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# Food – The Ultimate Weapon?

by Jimmye S. Hillman, Tuscon, Arizona \*

Since the Arab oil embargo and the US-Russian wheat deal of 1973 there has been much talk of “agri-power” implying that the United States which normally accounts for 50 % or more of the world’s wheat exports could follow the oil producers’ example and unleash a food weapon to bring the Third World and the Soviet Union to heel. Dr. Hillman points out that – apart from moral considerations – this proposition is full of holes.

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Erroneous implications continue to be made and misleading conclusions drawn from loose talk about “agri-power”, or the food-as-a-weapon political theme which surfaced so strongly during the 1972–74 period. The anomalous set of world events of this period gave rise to an unusual and unwarranted wave of alarm about food shortages and resulted in a certain fallacious economic and political reasoning about food and oil. Circumstances surrounding this set of events and their fallout have been analyzed at length in a variety of places<sup>1</sup>. The specious and faulty political and economic reasoning about food and related matters arising out of that period has filled speeches, air waves, newspapers, magazines and even professional journals *ad nauseam*. Overnight, far too many who knew far too little about the subject became instant experts on the “world food problem”.

Here I want to address one of the most erroneous proposals which surfaced during that tumultuous period, especially after the Arab oil embargo of 1973. Emotions ran high after the embargo and the US-Russian wheat deal of 1973. Therefore, there arose the general proposal: if the Arabs could embargo oil to us, let us embargo wheat or food to them. If not to them, to others; or, if not embargo, let us raise prices and use monopolistic trading practices. Proposals included bringing economic and political pressure on the world’s trading entities, including the oil exporters. After all, it was reasoned that normally the

US accounts for 50 % or more of the world’s wheat exports, so let’s use our muscle. Politicians, including President Ford and former Secretary Butz, at one time used the term “agri-power” implying that the United States could unleash a food weapon to bring the Third World and the Soviet Union to heel. All well and good economically and politically – if not morally – should such be possible. But alas! The proposition is full of holes.

## Basic Phenomena

Economists generally like to begin such an analysis by pointing out that everything is in some sense a resource and is subject to the broad conditions of supply and demand, that is, the market – however described – and to a variety of other constraints. In short, in a modern economy all resources are somewhat interrelated; hence, have some similarities. So it is in this instance.

Petroleum and grain are resources deriving from nature’s historic conditions and man’s technology, but bound together in the circuitous flow of economic goods and services which are utilized by man, the producer and consumer. Both can be “inputs”, both “outputs” in the economist’s jargon.

Food, of which the grains are a major part, like water and air, is the staff of life. Petroleum, however, is also basic energy, can be converted for direct consumption, but has been more specifically responsible in large part for the mechanical and fertilizer revolutions of modern farming.

Another way of putting it is that, while they are resources in a functional sense, food and oil are economic commodities. At most times and in most places, the same forces which determine the supply and demand for oil also shape the supply and demand for types and forms of grain, and

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<sup>1</sup> See, for example, The Impact of an International Food Bank by a Task Force of the Council for Agricultural Science and Technology, Iowa State University, Ames, Iowa, December 1973; and D. Gale Johnson, World Food Problems and Prospects, American Enterprise Institute for Public Policy Research, Washington, D.C., Foreign Affairs Study No. 20, June 1975.

their ultimate utilization. How much farmers receive for their grain compared to what it costs them to produce it determines grain supply for the most part. How much income consumers have to spend on food (grains, etc.) will determine to a very large extent the quantities and forms of food (grain, meat, milk, etc.) different people consume; i.e., its *demand*. Petroleum and related energy products play a major, if not dominant, role on the cost, or supply side, and on the income, or demand side, of the food-grain equation.

We arrive at the first critical point in the analysis: while our senses — physical and moral — tell us that food is special (the ultimate weapon?), its behavior as a commodity in a modern economy is special only in certain ways. While we think of food as the combination of land, water, labor, oil, etc. — and as somehow uniquely limited by these — the resources used to produce many other things are also used to produce food. How we allocate *all* our resources, therefore, determines in part how much food is produced.

About the same can be said of consumption patterns. It may appear logical to think in terms of using food as a weapon, but it is the differences in people's incomes that finally determine the world's grain trade and food consumption. Much the same can be said with respect to schemes which would use food as a charitable "weapon" (moral commitment or obligation).

So much for the similarities of oil and grain as resources and their roles in the circuitous flow of input-output mix to satisfy man's wants and needs. A second analytical point will try to differentiate the two.

Grain along with many farm products and resources would be categorized as "renewable", oil as "nonrenewable". Flow vs. fund resources. There is a vast difference with respect to long-term economic calculation; i.e., discount rates, capital investment schemes, and planning horizons. The supply of food, moreover, tends to be unstable because of special properties associated with weather, other natural phenomena, and human and governmental decisions. But each season there is renewed hope for a bigger and better crop. Thus, the 1976–77 world wheat and coarse grain (rice not included) production will be a record 1,100 mn metric tons substantially above the 985 mn tons of a year ago.

Higher product prices and improved supplies of agricultural inputs, particularly fertilizer, have encouraged increased plantings in many countries.

Agriculture response is like that and is renewable in form.

Oil reserves, on the other hand, are finite, exhaustible and limited. And, even though we have witnessed gluts of oil and variations in supplies, depending on economic conditions, there is a tendency to an approaching of a limit. For example, US petroleum production peaked in 1970 and has been dropping each year since, despite rising real prices.

Rising real prices for food could easily induce further agricultural expansion and higher levels of food production. Due to the "renewability" of selected agricultural inputs and despite higher relative prices for fossil fuel, there is a guarded optimism on the part of knowledgeable agricultural scientists with respect to grain production all over the world<sup>2</sup>. This guarded optimism includes, of course, the expectation that with the relative rising prices will come substitutes for fossil fuel.

### Food Power

For simplicity, those who would use "food power" or "agri-power" may be divided into two groups. There are the "hard-liners" such as former Secretary of Agriculture Earl Butz, Senator Henry Jackson and others who have implied that the US, which is a dominant supplier of grain and soybeans to the world, could somehow use this position as political leverage, tactical and strategic, in the developed and developing countries. Moreover, Senator Jackson, in particular, implied at one time that by denying the Russians grain the US might obtain concessions in arms reduction bargaining. In a lengthy article on "US Food Power Ultimate Weapon in World Politics", *Business Week*, December 15, 1975, said that "nearly everyone agrees that in a world of hunger and over-population, the US can apply its tremendous agricultural capacity as a lever on foreign countries to adopt policies beneficial to this nation". It went on to say "... there is strong evidence that, as another condition for the grain sale, the Russians were persuaded to keep their hands off during Secretary of State Henry A. Kissinger's negotiations on the Egyptian-Israeli accord."

A second group who would use food power is composed of liberals and charitable organizations. They would use food as a moral weapon in an equitable mode. They imply a repugnance to the notion that the US should consider using bread, the staff of life, as a political weapon. However, in their own naiveté and exaggerated accounts of the recent world food situation (it was called a "crisis" for so long by so many that the term lost most of its impact), they gave ammunition to the hard-liners.

<sup>2</sup> See Jimmie S. Hillman, *Land Needs for Food and Fiber with a Population of Six Billion*, Proceedings, Soil Conservation Society of America, August 1975, pp. 107-112.

**Table 1**  
**World Grain Production and Exports 1973**

Commodities	Production			Exports		
	No. of Producing Countries	Area (1000 ha)	Production (1000 MT)	No. of Exporting Countries	Quantities (MT)	Values (1000 \$)
Wheat	98	222,268	377,017	75 <sup>1</sup>	160,514,501 <sup>1</sup>	16,842,186 <sup>1</sup>
Rice <sup>2</sup>	114	134,163	320,714	68	9,239,841	2,023,576
Maize	136	110,924	311,780	66	49,675,687	4,475,842
Barley	81	87,712	168,749	80	12,194,679	1,140,937
Sorghum	72	42,631	51,768	— <sup>4</sup>	— <sup>4</sup>	— <sup>4</sup>
Millet	68	67,927	45,370	— <sup>4</sup>	— <sup>4</sup>	— <sup>4</sup>
Total Cereal <sup>4</sup>	161	720,476	1,368,146	111	165,084,473	17,143,118

<sup>1</sup> Exports of wheat are actually wheat, wheat flour and maslin. <sup>2</sup> Paddy rice. <sup>3</sup> This total is that of all grain, including those listed. <sup>4</sup> Data not available.

Source: FAO Production Yearbook, 1973; FAO Trade Yearbook, 1973.

"Agri-power" of the nature implied by the two groups is somewhat overrated and is an illusion. There is a third position or group which suggests that our exportable grains should be made freely available so long as they are not controlled by monopolies to their own exclusive advantage. Also implied in this position is that the US shouldn't turn over its grain to foreign governments — to state traders such as the Russians, or to other centralized purchasers — just because they have the money to buy it.

Then there are questions related to farm policy, food reserves and international grain trade stability. Questions of economic efficiency, political power and human equity are involved in all these positions to which we can now turn.

The United States has, in fact, become a dominant supplier of grain and soybeans in recent years. I shall use 1973 as a production and trade year for the grains, and for comparative purposes regarding petroleum. In 1973, 47.7 % of world trade in wheat, 17.6 % in rice, and 84.7 % in soybeans derived from the US production. During record years of production in this country and of corresponding crop failures abroad, the percentages are even

higher. These shares of the grain trade compare well with the position of the OPEC countries in oil. Why can't we exercise monopoly power or why don't we if we could?

In the first place, foreign trade in all grains in 1973 accounted for only 12 % of world production and consumption. Therefore, even if the US controls say 50 % of that 12 %, this is only 6 % of world output and intake. Foreign trade in oil, on the other hand, is more than 50 % of world production and consumption. The Persian Gulf States alone produce almost one-third of world oil and half of world oil exports.

A more detailed picture of the difference between grain and oil production and trade can be demonstrated. Table 1 shows that in 1973 there were 161 countries producing almost 1.4 bn metric tons of grain on over 720 mn hectares of land throughout the world. Sizeable portions of this production are in wheat, rice and maize. But large acreages are in barley, sorghum and the millets, crops which are adaptable to highly variable climatic, soil and management conditions.

Turning to crude petroleum, Tables 2 and 3 tell the story. 57 countries produced about 20.4 bn

**Table 2**  
**Crude Petroleum Production and Trade 1973 (1000 barrels)**

	N. C. America	S. America	W. Europe	Middle East	Africa	Asiatic Area	Sino-Soviet Areas <sup>4</sup>	World Total
Production								
No. of Countries Producing	4	10	10	12	10	11	—	57 <sup>3</sup>
Production	4,201,508	1,702,458	138,513	7,744,933	2,161,473	815,845	3,603,251	20,367,98
Exports <sup>1</sup>								
No. of Countries Exporting	5	9	5	10	10	7	—	46 <sup>3</sup>
Exports	367,251	897,786	34,830	7,170,524	1,984,180	464,425	644,486	11,563,48
Imports <sup>2</sup>								
No. of Countries Importing	15	10	17	8	18	15	—	83 <sup>3</sup>
Imports	1,973,776	771,470	5,399,035	254,979	244,269	2,520,437	557,332	11,721,29

<sup>1</sup> Exports and reexports. <sup>2</sup> Imports crude and unfinished oils. <sup>3</sup> Excludes Sino-Soviet areas. <sup>4</sup> Excludes Cuba, the data of Cuba are included in the N. C. America Area.

Source: International Petroleum Annual, 1973.

barrels of oil in 1973. 46 countries exported about 11.6 bn barrels. The ten leading countries produced 54 % of that oil, but the ten leading exporting countries exported 47 % of all world production of crude petroleum. Compare this with the 12 % export figure for grains, and it gives the picture of dominance and power of petroleum producers.

As has already been mentioned, oil deposits, like many minerals, are not universally and ubiquitously distributed. It is a finite — non-renewable — resource. Modern economies' growth is closely linked to its production. Grain, on the other hand, can be grown almost anywhere. Its production is "renewable". Moreover, as was demonstrated in the 1972–74 period, growth in production and reduction in consumption provides a wide range of grain flexibility to certain countries. The US demonstrated this by bringing additional acres into production; and by reduced grain feeding in the livestock sector cut its grain consumption 15–20 %. The Soviets reduced grain consumption by accelerated livestock slaughter several times in the 1950s and 1960s and apparently did it again in 1972–74 but not to such a degree.

Given adequate economic incentives, the upward flexibility in grain production can be expressed quite rapidly. This holds true for many of the current importing countries — developed and underdeveloped — with the possible exceptions of India and Japan. Rapid increases in stocks can result from such flexibility. The US Department of Agriculture puts 1976–77 global wheat and coarse grain stocks at 172 mn ton, 50 % above 1975–76. It projects a further increase in 1977–78 stocks at 36 mn tons, or another 20 % increase<sup>3</sup>. The possible record-level stocks already present enormous problems for grain producers and their governments. Rice, too, is in trouble.

There is yet another constraint on US agri-power. It is not clear that other grain exporting countries would cooperate with the United States in seriously limiting exports to attain economic — let alone political — objectives. Moreover, there is simply too much "leakage" in the system. An important "leakage" would be re-export. There is little to stop the USSR from buying US grain from a third country if we tried to embargo it. Temporary shortages may give the US limited short-term leverage, but if severe measures are used — such as the export embargoes of 1973 and 1975 — the long-term trade repercussions or short-term agricultural price gyrations may be highly counterproductive. The Soviets did agree to being over-

**Table 3**  
**Production and Exports of Crude Petroleum**  
**by Leading Countries 1973**

Countries	Production	Export	Production Exported
	(in 1000 barrels)		%
Saudi Arabia	2,677,146	2,479,202	92.61
Iran	2,139,229	1,926,517	90.06
Kuwait	1,007,002	965,937	95.92
Libya	793,839	793,055	99.90
Venezuela	1,228,594	775,092	63.09
Nigeria	749,820	698,779	93.19
Iraq	736,607	696,854	94.60
United Arab Emirates	559,399	552,298	98.73
Indonesia	488,536	369,543	75.64
Canada	648,348	365,370	56.35
Total	11,028,520	9,622,647	87.25
World total	20,367,981	11,563,482	56.77

Source: International Petroleum Annual, 1973.

charged for part of the shipping costs for some grain; but not enough to extract concessions on oil and political accommodations in the Middle East or Africa. In the context of modern economic and political reality, threats toward substantial denial to the Soviets and others of access to US grain supplies are essentially empty and counterproductive. Moreover, with the supply situation being what it was in mid-1977 realistic politicians are more concerned with stopgap price and income measures to prevent the farm situation from deteriorating further rather than attempting to form a tenuous wheat or grain cartel.

A word might be said on the growth in output in the agricultural sector. While the instability in world grain markets since World War II has been largely USSR-induced, gains in total agricultural output in the USSR during the 20-year period from 1950–71 compared very well to that in North America. Soviet agricultural output rose at an annual compound rate of 3.9 % vs. 2.0 % in the US. Moreover, national investment in Soviet agriculture has been increasing rapidly during the past decade. This is not to suggest that the Soviets are about to solve all their agricultural problems, but it is neither correct nor reasonable to expect them to be overly susceptible to our use of agri-power.

### Food Production and US Policy

The preceding analysis and discussion are not meant to imply that the US cannot use its enormous agricultural abundance for furthering its economic and political objectives abroad. Moreover, certain moral objectives might also be attained in the process<sup>4</sup>.

First, we might use our large agricultural export capacity to support *trade policy* goals. The US

<sup>3</sup> US Department of Agriculture, World Grain Situations, May 2, 1977.

<sup>4</sup> Fred Sanderson, The Brookings Institution, has written extensively on these policy matters.

has a decided comparative economic advantage in producing basic food and feed stuffs. To exploit this advantage, we can work — as indeed we have worked — for an open world trading system and a reduction of trade restrictions. We are now in Geneva negotiating toward that end. Tariffs, as well as nontariff barriers, could be reduced. We can further modify domestic agricultural programs which stand in the way of optimum use of our agricultural resources. At the same time, we can insist that other countries do the same. The current stalemate in the Multilateral Trade Negotiations attests to the fact that the commercial agricultural policies of the industrialized countries have a way to go in this respect. (The US has serious barriers on the importation of manufactured dairy products and a potentially serious restrictive quota policy on beef. We are net importers of these products.) On the whole, however, more liberalized trade policies and market-oriented domestic agricultural policies have already resulted in very large increases in the volume of agricultural trade between countries — over three hundred percent in volume since World War II. US grain exports have quadrupled; soybeans have developed into a phenomenal dollar earner.

A second, and closely related objective which can be furthered by our agricultural abundance is

the assurance of a reasonable stability in domestic food supplies at reasonable prices. The unwanted agricultural surpluses of the 1950s and 1960s were a by-product of high price supports. Food reserves were taken for granted by the American consumer and our trading partners abroad. After recent experiences, the world is now in a mood to move toward a more deliberate — as opposed to an arbitrary — food reserve policy which would have considerable economic and social benefits. The US must not neglect opportunities to make bargains with other nations that will provide improved access to their markets in return for our supply guarantees. At a minimum, we might bargain for a sharing of costs of carrying stabilizing stocks. Our long-term grain contracts with the USSR must be viewed in this context.

A third, and more humanitarian argument for a strong US food position, is our ability to provide leadership to assuage suffering in cases of disaster or emergency at home and abroad. Closely allied to this is the objective of famine relief. The US Foreign Development and Assistance Act of 1954 (PL 480) was originally conceived as a surplus disposal program. Over two decades, however, it became, for the most part, a food aid program and, even during the recent period of high prices, the US was meeting its food shipment commitments under the program. Other countries have joined the US in bearing the cost of food aid, and European countries have noticeably increased their commitment. Long-term food aid schemes, however, should not be confused with emergency and disaster relief.

Finally, US agricultural technology and food abundance can be increasingly used to aid agricultural and economic development in the poor countries. A large part of our bilateral aid is now devoted to agriculture and related industries. We have persuaded other countries through our influence in the World Bank, OECD, the World Food Conference and other organizations to join in this endeavor. Certain Arab petroleum producers are lending assistance in this regard. A \$1 bn International Agricultural Development Fund has been established and total aid commitments for agricultural development have risen accordingly.

In sum, it is obvious that instead of using our agricultural abundance as a "threat" or to make power plays we, and the world, will benefit more from a positive policy of cooperation. This does not mean that the US should walk away from tough bargaining and negotiations relative to trade policy and cost-sharing on reserves and food aid policies. It means that we take a realistic view of our possibilities for advancing US interests rather than entertaining illusory notions about "agri-power".

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