

Table 6. Anemia Women, child malnutrition and per capita food availability.

| Year | Prevalence of anemia women of reproductive age(15-49yrs) | % of child malnutrition under 5 | Per capita food supply, cal/cap/day |
|------|--|---------------------------------|-------------------------------------|
| 2000 | 54.1 | 49.8 | 53.0 |
| 2001 | 54 | 49.4 | 37 |
| 2002 | 54 | 49.1 | 26.0 |
| 2003 | 54.1 | 48.8 | 42.0 |
| 2004 | 54.1 | 48.5 | 53.0 |
| 2005 | 54.2 | 48.2 | 54.0 |
| 2006 | 54.1 | 47.8 | 37.0 |
| 2007 | 54.1 | 47.3 | 23 |
| 2008 | 54 | 46.6 | 39 |
| 2009 | 53.7 | 45.7 | 49.0 |
| 2010 | 53.5 | 44.5 | 40.0 |
| 2011 | 53.4 | 43.1 | 21.0 |
| 2012 | 53.2 | 41.7 | 14.0 |
| 2013 | 53 | 40.3 | 15 |
| 2014 | 52.9 | 38.9 | 12.0 |
| 2015 | 52.7 | 37.5 | 10 |
| 2016 | 52.6 | 36.2 | 23 |
| 2017 | 52.8 | 34.8 | 20.0 |
| 2018 | 52.9 | 33.5 | 22 |
| 2019 | 53 | 32.1 | 22 |
| 2020 | 53 | 30.9 | 20.0 |

Source: FAO [4]

In India, per capita daily food availability in gram from 1951 to 2021 has been catapulting at the rate of 0.1525% per year significantly. Its estimated trendline is given below.

$$\text{Log}(x) = 6.0669 + 0.001525t$$

$$(458.67)^* (4.77)^*$$

$R^2 = 0.248$, $F = 22.80$, $n = 71$, $DW = 1.56$, $x =$ per capita daily food availability in gram, $t = \text{year}$, $*$ = significant at 5% level.

In **Figure 7** the estimated linear trendline of per capita daily food availability is depicted below where the trendline is upward sloping although its actual line is mostly irregular and volatile.

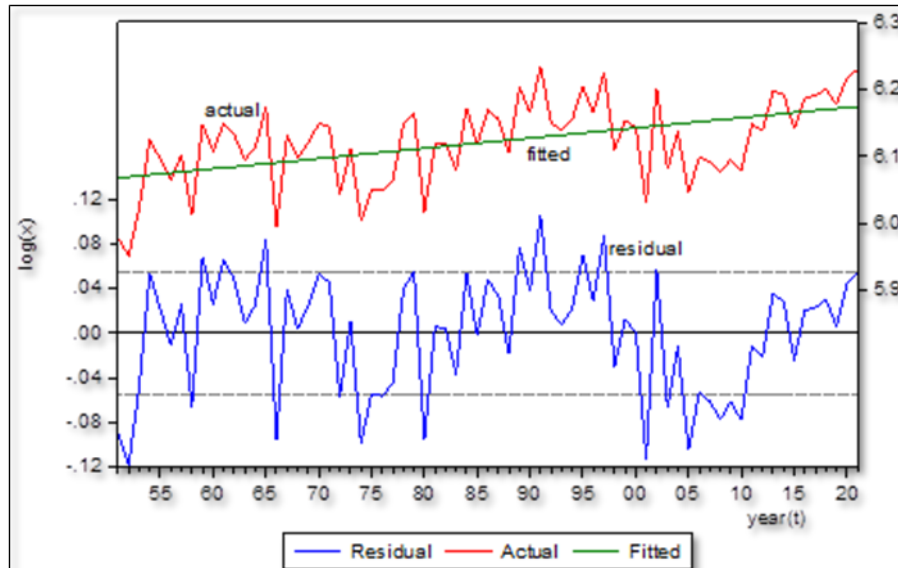


Figure 7. Per capita food availability.
 Source: Plotted by author

This linear trendline is seen as stable model since its CUSUM of squares line lie between $\pm 5\%$ level of significance which is plotted in **Figure 8** below.

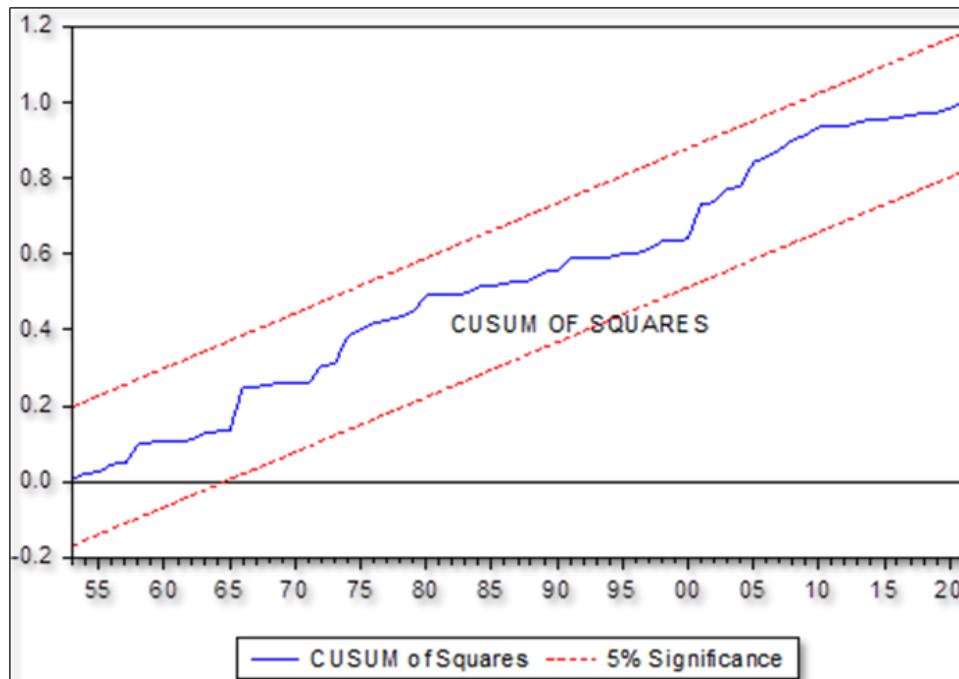


Figure 8. Stability model.
 Source: Plotted by author

In the following **Table 7** it is found that per capita availability of some essential commodities like edible oil, vanaspati, sugar, cloth, tea and coffee during 1960-61 to 2015-16 where all consuming articles have been increasing

slowly except coffee which is downward followed by upward trend although the amounts of essential articles have not available as the citizen need in daily life.

Table 7. Per capita availability of certain article.

| | Edible oil | Vanaspati, (kg) | Sugar, (kg) | Cloth, (meter) | Tea, (gm) | Coffee, (gm) |
|-------|------------|-----------------|-------------|----------------|-----------|--------------|
| 60-61 | 3.2 | 0.8 | 4.8 | 15 | 296 | 80 |
| 70-71 | 3.5 | 1.0 | 7.4 | 15.6 | 401 | 65 |
| 80-81 | 3.8 | 1.2 | 7.3 | 17.3 | 511 | 79 |
| 90-91 | 5.5 | 1.0 | 12.7 | 24.1 | 612 | 59 |
| 00-01 | 8.2 | 1.3 | 15.8 | 30.7 | 631 | 58 |
| 10-11 | 13.6 | 1.0 | 17.0 | 44 | 715 | 90 |
| 15-16 | 17.7 | 0.8 | 19.4 | 40.5 | 758 | 100 |

Source: Ministry of finance, Economic survey, 17-18.

According to Osmani [19], nutrition and poverty are too closely interrelated where being poor, hunger, inadequate health care, unhygienic living conditions; the stress and strain of precarious living tend to impair a person's nutritional status. He opined that Payne [20] argued that there could be no state of nutrition in which all functions are simultaneously maximized assuming that the evolutionary process through which the human body has come to acquire its potential for functional abilities is suffering rather than optimizing in nature and there is always a trade-off between the functions so that improvement in one function typically entails the loss of another. The question is whether or not an ideal state exists which lead directly to controversies regarding the practical methods for assessing the magnitude of under nutrition. In this case the author assumed the concept of adaptation, i.e., facing nutritional constraints, human body adapts itself a number of ways to minimize the adverse consequence of that constraint.

There are two types of energy related nutritional deprivation e.g., calorie intake with some standard of requirement and compare anthropometric measurement of the body with some reference standard. Srinivasan [21] argued strongly for the abandonment of the fixed requirement model and for adoption of process view nutrition which operates in the short as well as in the long run. He supported the process view of nutrition and went on to review the appropriateness of standard policies for combating under nutrition as seen from the altered viewpoint. On the other hand, Gopalan [22] strongly argued against both short and long run and prescribed for variable requirement where interpersonal variation in requirement is widely recognized that genetic differences in metabolic efficiency can indeed lead to different levels of energy requirement for individual of the same type. Osmani [19] asserted that there are problems of choice of the reference standard when nutritional deprivation is measured in the anthropometric approach by comparing actual physical dimensions with standard set by the achievement of a chosen sample of healthy people. The question of interpersonal and intrapersonal variation also arises in this case. There is prevailing orthodoxy in favor of

a fixed standard. Floud [23] clarified the statistical picture of changes of height in industrial world where he found that there has been a secular increase in height over the period as a whole but the progress was halted and found reversed during 19th century. Secondly, there is significant difference between countries in their time profiles of height change and thirdly, there are notable differences in the average height of different socioeconomic group within the same country. Fogel [24] made powerful use of this indicative role of height in throwing light on an aspect of the economic history of Europe where he suggested that it is the secular improvement in the nutritional experience of the population that explained the secular decline in mortality which showed the indicative role of height. However, Payne [20] suggested a novel measurement called body mass index for both children and adult members of a household to classify different households according to the binding constraint each of them faces.

POLICY ISSUES

The task of eradication of famine is a fairly straightforward since there are many success stories in Asian and African countries while the problem of endemic under nutrition and deprivation is harder to deal with. Without government assistances, the public can do a great deal because the nature of government policy can depend very extensively on the public activism because government can handle it rapidly if there is firm political will and determination although there may be some technical issues concerning institutional structure, financing arrangement and relative costs having political leadership to achieve the objectives. The positive role of political pluralism can play in the eradication of hunger and deprivation where political pluralism relates to the importance of adversarial politics and social criticism in influencing state action in the direction of greater sensitivity to the well-being of the population. The dichotomy arises between the advantages of political commitment vis-à-vis those of political pluralism in which there are twin role of public between collaborative and adversarial where leadership may choose radical social change or may be hostile. The ideal combination is hard to realize [12].

Engle and Dustagheer [25] in dealing with hunger free India described that the causes of infant and child mortality of the developing world is the childhood malnutrition in which UNICEF suggests that care and feeding, in addition to food security, health care services and healthy environment are critical for survival, growth and development. Enhanced care giving can optimize the use of existing resources to promote good health and nutrition in women and children. Many factors influence nutrition other than food intake and care practices play a major role in influencing these other factors that affect good nutrition. Authors mentioned six types of care practices: [i] care for girls and women represents a pattern of behavior on the part of the family where adequate prenatal care and safe birthing, equal access to education are available, [ii] food preparation takes enormous amounts of caregiver time and efforts, [iii] hygiene practices have long been recognized as critical for child nutrition, [iv] home health practices include diagnosing illness in the home, use of preventive health care and protection from pests and accidents, [v] good psychological care including warmth, verbal interaction and encouragement of learning causes improved cognitive development of children and is related to complementary feeding styles, and [vi] breastfeeding and complementary feeding practice is urgent. The other successful improved resources for care such as setting up community childcare facilities, improving community response to needs for child referral or strengthening women's capacity to make decisions affecting community decisions.

Following SDG-1.2 on reducing by half the proportion of individuals of all ages living in poverty in all its dimensions, India set its target in 2030 using multi-dimensional poverty index and millennium development goals. India targeted the goals of [i] zero hunger, [ii] good health and well-being, [iii] quality education, [iv] affordable and clean energy, [v] clean water and sanitation, [vi] zero poverty. India aims to eradicate extreme poverty for all people everywhere, currently measured as people living on less than USD 1.25 a day by 2030 and to reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions. India planned to end hunger and ensure safe, nutritious and sufficient food including infants and will end all forms of malnutrition by 2030. India will achieve gender equality and empower all women and girls ending all discrimination against women and girls. India will achieve and sustain progressively growth of the bottom 40% of population at a higher rate than the national average by 2030 [26].

CONCLUSION

The paper briefly explained the meaning and concept of poverty and hunger in context of the role of agriculture. The paper found that the Indian poverty has been reduced in both rural and urban areas but inequality has risen to some extents. The trendlines describe that undernourished people

during 2000-2019-21, average protein supply in gm/capita/day in 3-year average during 2000-2019-21, undernourished people (in million) at 3 year average during 2000-2019-21 have increased but malnutrition child under 5 (%) during 2000-2020, per capita daily food availability in gram from 1951 to 2021 have decreased, anemia women of reproductive age (15-49 years), per cent of child malnutrition under 5, and per capita food supply, calorie/capita/day from 2000 to 2020, have increased and some essential commodities like edible oil, vanaspati, sugar, cloth, tea except coffee during 1960-61 to 2015-16 have risen significantly. India's target on SDG for 2030 in partnership with UNDP for zero poverty and hunger has been launched and it is hopeful to be successful.

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