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Of Agflation and Agriculture: Time to Fix the Structural Problems

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"If agriculture goes wrong, nothing else can go right."
M. S. Swaminathan

Agricultural commodity prices have reached nosebleed levels in recent months.[1] The impact of the ongoing agflation across the world, especially on the low and fixed income groups, is so severe that the World Food Programme has described the phenomenon as a 'silent tsunami'.[2] The current food shortage is also seen as the first truly global food crisis since World War II. The Asian Development Bank thinks that one billion people in Asia are seriously affected by surging global food prices.[3] As there is a direct nexus between access to food and poverty, it is feared that soaring food prices will push more people under the poverty line and this could jeopardise the progress towards the millennium development goals. The World Bank believes that the current food crisis imperils 100 million people in poor countries.[4] Nevertheless, the World Bank's explanation of extreme poverty (people who earns less than US$1 a day) underestimates the actual number of poor people in the world, as the sliding United States dollar and higher food and energy prices have made the definition somewhat obsolete. However, there are some winners of the current soft commodity boom too. Net food exporting countries have been enjoying improved terms of trade.

There are several explanations for the ongoing high food prices. Rising demand from emerging markets, sliding United States dollar, higher energy prices, excessively loose monetary conditions, commodity speculation, weather woe, and developments of bio-fuels, *inter alia*, are the drivers of the current agflation. Further, to fuel the fire, some Asian

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1 For instance, in the last one year, the prices of rice, wheat and palm oil has increased 78 percent, 120 percent and 102 percent respectively, according to the International Monetary Fund Commodity Prices. In 2007, international food price index increased by roughly 40 percent, and in the first three months of 2008 prices rose by about 50 percent, according to the International Food Policy and Research Institute.

2 Press Release, The World Food Programme, available at http://www.wfp.org/english/?ModuleID=137&Key=2820

3 International Herald Tribune, 3 May 2008

4 Robert Zoellick, the World Bank President, commented at the International Monetary Fund-World Bank Spring Meetings in Washington on 14 April, 2008.

countries, including China, India and Vietnam, have banned or restricted several key cereal exports that have created food shortages in many parts of Asia. These factors, mostly demand-driven one, are pushing food-inflation up. However, the ongoing agflation is also linked to some fundamental supply-side factors associated with agriculture. Nonetheless, the current global food crisis can be a tipping point for the civilisations' most primitive sector, if history is any guide.

New Dynamics in Food Supply-Demand

In the last four decades, cereal production has more than doubled largely owing to the Green Revolution in the late 1960s, outnumbering population growth.[5] However, these great achievements have been overshadowed by chronic hunger and malnutrition that still haunt over 800 million people, mostly in Sub-Saharan Africa and many parts of Asia and Latin America.[6]

After maintaining equilibrium in the food grain market for a long period, some important factors have emerged in the global food supply-demand scene in recent years.

Firstly, there has been a sudden shift from demand-constraint to supply-constraint environment in the agriculture market. Despite a 3.5 billion increase in global population since 1960, world food supplies have been 20 percent higher per person and real prices are 40 percent lower than they were in 1961, according to the Food and Agriculture Organization (FAO).[7] As there has been a dampening effect on agricultural commodity prices, cereal and other food grain production have started to increase at a decreasing pace, especially in India, China and some other parts of the world.[8] Since early 1990s, agricultural productivity growth (particularly rice, wheat and maize) has shown a declining trend.[9] Since 2007, higher demand has been surging the food prices, as supply are not being able to cope with it.

Secondly, as the per capita income increases, the demand for meat and dairy products tends to increase. In recent years, per capita calorie intake has been increasing steadily in developing countries, particularly in Asia. Since China and other emerging economies' higher gross domestic product (GDP) growth has lifted millions of people out of extreme poverty, the demand for high-protein diets has increased. As a result, meat consumption has increased tremendously. The end result is more and more cereals have diverted to produce poultry and other meat. For instance, in China, the 2005/1990 ratios of per capita consumption for cereals, meat, milk and vegetables were 0.8, 2.4, 3.0 and 2.9 respectively.[10] It is estimated that, for the production of one kilogramme of meat, on average at least three

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5 Borlaug, Norman E. et al (2003), "Feeding a world of ten billion people: A 21st century challenge", Proceedings of the International Congress "In the Wake of the Double Helix: From the Green Revolution to the Gene Revolution", 27-31 May 2003, Bologna, Italy.

6 Food and Agriculture Organization (2005), "The State of Food Insecurity in the World" available at ftp://ftp.fao.org/docrep/fao/008/a0200e/a0199e.pdf.

7 Food and Agriculture Organization (2003), "World agriculture: towards 2015/2020: an FAO perspective", FAO, Rome, Italy.

8 FAOSTAT , available at <http://faostat.fao.org/ >

9 World Development Report 2008.

10 Braun, Joachim Von (2008), 'High and Rising Food Prices, International Food Research Institute (IFPRI), Presented at a USAID conference on 'Addressing the Challenges of a Changing World Food Situation: Preventing and Leveraging Opportunities, Washington, D.C, 11 April 2008.

kilogrammes of cereals are needed.[11] Consequently, the world's cereal demand is likely to increase by 40-50 percent, driven strongly by rapidly growing animal feed use and meat production.[12]

Thirdly, climate change concerns have promoted the development of alternative energy market. For instance, the road to biofuel was paved with good intentions. But the end result – the diversion of food to fuel – is doing more harm than good. The European Union, the United States and some other countries subsidise farmers to grow crops for alternative energy. The United States farmers have shifted their cultivation towards biofuel crops substantially in recent years. It is estimated that, in 2008, roughly 30 percent of United States maize production will be diverted to ethanol production[13] and such transformation is largely at the cost of wheat and soybean cultivation. The United Nations has dubbed this phenomenon as the crime against humanity. Though staples like rice and wheat are not used in biofuel production, however, if the use of maize in biofuel makes it more expensive then the consumers might be forced to substitute maize for cheaper wheat and rice. As a result, the prices of rice and wheat would increase in tandem with the price of maize.

Last but not least, the world is depleting resources much faster than they are being replaced. There has been increasing damage to the ecological foundations of agriculture such as land, water, forests, biodiversity and atmosphere, among others. The higher energy and food prices are giving a signal that the prices of these commodities have been under-priced and the supply-demand mismatch could lead to even higher prices for non-renewable and quasi-nonrenewable commodities. For instance, oil is believed to be under priced relative to the cost of carbon emissions. Similarly, biodiversity losses due to environmental degradation are not being replaced which had has an adverse impact on agricultural productivity. Such scenario could prove the Club of Rome right, which predicted in 1972 that, "If present growth trends continued unchanged, a limit to the growth that our planet has enjoyed would be reached sometime within the next 100 years."[14]

Structural Change in Asia's Agricultural Production

Asia accounts for 42 percent of global cereal (91 percent of global rice production) and 39 percent of meat production.[15] China and India are the two largest homes to agriculture which constitute roughly 28 percent (China's share 18 percent and India's 10 percent) share in world cereal production.[16] These two economies, along with some other Asian countries, have shown tremendous success in terms of food production since 1970s. However, in current decade, the portfolio of Asia's agriculture, particularly the Chinese, has changed significantly. The share of cereal in total agriculture produces has declined both in China and India compared to the period of 1999-2000.[17] However, cereal production has increased in Vietnam, Indonesia and Thailand. In 2006, global cereal stocks, particularly wheat, were at their lowest levels since the early 1980s. Stocks in China, which consists about 40 percent of

[11] According to the Europa Bio, available at < http://www.europabio.org/Biofuels/PressBrief/Food_March08.pdf >

[12] Borlaug, Norman E. et al (2003), "Feeding a world of ten billion people: A 21st century challenge", Proceedings of the International Congress "In the Wake of the Double Helix: From the Green Revolution to the Gene Revolution", 27-31 May 2003, Bologna, Italy.

[13] Rising Food Prices: What Should be Done?, IFPRI Policy Brief, April 2008.

[14] The Club of Rome (1972), "The Limits to growth", available at www.clubofrome.org/docs/limits.rtf.

[15] Reducing Poverty and Hunger in Asia, IFPRI Brief No. 6, March 2008.

[16] FAOSTAT.

[17] Ibid.

total stocks, declined significantly from 2000 to 2004 and have not recovered in recent years.[18] Nevertheless, meat, vegetables, fruits and fish production have witnessed a tremendous growth in China which comprises approximately 37 percent and 29 percent share of the world's vegetables and fruits, and meat production.[19] As a result, China's food production index increased from 59 in 1990 to 127 in 2006.[20]

India also witnessed a steady growth in its food production index until 2001 after which the country's food production has been less than stable.[21] India's agricultural sector grew by 1.66 percent annually from 1996-97 to 2004-05, compared to 3.29 percent growth from 1980-81 to 1989-90.[22] Consequently, the share of agriculture to total GDP has declined without a commensurate decline in the number of agricultural workers. Apart from India's one billion plus population, the country has been a major import source for cereal and numerous food items until recently.

Noted agronomists have studied the crisis in the Indian agriculture sector, both quantitatively and qualitatively. Generally, agricultural output is a function of rainfall, terms of trade between agriculture and non-agriculture, fertiliser, irrigation, crop intensity, institutional credit, public investment in agriculture, among others. In India's case, a study focusing on the aforesaid explanatory variables has found that, after 1996-97, almost all factors, except credit, turned unfavourable for the growth of agricultural output.[23] Increasing farmer suicides in India in recent years is an obvious reflection of agrarian crisis in the country.

As the recent growth in the Indian agricultural sector has been below its population growth, the country has lost its position as a food surplus country. The food grain growth rate (1.2 percent) in India was lower than its population growth rate (1.82 percent) in 1990s though the latter has declined in recent years. As a result, India's share in food export has declined from 16 percent in 1990 to nine percent in 2005.[24] India's recent poor agricultural performance has caused food problems in many parts of Asia. For instance, one of the reasons for the ongoing high food-inflation in Bangladesh is due to India's ban on all but non-basmati rice and some other agriculture produces. Agriculture diversification in China, coupled with higher demand for protein meal, has forced the country to slash its food export steadily. Its share in food export has also declined alarmingly from 13 percent in 1990 to three percent in 2006.[25] The recent decline in cereal production in China and India has not been fully compensated by production increase in other parts of Asia, particularly in Vietnam, Indonesia and Thailand.[26]

Subsidy, Tax, and Market Access: Major Roadblocks for the Agriculture Sector

Traditionally, developed countries subsidise and developing countries tax their agriculture sector. Nevertheless, the developing countries' agriculture tax policies underwent some

[18] International Food Research Institute (2007): "The World Food Situation", Policy Report No. 18, available at http://www.ifpri.org/pubs/fpr/pr18.asp.
[19] FAOSTAT
[20] Ibid.
[21] Ibid.
[22] Chand, Ramesh et al (2007), "Growth Crisis in Agriculture: Severity and Options at National and State Levels", Economic and Political Weekly, 30 June 2007.
[23] Ibid.
[24] The World Development Indicators, available at www.worldbank.org/data.
[25] Ibid.
[26] FAOSTAT.

changes in the 1980s and 1990s, and both direct and indirect taxes were reduced.[27] Market access barriers and agriculture subsidies in the countries of the Organisation for Economic Co-operation and Development (OECD) are two major hurdles for the farmers in developing countries as well as free-flow of agriculture commodities across the world.

Estimation shows that more than 90 percent of the global costs come from market access restrictions through tariffs rather than from export subsidies and domestic support.[28] According to the World Bank, the economic and social cost of today's trade, price and subsidy policies in world agriculture is large and they depressed international commodity prices by five percent on average and suppress agricultural output growth in developing countries.[29] The United States, the European Union and other industrialised countries' generous subsidies to their domestic farmers,[30] trade policies including dumping, among others, have kept agriculture commodity prices low. The developed nations' agricultural and trade policies have barred the developing countries access to the global agricultural market. Such distortions have made the developing nation's comparative advantage in agriculture redundant. Estimation shows that developed countries' agricultural policies cost developing countries US$17 billion a year.[31]

As the agricultural produces have been under-priced for a long period, developing countries terms of trade has deteriorated vis-à-vis its developed counterpart. There have been little incentives to stay in the paddy field than rushing to metropolis for off-firm jobs or migrating to the Gulf and other booming economic zones. Indeed, one of the reasons for the Chinese moves from cereal to vegetables, fruits and meat production in the late 1990s and in early 2000s is that oversupply caused the grain prices to fall.[32] Had there been no bar to flow these surplus grain in other parts of the world, China (so as other developing countries) could maintain its higher cereal production record. These market distortion policies have had adverse consequences on developing countries agriculture sector.

Is the Era of Cheap Food over?

Is the current agflation is a signal to produce more food which could lead to a fall in food prices? Or the higher food prices are here to stay? Generally, when demand for a particular product goes up, the market reacts by producing more. As a result, the demand-supply interactions stabilise the prices in the medium to long term. If this is the case, then farmers will grow more crops in coming seasons and the prices of agricultural commodities are expected to go down. Unfortunately, the scenario is not that straightforward for agricultural produces, as the sector has been suffering from some structural problems.

The global commodity prices, including agricultural commodities, work predictably in line with the Prebisch and Singer (1950) hypothesis[33] which states that the prices of primary

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27 World Development Report 2008, Chapter 4.

28 Ibid.

29 Ibid.

30 Though the average support to agriculture producers in the OECD countries fell from 37 percent of the gross value of farm receipts in 1986-88 to 30 percent in 2003-05, the amount support increased over the same period from US$242 to US$273 billion.

31 World development Report 2008, Chapter 4.

32 OECD (2005), "Agriculture Policy reform in China", Available at www.oecd.org/dataoecd/3/48/35543482.pdf.

33 Prebisch, Raúl (1950), "The Economic Development of Latin America and its Principal Problems, reprinted in Economic Bulletin for Latin America, Vol. 7, No. 1, 1962, 1- 22.

commodities relative to that of manufactured goods will tend to decline over time. However, recent trends show that the ongoing upturn in the global agricultural commodity markets has been large and rapid.[34]

There is a little reason to hope that food prices will return to their long-term trend soon unless there is sea-change in the agricultural sector. Even if all factors work favourably for the agricultural sector in the short-run, it is a daunting task to shift the agricultural supply curve rightward. Higher food prices are, therefore, likely to stay in the next few years. After that, a greater involvement of the market and the state could augment cereal production and other food items.

To make change happen, there is a need for significant policy changes pertain to agriculture both at the local and global level. Agriculture has been neglected both by the state and multilateral organisations for a long period. For example, the World Bank's lending to agriculture amounted to US$1.75 billion in 2006, just seven percent of total bank lending, compared with more than 30 percent in 1982.[35] A mere four percent of official development assistance goes to the agriculture sector in developing countries.[36] According to Oxfam, overall global aid to agriculture had declined by two-thirds, from US$11.5 billion from 1987 (from which year) to US$3.9 billion in 2005.[37]

Intensive research and development in the agricultural sector and more investment in irrigation, fertilizer and seeds, among others, could increase agricultural productivity, even if there is a constraint to expand the sector horizontally. For instance, it is estimated that 85 percent of increases needed in global food production must come from agricultural land already under cultivation.[38] According to the FAO, some 80 percent of future increases in crop production in developing countries will have to generate from higher yields, increased multiple cropping and shorter fallow period.[39] Technology and economic forces can spur solutions. Recent developments in bio-technology could increase crop intensity and overall agricultural productivity substantially. But all these developments will take substantial time to have an impact.

But there is a flip side too. The current export ban on key agricultural commodities by many agricultural commodity producing countries is giving a wrong signal to farmers to judge the actual demand and such actions are depriving them of getting the right price for their produces.

Further, climate change could emerge as a major barrier to increase food production, both vertically and horizontally, especially in Asia. Water shortage is another huge challenge to

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[34] For details see the IMF Primary Commodity Prices, available at < http://www.imf.org/external/np/res/commod/index.asp > and Braun, Joachim Von (2008), 'High and Rising Food Prices, International Food Research Institute (IFPRI), Presented at a USAID conference on 'Addressing the Challenges of a Changing World Food Situation: Preventing and Leveraging Opportunities, Washington, D.C, April 11, 2008.

[35] Third World Network, http://www.twnside.org.sg/title2/susagri/susagri017.htm.

[36] Agence France Presse, 20 October 2007.

[37] Third World Network, http://www.twnside.org.sg/title2/susagri/susagri017.htm.

[38] Braun, Joachim Von (2008), 'High and Rising Food Prices, International Food Research Institute (IFPRI), Presented at a USAID conference on 'Addressing the Challenges of a Changing World Food Situation: Preventing and Leveraging Opportunities, Washington, D.C, April 11, 2008.

[39] Food and Agriculture Organization (2003) World agriculture: towards 2015/2020: an FAO perspective. FAO, Rome, Italy.

increasing food production. In Asia, due to rapid industrialisation, water is increasingly transferred out of agriculture to meet growing demands from domestic and industrial sectors. Moreover, water is major source of contention in many parts of Asia.

Moreover, as many Asian economies are rapidly industrialising, the wage level is rising both in farm and off-farm. As a result, the cost of producing food and other agricultural produces is set to increase.

There is also a direct association between energy prices and agricultural production cost. As higher oil prices are likely to stay in the near-term, so is agriculture input and output cost.

Last but not least, cheap food is a double-edged sword. High food prices are essentially a regressive tax to poor, especially those who are net food buyers. Asia is home to two-thirds of the world's poor with 1.5 billion people. At the same time, any attempt to keep food prices low will do more harm than good, as farmers should be properly compensated for their hard work and increasing uncertainties in food production. The world should search for the answer for a right food price.

The Way Forward

Asia is the largest home to agriculture and the region is also highly vulnerable to the ongoing agflation. There is a need for both short- and long-term solution to address food security in the region. The current food (and agrarian) crisis indeed is an opportunity to fix the structural problems in the agriculture sector. Food aid can help to avoid hunger and starvation in the short run. But higher cereal and other food production are the ultimate solution to stabilise the prices in the medium to long run.

Distortions in the agricultural sector and agricultural trade (through tax, subsidies and market access) should be addressed sooner rather than latter. Agriculture, among others, has brought the Doha trade negotiation round to a standstill. Chances are still bleak that the world leaders will reach to a consensus over key issues concerning agriculture soon. Moreover, neither the United States nor the European Union has shown any sign that it would revise its current bio-fuel policies that are driving up food prices across the world, *inter alia*, as it is energy that affects developed countries consumer price inflation greatly, not food.

As there is little hope that the OECD countries will address the longstanding agriculture trade policies or that the United States and the European Union will change their bio-fuel policies, an Asian solution is the need of the hour. Thailand's recent proposal to form an OPEC-style cartel with some of its Southeast Asian neighbours will create further distortion in the grain market. Such an oligopolistic structure does not sound like a viable policy in the long-run, as unlike oil, rice is renewable commodity and it has close substitutes.

Policy makers in this part of the world should rather address issues like research and development in agriculture, technology share, water sharing, market access and potential free flow of agriculture commodities within the region, among others. Asia needs to act now – any further delay could exacerbate the current food crisis and it would lead to greater economic and political uncertainties, if not conflicts, in Asia.

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