old man's face
- Ribs and shoulder bones easily seen
- Severe wasting of fat and muscle which the body breaks down to make energy

KWASHIORKOR (OEDEMA)

- Excessive accumulation of fluid in body tissues which results from severe nutritional deficiencies
- Lethargic with a large belly
- Changes in hair colour and texture

UNDERWEIGHT

- Bodyweight lesser than normal
- Moderate: Below minus two standard deviations than the median weight for the age
- Severe: Below minus three standard deviations than the median weight for the age

TECHNOLOGY FOR RURAL DEVELOPMENT

Mahatma Gandhi had said, "India lives in her villages". Even today, after decades of rapid urbanisation, around 70 per cent of Indians live in villages. Nearly 70 per cent of the country's population lives in rural areas. Thus, the development of rural India shall reflect development of the whole country. For this to happen, an intensive focus on conservation of natural resources and use of sustainable technologies will have to become a prerequisite.

Rural India faces a severe technology deficit. While there are other serious shortages power, water, health facilities, roads, etc., these are known and recognised. However, the role of technology in solving these and other problems is but barely acknowledged, and the actual availability of technology in rural areas is, at best, marginal. The so-called digital divide is widely spoken and written about; the technology divide is hardly mentioned. Yet, this disparity is arguably more important, as it has far greater impact.

India's endeavour to raise rural income will depend on how effectively measures can be put in place to reduce the cost of cultivation. Prime Minister Shri Narendra Modi has set a target to [double farmers' income by 2022](#). This target can be achieved by a wider technological intervention to cut the input cost in the farm sector to ensure better returns to farmers for their produce. Government has initiated a host of measure to empower rural population through technology intervention.

[Digital India's](#) strategic cornerstones, the Common Services Centres, are meant to provide access points for delivery of various electronic services to villages, to [promote digital](#) and financial inclusion, encourage rural entrepreneurship, and build rural capacities and livelihoods, offering a bottom-up approach to social change, particularly among India's rural citizens. New technologies enable small farmers to shift from input-intensive to knowledge-intensive agriculture.

Precision agriculture can improve the timeliness of planting, secure the best market prices through market information and [e-market](#) reforms, provide fertiliser subsidies via direct bank transfers that eliminate or reduce the cost of financial intermediaries, and improve agricultural extension. Combined with improved seed supply and land and water

management, which can in turn increase double and triple cropping, farmers' income can grow.

GOI launched eNAM (National Agriculture Market), an online platform for farmers that integrates agricultural markets online, allowing farmers and traders alike to view all Agriculture Produce Market Committee-related information and services, commodity arrivals and prices, and buy and sell trade offers, thus helping farmers bid for the best prices across markets. GOI also launched a crop insurance scheme, the Pradhan Mantri Fasal Bima Yojana (PMFBY) in 2016, which now covers 37 million farmers.

Additionally, GOI is investing in mapping all of India's aquifers, and using technology to manage water demand. Quantifying the relationship between rainfall and groundwater levels under alternative modes of irrigation and farming should enable prioritisation of prospective water and irrigation investments.

Digitised land registration, mobile phones and 'Uberised' tractor services all are contributing to improved farm management. Digital India Land Records Modernisation Programme (DILRMP) is updating millions of land records, providing title guarantees and increased security of land tenure to farmers while stimulating land rentals by nonviable smallholders and land consolidation.

To facilitate communications, Digital India is implementing plans to connect 2.5 million Gram Panchayats (local governments) with high-speed internet by 2018, with hundreds of thousands already internet-enabled. GOI has also mandated that all mobiles phones must support at least one of 22 Indian languages, other than English and Hindi, beginning July 2017. With only 27% of villages having banking services within 5 kilometres, the government is licensing new banks and using mobile phone payment technology to an increasing extent. Mobile coverage is high—over 1 billion of India's population of 1.4 billion are connected.

Complementing efforts to increase agricultural productivity and employment is India's triple innovation system (JAM), consisting of [Jan Dhan](#) (the [Prime Minister's initiative](#) to open universal bank accounts, depositing Rs1000 [US\$15.4] per household), Aadhaar (a unique 12-digit ID number for citizens) and mobile phones.

There is now far less pilfering thanks to the digitisation of 230 million ration cards, 56% of which are strengthened with a universal ID and Aadhaar. Several states have now installed electronic point-of-sale devices at FPSs to track sales of food grains to cardholders on a real-time basis. A much debated policy shift - in-kind cash transfers in place of food distribution - is also being facilitated by digital technology.

Nearly 6.3 million new LPG connections have been provided to poor families in 2015–16, with a target of providing 50 million LPG connections over three years. Further, the [Mahatma Gandhi National Rural Employment Guarantee Scheme](#), ([MGNREGS](#)), the largest in the world, guarantees up to 100 days of rural employment for those in need of employment at Rs100 (US\$1.5)/day. Using DBTs to pay beneficiaries has reduced transfer costs, waste and corruption - and sidestepping any possible misallocation of funds transferred from central to state to district to panchayats for distribution.

Geographical application of new technologies is still limited in rural areas; many farmers remain unaware of these advances. Insufficient connectivity in rural areas along with a lack of basic computer knowledge and literacy hinder development. Substantial investment is needed in physical infrastructure, power, broadband, transportation and education, particularly in rural regions and among the poorest populations in order to truly reap the benefits of the 4th Industrial Revolution.

The utility of S&T will be paramount in achieving aim of rural development as it is most important and effective tool for ensuring poverty alleviation, food security, life skilling, and educating masses. But only scientific and rational outlook can help us determine whether a technology is in harmony with nature or not. Technologies should be used in a sustainable manner and only to the extent they do not interfere with the nature and ecosystem. The key to a developed and prosperous village lies in the sensible and rational usage of technologies which are in harmony with nature.

Gobar Dhan Scheme - Galvanising Organic Bio-Agro Resources-Dhan

Objectives –

With the largest cattle population in the world, rural India has the potential to leverage huge quantities of gobar into wealth and energy.

- To make villages clean
- Generate wealth and energy from cattle and other waste

Benefits:

- New Biogas plants with new and better technology will come up to make the process more efficient
- Facilitate regular power supply to rural homes
- Lead to cleaner villages
- Generate an alternate source of income for the farmers
- Creation of opportunities for income and employment generation for other groups involved
- Improve fertility of the soil and thereby enhance productivity of crops
- Prevent diseases in the animals of the country
- Mainstreaming women in development activities of the village – collecting and packaging the 'gobar dhan' for transportation
- Reduction of pressure induced by waste on the environment as the emission of methane from the cow dung will be processed and will lead to a reduction in Carbon Footprint

Challenges:

- Aggregation of cattle waste and maintaining a regular supply to plant operators becomes imperative.
- The Biogas plants that were constructed was not able to keep up, both in terms of production as well as speed, leading to inefficiencies and losses. The Biogas plants that are being planned to be constructed should have better technology which

sustains, up scales and is widely accepted by farmers and women in rural areas. Adequate training should be provided to the workers.

- India is dealing with a deficient fodder for our cattle. Fodder production for the cattle need to be enhanced
- Farm Mechanization may pose challenges to the population of the cattle as the machines will replace the cattle. This might lead to ignorance on the part of the cattle's master.

Way Forward:

Incentivize Behavioral Change: Cattles are considered important and the fact that the gobar can be utilized and become a source of income needs to be engrained in the minds of the farmers. This will not just generate additional income, but will reduce the pains of gobar disposal, thereby leading to the communities becoming swacchh.

Generating wealth from waste in rural areas will require the involvement of all actors and sectors.

- Investments from the private sector and local entrepreneurs will be needed.
- Panchayats and village communities will have to play key roles to leverage the animal and organic waste that goes into water bodies, dumping sites and landfills.
- Informal sanitation service providers can be integrated into the system by training and licensing them.

Political will and strong public demand for cleaner, healthier living environments should definitely drive the way ahead.

Integrated Watershed Management Program (IWMP): Aims to bring in ecological stability thru conservative utilization of soil & water resources

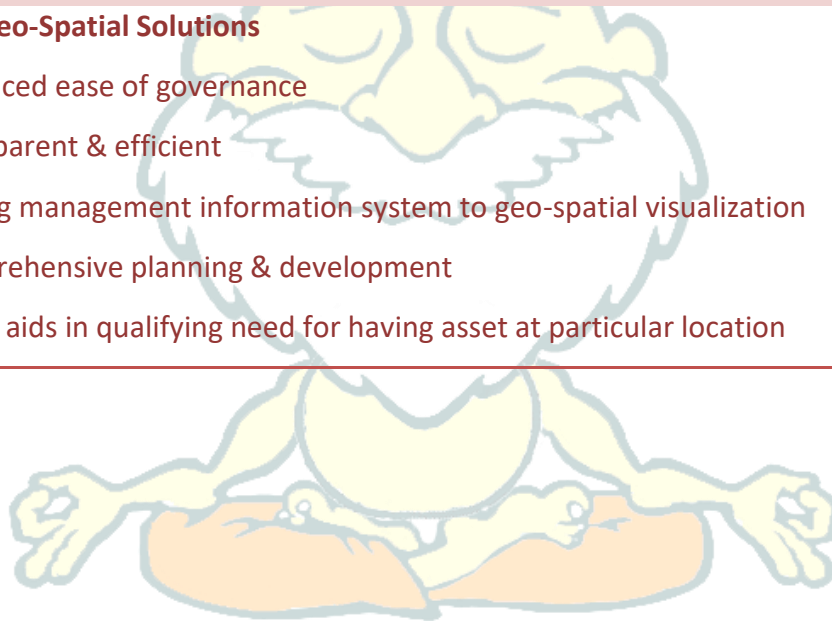
Space Applications in Agriculture & Water Resources Sectors

Geo-Spatial Solutions have immense value for the sustainable development of Rural India-

- Crop Insurance Decision Support System (CIDSS) – Web-enabled Integrated package for implementing Pradhan Mantri Fasal Bima Yojana (PMFBY)
- Crop Intensification – Bringing Green Revolution to Eastern India – Satellite-based mapping of post kharif rice fallows (National Food Security Mission)
- Mapping & Evaluation of High Value Crops
- Agricultural Drought Vulnerability
- Mapping Horticulture Crops
- Fibre Crop Information System
- Water Body Information System

Benefits of Geo-Spatial Solutions

- Enhanced ease of governance
- Transparent & efficient
- Linking management information system to geo-spatial visualization
- Comprehensive planning & development
- It also aids in qualifying need for having asset at particular location



Strategies	Technologies, Practices and Policies
Improved Usage of Surface and Groundwater	Laser land levelling of fields, optimum size of basins
	Furrows, raised beds, conveyance pipes, underground distribution system
	Proper canal schedules, irrigation schedules, well-maintained distribution networks
	Use of remote sensing, GIS, sensors, drones and ICT technologies for improved irrigation
	Water user associations, Smart card based community tubewells
	Pricing of water and power to recover their full costs, Solar pumps and allowing excess solar power to be fed back into the grid, focus for the east.
Improved Use of Rainfall	<i>In-situ</i> , on-farm and catchment water harvesting for supplemental irrigation
	Synchronising crop planting, transplanting with on-set of monsoons
	Improved water retention through mulches; drainage of excess water, use of rainfall for recharge through Underground Taming of Floods for Irrigation
	Agro-met advisory services, crop insurance; drought and flood management
Reducing non-beneficial Uses and Water Quality Deterioration	Improved canopy architecture through agronomy and plant breeding
	Zero and minimum tillage to reduce evaporation
	Enhanced use of micro-irrigation- drips, micro-sprinklers, sprinklers
	Use of plastic and residue mulches; boundary plantations
	Peri-urban agriculture and safe use of waste water.
Improving Crop Yields and Water Productivity	Improve incentives structures for water efficient crops through price and procurement policies, Direct Input subsidies to all farmers and let farmers decide which crops they want to grow.
	Breeding of superior crop varieties with higher yield, stress and disease tolerance
	Precision irrigation: synchronising water application with crop water demand
	Soil fertility management-rotation, tillage, targeted application of nutrients
	Disease, pest and weed management

Table: Initiatives in the Irrigation Sector

ICTs for Rural Development For Management of Rural Development Programs

- For e-Governance (including Services Delivery System)
- For Agricultural Extension Services & Marketing
- For Climate Change & Natural Resource Management
- For Rural Health Care Services
- For Disaster Management in Rural Areas
- For Rural Connectivity For Education
- For Social Justice & Empowerment
- For Public Distribution System
- For Rural Tourism

SECURE (Software for Estimate Calculation Using Rural rates for Employment): ICT based solution for estimate preparation

Panchayat Enterprise Suite (PES) – E-Panchayat

To transform functioning of Panchayati Raj Institutions (PRIs)

Plan Plus: Helps in preparation of participatory Gram Panchayat Development Plan (GPDP)

Action Soft: Provides interface for Financial & Physical progress reporting of all works carried out from approved plan

PRIA Soft: Basically accounting software to capture receipts/exp. details thru voucher entries

National Panchayat Portal (NPP): Provides dynamic web site for each local body

Service Plus: Portal to provide electronic delivery of basic services to citizens

Challenges of ICTs in Rural Development

- Continuous Supply of Electricity
- Low level of Digital Literacy
- Shortage of ICTs Personnel
- Lack of Access of Telecommunications & Internet Services
- Unavailability of Web Content in Local Language
- Acceptance in Rural People Unethical Use of ICTs

Happy Learning

IASbaba 😊

