

Impact on Focus on Food Intake and Nutrients In India – Overview

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ABSTRACT

This paper examines the evolving food consumption pattern in India over the past two decades due to income induced diet diversification, impact of globalization, increasing urbanization and changing lifestyle of people. The trend in calorie, protein and fat intake in the Indian diet is analyzed and comparison is made of the trend in nutrient intake in India with that of China and the United States, which are at different growth stages. This will be helpful to draw some conclusion about the likely emerging food demand scenario for India in future. National Sample Survey Consumer Expenditure Survey results and the Food Balance Sheet data are the major data sources of the study. As the average per capita food consumption is derived from all India data and not from state level data and from Monthly Per capita Consumer Expenditure (MPCE) groups, they may not correspond to actual per capita availability by various income groups. Furthermore, the Food Balance data refer to “average food available for consumption”, which, for a number of reasons, is not equal to average food intake or average food consumption. Hence in this report the terms “food consumption” or “food intake” and “nutrient intake” using the data should be treated as “food available for consumption”.

Keywords; Consumption, nutrient, per capita, food intake.

1. INTRODUCTION

Various food and nutrition related policies, initiatives and programme in India have already been discussed in preceding chapters. An attempt can now be made to see the impact of these on the consumption of various food items and consequently on national and household level food and nutrition security. It is proposed to first look at food or rather "cereals" consumption and then move on to the consumption of other food and nutrition items. Normally one should take food grains i.e. cereals plus pulses for such an exercise, but it is proposed to concentrate on cereals first, since cereals not only provide around 70 percent of energy and protein but averages in their case are quite representative for all, including poor households.

Consumption of cereals actually goes down as incomes of households increase. Thus, if average consumption of cereals is found to be equal to recommended levels, it projects quite a satisfactory picture, with poor households also consuming at least average, if not higher quantity. Same thing cannot be said of pulses, or for that matter other food items. The consumption, and resultant cereals security, is very important for a country like India which was characterised by a history of famines, has vast and expanding population; low per capita income with around 29 percent or almost 250 million people living below poverty line; poor access to health, education, safe drinking water, sanitation and other social services etc. Top most priority for such a country is to get each and every one of its people out of the clutches of hunger and starvation and assure them security of at least cereals or what is loosely called 'staple diets'. In a way this can also be described as food security, albeit in a very narrow sense. Let me, however, hasten to add that it will not be prudent

for any country to confine itself to only such food security; not certainly for India, which has been endowed with such resources that providing a complete nutritious diet to every Indian should not be beyond the capabilities of the country. The country must, therefore, work towards achieving complete food and nutrition security, even though elimination of hunger may have been the first objective.

In the ultimate analysis, the task is really one of around development of the human resource and "human beings need tot[e] nourishment for their growth, development and productivity. They need a wide range of nutrients to perform various functions in the body. These nutrients include protein, fats, carbohydrates, vitamins and minerals" (Rag, and others, 1989). As is well known, energy is vital for activity, growth and rest while protein supplies the body building material and help in recouping loss on account of wear and tear. These two are the most important nutrient but there are many vitamins and minerals that are needed by human body not only for carrying out many vital functions of the body but also for helping in utilisation of many nutrients like proteins, fats and carbohydrates. These are required in small quantities but their importance is now being seriously recognised.

INDIA LAGS BEHIND MAJOR COUNTRIES IN FOOD NUTRIENT INTAKE

In an effort to gauge where India stands in its food nutrient consumption level in the global context, an attempt is made to compare the food nutrient consumption pattern in India with that of China and the United States. Although these two countries are in different growth trajectories vis-a-vis India, the comparison would be helpful in knowing where India's food requirement is headed in coming years if the high economic growth continues. The Food Balance Sheet data is used for the analysis.

The following Charts depict the calorie, protein and fat consumption trends in India, China, and the United States. As can be observed, the current intake of calorie, protein and fat in India is significantly below that of China and the United States.

CHART INFERENCES

- Calorie intake level in the United States appears to have stabilized at around 3,700 K. Calorie per day whereas in China, it is approaching this level. India's calorie consumption currently is only about 63 per cent of the United States and 77 per cent of China.
- India's average daily protein intake has remained static over the past two decades at around 57 grams. Although the protein intake in China was close to that of India in early nineties, it has shown a steady upward trend reaching 94 grams in 2009, approaching the U.S. level of around 115 grams.
- Per capita fat intake in India, although showing an upward trend reaching around 57 grams per day in recent years, lags significantly below the U.S. intake of around 115 grams and Chinese intake of 95 grams. While most of the fat intake in China and the U.S. is from animal sources, in India the fat intake is predominantly from protein sources.

MAJOR SOURCE OF NUTRIENTS AND FOOD CONSUMPTION ACROSS REGIONS

This section tries to find out percentage share of average **per capita per day** (PCPD) intake of nutrients from food groups and average PCPD consumption of major food groups across NSS regions.

TABLE-1
PERCENT SHARE OF PCPD INTAKE OF DIFFERENT NUTRIENTS FROM MAJOR FOOD GROUPS, 2009-10 IN RURAL INDIA

Food Items	Calories (Kcal)	Protein (gm)	Fat (gm)	Minerals (gm)	Carbohydrate (gm)	Calcium (mg)	Iron (mg)	Vitamin-C (mg)
Rice and Rice Products	54.56	42.97	23.93	23.25	56.99	19.46	19.09	0
Wheat and Wheat Products	38.04	48.89	56.4	66.96	35.83	63.5	67.47	0
Coarse Cereals	7.4	8.14	19.67	9.78	7.19	17.04	13.44	0
Cereal Total	68.01	69.49	12.16	65.64	82.34	22.08	77.35	0
Root and Tubers	2.94	2.07	0.21	4.65	3.66	3.38	2.75	24.02
Sugar and Honey	4.89	0	0.05	0.27	6.85	0.58	0.27	0
Pulse, Nuts and Oilseeds	4.4	10.29	3	7.7	3.89	4.09	8.41	0.15
Vegetables and Fruits	1.58	2.55	0.74	7.18	1.22	6.33	6.72	72.44
Meat Products	0.61	3.83	0.58	1.85	0.02	4.44	2.45	0.05
Milk Products	7.21	10.75	27.1	12.7	2.02	59.12	2.05	3.34
Edible Oil	9.04	0.54	1	0	0	0	0	0
Miscellaneous Products	1.33	0.97	2.1	0	0	0	0	0
Total	100	100	100	100	100	100	100	100

Source: Authors' calculation based on NSS 66th Consumer Expenditure unit level data.

TABLE INFERENCE

Table 1 clearly shows that all nutrients except fat, calcium and vitamin C have their major share from cereals particularly wheat and rice products. Cereals provide 68 percent calorie, 70 percent protein, 65 percent minerals, 82 percent carbohydrate and 77 percent iron. These results clearly show that rural population is generally dependent on cereals for their most of the nutrients. Besides, major source of fat is edible oil (54 percent) and milk products (27 percent). Milk consumption also ensures proper calcium (59 percent) in the body whereas vegetables and fruits are rich with vitamin C (72 percent).

REGIONAL DISTRIBUTION OF AVERAGE PCPD FOOD CONSUMPTION (IN KG) IN RURAL INDIA, 2009-10

Consumption of cereals and milk ultimately fulfills major requirements of nutrients in the body as far as Indian rural diet is concerned. However, a diversified diet is required to fight against modern diseases and to lead a healthy and active life. It is studied that Indian diets are mainly based on cereals avoiding the importance of other food items especially fruits and vegetables. Since cereals are the major source of most of the nutrients in Indian diet, regions leading in cereal intake also show a higher proportion of most of the nutrients.

TABLE-2

Food Products	North	Central	West East	North	East	South	Total
Rice	0.068	0.154	0.182	0.270	0.408	0.292	0.215
Wheat	0.274	0.246	0.128	0.134	0.025	0.030	0.164
Coarse Cereals	0.156	0.086	0.120	0.051	0.038	0.086	0.106
Total Cereal	0.368	0.394	0.368	0.396	0.424	0.350	0.380
Pulses	0.021	0.025	0.025	0.017	0.017	0.024	0.022
Milk (litre)	0.350	0.167	0.143	0.108	0.087	0.128	0.172
Sugar	0.040	0.024	0.029	0.013	0.016	0.022	0.024
Edible oil	0.020	0.018	0.025	0.016	0.014	0.019	0.019
Meat Products	0.011	0.012	0.012	0.017	0.024	0.025	0.018
Vegetables	0.133	0.159	0.139	0.199	0.177	0.123	0.154
Fruits	0.018	0.016	0.017	0.018	0.017	0.013	0.016

Source: Authors' calculation based on NSS 66th Consumer Expenditure unit level data.

TABLE INFERENCE

Hence, analyzing food consumption pattern across regions becomes essential to determine intake of different nutrients. Table 2 describes consumption of food group items across major regions of India. This table clearly shows that among all major food groups, cereals constitute a major share followed by milk and vegetables in the diet of rural population. On an average, PCPD cereal intake in rural India is 380 grams followed by 172 grams of milk and 154 grams of vegetables. Lowest consumption is shown by meat products (18 grams) and fruits (16 grams). This pattern is common across all regions with little variations. However northern region covering states like Delhi, Haryana, Punjab, Rajasthan, and Himachal Pradesh consume higher intake of milk leaving far behind other regions. This has resulted into higher intake of all nutrients in this region.

CALORIE INTAKE TREND

Despite the changing diet pattern in India over the years, the overall calorie intake has registered only a modest increase from an average 2250 K Calories during 1987-1993 to 2310 K Calories during 2005-2010. A decline in calorie intake from vegetable-based food, more importantly from cereal-based food, was more than offset by increased calorie intake from animal based food products.

2. INFERENCES

Calorie intake by type of food shows that the contribution of cereals and pulses combined has declined from 1580 K. calories during 1987-1993 to 1460 K .calories during 2005-2010, a decline of around 8 per cent. During the corresponding period calorie availability from fruits and vegetables increased by 43 per cent to 156 k. calories, from vegetable oils by 39 per cent to 204 k. Calories, from milk by 6 percent to 105 K. calories, from meat, egg and fish by 25 per cent to 35 k. calories, and sugar by 9 per cent to 200 k. calories.

TRENDS IN COMPOSITION OF PER CAPITA CALORIE INTAKE BY TYPE OF FOOD: K. CALORIES/DAY

The relative contribution of various food items (%) in total calorie intake during the study period is depicted in the following diagrams.

3. CONCLUSION

Indian government is striving to provide food security to all its citizens through various policies and programs. The recently enacted National Food Security Act is the most important one in this direction, which aims to give adequate quantities of cheap cereals (predominantly wheat and rice) to the most vulnerable segment of rural and urban population. Although this effort is laudable, food strategies must not merely be directed at ensuring just food security for all, but must also address providing adequate quantities nutritious, safe and good quality foods which could address the makeup of a healthy diet.

The present study shows that despite rapid economic growth during the past decades, India's average per capita calorie and protein intake has grown only modestly, although the per capita fat consumption has registered a higher growth. Calorie and protein source in the

Indian diet is diversifying with fruit/vegetable and animal-based food share increasing and cereal and pulses declining. The implication is that the implementation of the cereal-based National Food Security Act will have only a limited impact in achieving the goal of providing nutritional security to the vulnerable section of the population. There is need to include higher protein food such as pulses or protein-enriched cereals or cereal flours in the program. It is worth mentioning that at present India is exporting a major share of its high protein soybean meal while the country is facing a protein-deficiency. Technology to incorporate soybean products in the diet should be encouraged.

Despite large imports, the overall decline in per capita pulse consumption is also of concern. There is need to increase pulse production in the country as international availability of pulses is limited.

With the rising level of income, per capita fat consumption is growing rapidly and the share of vegetable oil in the overall calorie intake is increasing necessitating large imports. Unless domestic production increases the import requirement will continue to grow with rising per capita income.

India's per capita calorie, protein, and fat consumption remains significantly below that of more developed countries such as China and the United States. The implication is that in coming years with rising per capita income and urbanization, India's demand for various superior food products will continue to increase necessitating a possible change in the food production system and agricultural trade. The implications for the predominant small and marginal farmers could be serious, unless there are incentives and policies that allow them to shift from subsistence agriculture and become more integrated in the global food market.

Deliberations on the potential of the food and agriculture sector to meet the demands and challenges posed by this analysis and its implications for all components in the food chain would be useful.

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