

Headline: Heading off a food crisis

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Food self-sufficiency will preoccupy whoever is in government. In contrast with the 20th century, when food prices fell, the 21st century is expected to see food prices rise.

"The world is just one poor harvest away from chaos in the grain markets. Food prices will rise to previously unimaginable levels. Food riots will multiply, political unrest will spread and governments will fall," said Lester Russell Brown, founder and president of Earth Policy Institute, based in Washington D.C.

Recently, a Japanese investment bank, Nomura, listed the countries that would be affected in a prolonged food price spike. The Philippines ranked 13th among the top 25 countries found to be in danger of facing a food crisis.

To better address the emerging crisis, it is necessary to have a continuing dialogue with the intention of shaping policies and thinking. The public should know the major interconnected factors that threaten food supplies and cause prices to go up.

1. Climate change. That climate change has affected not only global supplies and prices of wheat, sugar and soybeans but also prices of rice and other food items cannot be denied. If the drought and scorching summer last year in Russia will happen in the United States, which produces 40 percent of corn and supplies 70 percent of corn export, prices of food will soar.

But blaming the weather as the culprit in the impending food crisis will not help as we cannot "tame the mind or spill the water" as the song goes. Let us adjust quickly.

2. Biofuel. In 2006-2007, 75 percent of the food price increases were mainly attributed to the use of food crops in producing biofuel. On April 8, the UN Food and Agriculture Organization (FAO) reiterated that biofuel production was causing food prices to increase. The price of cassava flour from Thailand, for instance, was up 30 percent. Cassava flour, a direct substitute for wheat flour, is exported to Europe mainly for bioethanol production.

But why use food sources for biofuel?

3. Oil prices. Oil prices affect food production. Tillage, threshing, hauling and transport are oil-based. Indirectly affecting food production are inputs, particularly fertilizer. To make 1 kg of nitrogen (N) fertilizer requires 1.80 liters of diesel oil equivalent (LDOE). Then there's the post-manufacture energy bill. The fertilizer consumes 2.15 LDOE when it reaches the Philippines. To produce a ton of paddy (unmilled rice) requires 18-20 kg N, which translates to 215 LDOE.

At \$111 a barrel, the price of urea is about P1,300/kg. If the price of oil rose to \$150 a barrel, the price of urea would be at least P2,000 per bag. Farmers will not be able to apply 100 kg N to produce 5 tons/ha. Yield will decrease proportionally to the drop in N fertilizer input. N fertilizer accounts for 50-60 percent of crop yield.

A 50-percent decrease in fertilizer use will translate to 25-30 percent drop in yield. As a whole, this will be about 4.0 million to 4.8 million tons of unmilled rice if prorated in 4 million hectares (16 million

tons of paddy rice).

4. Importation. Importing rice is an action that any president of the Philippines will take if there's a shortage, but it is a stop-gap measure. If India and China suddenly import rice from Thailand, Vietnam and Myanmar, food prices will skyrocket.

There should also be an investigation of the country's huge rice imports in the past decade. In 2008, the country imported 2.42 million metric tons which made the Philippines the world's largest rice importer.

Records showed that it was in 2008 when the country produced one of its highest yields at 16.8 million MT. Data on per capita consumption are instructive. In 2000-2001, per capita rice consumption was 103 kg. By 2008, it increased to 128 kg. At a population consumption base of 100 million, it should be pointed out that 11 million Filipinos are abroad and about 7 million to 10 million are corn eaters.

It is true that a number of Filipinos like athletes and people who work in the fields eat at least 140 kg per capita. But what about young children ages 1 to 10, senior citizens and people who are so concerned about their weight? It is crucial to examine whether we are using correct data.

5. Rice yield. To achieve rice self-sufficiency by 2013, the country must increase yield from 3.6 tons to at least 5 tons/ha. Consider the following data: Rice physical area = 2.7 million ha; irrigated area = 1.9 million ha; rain-fed area = 1.3 million ha (BAS 2010). From 2005 to 2009, the average yields for irrigated and rain-fed areas were only 4.3 and 3.0 tons/ha, respectively.

A yield of 5 tons/ha is achievable. We have farmers harvesting more than 8 tons/ha. To achieve an average yield of 5 tons/ha for the 4.2 million ha planted to crops, we need to address constraints like soil, water, input and output prices, technological inputs (seed types and fertilizers), attitudes and support for farmers.

6. Water and rice production. If our net consuming population hits 100 million, we will need 18.15 million tons of unmilled rice. Where will we get all the water needed to produce that volume requiring 90.75 billion tons of water? (A ton of rice requires 5,000 tons of water). Expanding irrigated areas, could increase yield (1 ton more/ha).

Two things must be considered in putting more irrigation facilities.

One is the huge cost, which now stands at about P500,000/ha and may even go up. Irrigating 500,000 ha needs P250 billion.

Another is preventing further conversion of prime irrigated lands into residential, commercial and industrial areas.

The ideal ratio of forests and agro-ecosystems is 50:50 (Do reforestation now but the effects will come after 10 years.) The condition of our watersheds is manifested by the effectiveness of our irrigation systems. Many of our irrigation systems are simply river-water diversion. This explains why irrigation systems have insufficient water during prolonged droughts.

7. Support for farmers. The current rice self-sufficiency program is in the right direction. Direction setting, however, is different from accomplishing the goal.

Farmers are unhappy with the support they get from consumers and the government. The retail price of rice at P34/kg should translate to P17/kg when bought from directly farmers at their threshers or to P20/kg at 12 to 14-percent moisture content. At harvest time, traders buy rice from

farmers for as low as P11/kg when the break-even price is about P13/kg (this crop year). This happened for two cropping seasons.

The low farm-gate price has further deepened the indebtedness of farmers. This will make them resort to input cost-cutting as an adaptive measure. They will not apply sufficient fertilizers so yields will go down. The “unjust price of rice” paid to our farmers must be addressed because 9 out of every 10 farmers are rice farmers. This means that the rural economy revolves around rice.

Why are our farmers becoming more impoverished? We can trace this to the low prices of palay at harvest time and the high interest-bearing loans they incur to grow rice. We tried computing the equivalent wage of farmers at various farm-gate rice prices. Using the national average yield of 3.6 tons/ha, the farm-gate price should be P25 for the farmer to earn a minimum wage of P300/day, which is P500 less than the living family income of P800 a day.

At a higher yield of 5.4 tons/ha, the farm-gate price should be P18/kg for the farmer to earn P300 a day. To earn the living wage of P800/day, the farm-gate price should be P27/kg. The question is, How many farmers obtain 5.4 tons/ha? Equally important to consider is farm-gate prices rising to P27/kg, which will push the retail price of rice to P54/kg, a level that may not be affordable to many.

What can be done?

The looming food crisis should be addressed from production to consumption.

On the consumption side, anchoring our food-caloric sufficiency on rice alone is not the correct approach. We could easily be food-caloric-energy sufficient with our current production systems by doing the following:

Mixing rice with 15 percent (1.5 million tons) white corn, we can easily satisfy the demand. Studies showed that corn can be mixed with our rice up to 30 percent. We produce about 7 million metric tons of corn. But these are mainly yellow corn.

We should have a program of growing white corn for food. Corn is mostly grown in upland rain-fed areas. Growing corn in lowland irrigated areas expands the service areas three to four times. Furthermore, we can eat other food-caloric sources like root crops and banana.

Tempering our white-rice consumption and shifting to brown rice. If we mix 50 percent brown rice with our well-milled rice, we could be self-sufficient in rice (Brown rice leads to an 8-to 10-percent increase in milling recovery and a 30- to 40-percent reduction in rice consumption). Moreover, brown rice is more nutritious than well-milled rice.

Eating more vegetables and fruits. Filipinos consume low amounts of vegetables at 40 kg per capita while the Chinese eat as much as 225 kg per capita. Vegetables provide many nutrients and extra fiber that the body needs.

On the production side, helping farmers produce more rice but leaving them to sell their produce at below break-even price is a calamity worse than flooding or drought. Some possibilities are as follow:

The government should implement a P20/kg guaranteed price for our farmers. It costs P13/kg to produce rice. If the price of oil continues to increase, the break-even price of P13/kg will also increase.

Now is the time for citizens and private corporations to help farmers. Well-to-do families should buy in advance their rice requirement (10 cavans at P20/kg = P10,000 at 1 million families). This is

equivalent to a P10-billion infusion into the pockets of farmers and represents 30 percent of the budget necessary to contain the rice traders' price manipulation at harvest time.

Private companies that employ more than 400 people should buy the rice requirement of their employees. At 1 cavan a month  $\times 400 = 4,800$  cavans a year or 7,500 cavans of unmilled rice at P20/kg. If we have 5,000 corporations that will respond to this call, it will translate to a P37.5-billion direct rice purchase from farmers through their cooperatives.

This money (P37.5 billion) is roughly the amount (25-30 percent) required to counter the traders' control of the price of rice during harvest season (October to November and March to April).

Many are now advocating organic and sustainable farming. We now have an Organic Agriculture Act. But going organic is not like going on a picnic! Going organic agriculture needs soil rehabilitation or soil fertility restoration.

Restoring soil fertility is a slow and gradual process. Experiences show that three to five years are required to rehabilitate the soil. The practical thing to do is to adopt soil-rehabilitation and cost-reduction farming practices.

Two practices can be adopted immediately:

Implement a nationwide no-rice-straw burning. A ton of straw is equivalent to a bag of urea. About 3 tons/ha of rice straw are simply burnt.

Integrate urban-waste recycling (biodegradable waste) to provide partially the organic nutrient requirements of our fields. More than 50 percent of our population lives in urban areas.

We can expect our farmers to restore soil fertility if the land is theirs. The full-scale implementation of the Comprehensive Agrarian Reform Program with Reforms should be done.

Seed and equipment support for organic farming should also be promoted. As farmers are mostly into monoculture, they have lost their bahay-kubo crop species.

#### Diversified agriculture

So diversified agriculture must be pursued. Farmers must be retrained on propagation of various seed lots (orthodox and recalcitrant) and appropriate planting materials (cuttings, tubers and roots) of various crop species.

The shift to diverse agriculture requires relandscaping or redesigning the farms to achieve the desired ecosystem or soil condition of the various crops species to be grown by the farmers. Equipment for soil digging (backhoe) and water-reservoir construction (bulldozer and loader) must be made available to farmers.

Finally, Filipinos will not go hungry if all the able-bodied grow their own food in whatever quantities. There are still many idle spaces and the Philippine climate is so accommodating for our crops.

We need to implement "household-based agriculture." Integrated into it is recycling as biodegradable wastes can be easily composted for our vegetables and fruit trees around the house.

In doing so, we solve the twin problems of food scarcity and disposal of waste that clog our waterways and cause flash floods during the rainy season.

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