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EVALUATION INDICATORS

1. Alignment Competence
2. Context Competence
3. Content Competence
4. Language Competence
5. Introduction Competence
6. Structure - Presentation Competence
7. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

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4.

5.

6.

All the Best

Section
A

Good Nutrition is the Foundation of Human Development

'Bhaat' or 'Rice' was all 11 year old Santoshi kept asking for. However, Santoshi's family had no rice since its Ration Card was not linked to Aadhaar. Santoshi's school in Simdega, Jharkhand was off due to Durga Puja Holidays. She could, therefore, not get a meal under the school's mid-day meal programme.

After starving for 8 days, Santoshi died. A part of all of us, who read the news later, died too.

Mid Day Meal Programme, however, has a fair share of achievements too. It has played a stellar role in reducing drop-out rate in primary education and has helped improve the nutrition status of Indian children, as the National Family Health Survey-4 data shows. The programme, along with the National Food Security Act, have laid a solid foundation for improving the educational, nutrition and

health indicators of Indian children in particular, and poor citizenry in general.

In spite of its successes, the story of Santoshi, or those of three siblings from Delhi aged 2, 4 and 8, who died starving for the want of nutrition prompts us to take a closer look at the role of good nutrition in Human Development, and the challenges we face.

In this write up, we will first delve into the multi-dimensional aspect of good nutrition. We will then analyze what Human Development is, and how is it interlinked with good nutrition. We will then analyze how poor nutrition curtails human development. We will finally investigate how we can fix our nutritional challenges for a robust and sustainable human development.

Good Nutrition: Multi-dimensional Aspects

Human beings need a variety of nutrients for the healthy development - Carbohydrates, proteins, vitamins, micro and macro nutrients like minerals, fats, amino acids and so on. Good nutrition connotes that all of these nutrients should be available to the body in a balanced amount. Good nutrition is achieved when we eat carbohydrates like rice, proteins like dairy, pulses or meat, vitamin-sources like fruits and vegetables in the right amount - neither too little, nor too much and at right frequency.

Good nutrition translates into different requirements for different people. An expectant mother's nutrition needs to take care of her own as well as the child's needs. Adolescent Women (15-49 years) in India show a high prevalence of anaemia (56% as per National Family Health Survey), therefore their diet needs

to be rich in Iron and folic acid, now given as weekly supplements through Anganwadis. For a sports-person, the diet needs to be rich in proteins, and their daily caloric requirement is also higher than that of, say, an office-goer.

Good Nutrition is also associated with ~~other~~ factor other than food intake. Good Hygiene ensures that the benefits of good nutrition are not ~~do~~ undone by frequent diseases and afflictions. For example, poor hygiene is often associated with the prevalence of tape worm - a parasite - in the ~~intestine~~ intestines of a large number of Indian children. It is the parasite, then, that benefits from good nutrition, with very little reaching the body and mind. The National Deworming Initiative with periodic Albendazole tablets therefor assumes better nutrition. While good nutrition is multi-dimensional

onal, it is also intricately linked with ~~good~~ human development as we will now investigate.

Nutrition and Human Development: Linkages

Human development, as Amartya Sen and Mehbub-ul-Haq point out is multi-dimensional too. However they identify 3 important factors that help construct the Human Development Index - High per capita National Income (i.e. low poverty), good educational outcomes (mean and expected years of schooling) and longer life-spans (i.e. good health indicators). Good Nutrition contributes to all 3 dimensions.

Good nutrition helps in better cognitive development in childhood and improves learning capacity and outcomes. In a healthy body, resides a healthy mind. Good nutrition ensures both. Good nutrition - provided through mid-day meals - can

help reduce drop-out rates of school-going children. India's universal enrolment at primary school level (99.1%) and gender parity could not have been achieved without Mid Day Meal scheme. Through better learning outcomes, good nutrition prepares educated, nourished and healthy workforce for tomorrow.

Good nutrition also increases body's immunity against various diseases and reduces the burden of diseases. This again aids in ensuring higher school attendance and reducing the instances of families falling into poverty and ~~debt~~ debt trap due to catastrophic illnesses.

By increasing the productivity and by reducing the healthcare expenditure, good nutrition also helps reduce poverty. Good nutrition in women aids higher women partici-

participation in the workforce and can be a great contributor towards improving women labour force participation rate (WLFPR) that is currently languishing at about 30% in the world and 22% in India.

Hence, good nutrition lays the groundwork of human development.

Poor Nutrition curtailing Human Development

Nearly 1.1 Billion people have moved out of acute poverty since 1990, yet about 0.9 Billion still live in the condition of acute poverty and deprivation, as UNDP points out. Most of them live in South Asia, the Sahel region of Africa, and in parts of China. Most of these regions ~~are~~ fare poorly on various indicators like the UN Development Index and Hunger Index.

India ranks 131st on the Human Development Index and 100th on the Hunger Index - a very poor

performance especially when we have broken into the 3 large economies of the world in GDP (PPP) terms.

The NFHS-4 further shows that 38% of Indian children are stunted, 36% are ^{underweight} ~~wasted~~ and 21% are wasted. This lays a ~~very~~ very weak and shaky foundation for human development.

Recognizing the grave challenge posed by poor nutrition, economic survey 2015-16 advocates a mission-mode push to nutritional intervention in early childhood. It calculates that return ^{on} ~~to~~ investment (ROI) from childhood nutrition programmes is 16:1, i.e. 16 Rs. from every rupee spent. Niti Ayog has brought out a National Nutrition Strategy that forms the basis of POSHAN Abhiyaan - an umbrella scheme to fix India's nutritional challenges in a time-bound manner. ~~But~~ However

the success of these interventions would require a multi-faceted and multi-stakeholder approach as we will now see.

Fixing Nutrition to Solve Developmental Challenges: The Path Ahead

Most Indian interventions, as well as most food programmes in the world, rely on provision of calories rather than on the provision of a balanced diet. In the mid-day meals as well as NFSA too, the focus is on food grains, although pulses and eggs have started making frequent appearance on children's mid day meals. The need of the hour is to expand NFSA to include pulses and fortified foodgrains. Similarly mid day meals must necessarily include fresh fruits, season vegetables and eggs, and the same should be extended to ~~too~~ hot-cooked meals provided to pregnant and lactating mothers by Anganwadis.

To fix child nutrition, fixing maternal nutrition is essential. Patriarchal

beliefs and lack of awareness about the importance of good nutrition often means that expecting mothers do not get proper nutrition and it affects the health of both the mother and the child. Through better awareness, expanded PAs, and supplemental medicines through ASHAs, maternal nutrition can be improved.

Similarly, a recent phenomenon is the increase in the number of obese people (12% of the population as per NFHS-4). Overnutrition can be as harmful as undernutrition, and awareness programmes targeted at diet and behavioural change can help tackle obesity. Tax on sweetened beverages and sugar-laden foods is one of the way forwards as the Kerala experiment has shown, but periodic exercises and change in dietary regimen can help tackle the issue better.

There is further need to expand the mid-day meal programme to secondary school level as TSR

Subramanian panel has recommended. It can further reduce drop out rates and strengthen the foundation of human development.

To conclude, better nutrition is a sine qua non for achieving better educational and health ~~and~~ outcomes, as well as for reducing poverty and increasing workforce productivity.

'An apple a day keeps the doctor away' is the age-old affirmation of how good nutrition can lead to a healthy body and a healthy mind.

Expanding the coverage of good nutrition will ensure better developmental outcomes, and would also ensure that no child like Santoshi ever has to hanker for food. Good nutrition is essential to realize the vision of Sarvodaya.

Sarve Bhavantu Sukhinah
Sarve Santu Niramayah
Sarve Bhadrani Pashyantu
Ma Kashchit Dukh-bhag Bhavet!

(May all be happy
May all be healthy
May all see good things
May bad fortune befall ~~no~~ none!)



Section
B

Nuclear Disarmament ~~IS~~ ~~PA~~ Is The Need of The Hour

It was just another routine sortie of the U-2 spy planes of the USA over Cuba one day in October 1962. However, what it discovered was to soon bring the world ~~the~~ to the brink of nuclear disaster. It was discovered that USSR was deploying nuclear capable missiles in Cuba - 150 km from the US mainland - in retaliation to USA's deployment of missiles in Italy and Turkey. The memory of Hiroshima and Nagasaki were still fresh in the mind of the world citizens, and there were tense moments in the 13-day long standoff when many thought that the end of the world was near. Through astute and pragmatic diplomacy, the crisis was resolved, but the spectre of nuclear wars has never subsided.

The fear of nuclear war was recently rekindled when North Korea

conducted nuclear tests and tested ⑧ ballistic missiles that could reach USA. What followed was threats and counter-threats, in no polite language, issued by the highest level of leadership of both the countries.

It is in this context that the issue of Nuclear Disarmament needs to be vigorously discussed. In this write-up, we will first look into history of nuclear armament briefly. We will then discuss why it is imperative that a complete and irreversible nuclear disarmament is needed. We will then survey the steps taken in that direction so far and their limitations. We will finally conclude with what steps the humanity must take to ensure nuclear disarmament and achieve durable world peace.

Nuclear Armament: A Brief History

Throughout the Second World War, USA, and possibly USSR, were trying to develop Nuclear weapons. Einstein's theory of relativity, particularly the famous $E=mc^2$ equation had predicted that even relatively light nuclear weapons could release enormous energy and precipitate unimaginable destruction. USA had built the first nuclear weapon in 1945 and tested them in New Mexico in what are called the 'Trinity Tests'. Within a year, the bombs were first used in modern warfare on Hiroshima and Nagasaki, although it has been hotly debated that USA did not need to use the bombs as Japan was close to losing the war.

No sooner had the war ended, the cold war between USA and USSR started and the world split into 2 blocks. USSR, and later UK, China and France developed their own nuclear weapons. By 1965- the nuclear weapons

had been tested on land, in ocean and in atmosphere. More destructive hydrogen bombs were developed and their destruction potential increased from kilo Tonnes to mega Tonnes (equivalent of conventional bomb yield).

A heavily armed set of nations meant that every war - Korean war, Vietnam War, Falklands war and so on - presented the risk of use of nuclear weapons. Nuclear weapons became an instrument of state policy of these nations - used to intimidate weaker and even stronger nations, militarily. The Theory of Brinkmanship by John F. Dulles, US Secretary of State legitimized the use of nuclear weapons as a credible threat. The doctrine of Mutually Assured Destruction further was used to intimidate adversaries that had their own nuclear weapons.

India, surrounded by hostile nations envious of her principled approach of Non-alignment, had to

develop her own nuclear weapons to preserve her hard-won independence and sovereignty. Israel too, although unconfirmed, possesses nuclear weapons.

The threat has further increased by unstable nations like Pakistan and North Korea acquiring these weapons through proliferation networks. However possession of weapons of mass destruction by such nations further strengthens the case towards nuclear disarmament as we will now investigate.

The Need for Complete and Irreversible Nuclear Disarmament

After witnessing the fireball produced by the Trinity Tests, J Robert Oppenheimer, a leading nuclear physicist and the father of USA's nuclear weapon programme is said to have remarked:

'Now I have become death, the destroyer of worlds'

He could not have been farther from truth as Hiroshima and Nagasaki

demonstrated. Thousands of lives were extinguished within seconds, many died in the days that followed, and thousands were left maimed. The humanity was stunned by the scale of destruction. Japan had no other option, but to surrender and its successive generations are still reeling from the after-effects of the bomb.

The biggest argument against
for disarmament is therefore the scale
of destruction a nuclear bomb causes. Entire cities can be obliterated and a large number of non-combatants die. Those who do not die are maimed and rendered immobile. Those who are fortunate enough to survive are exposed to high levels of radiation that can cause cancer down the line due to genetic mutations.

Genetic Damages ensure that the impact is multi-generational and future generations can be born with

genetic deformities. Japan is still facing the harm that the 2 bombs did at the genetic level.

A further argument ~~is~~ ~~the~~ against such weapons is the doctrine of mutually assured destruction (MAD). An all out nuclear war between 2 heavily armed nations (eg USA and USSR) can obliterate not only these countries, but also other countries. It is very difficult to localize damages from high-yield nuclear weapons and radiation-~~poison~~ poisoning can engulf the whole world. A war between 2 blocks (like the first and second world war) can threaten the very ~~to~~ existence of humanity. That is why many disarmament advocates prognosticate that the Third World War, as and when it breaks out, will ~~the~~ be the ~~the~~ last war that the world would see.

In the present-day unstable world facing the menace of terrorism, nuclear weapons can fall into the ~~the~~ ^{hands} of ~~the~~ ~~arms~~ ^{terrorists}.

of terrorist organizations like ISIS or Al Qaeda. With nuclear-armed states like Pakistan descending further into turmoil, this distant possibility can not be brushed aside.

Such fears are further compounded by 'Broken Arrow' incidents. In the last 70 years, there have been about 30 'broken arrow' incidents - accidental firing, explosion, theft or loss of nuclear weapons. Many of them were related to fighter planes carrying nuclear weapons crashing in remote areas or on oceans. If such weapons were to fall in hands of non-state actors, or contaminate the land or oceans, the impact can be disastrous.

These factors make it imperative that the world must take steps to proceed towards complete and irreversible nuclear disarmament. There have been some sporadic steps taken towards that direction, but have not been enough as we will now investigate.

Nuclear Disarmament : The (baby) steps so far

Seeing the scale of destruction ~~is~~ in Hiroshima and Nagasaki, Oppenheimer later became one of the most vocal supporters of nuclear disarmament, and so did Albert Einstein. ~~The~~ Einstein along with Nobel Laureate Bertrand Russell brought out Einstein-Russell Manifesto in 1950s and it received widespread support from the world scientific community. Linus Pauling, another Nobel laureate later became the champion of nuclear disarmament.

Their collective voice did have some effect. In 1960s, first the Partial Test Ban Treaty (PTBT) and then the Comprehensive Test Ban Treaty (CTBT) were negotiated and signed by various nuclear countries. Later the Nuclear Suppliers' Group (NSG) was formed to ~~stop the~~ curb the supply of

fissile materials to nations 'who could not be trusted' to use nuclear fuel for peaceful purposes.

USA and USSR negotiated Strategic Arms Limitations Treaty (SALT) and Strategic Arms Reduction Treaty (START)

in 1970s and 1980s and these treaty did help limit and then reduce the ^{nuclear} arsenal of these nations that once ran into tens of thousands. They further signed a Great 'Mega ~~Watts~~ Tonnes to Mega Watts' programme that helped divert Russia's stockpile of enriched uranium to USA's nuclear power plants ~~and~~ to produce energy.

However, these treaties had limited success. They could not contain proliferation networks like Pakistan's A.Q. Khan Network. They also could not stop unstable nations like ~~Korea~~ North Korea and Pakistan.

from acquiring these weapons. Iran was too just 'months away' from having enriched uranium that could have been used to build bombs before it was stopped ~~the the~~ by world powers.

Despite these treaties, many countries are expanding their nuclear arsenal, and therefore fresh measures are needed.

Complete Nuclear Disarmament: The Path Ahead

The International Campaign to Abolish Nuclear Weapons (ICANW) won the 2017 Nobel peace prize, and its work done ~~as~~ towards nuclear disarmament show the path forward. It consists of NGOs and Human Rights Organizations as well as scientists and thinkers that are putting pressure on world leaders and governments to pledge and then take credible, time-bound measures towards complete disarmament.

All Nuclear weapon states

must give credible and realistic commitments about their ~~redu~~ nuclear weapons reduction target, with the aim of completely eliminating the weapons in a time-span of one to two decades.

As the Mega Tonne to Mega watt programme shows, the uranium recovered from such weapons can power our nuclear power plants for many years and can also help meet the clean energy goals of Paris-2015 and SDG-2015.

The first step in that direction is all UN member countries signing the Treaty on The Prohibition of Nuclear Weapons (TPNW) and then setting up an independent body to oversee the compliance of nuclear weapons nations to the treaty. This can be a true 'giant leap forward' for humanity.

Every technology has positives and negatives, and the nuclear fission and fusion technology is a shining example of the same. On one hand it can meet our future clean energy and sustainable development goals, and on the other hand it can amuse that humans would be one of the casualties of the sixth Man Extinction if the nuclear weapons are misused. It is therefore essential that all nations of the world unite and ~~decide~~ forever give up nuclear weapons. Consigning Nuclear weapons to the dustbin of history can ensure that humanity continues to survive, thrive and leaves a mark on this beautiful blue planet.



Good Nutrition is the Foundation of Human Development

Story → Santoshi (Simdya JH)

Tamil Nadu → Mid Day Meal

3 Girls → Delhi (2, 4, P)

India (Stats) of nutri

← Good Nutrition → What → Multidimensional

Human Development → What

HDI Rank

Linkages

HDI

→ Longevity (Health)

→ mean & exp (schooling)

→ GNI_{PC} (PPP)

Sen + Hag

→ Eco Sur 15-16 → Nutrition

ROI → 16:1

Maternal

→ Breastfeeding (MAM)

→ over & undernutrition

→ calorie & nutrients

→ Hygiene essential (eg deworming)

① Intro

② Good Nutrition: Multidimensional Aspects

③ Nutrition & Human Development → linkages

④ Poor Nutrition Curtailing Human Development (India/world)

⑤ Fixing Nutrition to fix Developmental Challenges → The Path Ahead

