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## Will the World Experience Hunger and Starvation?; Cattle Comments


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# ECONOMICS COMMENTATOR

SOUTH DAKOTA STATE UNIVERSITY

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## WILL THE WORLD EXPERIENCE HUNGER AND STARVATION?



by

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Given the world's current population, food consumption and food production trends, some analysts are asking whether or not the supply of food can keep up with demand for food. From 1910 to 1930, U.S. wheat yields were fairly stable around 13 to 14 bushels per acre. But from 1931-1965, yield per acre nearly doubled to 26.5 bushels per acre and then from 1960 to 1995 slowed to a 35% increase to 35.8 bushels per acre.

As U.S. yield and increases slowed, the rest of the world began to experience the large yield increases that the U.S. experienced during the 30's through the 60's. World wheat yield increased 105% from 1965 to 1995 or from 1.2 to 2.46 metric tons per hectare (17.8 to 36.6 bu/Ac). Acreage over this time period only increased 0.9%. If the world yield, that has now equaled U.S. yield, increases at a slower pace, will the world go hungry? Will grain prices stabilize at a higher plateau?

Market forces have already answered the second question. With increases in expected winter wheat production in the U.S. due to better growing conditions, wheat price has plummeted, even as the U.S. Northern Plains and Canada are making slow progress in planting spring wheat. You can draw your own conclusions about the answer to the first question given the following information about the wheat situation in China, the Former Soviet Union (FSU) and the world.

### NOTE - Metric Conversion:

One metric ton = 36.7 bu. of wheat

One Hectare = 2.47 Acres

*(Continued on p.2)*

## CATTLE COMMENTS



by

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The last 18 months have not been "good" for cattle producers. Prices are considerably below where they were only two years ago. For example, when comparing 1995 average annual prices to 1993 average annual prices, calf prices declined by about \$25/cwt, yearling prices by around \$20/cwt, and fed cattle prices by almost \$10/cwt lower. The situation thus far in 1996 is even worse.

What caused the big price decrease over the last two years? And, is a repeat performance over the next year or two likely? Some of the possibilities are discussed below.

### Why are prices lower?

Several factors have been blamed for lower cattle prices. Sometimes the blames have been in error--sometimes only partially correct. More beef produced in the U.S. (up 9% in the last 2 years), more pork (up 4½%) and more broilers (up 13%) must carry part of the burden. U.S. consumers now eat record amounts of meat.

Some blame probably should be placed on the packing industry. There, concentration and the somewhat related captured supplies, likely have put some pressure on cattle prices. Even if the amount of captured supplies is low, the perception that it is high may be enough to pressure prices, at least in some areas.

*(Continued on p.3)*

World wheat consumption increased from 231 mmt in 1960 to 330 mmt or 43% by 1970. From 1970 to 1980, consumption increased to 444 mmt or 35% and another 27% by 1990 to 562 mmt. Consumption has declined since the 1990 peak (Table 1). Higher prices have rationed dwindling or smaller wheat supplies which came about due to the uncertainties surrounding mother nature.

Table 1. Wheat Production, Consumption and Yield: U.S. and World, 1960-1995.

Year	Yield		Production		Consumption	
	U.S.	World	U.S.	World	U.S.	World
	(Tons/Hectare)		(Million metric tons)			
1960	1.76	1.15	36.9	233.5	16.1	230.9
1970	2.08	1.48	36.8	306.5	21.0	329.5
1980	2.25	1.84	64.8	436.2	21.3	444.0
1990	2.65	2.54	74.3	588.0	37.2	561.5
1995	2.41	2.46	59.5	534.6	31.1	551.5

Source: USDA

A recent *Choices* magazine article, entitled "Why China Will Not Starve the World," by Scott Rozelle, Jikun Huang and Mark Rosegrant includes projections for consumption in China. With "normal" population growth and technological advances, consumption needs in China could exceed production by an estimated 43 million metric tons by the year 2020 and then level off at that amount. Current trends in China (see Fig.1) are for flat supplies and flat to slightly increasing usage.

Forecasts of large shortages of wheat (grain) in China stem from expectations of demand growth for meat products which in turn use large supplies of grain. China has kept stocks of wheat at around 20 to 22 mmt for over a decade through aggressive import buying when crop production is below consumption needs.

Production of wheat continues to increase even as the area devoted to planting wheat has stabilized at around 29 to 30 million hectares (Fig.2) This production increase has been possible because of yield increases (Fig.3). Yield increases in China have leveled off compared to the rapid change of the early 1980's. This is partly due to the lack of government investment in research. Recent developments suggest that more money for research will be spent and larger yield increases once again will materialize. Since current average yield is around 3.5 metric ton per hectare, some analysts question the ability to realize larger yield gains than in the 1990's.

One of the areas that the world may be dependent on for increased wheat production is the FSU countries. Yield has been variable between 1.25 and 1.75 metric tons per hectare, less than half of the wheat yield in China. FSU countries have not yet experienced the rapid yield growth that many other countries have

Fig 1.

### WHEAT SUPPLY AND USAGE CHINA 1960 - 1995

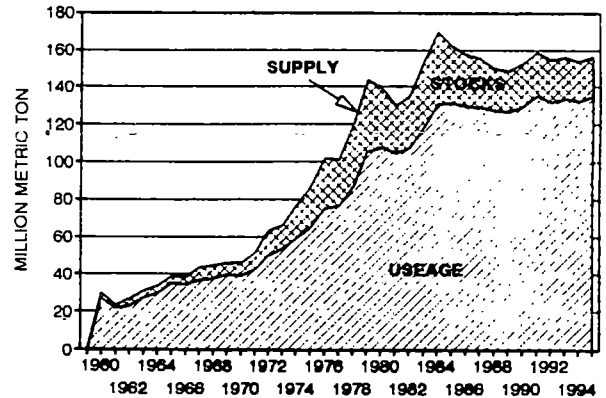
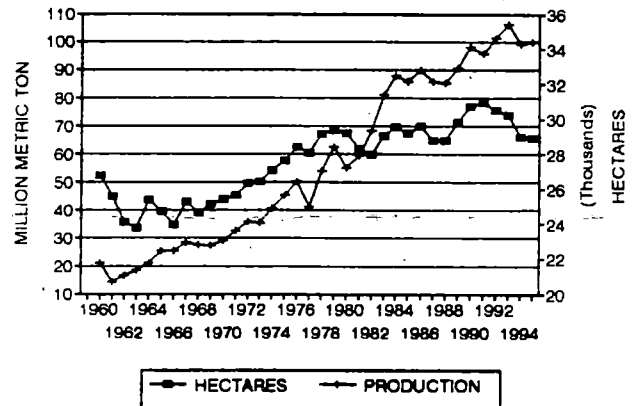


Fig. 2

### PRODUCTION AND AREA WHEAT: CHINA 1960 - 1995



realized (Fig.3). Even with this yield, the FSU has experienced in years past much larger amounts of production than current levels (Fig.4). This was possible due to large areas being devoted to wheat production. Wheat area has declined significantly as demand for wheat in the FSU countries for livestock consumption has declined (Fig.5). Non-fed wheat usage in the FSU has been rather stable over time. The bottom line is that with the proper economic incentive (wheat price) FSU could produce 140 million metric tons

of wheat. This is possible with an area increase back to 70 million hectares and yield increase to only 2.0 metric tons per hectare. If yield in FSU advances to yield levels in China of 3.5 metric tons per hectare, they could produce 245 million metric tons of wheat. Fortunately, for the wheat world market, the current economic situation and climatic conditions in the FSU prevent this production increase from happening. However, the FSU potential is tremendous.

Fig. 3

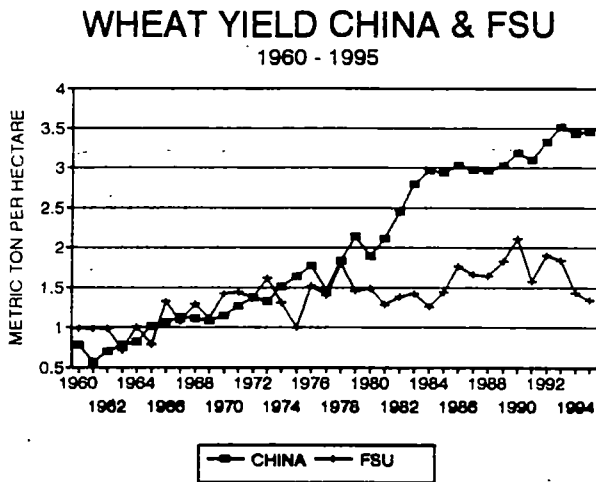
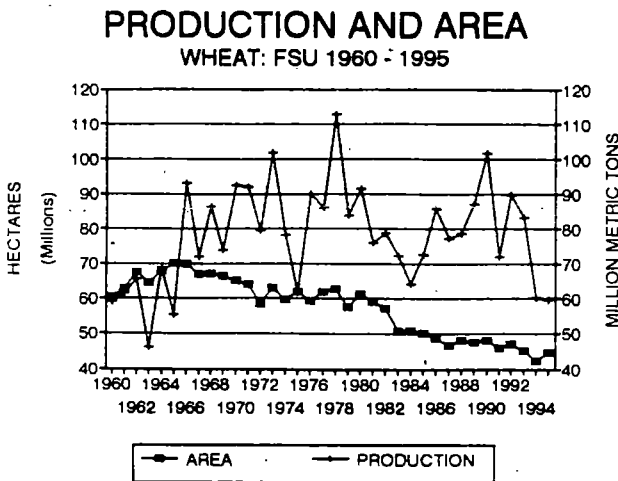


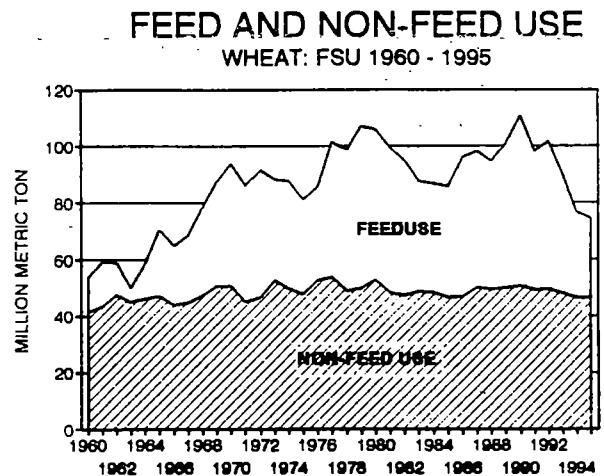
Fig. 4



Will the world starve? Probably not in the short run, to 2020. But, some individuals or individual countries may need to alter their consumption patterns. Long run wheat yield increases precipitated by research advances and technological change already have been put

in motion by decisions stemming from wheat prices exceeding \$7.00 per bushel in 1996. Wheat importing countries, such as China, will strive to increase production in order to decrease import requirements (at higher prices). And, the "new" competitive economic environment and the profit motive in the FSU will lead to investment in agriculture that will cause higher yields and greater production. World wheat production and price will become even more variable as mother nature continues to exert her power! Will the world go hungry?

Fig. 5



*(Cattle Comments – cont. from p.1)*

The trade area sometimes is blamed for lower cattle prices. At least in the last year or two, that is not justified. Again, when comparing 1995 to 1993, beef exports were up 43% and beef imports were down 11%. Thus far in 1996, the changes have been even greater (and on the positive side).

Another area that sometimes is blamed for low cattle prices is the retail market. Again, here the figures don't support the changes. Between 1993 and 1995, choice retail beef dropped \$9.00/cwt and choice boxed beef cutout dropped about \$12.50/cwt. Both are consistent with the \$9.50/cwt drop in fed cattle prices.

**Can we expect more of the same?**

The cattle industry should not expect great things for the rest of 1996. There should be plenty of beef and other meats to keep pressure on prices. For the fed beef sector, some will depend on demand. There, while

foreign demand is a key factor, one cannot ignore the domestic side. Increased competition from pork and poultry will be the rule rather than the exception. Even with a stable or slightly improved demand picture, however, the supply side should continue to be a factor through at least mid-1997. It will take that long to "get rid of" the 1995 and 1996 calf crops and the cull cows which are adding to slaughter levels.

Feeder cattle producers still will be at the mercy of the weather and grain production. If fed cattle prices do not stage a large rally (and one is not expected), feeder cattle producers will need help from the corn market. There, concern still is that production won't be large enough to pull corn prices down. That means continued pressure on feeder cattle prices.

In total, fed cattle prices in the \$60's (\$50's more likely than \$70's) and fall calves close to 1995 levels seem most likely. If help comes, it more likely will be at the feeder cattle level first. The fed cattle market might have to wait until beef supplies drop back from current levels, and that could take another year.

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