



Policy Brief # PB-41-2017
November 13, 2017

**Pakistan; one of the Eight most Stunted
Countries of the World**

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Key Points:

Pakistan's food and nutrition statistics are poor but whether poor enough to relegate it to being one of the 8 most stunted countries of the world is concerning and questionable.

A commodity analysis involving Wheat, Sugar, Maize and Rice provides evidence for the food sufficiency of Pakistan, especially in comparison to its South Asian neighbors.

Pakistan has also done favorably well in comparison to the continental representatives selected from Africa and South America.

The data trends observed in the commodity and availability analyses are consistent with accessibility and utilization where Pakistan ranks much better than majority of the continental representatives, especially India and Bangladesh.

Re-estimation of stunting through indigenous data collection and involvement of local expertise needs to be undertaken with institutional, policy, systemic and programmatic support from the government and private sector organizations working in the mutually inclusive domains of food policy and agriculture production.

1. Introduction:

Despite the consistent progress in the country's GDP growth rate, Pakistan's development indicators - most particularly those pertaining to nutrition and food security – continue to be reported as poor. Given the negative growth of 0.19% in agriculture last year², such inferences are partially understandable eventhough quite the contrary to the country's overall macroeconomic performance that has been on the trajectory to improve. This implies that while food and nutrition statistics aren't satisfactory, they definitely aren't poor enough to have relegated Pakistan, a largely agrarian economy, to a level of stunting just above Guatemala, Yemen, Madagascar, Papua New Guinea, Eritrea, Burundi and Timor Leste as in the IFPRI's global nutrition report, 2016³.

The IFPRI report is a reflection on and a manifestation of the concerns looming over nutrition and food security, especially in the global south. It serves to rank countries on the basis of various nutrition-related metrics like stunting prevalence and wasting and presents the percentage scale and intensity of stunting prevalence in the various countries of the world to conduct a ranking exercise. Surprisingly, Pakistan ranks 125th out of 132 countries on stunting with a prevalence of 45%. This number has since been picked up and reported by a sizable number of media and research organizations both within and outside Pakistan and has raised serious concerns over the development priorities and performance of the current government that lays an emphasis on, and makes a serious commitment to economic growth and development.

While the report doesn't clearly outline the technical methodology used, it's consistent calling to and referencing World Bank, UNICEF and WHO data sets provide a reasonable idea of the level, scale and nature of analysis that has been conducted. It does however provide details on the contributory factors that are assumed to be contributing to stunting and provides data on

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² See Pakistan Economic Survey 2015-16.

³ IFPRI published a global nutrition report in 2016 titled "From Promise to Impact; Ending Malnutrition by 2030".

how each country has performed on each one of the factors. But since the weightages allotted to each factor and aggregation methodology that is used to sum up the score in each factor to calculate a country rank are not explicitly provided, one is incentivized to question the ranking results.

2. Technical and Methodological Approach to Stunting Estimation:

Considering the common drivers of stunting, foremost of which is availability of staple food commodities like Wheat, Maize and Sugar, one is led to question the validity and authenticity of the estimates provided by IFPRI. Pakistan ranks much better in terms of availability of a majority of the food commodities when compared to its South Asian neighbors while it hasn't fared too badly either against the continental representatives I've selected from Africa and South America to do a comparative analysis (see data analysis section below).

The IFPRI report while acknowledging that Pakistan falls much behind the targets accepted by the international community, hasn't managed to provide a reason for how and why this is happening. It does however provide five contributory factors to stunting and malnutrition including food calories, calories from non-staples, access to piped water, access to improved sanitation and female secondary enrollment rate. While the inclusivity and validity of the contributory factors can also be challenged so as to determine the impact and correlation of variables like the education of mothers (given by the female secondary enrollment rate) and access to sanitation, it is not just the methodology and technical approach to stunting estimation that is unique to the point of being unclear and inappropriate but also that the country ranks for stunting that should have been derived out of the used methodology also seems to be following a pattern different to what constitutes common understanding about the variables. What this implies is that Pakistan does significantly better than many countries ranked above it on a majority of the five contributory factors. In such a case, the ranking exercise clearly follows something beyond the factors explicitly outlined as part of the stunting estimation methodology.

According to Shahid Javed Burki, Pakistan's relative estimates for the five contributory factors are; total calories in food supply (2520), calories from non-staples (51 per cent), access to piped water (39 per cent), access to improved sanitation (64 per cent), and female secondary enrollment rate (32.2 per cent). For India the numbers are total calories (2390), calories from non-staples (40 per cent), access to piped water (28 per cent), and access to improved sanitation (40 per cent), and female secondary enrollment (66.3 per cent). Pakistan does poorly in only one of the five contributing factors: female education. The Indian female enrollment rate at the secondary level is more than twice as high for Pakistan. Even with more food and better access to drinking water and sanitation, Pakistan has a much larger proportion of stunted population for the reason that mothers are poorly educated.⁴

It is thus fair to say that the absence of field research and formal data collection process has culminated into the perceived inaccuracy of the estimates. Eventhough stunting is a phenomenon whose glaring presence cannot be ruled out in Pakistan and that the economic

⁴ Shahid Javed Burki published an editorial piece in the Express Tribune in 2016 that did an overall analysis of the state of stunting prevalence in Pakistan and how the IFPRI's estimates and subsequent ranking on the basis of those could be well come into question given that Pakistan does better India on 4 out 5 metrics that it includes in its methodology and is still ranked much below it. It would have however required much more than a single editorial piece, simply on grounds of the lack of space it provides, to extend the comparative exercise beyond India to include other countries that might have not done better than Pakistan on a majority of the 5 metrics but still ranked above it. Link to the article: <https://tribune.com.pk/story/1183829/pakistans-large-stunted-population/>.

policies of the government are far from being as pro-poor, equitable and development oriented as it would require to bring malnutrition down to the levels desired by the 2030 agenda put forth by the IFPRI report, the ranking of Pakistan below India and its South Asian neighbors is questionable, especially when it does significantly better than them on a majority of the variables that the IFPRI report itself includes in its analysis.

In order to establish that Pakistan’s perceived food insecurity is not as concerning as the IFPRI numbers indicate, I have relied on the food security dimensions presented in the diagrammatic model below to do a cross-country comparative data analysis conducted in sections 3 and 4. Empirical estimates on metrics pertaining to the three dimensions are used to establish Pakistan’s perceived self-sufficiency in food and agricultural commodities, especially when juxtaposed against the continental representatives selected from Africa, South Asia and South America.

Figure. 1: Food Security Dimensional Diagram



3. Food Availability – Commodity Analysis

I have conducted an empirical data analytical exercise to underpin that (i). Pakistan has a comparative advantage in various agricultural commodities like Wheat and Sugar that are commonly used as part of the staple diet in the subcontinent, and, (ii). In other commodities for instance rice where it doesn’t have the kind of comparative advantage that it has in the case of wheat and sugar, it does have the production potential and agricultural infrastructure and inputs to ensure internal food security and availability. If resources are managed in line with what is proposed in the state of the economy report on agriculture and water published by BIPP in 2017⁵, commodities other than wheat and maize can also become exportable commodities besides catering to the local food requirements.

Table.1: Maize

Food Supply Quantity (Kg/Capita/Yr.)

Year	Pakistan	Bangladesh	Brazil	India	Uganda	Congo	Venezuela	Peru
2011	14.56	0.45	24.31	6.5	39.44	3.57	56.92	19.73
2012	13.81	0.63	27.55	6.27	46.91	4.17	56.74	19.66
2013	14.54	0.8	28.01	6.29	48.95	3.65	55.25	19.41

Source: FAOSTAT

⁵ The Shahid Javed Burki Institute of Public Policy at NetSol (BIPP) published its annual report titled “The State of the Economy: Agriculture and Water 2016” in April 2017. The report presents a comprehensive analysis of the challenges and opportunities facing the agriculture and water sectors of Pakistan.

Pakistan has done much better than both India and Bangladesh in terms of supply quantities of maize given by Kg/capita availability. However, the South American countries followed by Uganda have a clear advantage over Pakistan. As regards Maize, of vital importance is Pakistan's international trade status. Maize is one of the few agricultural commodities alongside Wheat and Sugar whose excess availability has elevated it to a status of an exportable commodity. However, as per data released by the Trade Development Authority of Pakistan, Maize does not feature in the top 20 exported commodities of Pakistan and its share in the current exports of the country is negligible.

Table.2: Wheat

Food Supply Quantity (kg/capita/yr.)

Years	Pakistan	Bangladesh	Brazil	India	Uganda	Congo	Venezuela	Peru
2011	113.8	17.29	53.46	58.85	11.14	40.06	54.61	54.31
2012	114.27	17.06	52.29	57.08	13.56	41.06	50.19	55.29
2013	113.63	17.47	53	60.56	10.14	40.07	49.17	56.12

Source: FAOSTAT

Pakistan outstrips all continental representatives by a fair margin when it comes to wheat and is by far the largest producer of the commodity. It must also be conceded that a reasonable amount of policy work and institutionalization needs to be done to make wheat a sustainable export commodity, however, given its wide use as a dietary component, its availability for domestic consumption provides reason for skepticism over the stunting estimates provided by the IFPRI report.

Wheat farmers continue to experience impediments like asymmetric information of market conditions, lack of access and marketing information systems, exploitation of the intermediaries, pricing distortions, seasonal variations and lack of support from the government. All of these combined with a serious lack of storage facilities and Agri malls account for the high wastage of wheat and despite its increasing production and favorable availability for local consumption, wheat like Maize doesn't feature in the top 40 exported commodities of Pakistan.

Table.3: Rice

Food Supply Quantity (kg/capita/yr.)

Years	Pakistan	Bangladesh	Brazil	India	Uganda	Congo	Venezuela	Peru
2011	12.42	172.62	34.16	70.82	5.56	17.41	26.75	44.48
2012	12.63	172.47	31.76	70.3	5.25	18.03	23.24	48.97
2013	12.25	171.73	32.13	69.49	4.64	16.51	23.39	48.92

Source: FAOSTAT

Bangladesh is clearly the largest producer of Rice followed by India and Peru. Pakistan, despite doing favorably well against the African representatives, hasn't realized its true potential for Rice production. Interestingly, the food supply levels for most countries have decreased

slightly between 2011 and 2013 which could be indicative of a decrease in the world supply levels of rice. International estimates on rice production could do to validate the concern. Despite a slight decrease during the same period, Pakistan's rice supply has been largely consistent. Infact, according to recent data by the Trade Development Authority of Pakistan, rice is the largest exported Agri commodity and fifth largest when compared to exports from other industries. It contributes roughly 9% to the overall exports of Pakistan⁶.

Table.4: Sugar

Food Supply Quantity (kg/capita/yr.)

Years	Pakistan	Bangladesh	Brazil	India	Uganda	Congo	Venezuela	Peru
2011	25.06	5.47	39.61	20.06	9.08	13.66	37.49	20.97
2012	26.36	5.46	39.68	20.68	8.9	14.98	36.85	21.02
2013	26.09	5.45	39.61	20.87	11.5	17.35	36.11	20.78

Source: FAOSTAT

South America is the clear winner when it comes to Sugar however, Pakistan has a comparative advantage in Sugar over its South Asian neighbors and also the representatives from Africa. Eventhough the prevalent practice of hoarding - backed by the political economy and governance of the sugar trade - has often given rise to issues of sugar accessibility, the production capacity of Pakistan's sugar production systems has hardly been a concern.

4. Accessibility and Utilization

The selected accessibility and utilization metrics (see table.5 below) supplement the availability analysis conducted above since availability of food, despite its utmost importance, cannot alone explain the prevalence of mal or undernourishment which are known to be the largest contributors to stunting and wasting. As one can see in the FAO data results presented in table.5 below, Pakistan has done much better than India and the continental representatives from the global south in terms of paved roads as a percent of total roads while it ranks much higher than both India and Bangladesh only second to the South American countries in providing access to improved water and sanitation.

The only accessibility and utilization metric that Pakistan has made little or no progress in is the domestic food price index for the country's assumed inability to curtail hoarding and the consequent food price inflation. The GDP per capita estimates of India, Pakistan and Bangladesh are quite similar in being much lower than the South American countries which is reflective of the relative population pressures in the two regions.

⁶ Export Statistics, Trade Development Authority of Pakistan. 2017. Retrieved From: <http://www.tdap.gov.pk/tdap-statistics.php>

Table.5: Selected Accessibility and Utilization Metrics

	Access to Improved Water	Access to Improved Sanitation	% of Paved Roads over Total Roads	GDP per capita (PP equivalent)	Domestic Food Price Index
Countries	2015	2015	2011	2015	2014
PERU	86.7	76.2	13.3	11672.1	3.87
Venezuela (Bolivarian Republic of)	93.1	94.4	N/A	15602.9	4.52
Uganda	79.0	19.1	N/A	1717.8	N/A
Pakistan	91.4	63.5	72.6	4744.8	7.14
India	94.1	39.6	53.8	5730.1	4.68
Bangladesh	86.9	60.6	N/A	3136.6	7.99
Brazil	98.1	82.8	13.5	14454.9	2.61
Congo	76.5	15.0	N/A	5993.2	6.29

Source: FAOSTAT

5. Policy Recommendations:

The policy-makers within the country and international organizations reporting Pakistan's Agri statistics should be cognizant of the fact that there appears to be enough food for everyone in the country, especially in Punjab which is perhaps already in a position to feed itself with the existing resources. However, this does not imply that everyone has physical or economic access to food. The problem, as it appears is a distributional disparity problem, rather than food shortage per se. Furthermore, the increase in the prices of basic food commodities experienced over the past few years may also have impacting household levels of nutrition, and the extent of vulnerability to food insecurity. But can a mere distribution disparity problem stunt 45% of a population as large as 210 Million⁷ is a question that needs to be considered. If the food insecurity problem experienced by such a large section of the population has turned to be as ominous as reported by IFPRI, then it necessitates an immediate redressal from the government.

Stunting is predominantly a function of under and/or malnourishment experienced during the first five formative years of life and therefore the dietary needs of children under-5 and their health and sanitation needs must be correctly understood. Given the findings of IFPRI, the only two factors that could be contributing to the high prevalence of stunting and wasting in Pakistan could be low levels of hygiene in the under-5 age cohort or that the specific dietary needs of children at the different stages of their physical growth are not understood and properly taken care of. Clearly enough, the former is a product of lack of food and water quality control mechanisms and the latter, of the lack of awareness and education amongst parents.

⁷ The Provisional Results of Pakistan's Population Census 2017 estimate the population to be 207.774 Million. This represented a 57% increase in population over 1998 when the last census was conducted.

To that end, food and nutrition experts have already been raising concerns over the quality of food that is often compromised by the incidence of water contamination and adulteration. If that is contributing to stunting and not availability, accessibility, utilization or the contributory factors that the IFPRI report has identified can only be ascertained through a detailed and investigative field research exercise that involves working participation of technical food experts, nutritionists, economists and public policy analysts who can re-build a stunting and nourishment profile of the country to see if undernourishment and stunting are as prevalent as reported by the international research organizations.

It is therefore proposed that an investigative research exercise that starts from a revision of the methodology used by IFPRI should be done locally within Pakistan to re-estimate and re-assess the prevalence of stunting. Formal data collection tools like surveys and consultations with selected stakeholders should be conducted to correctly estimate the scale and intensity of malnutrition and stunting.

6. Conclusion

The data evidence regarding favorable food availability in Pakistan provides cogency to the argument that is used to contest the 45% stunting prevalence estimate presented by the IFPRI report. While the report has done a fairly comprehensive analysis on stunting and does to usher in a new era of debate in the this very pristine area of development and food security, it must also do to clarify and expound further on the methodology it has used to reach the stunting estimates reported. Clearly, food availability, or the lack if it rather has to be the largest driver of stunting and a country like Pakistan which, despite a negative agricultural growth rate of 0.19%, has a fairly large agricultural base and is self-reliant for most its staple food items like wheat, maize and sugar. In such a case, a prevalence of 45% and the country's ranking with/around much smaller economies like Madagascar, Yemen and Timor-Leste raises serious questions and concerns regarding the validity and authenticity of the IFPRI estimates and also brings forward the fact that Pakistan's agricultural economy is largely misunderstood and undervalued.

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