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Redefining Government's Role in Agriculture in the Nineties

Odin Knudsen and John Nash
with contributions by
James Bovard, Bruce Gardner, and L. Alan Winters

The legitimate roles of government in agriculture — especially investment and research — have often been subordinated to roles for which government has shown little competence, such as price setting and intervention in markets. These priorities must be reversed.

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This paper — a product of the Trade Policy Division, Country Economics Department — is part of a larger effort in PRE to investigate the impact of industrial country policy on developing countries and how impediments to structural adjustment in the latter countries can best be removed. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Karla Cabana, room N10-037, extension 37946 (122 pages with tables).

Government policies in agriculture have been costly and misdirected worldwide, argue Knudson and Nash.

In developed countries, those policies have cost taxpayers and consumers hundreds of billions of dollars yet failed to provide low-cost food while sustaining farm incomes. They have disrupted world trade and could create divisive trade conflicts with ramifications well beyond agriculture. They enrich larger farmers and agroindustrialists and probably accelerate the replacement of the family farm with the large farm business. In the long run they have contributed to degradation of the environment.

In developing countries, those policies have impoverished rural people without providing the food security urban consumers and policymakers want. Immense funding wasted on subsidies of fertilizer, credit, and urban consumers should have been invested in areas where private markets do not work well because the costs or benefits are difficult to internalize for private agents -- infrastructure or some basic research, for example.

This inefficiency need not continue, argue Knudsen and Nash. The Uruguay Round is an ideal opportunity for developed and developing nations to strike a bargain, the elements of which should be to:

- Make agricultural trade subject to the full discipline of the GATT by eliminating waivers and exemptions that have set agricultural commodities apart from other products in their treatment under the GATT.

- Bring developing countries fully into the GATT, by eliminating their special status, which allows them to avoid reciprocity in trade policy reform and to protect infant industries or use quantitative restrictions for balance of payments purposes.

- Get all countries to reform their agricultural policies, to reduce the many policy-induced distortions that plague the sector. Measures that need reform include import restrictions, export subsidies, and dumping of surplus commodities by the OECD countries; and subsidies to fertilizer, irrigation, and credit that distort trade incentives in both developed and developing countries.

Such a bargain would result in a redefinition of governments' role in agriculture, increased sectoral efficiency nationally, and a more smoothly functioning and tightly knit world agricultural trading system.

Many of the unproductive policies detailed by Knudsen and Nash have a common cause, they say: governments' tendency to see problems as resolvable by taking income from some and giving it to others. What is needed, they say, is to reconsider the government's proper role in agriculture — and the institutional changes that would follow from that. Knudsen and Nash are specific in their suggestions for change.

Resolving the problems in agricultural policy requires withdrawing most government intervention from agricultural markets and recognizing economic rights: the farmers — to produce whatever commodities they feel will profit them best and sell them freely at home or abroad; the traders — to move goods in expectation of profits, without fear of repression; and consumers — to buy foods at the lowest prices, from foreign or domestic sources.

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Table of Contents

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CHAPTER 1

THE GOVERNMENT AND AGRICULTURE

Agricultural policy in developed and developing nations is a tangle of contradictions. Throughout the world, governments have "one foot on the accelerator and one foot on the brake"--simultaneously encouraging and discouraging increased farm production. In the United States, the government is pressuring many farmers to leave good farmland unplanted--while paying other farmers bonuses of 50 percent over market prices to boost their production. In Europe, if farmers produce more than a government-set limit, they are penalized by reductions in their government-set prices. In many African nations, governments refuse to pay farmers the true value of their crops, yet sell farmers fertilizers and seeds for far less than they are worth.

At a time when East European economies are moving rapidly away from central planning, many agricultural policy makers in industrial countries show little sign of a willingness to deregulate and de-control the production of food. Yet, programs that were begun with a rationale of avoiding food shortages are now the primary cause of cutbacks in production and the wasting of food. In both the United States and European Community, the more generous governments have become to farmers, the more controls governments have imposed upon farmers. And unfortunately, the United States and European Communities have set precedents that are encouraging other governments to increase their controls over their own farmers.

While developed nations have been squandering their agricultural resources, developing nations have been squandering their farmers. In much of Africa, farmers have no right to market their crops on their own or to bargain with buyers for a fair price. The government buys their crop at less than world

prices and sells it for even less to relatively better-off urban dwellers. Farmers have been arrested and punished simply for seeking to sell their own grain. Agricultural restrictions and controls frequently drive down the market price of food. Farmers usually react to suppressed prices by reducing their production--which results in perennial shortages, repeated famines in some nations, and the need to seek imports or food aid. Regrettably, many politicians have reacted to food shortages by imposing new government controls on farmers and markets and creating more inefficient government enterprises, rather than abolishing the controls that caused the original problem.

Farm programs in developed countries are costing taxpayers and consumers between $200 and $300 billion a year (Goldin and Knudsen). The aggregate costs of developing countries' policies is less well known, but estimates place the net benefits to developing countries from more liberalized agriculture at about $60 billion per year (Anderson and Tyers). In industrial countries, annual farm subsidies exceed the total World Bank lending since 1980, and the total IMF lending since 1970; annual subsidies also exceed the total amount of development aid given to sub-Saharan Africa since 1980. Farm programs have been allowed to become so costly partly because programs are so complex and the costs so hidden and diffuse that few people realize their true magnitude. One recent study estimated that the effects of existing farm trade barriers amounted to a tax of 233 percent on sugar by the United States and of 421 percent on dry milk by the European Community. It is not unusual to find in developed countries a hidden tax on consumers from agricultural trade barriers of 50 to 100 percent on basic food grains. In developing countries, costs also are hidden, with relatively well-off urban consumers eating food subsidized at the expense of much poorer and hungrier farmers.

This costly intervention in private production and marketing is unjustified; in both developed and developing countries it benefits primarily the relatively well-off. This massive level of misguided government intervention in agriculture has no precedent in any other sector of the economy. If such policy were found in social welfare programs, say for the unemployed or homeless, it would be a major scandal of waste and misuse of government power. Yet this intervention continues, misusing taxpayers' and consumers' money to support relatively few farmers and taxing farmers in developing countries under mistaken notions of what agriculture is really about and what governments can actually accomplish in the farm sector. Furthermore, the developed nation farm policies have spilled over into the international markets, disrupting trade and taking income producing opportunities away from much poorer farmers in developing countries. In 1986, the World Development Report described the abuses and costs of these misguided agricultural policies. Unfortunately, farm programs have not been fundamentally reformed. At the time this report is being written, governments are meeting in Geneva in the Uruguay Round of trade negotiations, attempting to reduce governments' heavy intervention in agriculture. It is hoped that this report will assist in pushing the negotiations forward to a resolution of this incredible mismanagement of human and natural resources.

IS AGRICULTURE SPECIAL, SO SPECIAL SO AS TO NEED HEAVY GOVERNMENT INVOLVEMENT?

Agriculture is unique in economies. Farm sectors comprise highly competitive businessmen, producing a relatively homogenous commodity for sale in a market with numerous, price and quality conscious consumers. In other words, agriculture would appear to be the ideal industry in which to realize a

textbook-perfect competitive market to the benefit of both producers and consumers. Considering the potential for pervasive competition and lack of market dominance by any one producer, one would think that agriculture is the least likely sector of the economy to find extensive government intervention.

But throughout most of the world, governments are dominating agriculture. For instance in the United States, there is one government bureaucrat for every three full-time farmers and the budget of the Department of Agriculture exceeds the net income of all farmers together. In Europe, two-thirds of the budget of the European Commission goes to support farmers. In developing countries, nearly every government owns an enterprise which monopolizes the trade of at least one major agricultural commodity. The heavy hand of government disrupts the international markets for many major crops through intricate barriers to trade and subsidized dumping of surplus commodities.

Why is this? One reason is that farmers are politically organized. Throughout the world farmers have formed lobbying groups--even in remote areas of India or in the coast of Ecuador. But now are they as well organized as they are in the United States, Europe or Japan--the havens of the world's largest government handouts for farmers. It is widely recognized that two of the most powerful lobbies in Washington are the dairy and sugar associations. In France, farmers routinely go on strike and seek to close down major highways until their demands are met. In Japan, the backbone of the Liberal Democratic Party, the party that has ruled Japan virtually ever since the end of World War II, is the farm lobby. Farmers have a political voice that often makes politicians and policy makers support unwise and costly farm programs. As a consequence, most farmers in developed nations receive for their commodities prices that are higher--sometimes six times higher--than those in international markets. In

fact, international markets have become the dumping ground for farm products that cannot be sold at home.

Ironically, around the world, food is cheap--that is, if your country does not produce the particular imported food. Food is much cheaper in Hong Kong than in Japan--primarily because Hong Kong has almost no farmers. The curse of the consumer in the 1980s is to live in a country self or nearly self-sufficient in food--for it is almost a certainty it will cost more in countries where it is produced (particularly developed countries) than where it comes off a ship. Historically, the greatest beneficiaries of United States and European Community farm programs have been the food importing countries, especially the USSR and Eastern Europe, and the lesser developed countries, especially in Africa, which unfortunately have taken advantage of cheap imported food while undercutting the development of their own agricultural sectors.

But the strength of farm lobbying groups is not the whole reason for farm policies being so costly. People in general are concerned about adequate food supplies. Most people in the world have occasionally experienced hunger, and some, perhaps a billion, for all their (shortened) lives. Even today in a world filled with food surpluses and waste millions of children die of malnutrition or a disease related to it. No one wants to wish hunger or death on anyone. Isn't then a little food security and over-production justified?

It would be wonderful if food production could end hunger in the world. If it could, hunger would have ended in 1986 when the world over-produced millions of tons of cereals, of meat, of dairy products, and of high calorie sugar. Surpluses accumulated in government stocks despite the government paying for millions of hectares of land to be set aside from production, while surplus

milk was fed to calves and government bureaucrats rewarded farmers for killing two million cows in order to reduce milk supplies.

The world has had persistent grain surpluses for most of the last thirty years. If hunger were caused by insufficient food production, then the problem of hunger could have been solved long ago. Rather, hunger is overwhelmingly the result of poverty--of not having money to purchase widely available food supplies. The solution to the problem of hunger is largely the same as that for poverty--it is capital to build infrastructure, research to yield new technologies, education and health care so people can be more productive and viable economies promoted by stable and sound fiscal and monetary policies. In other words, it is income growth along with health and targeted nutrition programs that is largely the long term solution to hunger and malnutrition. Hunger certainly cannot be solved by food production promoted by expensive subsidies and wasteful trade protection. That is one of the clearest lessons of the last few decades.

But what about the future? Will farmers continue to produce sufficient food to create surpluses? The dominant factor in agricultural economies in the past century has been the declining real prices of food. Crop market prices have consistently fallen in real terms because the cost of production has plummeted. Mechanical inventions, the development of new seeds and fertilizer, the development of sound management techniques on the farm, and the success of private and government-funded research have all helped drive down the cost of food production. Unfortunately, politicians have long tended to view falling food prices as an economic problem rather than as a natural and inevitable result of technological progress and an opportunity for more citizens to have a better diet. And the political responses to falling prices--pushing massive subsidies

and requiring productive land to be idled--have reduced farming efficiency through keeping unviable farms in business, and destabilized agricultural markets.

In the past two decades, technology in plant breeding has experienced the greatest advances in the world's history. Wheat yields have increased by 36 percent since 1974; rice yields by 38 percent; and coarse grains by 30 percent. In the United States milk production per cow is increasing three to four percent per year. Since 1970, the FAO's food production index has increased by over 45 percent in part because of this technological revolution and in part because of the rapid growth in fertilizer use and the increase in irrigated area by around 30 percent. The United States Congressional Office of Technology Assessment estimates that yields of major crops could increase by 20 percent by the year 2000. And further advances in biotechnology promise even greater advances. All major crop plants are amenable to significant yield increases from biotechnology. Advances in biotechnology for animals are already here. Use of hormones in pig production can cut feed requirements by 25 percent, saving 30 or 40 million tons of feed. Hormones in dairy and meat production can save even more in feed grain use and increase yields greatly, but their use has been constrained by health concerns, some perhaps well-founded and some not. Furthermore, developing countries currently use very small quantities of purchased inputs in their food production. Potential expansion in yields in developing countries from moderate levels of input use or extended irrigation is enormous.

And so it continues--technology pushes forward productivity gains, forcing downward real producer prices. Antithetical to this economic progress, Government programs attempt to artificially support farm prices. Hence, the

root of the dilemma--progress against the resistent forces of farm support programs. The results are surplus accumulating under government ownership and idle productive capacity.

This does not mean that there are not constraints to agricultural production. Soil erosion is a serious problem in some parts of the world and does affect localized production. Increasing productivity in food production in Africa remains the greatest challenge in agricultural development in the world. And carbon dioxide is increasing in the atmosphere at a very rapid rate. Furthermore, misguided agricultural policies in both industrial and developing countries are causing destruction of the environment through abuse of water, fragile soils, fertilizers, pesticides and other chemicals. But these problems should be separated from the overall issue of whether the world can feed itself (which it can) and whether there is a need for extraordinary intervention by the government.

Drastic reform of agricultural policies is desperately needed in both developed and developing countries. In developed countries, governments must recognize the futility of attempting to oppose the fundamental economic tide of technological change and recognize the environmental destruction reaped by current policies. In developing countries, governments must allow farmers to freely market and trade their agricultural products. They must end policies that lead to salinization and de-forestation, many of which are followed under the misleading banner of food security. The political realities appear to require that this reform take place in a coordinated manner, through international negotiations such as in the Uruguay Round. The purpose of this report is to promote these agricultural policy reforms by documenting the waste and distortions caused by current farm policies and to redefine a more appropriate role for governments in agriculture.

CHAPTER 2

T' MORASS AND CONSEQUENCES OF INDUSTRIAL COUNTRY AGRICULTURAL POLICIES

In developed countries, rapid advances in agricultural production technology have vastly increased the productivity of farm labor and, therefore, greatly decreased the number of farm laborers needed. New technology has also resulted in a steady decline in the cost of production and a decline in crop prices. These factors, along with increasing opportunities in urban areas have combined to create a strong incentive for rural-urban migration. This came to be seen by governments (spurred on by the farm lobby) as a process with dire consequences for the future of a stable society. So, instead of trying to make the transition as painless as possible, governments have perennially tried to artificially increase the number of people remaining on farms and to support their incomes. Governments have pursued this goal by prohibiting free agricultural trade in international markets, by imposing de facto taxes on consumers through higher prices, and by spending taxpayers' income on farm welfare programs. The results have been the same as those from other efforts to restrain the flow of fundamental economic tides behind regulatory bulwarks. The bulwarks--in this case, trade controls and income transfers--have of necessity been built higher and higher, and, as a consequence become more costly and distortionary.

According to OECD estimates, these farm program bulwarks have risen to well over $200 billion a year in the OECD countries alone. In this chapter, we will review for the three major subsidizers of agricultural production--the

United States, the European Community and Japan--the evolution of their programs and how they have distorted both domestic and international markets.

I. UNITED STATES' FARM PROGRAMS

Introduction

For over 50 years, American farm programs have provided large benefits to large farmers and small benefits to small farmers. Yet, the farm lobby has succeeded in persuading the American public that the programs exist to preserve the relatively small family farmer. As a result, the U.S. in the 1980s has essentially the same farm programs that it had in the 1930s.

The General Accounting Office, the premier audit agency of the federal government, has produced scores of reports detailing waste and ineffectiveness in farm programs Yet, federal policy makers have generally disregarded the evidence of failures. Why?

Agricultural policy has long been dominated by the influence of farm lobbies that have generously poured money into congressional campaign coffers. Dairy cooperatives donate almost $2 million a year to congressmen. The sugar lobby provides $450,000, and grain lobbies provide over $500,000 a year, and other lobbies add to the total. And of course the United States Department of Agriculture, with a budget greater than the net income of all United States farms, has a vested interest in maintaining the programs.

Farm policy reform has also foundered upon a public choice dilemma: farmers have a strong interest in farm legislation while consumers and taxpayers have only a vague interest in ending subsidies. Farm subsidies amount to only two percent of the federal budget, yet often exceed 100% of net farm income for the

subsidized crops. A NEW YORK TIMES poll found that 55% of the public favored giving more government aid to farmers.

Though the farm lobbies are strong, there are still grounds to be optimistic about reform. In 1981, legislation to perpetuate farm subsidies was almost defeated in the House of Representatives, and the House or Senate has repeatedly voted to abolish specific individual farm programs (though failing to get the concurrence of the other chamber). If the GATT talks succeed and major industrial nations agree to phase down their trade-distorting subsidies, pressure to sharply cut farm spending will likely be overwhelming.

The Evolution of United States Policy

United States farm policy is still operating in the shadow of the Great Depression. The farm problem in the United States began when the government distributed hundreds of millions of acres of free farmland to former Union soldiers and immigrants after the Civil War. This led to decades of overproduction in the Mid-West. As early as the 1880s, activists were urging farmers to "raise more hell and less corn." In the late 1880s, largely at the behest of farmers, the federal government imposed price controls on railroads. (These price controls, which continued until the early 1980s, are now widely perceived as the primary cause for the decline of the American railroad industry). In the 1890s, farmers led a drive for 'cheap silver'--for a government monetary policy that would have meant the minting of unlimited numbers of silver dollars. Farmers assumed that this would create a general price inflation, which would make it far easier for them to pay off the mortgages on their farms in depreciated dollars. Even before the United States entered World

War I, the government had established a special credit bank to provide subsidized loans to farmers.

Once the United States entered World War I, the government encouraged farmers to vastly increase their plantings. The government guaranteed farmers an extremely lucrative price for their harvest, and Congress perpetuated the high price guarantee until long after the war had ended. The government's price guarantee meant that major crop prices in the United States were more than double world market prices. Once the price guarantee expired, farm prices in the United States collapsed, and land values--which had risen four fold since 1910--declined sharply. The falling land prices boosted the bankruptcy rate, which created a public perception that farmers as a group were suffering hard times. Politicians focused on the post-war adjustment difficulties of agriculture to argue that agriculture was inherently unstable and needed perpetual government control. The farm lobby was convinced that farmers were being unfairly treated by society because farm prices were lower in the 1920s than they had been during the boom years of the previous decade.

A few months before the stock market crash of October 1929, President Hoover launched the Federal Farm Board, a new agency with a $500 million budget and a goal of driving up U.S. wheat and cotton prices. The Board succeeded in temporarily driving U.S. prices above world prices; as a result, American exports plummeted. Large surpluses quickly accumulated, which completely swamped markets. The net result was the de facto takeover of the agriculture sector by the Roosevelt Administration in 1933.

Though the condition of American agriculture has changed radically in the last 60 years, the United States has retained the basic farm policy tools and incentives that it developed in the Great Depression. The Roosevelt

Administration favored an autarkic farm policy and pressured farmers to plant only as many crops as could be consumed in the United States. To achieve this goal, the government rewarded farmers for leaving much of their land unplanted. At the same time that government pressured farmers to leave land idle, it rewarded them for boosting production on their remaining land. The Roosevelt Administration believed that driving up farm prices would produce a multiplier effect of prosperity on other parts of the economy. Instead, the higher food prices reduced food consumption, which was especially unfortunate considering the extremely high United States unemployment rates throughout the 1930s.

BOX 2.1 PAYMENT LIMITATIONS: DO THEY WORK?

The distribution of direct farm payments and the gains from farm programs have long worried policy makers. With over 40 percent of the direct payments of the United States government going to large farmers, about 35 percent to large to middle size farms and only 25 percent going to small farms in 1984, administrators, the press and politicians have expressed their concern whether farm programs that are attempting to help small and medium family farms really accomplish their objective. This is particularly the case when it is considered that this distribution of direct payments understates the skewed distribution of farm program benefits. Because large farmers produce more output and farm programs support commodity prices, the benefits of farm programs are even more unevenly distributed than these already alarming numbers suggest. This coupled with press reports of million or even multi-million dollar payments to some farmers has raised concerns that the support from the public may be being undermined by this uneven distribution of benefits.

This concern goes back to the 1960s in the United States when there was particular furor over one farming operation receiving a direct payment of $4.1 million. In 1970, after much debate a limit of $55,000 was placed on direct payments under the wheat, feed grains, and upland cotton programs. Although this payment limit was even lowered at times to $20,000, large payments continued to large farm operations because of various exemptions and legal loopholes.

The first loophole came through the Findley amendment in 1981 which was later amended for the 1985 United States Farm Bill. The Findley amendment gave the Secretary of Agriculture the right to allow compensatory payments if the nonrecourse loan level is lowered to make United States commodities more competitive. Payments under this provision are not subject to any payment cap.

And payments under this provision were not small, absorbing 40 percent of the direct payments in 1986.

The second loophole is through direct, but legal evasion (according to a study by the Congressional Research Service, 87-12 ENR, January 16, 1987). Since the payment limit applies to a person (in 1987, $50,000 per person) broadly defined to include most legal entities--such as corporations, trusts, estates etc., a farmer can create an additional entity through incorporation or partnership formation so as to receive more payments totalling to a sum well above limit. For example by adding more partners to a partnership or establishing a trust with two or more beneficiaries, more "persons" can be created to receive payments. While no one has firm data on the number of evasions of this kind, it is known that the number of farms have proliferated (Investors Daily noted that "it is common to find farms splitting like amoebas from one to 10 or more units..." (August 28,1986)).

But the problem with the payment limitation is not that it is being evaded. The more serious problem is its potential effects on farm productivity. Payment limitations places an incentive to have smaller farms--many of which may not be as economic as larger farms. Productivity could be hindered if truly small farmers proliferate with the consequence that United States agriculture becomes less competitive--possibly creating more pressure for additional farm payments or programs "to save the small (shrinking) family (multi-legal entity) farm."

In 1953, the administration of President Dwight Eisenhower sought to try to roll back federal controls and subsidies of farmers. Congress resisted, and, in 1954, imposed a system of mandatory controls which dictated the percent of land upon which farmers were allowed to plant wheat, corn, rice, and cotton. But, at the same time Congress imposed production controls, it also guaranteed farmers extremely high prices for the crops they did produce. As a result, surpluses piled up, and by 1960, the United States was spending over a billion dollars a year just to store surplus commodities. Throughout this period, U.S. support prices for major crops were far higher than world market prices. As a result, farmers dumped their crops on the government, which in turn dumped the crops on world markets. The United States sought to "solve" this problem by creating an international wheat cartel through an International Wheat Agreement where all exports would agree on market share, but this effort collapsed.

By the late 1960s, farm policy makers realized the futility of their efforts to hold American prices above world market prices. The federal government began lowering price support levels to provide farmers with a strong incentive for exports. Because government aid was largely intended to "compensate" farmers for low prices, the high grain prices of the early-mid 1970s effectively greatly decreased American farmers' reliance on government support.

But, in the 1976 presidential campaign, candidates got into a bidding war for farm votes, and government support levels were sharply raised. Though the number of farmers had greatly decreased, farmers were still a major voting bloc in many important states. The maintained political strength of farm commodity groups became apparent in the late 1970s as dairy producers continued to be able to boost support prices and, more importantly, the grain producers were able to maintain support prices near the boom-year levels of the 1970s. The willingness of Congress to enact these support levels and of subsequent Administrations to accept them in 1977 and 1981 stemmed largely from a widespread perception that any commodity price declines would only be temporary and that the longer-term trend in prices had turned positive in the 1970s (see D. G. Johnson, 1985, for a contemporary critique of scarcity projections).

The 1980s saw a complete turnaround in the United States (and world) market outlook from scarcity to surplus production. Change in the policy picture is apparent in the debate on and provisions of the two principal agricultural laws of the 1980s, the Agriculture and Food Act of 1981 and the Food Security Act of 1985. The 1981 Act established target prices and loan rates for the grains and cotton at continuing high levels over a four-year period even though signs of market weakness were already apparent. By 1982 government stocks had grown so large that in 1983 the largest acreage reduction program in history was

introduced as a one-time supply reducing measure. A major drought helped further to bring a short-term respite from surpluses. But by 1985, abetted by large U.S. production and weakening export demand as the dollar had risen (by 40 percent since 1980 in real terms against the G-7 countries), United States government-held stocks had again accumulated to pre-1983 levels. It was by then clear that no scarcity scenario was going to emerge to make the 1981 Act support prices economically viable.

Consequently, the 1985 Act sharply reduced price support loans. However, the target prices which established producer price guarantees were essentially maintained at 1981 Act levels. The resulting large spread between target and market prices, the difference between which was covered by "deficiency" payments, caused budgetary outlays in the neighborhood of $25 billion per year. This in turn led to acreage diversion in 1986 and 1987 that rivaled the scale of the 1983 program. Thus ended the era of farm commodity scarcity, and the United States government's hopes to phase down governmental intervention in United States agriculture. In terms of budgetary costs, government stock levels, and acreage idled, the Reagan years saw more massive farm programs than any preceding President's, including the New Deal programs. Unfortunately, price support loans were often still higher than market prices. As a result, the United States came to rely increasingly more on direct export subsidies.

But, even though American programs sought to boost exports at almost any cost, the profusion of regulations and conflicting interventions sometimes frustrated the exorbitant export spending. The cotton program spent more than $7 billion between 1986 and 1989, even though America has only 6,000 full-time cotton growers. But, generous government cotton payments designed to encourage farmers to sell their cotton on international markets at any price were by

another regulation designed to benefit cotton growers. As part of the cotton price support program, Congress requires the Agriculture Department to offer cotton growers eighteen-month interest-free loans to hold their crop off the market, and the agency also pays for farmers' storage costs. The eighteen-month loan allows the farmer to speculate with his harvest, guaranteeing that the taxpayer will take any loss while farmers can keep any profit if market prices rise above federal price-support levels during the eighteen-month period. Cotton shippers and millers must pay cotton growers a bonus of six to eight cents a pound above world market prices to persuade them to sell their cotton before the end of the eighteen-month loan period. But this six-eight cent bonus has made American cotton uncompetitive on world market, and put American textile mills at a disadvantage in competition with foreign textile mills. This, in part, contributes to unemployment in the textile industry and the need to regulate textile imports.

American farm policy-making has not been goal-oriented: regardless of the stated goal of a program, as long as the government transfers a significant amount of resources to farmers, the program is considered a success. The contradictions among farm programs - such as simultaneously paying for supply controls and offering above-market rewards for production--have been obvious for decades, yet Congress has refused to rationalize the system. The goals for farm programs often seem to be only camouflage--existing solely to provide a plausible reason for transfer payments to businessmen. Agricultural conservation programs have fit this category for many years. The conservation programs are justified as preserving the soil--but, as the General Accounting Agency has long pointed out, "conservation payments" routinely are used to pay for good routine farming practices.

Farm subsidies have been perpetuated partly because Congress and the Agriculture Department understate the predicted cost of farm programs. The 1981 four-year farm bill cost four times as much as Congress announced it would cost in 1981, and the 1985 five-year farm bill has cost more than double the expected cost. Since 1974, the average annual cost of subsidy programs for major crops has been 75 percent higher each year than the Agriculture Department has predicted. Before a program is begun or expanded, congressmen and bureaucrats insist that it is a minor program with minimal costs; after the costs soar, congressmen and politicians insist that it is too late to worry about the lost money.

In 1987, the Reagan Administration attempted to reform the Farmers Home Administration, which was loaning billions of dollars a year to technically bankrupt or near-bankrupt farmers, thereby sustaining overproduction of surplus crops. Reagan proposed to restrict government-subsidized loans to farmers who were less creditworthy than before. (Studies have found that 25 percent of bankrupt government-subsidized borrowers went bankrupt largely from receiving too many subsidized loans, which they were subsequently unable to service, the low interest rates notwithstanding.) Yet, there was a firestorm of protest from Congress and the Reagan Administration and any attempt to reduce lending was successfully portrayed as an attempt to throw farmers "into the street."

United States Methods and Levels of Support

Farm policy reform has been stymied partly because of the complexity of farm programs. Farm policy terminology is a maze of phrases like support prices, target prices, deficiency payments, conservation reserve payments, set-asides, etc. These phrases attempt to portray transfer programs as serving the public

interest. Programs that impose costs on consumers are applauded for not burdening taxpayers; programs that hit taxpayers are championed for protecting consumers. Farm lobbies have fought hard to avoid reforms of farm programs that would make more clear the welfare element of farm subsidies.

Grain Policies

The most important set of programs in terms of both U.S. budgetary costs and in international impact are those for the grains. For wheat, corn, grain sorghum, oats, and rice (as well as the principal fiber commodity, cotton) these programs have a common structure. The main elements are set by three policy instruments, as follows.

1. The "loan rate", or market support price, is the price at which the Commodity Credit Corporation (CCC) accepts grain as collateral for loans to farmers, which the farmers need not pay back. The CCC ends up acquiring the commodity, hence removing sufficient quantities from the market to prevent the market price from falling much below the loan-rate level for any sustained period such as a marketing year. Since no significant United States border distortions exist for the main exported crops, supporting the United States price means supporting price at all other locations around the world in which the domestic market price is not insulated from world markets. This characteristic led some economists to say during the early 1980s when CCC stocks were growing rapidly that the U.S. was bearing the burden of worldwide price supports by having CCC loan rates set too high. In the 1985 farm bill, loan rates were sharply reduced for all the major commodities. The effect on world price was seen most dramatically in rice and cotton, where all effective market price support ceased

in 1986. Rice and cotton prices at United States border and other international locations fell by as much as 50 percent within a few months.

2. The "target" price provides price insurance by making payments to farmers to supplement market receipts. The payments are roughly sufficient to guarantee producers the target price ("roughly" because the payments are based on U.S. average prices, not on each producer's actual price). But to qualify for these payments, farmers have to hold acreage idle. When target prices were introduced in their present form, in 1973, they were below market prices. The rice legislation of 1975 established a target price above the market price, but like the 1973 Act made payments only on long established base acreage so that payments would not create a direct production incentive (no subsidy at the margin). (Actually, by raising the incentive for production on a fixed amount of land, the government encourages farmers to farm more intensively--using more fertilizers, more seeds, etc.) The Food and Agricultural Act of 1977, however, made the fateful change of basing payments on current production, and with a target level already above the market price for wheat, grain sorghum, and barley. By 1982 target prices were above market prices for all the covered crops. The target price consequently turned into a production incentive price which tended to increase CCC stock buildup at the loan rates. When loan rates are cut, such excess supplies depress world prices.

3. Acreage controls: Payments made to farmers for not growing crops were a mainstay of 1950s programs (the "Soil Bank") and evolved into the "set-aside" and voluntary (paid) diversion programs of the 1960s. Set-asides were phased out in the mid-1970s, but in 1977 were reinstated for wheat, in response to accumulating CCC stocks. Set-asides require farmers to idle a fraction, typically 10-20 percent, of an average base in order to qualify for target prices

and CCC loans. In 1978, paid diversion programs were reestablished. These are essentially offers by the government to rent a farmer's land, which is then left idle. As compared to set-aside, this approach is much preferable to farmers.

The scale of acreage diversion was substantially expanded under the Acreage Reduction Programs (ARP) of the 1980s, especially in 1983-87 when payment-in-kind (PIK) programs used CCC stocks quite generously to achieve the dual goals of reducing production and government-held stocks simultaneously. In 1983 and again in 1987 and 1988 about 20 percent of the cropland base for the main supported commodities was idled under ARPs, a larger percentage than at any time in the Depression-era programs of the 1930s or the "Soil Bank" of the 1950s. The world market effects of ARPs are the opposite of target prices--indeed the two policy instruments could be said to have offsetting effects so that net world supplies would be neither increased or decreased by the overall program. For example, in the wheat program in 1987, the ARP idled about 27 percent of wheat acreage; but because of high price incentives wheat yields were higher on the remaining land. It is estimated that nearly half of the idle acreage effectively came back into production through this slippage on yields. Similarly, in 1986, the rice program required farmers to idle 35 percent of their rice acreage in order to qualify for subsidies; it then paid farmers more than double the market value of the harvest produced from the remaining cropland. The price effect of higher prices induced an increase in production on non-idled acreage of between 15 to 30 percent, nearly offsetting the supply controls on rice acreage.

BOX 2.2 THE UNITED STATES ADDICTION TO SUPPLY CONTROL PROGRAMS

In 1934, Agriculture Secretary Henry Wallace declared, "The present program for adjusting productive acreage to market requirements is admittedly but a temporary method of dealing with an emergency." In 33 of the last 35 years the

U.S. Agriculture Department has tried to balance crop supply and demand by paying American farmers not to grow on their land. Supply controls are the clearest symbol of the contradictory, self-defeating nature of American farm policy.

Set-asides presume that the United States is the Saudi Arabia of wheat and feedgrains--and that the U.S. can cut back its production, drive up prices, and increase its profits. If nobody else in the world had any farmland, this policy might make sense. But, in recent years, while the U.S. government has forced taxpayers to reward farmers not to farm. Farmland in production in other parts of the world has increased by over 70 million acres since 1980--largely in response to high United States price supports and set-asides.

Paying farmers to cut back production stemmed from the Roosevelt's Administration 1933 decision to abandon the export market and instead regulate farmers to provide only enough for domestic demand. Paid set-asides were part of the "domestic allotment" program--whereby farmers were allowed to grow on a percentage of their property according to how much USDA planners estimated national demand to be. Even though the United States is now attempting to maximize exports, it has retained programs crafted with the exact opposite goal.

Much of the chaos in world agricultural markets in the 1980s is the result of the 1981 United States four-year farm bill, which set American subsidy levels far above world price levels. As a result, farmers boosted output and the United States was soon swamped by the largest grain surpluses in history. Congress and the Administration responded to the surpluses not by lowering the subsidies but by creating new programs to pay farmers to reduce plantings. In 1988, the Agriculture Department rewarded farmers for not planting on 78 million acres.

Set-asides are a political response to what various United States Administrations have perceived as "excess capacity"--too many acres producing a given crop. Yet, a 1988 Agriculture Department study concluded, "Excess capacity is a much more serious problem for the seven major (subsidized) crops (wheat, corn, oats, barley, sorghum, cotton, and soybeans) than for the rest of United States agriculture." Excess capacity is four times greater for the major subsidized crops than for the unsubsidized crops.

The United States has had perennial set-asides in agriculture largely because Congress insists on perpetually paying farmers more than their crops are worth. Government first artificially raises the price and then artificially lowers production. The higher Congress drives up the price, the greater the need for government controls on the amount produced. The federal government has never imposed supply controls on the vast majority of crops grown in the U.S. because farmers naturally responded to temporary surpluses by reducing their plantings in the following year.

The supply control programs, by shutting down many farms, have devastated rural economies. A 1987 Agriculture Department study estimated that the 1987 supply control program, which idled 70 million acres, reduced employment in the U.S. by 300,000 jobs. The reduced sales to farmers also slashed farm input (fertilizer, seeds, pesticides, etc.) by $4 billion. (The high cost of the set-supply control programs are illustrated in a Purdue University study that

estimated that each additional farmer kept on the land was costing taxpayers and the economy up to $200,000 per year).

Every acre of government-paid set-aside land is a indictment of the failure of federal planning. Permanent set-asides mean that government perpetually attracts too much capital to agriculture, and then, instead of allowing a natural adjustment and the capital to flow out, perpetually intervenes to keep some of that capital idle.

While the government is paying farmers not to plant on good land, it has spent billions creating more farmland and making existing farmland more productive. The Bureau of Reclamation has spent over $22 billion since 1905 to "make the desert bloom" - continually building new dams to make more farmland - even though the new farmland costs taxpayers far more than it is worth and the additional harvests often glut markets and depress farm income.

Other commodities

While the farm lobby insists that farmers in general need assistance, there is little or no consistency among federal programs for different commodities.

The tobacco program relies on a combination of acreage allotments and price supports. In order to grow tobacco, a person must have a federal license. The permits to grow tobacco were distributed in the 1930s, and current farmers must either inherit, buy, or rent a license to grow tobacco. The government has been widely ridiculed for having "tobacco police" (Agriculture Department employees) out measuring each farmer's fields to insure that he does not grow a hundredth of an acre too much of tobacco. The government has pegged price support for tobacco consistently at 50 percent to 100 percent higher than the world market price. The costs of renting a federal license has sharply inflated the cost of tobacco production in the United States. Production costs have also been boosted because the tobacco allotment system has caused the fragmentation of tobacco planting and preventing the development of economies of scale which have benefitted other crops. Largely because of the tobacco program, American tobacco exports have plummeted. And, at the same time that the government has

spent billions in recent decades subsidizing tobacco production, other branches of the federal government are spending millions of tax dollars in anti-smoking campaigns.

The peanut program combines a price support and a poundage allotment. Farmers must have a license for each pound of peanuts that they sell on the domestic market. The government has guaranteed peanut farmers a price roughly 50-75 percent higher than the world market. In order to isolate the peanut farmers from lower world market prices, strict quotas have been imposed. The Agriculture Department has even prohibited the export of certain types of peanut butter from the United States to Canada, fearing that the peanut butter may be re-imported and undercut the government's efforts to inflate peanut prices.

For the dairy price support program, the main policy instrument is CCC purchases of butter, cheese, and powdered milk at support prices which generate a legislated minimum price for raw milk. The large stocks of these commodities that were generated by the mid-1980s support levels resulted in two short-term measures to reduce output as well as automatic cuts in support prices when projected CCC stock accumulation exceeds 5 billion pounds of milk annually. The output reducing measures were: (1) contracted reductions in output of 5 to 20 percent per participating farmer in 1985-86, with payments of $335 million in FY 1985 and $630 million in FY 1986; (2) a contracted buyout of dairy herds in 1986-87, with payments of $489 million in FY 1986, $587 million in FY 1987, and $296 million in FY 1988. Surplus stocks were also disposed of using domestic free distribution of cheese and butter to low-income and elderly people. (Unfortunately, free distribution of butter led to an almost pound-for-pound decrease in commercial sales of margarine, which hurt soybean farmers, as soy oil is a primary ingredient of margarine). Though the distribution program was

officially named the Temporary Emergency Food Assistance Program, the program has effectively become permanent. When CCC stocks were used up in 1989, Congress added legislation for the CCC to buy more cheese in order to continue the program.

The sugar program combines a price support and an import quota. The quantity of imports is regulated so as to achieve a legislated price for U.S. raw sugar. As the demand for sugar has decreased because of the development and popularization of sugar substitutes (both noncaloric, like aspartame, and caloric, like high fructose corn syrup) it has been necessary to cut back the import level regularly. United States sugar imports have declined from 5 million tons in 1975 to about 1 million tons annually in 1988 and 1989. But the U.S. raw price has been maintained at about 18 cents per pound. The costs are borne by sugar consumers, (and poor producers in developing countries) and are in the billions of dollars. The exact cost depends on the price that consumers would pay without the program, which is the world price of sugar. This price has varied between 3 cents and 13 cents per pound in 1986-89, so the consumer's cost can be made to vary by a factor of 3, between 15 cents and 5 cents per pound, depending on what world price is used. Moreover, United States policy itself significantly affects the world price (see Millmoe, 1989).

BOX 2.3: ONE HUNDRED AND SEVENTY YEARS OF SUGAR SUBSIDIES

The United States government has been heavily protecting or directly subsidizing the sugar industry since 1816. For almost the entire history of the United States, American sugar prices have been held at double, triple, or quadruple world sugar prices.

Since 1980, the sugar program has cost consumers and taxpayers roughly two million dollars for each American sugar grower. There are only 11,000 sugar beet and sugar cane farmers in the United States, and production is extremely concentrated. A USDA study estimated that one corporation was receiving over

$100 million in benefits from the program, and several others were receiving over $50 million each.

Congressmen defend the sugar program as protecting Americans against sharply fluctuating international sugar prices. The sugar program, like other American farm programs, provides a price FLOOR but no price CEILING. Thus, USDA prevents prices from falling but allows prices to rise as high as the moon: price supports are always a "heads, farmers win; tails, taxpayers and consumers lose" proposition.

The sugar program is a great inflationary success: sugar sold for 22 cents a pound in the United States when the world sugar price was only four and a half cents a pound. (World sugar prices are now about thirteen cents a pound). Each 1 cent increase in the price of sugar adds between $250 and $300 million to consumers' food bills. A May, 1988 Commerce Department study estimated that the sugar program was costing American consumers more than $3 billion a year. This works out to over $60 a year for the average United States family of four.

Like most farm programs, the sugar programs costs consumers and taxpayers far more than it benefits farmers. The Agriculture Department estimates that total sugar producer income was only about $300 million. Thus, sugar protectionism costs consumers $10 to provide $1 in income to sugar growers.

A few thousand sugar growers have become the tail that wags the dog of American foreign policy. Early in 1982, Reagan announced the Caribbean Basin Initiative to provide United States aid to Latin America. But, a few weeks later, the USDA slashed the amount of sugar Latin American could sell to the United States in order to protect the high price received by American growers. Sugar was Latin America's third-largest export in the early 1980s, and sugar revenues have evaporated. The State Department estimated that the reductions in sugar import quotas costs the developing country allies $800 million a year. By reducing Latin America's dollar revenue from sugar sales, the sugar program has also hurt commercial banks awaiting repayment of loans from sugar exporting governments.

High prices have lead to nosediving sugar consumption. The average American consumes one-third less sugar now than he did in 1971. Lower priced corn syrup and low-calorie substitutes are rapidly driving sugar out of the sweetener market. Coke and Pepsi no longer use sugar in their soft drinks in the U.S. The government can drive up the price, but it can't force people to use sugar.

Congress' generosity to sugar producers is victimizing other American farmers as well as American industries. Brazil retaliated against the United States for cutting its sugar quota by reducing its purchases of American grain. In the Dominican Republic, former sugar growers are now producing wheat and corn, thereby providing more competition for American farmers. American candy producers are losing market share to foreign competition-partly because foreign companies can buy their sugar at much lower prices. Since 1982, dextrose and confectionery coating imports have risen tenfold and chocolate imports are up fivefold.

Sugar protectionism is disrupting American commerce. In the early 1980s, when United States sugar prices were seven times higher than world prices, "entrepreneurs were importing high-sugar content products, such as iced-tea mix, and then sifting their sugar content from them selling the sugar at the high domestic price," according to the 1986 Economic Report of the President. In order to protect the domestic sugar program, the Reagan Administration in 1985 banned imports of all products containing any sugar - thereby nullifying hundreds of private contracts.

The sugar program has destroyed far more jobs than it has saved. American had an efficient sugar refining industry with an excellent location near the Caribbean. But, thanks to the forced reductions of in imported sugar, since 1981 ten sugar refineries have closed down and thousands of non-farm jobs have been lost.

The sugar program, like most farm commodity programs, has done nothing to encourage farmers to adjust to market realities. High federal support prices have led to a boom in domestic sugar production--up 23 percent since 1982. Yet, most American sugar producers remain hopelessly uncompetitive with Caribbean, Filipino, and Australian and New Zealand sugar farmers. This is a classic case of government generosity encouraging wasteful behavior in the private sector.

Marketing orders are another important farm program. For raisins, California-Arizona lemons and oranges, almonds, filberts, and spearmint oil, the Agriculture Department dictates the percentage of each farmer's harvest he will be allowed to sell. The Agriculture Department justifies these controls by claiming that they maximize returns to farmers. The programs were begun in the 1930s and 1940s, and were designed to help farmers overcome the effects of temporary gluts. But, the programs became institutionalized, and are now administered with the goal of keeping prices permanently higher than they would be without intervention. As a result, each year millions of pounds of fresh oranges and lemons and almonds are fed to cattle, rather than being sold to humans. Many regulated farmers have been driven into bankruptcy, largely because they could not sell all of their harvest.

Other programs, for example, the Wool Act and the Meat Import Act, are quite different in structure and complicate the picture considerably. Moreover,

of the roughly 400 different farm products produced in the United States, fewer than 20 are subsidized or directly controlled by the federal government. Whether a crop is subsidized or not depends largely on political accidents, or the clout of various farm lobbies at the time of the 1930s.

Costs and Consequences of U.S. Policies, 1984-89

The consequences of policies can be approximated by comparing internal prices with world trading (border) prices, but this is not a good measure for the United States because it is large enough to influence world prices and because the production control programs involve social costs that price comparisons cannot capture. Preliminary results are available for a series of studies by the U.S. Department of Agriculture's Economic Research Service that estimate the supply-demand situation that would have existed in 1984-89 in the absence of CCC purchases, acreage diversion, and deficiency payments. For details, see Lin and Gardner (1989).

Table 1 shows estimated output effects of the United States unilaterally removing its target price, loan rate, acreage control programs and sugar quota under 1987 conditions. For the grains, soybeans, cotton, and tobacco output is greater with no programs. The main reason is that acreage controls in 1987 outweighed the incentives for increased production caused by target-price protection. Milk, sugar, and peanut output is less with no program. For these commodities the production incentives of support prices dominate. Meat animal production is largely unaffected. An overall index of output, constructed by weighing each commodity's production by its share of the value of the total, is 3.7 percent higher in the no-program scenario. This implies that on an overall basis U.S. policy is world-price increasing, not decreasing as is sometimes asserted.

TABLE 1: Effects of eliminating farm commodity programs on production: 1987

Commodity	Unit	Production with program	Production with no program	% Change due to ending programm
Wheat	mil. bu.	2,108	2,570	+21.9
Corn	do.	7,064	7,350	+4.0
Soybeans	do.	2,008	2,087	+3.9
Cotton	mil. bale	14.8	16.1	+8.8
Rice	mil. cwt.	129.6	155.0	+19.6
Tobacco	bil. lbs.	1.2	2.02	+68.3
Sugar	1,000 tons	7,185	6,573	-9.5
Peanuts	mil. lbs.	3,619	2,618	-27.7
Potatoes	mil. cwt.	385.5	389.5	+1.0
Dairy	bil. lbs.	140.3	134.2	-4.5
Beef	do.	23.4	23.4	0.0
Pork	do.	15.6	15.7	+0.6
Broilers	do.	16.1	16.0	-0.6

Source: Gardner, 1989.

With respect to prices the commodity programs increase producer prices for all commodities, and generally increase prices paid by consumers, also. However, in 1986-87 consumer prices for the grains were reduced as loan rates were cut and CCC stocks disbursed. Because the lower prices in 1986-87 were only

made possible by stock accumulation before 1986, it is misleading to look at 1987 effects in isolation. Table 2 shows estimates of gains and losses for different interest groups using 1985-87 averages. Overall, according to these estimates, producers gain $12.8 billion annually at the cost of $17.8 billion to domestic consumers and taxpayers. Other estimates of consumer losses range to $23.6 billion per year (OECD).

BOX 2.4: THE WEALTH OF AMERICAN FARMERS

Federal farm policy is founded upon two delusions: that farmers are comparatively needy, and that the number of farmers is decreasing. In reality, the average full-time farmer is a millionaire and the number of full-time farmers has significantly increased since 1980. The vast majority of the "farm crisis" stems simply from counting part-time farmers as full-time farmers.

Farm policy in the United States has been driven by a widespread impression that America has lost hundreds of thousands of farmers in the 1980s--thereby supposedly proving the need for more aid to agriculture. Agriculture Department statistics reveal that the total number of farmers went from 2,440,000 in 1980 to 2,197,000 in 1988 - an apparent decrease of 243,000 farmers.

But, this decrease is a statistical illusion--caused by the government's antiquated, irrelevant definition of farmer. According to USDA, anyone who sells more than $1000 in agricultural commodities is a farmer. But, Agriculture Department statistics imply that anyone who sells one horse for over $1000 or 250 bushels of wheat a year is a bona fide farmer.

According to the official USDA statistics, most of the 1980s decrease in the number of farmers occurred in the farmers selling less than $10,000 a year. These are gentlemen farmers, hobby farmers, and tax farmers. The vast majority of so-called farmers receive the vast majority of their income from off-farm work. In the 1987 Census of Agriculture, most farmers in this classification denied that their primary occupation was farming.

Many agricultural economists agree that the viable size of a farm now is gross sales of over $100,000. In 1980, there were 271,000 farmers with sales above $100,000; by 1988, there were 323,000 farmers in this class--an increase of almost twenty percent. These farmers perennially collect between eighty and ninety percent of all farm income.

Some farm aid advocates count farmers in the $40,000-99,999 sales class as full-time farmers. But, as Emanuel Melichar, former chief agricultural economist for the Federal Reserve, observed in 1984, "on many of these farms, the operators either are underemployed during much of the year or have a relatively inefficient

operation. H.O. Carter of the University of California at Davis observed, "As a group, these smaller farmers are declining in numbers because they are not large enough to compete with their larger, more efficient neighbors." According to USDA's yield and labor estimates, a person can raise $40,000 worth of corn in only seven weeks.

The Agriculture Department reported that, for 1988, the average farm family had an income of $21,350. Yet, this number was calculated by simply by dividing the total number of full - and part-time farmers with total farm income. In reality, the average full-time farmer in 1988 reaped an income of $168,000. (The same year, the average United States family income was $38,740). Even the class of $40,000-99,999 farmers had an income much higher than the national average: $39,931 (most of this came from off-farm earnings).

The financial gap between farmers and non-farmers becomes even more stark when considering net worth. The Census Bureau concluded in 1986 that the average net worth of American households was $78,734. (About half of American households were worth less than $32,677). In contrast, the average full time farmer is a millionaire, with a net worth of $1,016,000 as of December 31, 1988. (This net worth figure is after subtracting debts). The average full-time farmer has a net worth almost 13 times greater than that of the average American family, and a net worth over 30 times greater than half the families of America. Even farmers in the part-time, $40,000-99,999 sales class have a net worth of $426,487 - over five times greater than the average American family.

The concentration of wealth among a few hundred thousand farmers is leading to a concentration of land ownership. Former USDA Assistant Secretary Don Paarlberg notes, "We are drifting toward a structure of agriculture which approaches.. a wealthy hereditary landowning class, with new entrants almost ruled out unless they are well-to-do." The National Agricultural Forum reported in 1984 that "eight percent of the households in America own the vast majority of the land... 63 percent of United States households own no land."

The magnitude of the increase in domestic prices from the farm program can be estimated by the tariff equivalents of current quotas. A United States International Trade Commission study (1990) concluded that, for 1986, the sugar quota was the equivalent of a 233 percent tariff on sugar, the butter quota was the equivalent of a 190 percent tariff, the cheddar cheese quota was equivalent to a 132 percent tariff, the "American-type processed cheese" quota was equivalent to a 172 percent tariff, the quota on nonfat dry milk had the same effect as a 142 percent tariff, and the peanut quota was equivalent to a tariff

of up to 90 percent on peanut imports. If some politician openly proposed imposing such high tariffs (taxes) on major food items, he would be barraged by criticism in the nation's media. But, because few Americans understand how farm policy operates, extremely high levels of protection and subsidy have continued unchallenged for decades.

Many farm products that are not directly subsidized or supported by quotas are protected by high tariffs. The tariff on orange juice is 40 percent; though Canada has no orange groves, orange juice is much cheaper in Ontario than in New England. Yogurt and ice cream are hit with 20 percent tariffs, while frozen chicken carries a 28.6 percent tariff. Fresh cabbage, asparagus and broccoli must pay a 25 percent tariff, carrots are hit with 17.5 percent tariff, and cantaloupes pay a 35 percent tariff.

The losses to people outside the United States due to United States farm programs are estimated to be $1.0 billion. This loss occurs because the commodities considered, except for sugar, are net exports of the United States. Therefore, when United States farm programs increase commodity prices in world markets, foreign sellers gain but foreign buyers lose more.

The difference between the $12.8 billion producer gain and $18.8 cost (including foreign losses) caused by the United States farm programs is a $6 billion worldwide deadweight loss of these programs. This loss measures the real income given up in order to undertake United States agricultural protection. Apart from uncertainties in elasticities and other parameters necessary to make these estimates, several reasons have been put forth why the $6 billion dollar figure is incomplete or misleading.

First, the administrative costs of the programs are omitted. It is difficult to separate out the United States Department of Agriculture and other

agencies' budgets that constitute these costs, but they include at least the payroll of the Agricultural Stabilization and Conservation Service, which is about $0.5 billion annually.

TABLE 2: Annual average gains and losses from farm commodity programs: 1984-87 crop years

Commodity	Buyers					Net domestic effect
	Producers	Domestic	Foreign	Total	Taxpayers	
	billion dollars					
Wheat	3.2	-0.4	-0.4	-0.8	-3.6	-0.7
Corn	4.2	-0.4	-0.1	-0.5	-6.7	-2.9
Soybeans	0.41	-0.48	-0.30	-0.78	--	-0.07
Cotton	1.18	-0.20	-0.08	-0.28	-1.02	-0.04
Rice	0.43	0.02	0.02	0.04	-0.76	-0.29
Tobacco	0.36[a]	-0.21	-0.11	-0.32	-0.02	0.14
Sugar	0.61	-0.78	n.a.	n.a.	--	-0.17
Peanuts	0.77[b]	-0.41	n.a.	n.a.	--	0.36
Potatoes	0.12	-0.12	0	-0.12	--	-0.01
Dairy	1.44	-0.99	0	-0.99	-1.67	-1.22
All program commodities	12.8	-4.0	-1.0	-5.0	-13.8	-5.0

Source: Gardner, 1989.

a/ Includes gains to quota owners of $0.45 billion and losses to producers of $0.09 billion. Overall domestic impact is positive because reduction of supply exploits the U.S. position as a quasi-monopolist in world markets by raising world prices.

b/ Includes gains to producers of $0.34 billion and gains to quota owners of $0.43 billion.

Second, farmers expend some effort trying to comply at minimal cost with program provisions or to make themselves eligible for payments. For decades, it has been a common complaint that farmers have become primarily concerned with 'farming the government.' For example, some intricate contracting arrangements have been undertaken so that farmers can obtain two, three, or even ten times the 1985 Act's ostensible limitation of $50,000 per farm in deficiency payments. The costs of this maneuvering are part of the deadweight losses from current programs. However, no quantification of them is available. Third, an agricultural information and influence industry has arisen centered in Washington, D.C., in which each commodity group has to hire lobbyists and expend its own time in obtaining the best political results possible for itself. Many millions of dollars are spent in this way, but again the data for even a rough estimate are not available.

Fourth, there are long-run resource allocation effects of programs which may be important sources of economic mischief. Price supports, especially when combined with disaster programs that constitute free output insurance and credit programs which approximate free insurance against bankruptcy, provide a safety net sufficient to prevent people who aren't managerially or temperamentally suited to farming from moving to an occupation that fits them better. In the long term this is no favor either to the particular farmers in trouble or to the health of the farm sector.

Farm programs have done many things to reduce farmers' efficiency. One recent study estimated that the requirement that farmers idle 25 percent of their farm adds 30-40 cents a bushel to the cost of production of corn. (Some of the most efficient farmers can produce corn for about $1.25 a bushel). The stringent rules required to qualify for subsidies also often effectively prohibit a farmer

from rotating his crops. This can add another 30 to 40 cents a bushel to the cost of production, and also results in farmers using much more pesticide and fertilizer to compensate for the adverse effects of monoculture. Farm programs also drive up the price of farmland, thereby increasing farmers' debt load and increasing their vulnerability to rising interest rates. In order to qualify for federal subsidies, an acre of land must have a history of being planted to subsidized crops for at least three years. Two acres of practically identical land can differ in value by 30 percent or 40 percent depending on whether crops planted on the land are currently eligible for federal subsidy. (Unfortunately, a prevailing reaction to the government-induced rise in farmland value has been an increase in demand for government subsidized credit to buy farmland, thus leading to a spiral of higher land values and higher government spending).

Finally, government spending on farm programs increases the budget defict, raising real interest rates on farmers's loans. This not only increases the costs of production though making borrowing for seeds and fertilizer more costly but makes it more difficult for efficient farmers to acquire more land or others to purchase land to start a farm.

These are examples of the unintended consequences of dozens of conflicting government programs designed to benefit farmers. Presumably no one in Congress or in the Agriculture Department desires to inflate farmers' cost of production; yet, the programs have numerous effects that sharply reduce American farmers' competitiveness. And, because changing program rules to eliminate the adverse effects would reduce some farmers' subsidies, there seems to be a political paralysis on fixing the problem.

More generally, the programs encourage undue risk-taking in less productive ventures and discourage management approaches that would make farmers and the

farm sector more resilient and competitive in world commodity markets. These losses are also not quantifiable but may well be the most important of all.

BOX 2.5: AMERICAN'S DAIRY QUAGMIRE

Since 1980, federal dairy policy has cost the average American family enough to buy its own dairy cow. Annual subsidies for each dairy cow in the U.S. exceed the per capita income of half the population of the world. While productivity in the American dairy industry is soaring, the United States Congress is preventing consumers from benefiting from lower dairy prices.

The United States has been awash with surplus dairy products since 1979: The government bought the equivalent of almost nine billion pounds of milk in 1988, and expects to buy over 8 billion pounds this year. The federal dairy price support program obliges the government to buy unlimited amounts of milk at a set price. The federal program sets a price flow in the marketplace, thereby guaranteeing that dairy prices will not fall below the level that Congress decrees.

Congress has twice sought to solve the dairy surplus problem by paying farmers to cut back production, yet each time Congress maintained price support levels far above market-clearing levels. In 1983-84, Congress paid farmers almost a billion dollars to reduce their production; no lasting decrease in production occurred. In 1986-87, Congress paid dairymen over $1.3 billion to slaughter over a million cows. A hundred and forty-four dairy owners got over a million dollars a piece to take a five-year vacation from dairying. Yet, as the General Accounting Office noted, "Total milk production did not decrease because nonparticipating farmers increased their production during the program period."

Retail milk prices are sharply inflated by byzantine regulations that have prohibited free trade in milk among the different states of the United States. The federal government has over 1000 pages of restrictive rules on how milk is allowed to be sold and employs over 600 federal employees simply to administer the programs. The regulations were begun in the 1930s, when roads and refrigerated technology were comparatively backward, and have been retained half a century despite vast increases in technology and transportation that should have made such autarchic policies a laughingstock. The Agriculture Department even prohibits businesses from drying out milk in one area, shipping it to another area, and reconstituting it as fresh milk.

Dairy is one of the United States's most protected industries, with strict quotas limiting dairy imports to roughly 2 percent of domestic consumption. For most of the 1980s, American cheese prices were double world market prices and nonfat dry milk and butter prices were three times the world price. The dairy lobby is a leading opponent to GATT reform.

Many American dairymen are hopelessly uncompetitive by international standards: Australian and New Zealand farmers can produce milk for less than half the cost of the average American farmer. But, the dairy program, by encouraging dairy production in the areas of the United States with the highest cost of production, has made American dairymen appear much less competitive than they may actually be. The dairy lobby is extremely strong in the United States and is one of the most vocal opponents to GATT agricultural reform.

The array of handouts and protection have not prevented a decline in the number of American dairy producers from 600,000 in 1950 to about 130,000 today. The Congressional Office of Technology Assessment estimates that milk output per cow could double and that 5000 large dairy farms could supply the nation's milk needs by the year 2000.

The cost of dairy production in the U.S. fell 4 percent in 1987 alone, and milk output per cow jumped 3 percent in 1988. Computerized feeding methods can boost milk yields another 5 percent without increasing a herd's total feed requirement. Artificial insemination, embryo transfers, and cloning are helping to boost average dairy cow productivity by a steady two-three-four percent a year. And dairy production could explode in the next few years after the Food and Drug Administration approves bovine growth hormones (BGH) that can boost milk output by up to 30 percent per cow.

Several state legislature have already proposed prohibiting BGH. Instead of seeing a lower cost of productivity and the resulting lower prices as large benefits to low-income citizens who cannot afford sufficient calcium and protein, politicians at both the state and federal level are rushing to attempt to ban the new hormone. This is indicative of how perpetual protection encourages a hostility to innovation in the protected industry.

The dairy program has cost consumers and taxpayers far more than it has benefited dairymen. In 1985 the dairy program cost taxpayers and consumers roughly $8 billion while dairy profits amounted to $3.6 billion. In 1986, dairy profits were $5 billion; subsidies cost the public around $8 billion. Thus, consumers and taxpayers had to pay over $1.50 for each dollar of income realized by dairymen.

Nutrition surveys have found that calcium is the most deficient nutrient among low-income Americans' diets; a major reason for the calcium shortages is the relatively high cost of milk. Agriculture Department surveys show that the average American dairymen is worth over half a million dollars. Yet, despite the disparity between low-income consumers and relatively wealthy farmers, United States public policy continues sacrificing poor consumers to rich farmers.

II. THE EUROPEAN COMMUNITY'S COMMON AGRICULTURAL POLICY

The European Community's Common Agricultural Policy or CAP shares many of the characteristics of United States farm policy: high costs, inefficiencies, and trade distortions. But it also has its unique characteristics and evolution. Nevertheless, it is trapped in many of the same political rigidities as United States farm policy.

The Evolution of EC Policy

The Common Agricultural Policy was an essential component of the political process which formed the European Community. At the time the European Community was being founded, most Europeans still had stark memories of hunger or food rationing during World War II and the difficult post-war years. The CAP was bound to be somewhat protectionist, for every member state protected agriculture to one degree or another, but right from the start it was prone to excess. The French government desperately wanted an outlet for French cereal production while the German government felt it necessary to defend the incomes of its own farmers. The compromise was to adopt high German prices and to ensure French sales in Germany. Once cereals were protected other sectors had to be similarly treated for the sake of equity, and the result was increased protection across nearly all parts of agriculture.

There was sharp debate about the direction CAP would take in the early years. A 1958 resolution of EC members declared that the CAP "should render possible the application of a price policy which will avoid overproduction while enabling goods to remain or to become competitive."

At first the EC was slightly embarrassed by the degree of agricultural protectionism, and during the Kennedy Round--the Round of GATT talks started in 1963 primarily to address United States fears that the creation of the EC would curtail their European sales--the EC offered to bind the degree of support--the "mouton de soutien". The United States refused this offer, believing that the bound levels of protection were too high, but the CAP has never been negotiable since. Even now in the Uruguay Round the EC continues to argue that the CAP is non-negotiable, and has become increasingly protectionist.

The CAP - Methods and Levels of Support

The basic instrument of agricultural protection in the EC is the variable import levy. Roughly speaking the variable levy defines an internal price for each product and then taxes imports by whatever amount is necessary to ensure that they cannot undercut it. The variable levy is calculated daily from the lowest price of imports to the Community that day. It is obvious that the administration of variable levies is a significant and expensive task (in fact, they are considerably more complex than described above), so they are used only for the major items. For less important products, or where defining import prices would be excessively complex--perhaps because a wide range of qualities was available (e.g. processed foods) or because of significant geographic price dispersion (e.g. fresh fruit)--the EC uses import tariffs and minimum prices to restrict imports. There are also import quotas or "voluntary" export restraints on certain products - e.g. beef and cassava respectively. Finally, virtually all imports of agricultural products are subject to license. Although these licenses must be granted freely and quickly, they are indicative of the extremely close watch that the European Commission keeps on agricultural trade.

The import restrictions detailed above are supplemented by two further groups of policies. For most commodities, including all the major ones, the EC stands ready, through the various national authorities, to buy local product at pre-announced prices. These prices, of course, are intimately related to those defining the variable levies, and the buying in ensures that European production cannot drive prices below the prescribed levels. These "intervention prices" are the basic levers of the agricultural policy, and are subject to considerable political debate during the annual price fixing round. As noted above, common financing results in every member pressing for high prices for its major products; even Britain, the staunchest critic of the CAP, fights its corner vigorously and has usually been persuaded to agree to general price rises provided its own products are supported and that its share of the budgetary burden is mitigated.

Intervention buying is also the origin of the famous EC mountains and lakes of agricultural produce. Once bought in the EC must hold--or strictly, pay others to hold--the goods until they are sold. At the high prices defined by the policy it is often not possible to sell the full crop to consumers, so the excess is kept until it is exported, denatured or destroyed.

Export subsidies--export restitutions in Euro-speak--are the second supplementary policy. When the CAP was initiated, the EC was either self-sufficient in, or a net importer of, most agricultural products. Thus market prices could be controlled by import policy and, incidentally, net revenue earned for the Community's coffers. (Agricultural levies accrue to Brussels, not the individual states.) Intervention prices were set so high, however, that production grew and eventually outstripped demand. For example, self-sufficiency (the ratio of output to consumption) rose between 1960-64 and 1985 for cereals

from 84 percent to 127 percent; butter from 99 percent to 113 percent; wine from 94 percent to 112 percent; beef from 97 percent to 108 percent.

The excesses above 100 percent have either to be destroyed, made unfit for human consumption, or sold abroad. The last can only be done at world prices, and the difference between world prices and what farmers receive (and hence spend on production) must be met by subsidies. The result is that as output grows it becomes increasingly expensive to maintain internal prices at high levels, for increasing amounts of output have to be subsidized for dumping abroad. The subsidies also increase as world prices fall, so the more the EC dumps the more expensive each unit of dumping becomes.

Aided by these generous export subsidies, as well as by the general support for agricultural output, the EC has greatly increased its shares of world markets. For example, between 1970-71 and 1982-83 it increased its market share from 8.1 percent to 17.1 percent in wheat; 22.9 percent to 50.3 percent in non-fat dairy products, and 2.9 to 13.9 percent (1981-82) in beef and veal.

Overall, the EC pattern of trade has reversed dramatically since the outset of the CAP. The share of agricultural imports in total EC imports has fallen by a third and the EC share of OECD agricultural imports has fallen by 10 percent; on the other hand, policy has maintained the share of agriculture in total EC exports and significantly increased the EC share of OECD agricultural exports. Most OECD countries have increased their support for agriculture over this period, so relative to world trade, the changes in EC trade have been even more marked. For example, the EC share of the value of world agricultural and food imports fell from 45 percent in 1967 to 41 percent in 1986, while her share of exports rose from 22% to 38% (GATT, 1988). As the EC worries about its competitiveness in high technology products it is paradoxical that the principal

effect of its principal policy is to promote net exports of the oldest sector of all. Agricultural subsidies divert resources, including highly skilled scientists, into agriculture as well as appreciating European exchange rates to the detriment of hi-tech exporters.

BOX 2.6: THE OBJECTIVES OF THE CAP

The common Agricultural Policy (CAP) has several explicit objectives (OECD 1987):

to increase agricultural productivity and competitiveness, and thus

to ensure a fair standard of living for the agricultural community,

to support family farms,

to stabilize markets,

to ensure the availability of supplies, and

to ensure that supplies reach consumers at reasonable prices.

European agriculture certainly left plenty of room for improvement at the outset of the CAP in 1987, and it is difficult to disentangle the effects of poor policy from the effects of adverse economic circumstances. Nevertheless it is hard to see the CAP as a success even in its own terms.

Agricultural productivity and incomes have fallen relative to those in other sectors in almost every year: in some countries (e.g. the UK--see figure 1) real farm incomes fell absolutely, while across the EC, real value-added per worker did not rise between 1975 and 1986 (IMF, 1988, T32). Even at the EC's inflated prices the average EC agricultural worker produced just over half the value of output produced by other workers in 1984 (OECD, 1987, T 5.11); and in several EC countries he needed well above average amounts of capital to do so. Agricultural employment and communities have declined in size significantly during the CAP and small family farms have received much less support than the major producers. In 1984 the largest quarter of farms received an average of approximately 10,000 ECU each in price support while the remaining three quarters averaged just over 1,000 each (Bureau of Agricultural Economics). The EC's internal prices for most agricultural products have been stable, but at the expense of greatly increasing price instability in world markets and without material effect on the stability of agricultural families' incomes (EEC, 1986). Food supplies have generally been kept available to EC consumers too, although there have been occasional shortages (e.g. sugar in 1974), but domestic availability has sometimes resulted in unavailability elsewhere, for example,

when food aid has been cut back. Finally, prices to consumers have certainly not been reasonable. On any definition, a policy amounting to a 50 percent tax on purchases of food is not reasonable.

The Domestic Costs and Consequences of the CAP

Self-sufficiency and booming exports are not, of themselves, necessarily a bad thing; indeed, if they were based on genuine comparative advantage they would be a matter of congratulation. But they are not. They have been achieved only at the expense of huge production subsidies, whose cost, in turn, has been borne by taxpayers and consumers. Consider the tax-payers first.

The CAP's intervention purchasing policy has obvious implications for public expenditure. The intention of the policy is to transfer resources from the general taxpayer to the farmer by paying the latter more for agricultural produce than it is worth in the open market. As farmers responded over time to the high prices they were offered and increased their production, government receipts from import levies fell while outlays for intervention purchases increased--the latter by over 400 percent between 1973 and 1986. As a result, the price support element of the CAP now absorbs around 67% of the entire EC budget, or nearly 0.7 percent of EC GDP. This official largess is not evenly distributed. It not only transfers income between sectors of each economy but also between member countries, and not according to any recognizable criterion of economic need. As Mrs. Thatcher occasionally notes, in the absence of countervailing adjustments, the largest proportionate burden of the CAP falls on one of the Community's poorer members.

High agricultural spending raises obvious issues of equity (why are farmers supported but not shop-keepers?), but it also raises more fundamental issues,

especially in the context of EC aspirations towards greater integration. Agricultural expenditure is not easily controllable - in the short run because it is determined by levels of output, exports and world prices, and in the long-run by the apparent ability of the farm lobbies to prevent significant price reductions. Thus the agricultural share of 67 percent in the total EC budget undermines any hope that the EC authorities would be able to influence the EC's fiscal stance and greatly reduces their ability to affect the management and development of the European economy in general. It rules out fiscal transfers of the kind necessary to underpin the creation of a monetary union--transfers to restore purchasing power in areas of incipient deficit--and also any transfers that may be desirable to redress any inequities arising from the process of completing the European internal market. It also casts serious doubt on the EC authorities' ability to handle any seigniorage arising from the creation of a single European Currency and Central Bank. The central authorities of the European Community currently devote two-thirds of their budget to supporting less than 4 percent of their overall economic activity, do so in a manifestly inefficient and inequitable fashion, and seem politically hamstrung from addressing that fact. Such institutions can hardly expect to have the credibility to institute a dramatic movement towards economic and monetary union or to be a major force within any such union that emerged. In short, the agricultural leviathan threatens ultimately to undermine the EC's bold attempt to complete its integration in 1992 and beyond.

The Commission has shown some awareness of these political difficulties, for in the 1988 Budget--which was agreed under the pressure of deep crisis--it persuaded the Council to slash agricultural spending - to 62 percent of the budget by 1992. Further evidence of the inability of Community institutions to

grasp the agricultural nettle occurred in 1989. Favorable movements in commodity prices and exchange rates reduced the costs of export restitutions below the amount budgeted, but instead of saving or redirecting the money, the Agriculture Commissioner was immediately allowed to start talking about increasing expenditure elsewhere.

Community expenditure on agriculture is excessive; but it is more than matched by agricultural expenditure by the member states. Even excluding social security payments, expenditure by national authorities nearly doubled the amount spent by the EAGGF in 1980; including social security payments to farm communities, they more than trebled it. Some of the national expenditure is on inspection and quality controls, but most is for structural reform, agricultural development, market support and natural disaster relief. The last might appear a perfectly reasonable item of expenditure, but few other sectors receive such support and private markets would be quite capable of providing insurance of this kind if only farmers would pay for it.

For consumers the cost of the CAP is related directly to the extent that it raises prices. The CAP has the effects of imposing taxes on consumers and giving the revenue to the farmers. The tax is implicit, however, and therefore politically much more innocuous than explicit taxes. For example, in the UK general election campaign of 1987 the Prime Minister publicly rejected EC suggestions that the UK should impose a 4 percent value added tax on food in the process of EC fiscal harmonization; yet no word was raised about the CAP which imposes implicit taxes of ten times that level!

Table 3 shows the implicit tax on consumers of agricultural products--both personal and corporate. The figures show the extent to which the whole range of policies raises consumer prices relative to those that would apply if the same

quantities were consumed in the absence of policy. They measure the percentage of actual consumer expenditure not devoted to buying the good in question but used to support domestic agriculture. Taxes of 50 percent are quite common--far in excess of those imposed on goods like cars and consumer durables or services. The United States International Trade Commission estimated the tariff equivalents of E.C. nontariff barriers and concluded that, for 1986,the tariff equivalents were 212 percent for butter, 275 percent for cheddar cheese, 471 percent for nonfat dry milk, 188 percent for sugar, and 96 percent for wheat. (United States International Trade Commission, 1990). In 1983 the CAP cost the average family of four ECU 800 per year (Winters, 1989). Moreover, since poor families spend a higher proportion of their incomes on food than richer families the agricultural consumer tax falls disproportionately on the poor.

TABLE 3: Consumer Tax and Producer Subsidy Equivalents 1986-88, EC(12)

	Consumer Tax Equivalent[a]			Producer Subsidy Equivalent[a]		
	1986	198/(P)	1988(E)	1986	1987(P)	1988(E)
Total	52	51	42	52	51	46
Livestock	47	46	44	46	45	48
Crops	64	64	39	67	66	40
Wheat	57	60	31	63	66	36
Sugar	153	161	150	76	80	71
Milk	68	64	56	75	72	66
Beef	48	43	52	53	49	59

Source: OECD (1989)

(P) Provisional (E) Estimate
(a) as a percentage of actual expenditure on consumption on production

The purpose of the CAP is to transfer income to farmers, and as a first step to assessing its effectiveness we may consider the so-called producers subsidy equivalent--the percentage subsidy to farmers that would have the same effect on their incomes as does actual policy. These PSEs can be as high as 75% (for rice) and average 40 percent over all commodities.

Increasing the prices that consumers have to pay for food and taxing industry to subsidize farmers obviously affects income distribution within the EC economy. It also, however, affects economic efficiency, as individuals respond to the economic signals contained in the distorted prices. Consumers, for example, switch their consumption away from food towards other goods: to gain an ECU's worth of utility costs (1+t) ECU spent on food but only 1 ECU spent on other goods, where t is the implicit tax on agriculture. Thus because they are deceived into consuming less food and more of other goods than they would if they could buy both food and other goods at prices reflecting their "true" cost, the benefit that consumers obtain from their incomes is reduced. True cost in this case is the world price, which reflects the costs of the marginal unit of food produced by the world's most efficient producer, not the inflated costs necessary to produce the goods in Europe. For producers the opposite case applies. In agriculture 1 ECU's worth of inputs yields (1+s) ECU of private returns in agriculture, where s is the subsidy, but only 1 ECU in other sectors. Resources are therefore diverted into agriculture until returns between sectors are equalized, which can only happen when inefficiency or increased agricultural input prices have absorbed the subsidy into private costs. Relative to production at undistorted prices agriculture is over-expanded in Europe and has marginal costs in excess of the true value of its output (the world price).

These efficiency losses mean that of each ECU taken from consumers and taxpayers only a fraction gets through to farmers as increased incomes.[1] The remainder is dissipated in economic losses due to inefficient production and distorted consumption patterns. The cost to consumers and taxpayers of providing an ECU to farmers is known as the transfer ratio. Estimates of EC transfer ratios vary, but most lie between about 1.2 and 1.8; that means that between 20% and 80 percent of the transfer received by farmers is absorbed by the process of transfers (Winters, 1989). Agricultural policy is an inefficient way of redistributing income. Estimates of the economic costs of the CAP suggests that the CAP wastes (i.e., imposes costs on consumers and taxpayers in excess of benefits to farmers) a staggering ECU 24 billion per year at 1980 prices.

In fact the benefits imputed to farmers in estimates of benefits/costs of the CAP are no such thing. They accrue to the production sector as a whole and are mostly dissipated in increases in land rents and input prices. Ever since David Ricardo wrote in the early nineteenth century economists have known of this possibility, and a good example of it occurred when the UK joined the EC. UK accession to the EC raised her average levels of agricultural protection significantly and was accompanied by a doubling in land prices. One might also note how strongly the suppliers of agricultural inputs lobby for agricultural protection, which suggests that they too understand the proposition.

The reason that farmers--still less farm workers--receive so little benefit from agricultural support is that they are in elastic supply. If the returns to farming increase, the number of farmers increases, or (in the E.C.)

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1 Depending on how each program is administered, the losses may be mainly to consumers (the consumer tax equivalent is much higher than the producer subsidy equivalent for sugar), mainly to taxpayers, or some combination.

does not fall as rapidly as it otherwise would. The amount of land, on the other hand, can hardly increase at all, and since farmers need land to grow the crops to earn the subsidies, they compete for it and drive its price up until all or nearly all their extra earnings from higher subsidies are absorbed by higher land costs. Thus the EC's agricultural policy combines a consumer tax--which falls disproportionately on the poor--and a capital transfer to land-owners, who are predominantly rich.

A further consequence of promoting agriculture above other sectors is to reduce output, employment and net exports of other goods. General equilibrium analyses of the CAP quantify these consequences: for example, OECD (1989b) estimates that the CAP reduces manufacturing and services output by 2.1 percent and net exports by about 17 percent of gross exports. Moreover, if wages are not perfectly flexible in the EC--and they are probably not--the penalties imposed on other sectors for the sake of agriculture show up as reduced employment, possibly by as much as 1.5 percent of the total.

A 1988 OECD study estimated the effects of the abolition of the CAP on the West German economy, the largest national economy of the EC. The OECD concluded that, without CAP, agricultural output would drop by five and three-quarters percent, agricultural employment by eleven and a half percent, and agricultural exports by eighty-six and a half percent from the levels they would otherwise have attained. On the other hand, lower agricultural prices reduce nominal wages by a little more than one and a half percent. "Owing to lower labor costs and cheaper agricultural inputs, the competitiveness of industry and the traded services sector improves; output and employment in these sectors therefore increase significantly.... Reflecting higher aggregate domestic demand and lower production costs, output and employment in the nontraded services

sector increase by three and a half percent and five and a half percent, respectively. The consumer price level declines by about one and three-quarters percent owing to lower agricultural prices. Aggregate employment increases by five and a half percent as the other sectors provide more jobs than are lost in agriculture. Real income and domestic demand, therefore, increase by about three and a half percent." (IMF, p.11).

A 1988 study by the Kiel Institute of World Economics estimated that abolishing the CAP would boost employment by 850,000 workers--roughly 4 percent. This would have lowered Germany's unemployment rate in 1987 from about nine percent to five percent. The Kiel study concluded, "the policy intended to help farmers in fact constitutes a taxation of Germany's growth and export industries." The Kiel study also notes, "Currently, total public subsidies to agriculture amount to well over DM20 billion, equivalent to about 70 percent of this sector's gross value added at domestic prices." This makes it clear that subsidies are costing German taxpayers and consumers far more than they are benefitting German farmers, since profit percentages are far less than 70 percent. (Dick, et. al., 1988).

The Foreign Costs and Consequences of the CAP

The costs of the CAP fall primarily on the EC member states themselves, but some spill over onto the world economy. They do so through three principal mechanisms: the level of world prices, the variability of world prices, and preferential trade arrangements.

The CAP taxes EC consumption and subsidizes EC production so that for nearly all products it increases the EC's net supply to world markets.[2] This depresses world prices and does so quite independently of whether the CAP increases EC exports or reduces imports by an equivalent amount. There is no sense in which taxing imports is less disruptive of world markets than subsidizing exports.

Countries which really must rely on world markets for their food supplies could in theory benefit from the price-depressing effect of the CAP, but many do not realize these benefits. Instead, governments come under pressure to protect domestic producers from the cheap "dumped" commodities, and often respond by restricting imports that would have otherwise been beneficial. Other countries export the goods whose prices the CAP reduces and thus suffer a terms of trade reduction, and many of the world's current food importers would switch to exporting and be better off for it at the prices that would rule in the absence of the CAP.

A more critical effect of the CAP on developing countries concerns the stability of world market prices. The CAP insulates EC producers and consumers from external shocks and thus increases the effects of the latter on world prices. Estimates suggest that the operation of the CAP doubles the variability of world dairy prices, raises that of wheat and beef prices by 50 percent and that of sugar by 25 percent (Winters, 1989). To mitigate such shocks, developing country governments are led to intervene in their economies to a degree well in excess of their ability to do so effectively. The result is disruption of their

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2 There are exceptions arising from particular cross-commodity effects: for example, the taxes on grains increase EC demand for grain substitutes such as cassava.

economic inefficiency and a tendency to shift activity away from agriculture into industry.

The resource shift out of agriculture induced by increased variability is exacerbated by the change in the nature of the price variability that the CAP induces. Under free trade prices vary, but in response to weather, natural disaster and taste changes, all of which are random and largely reversible. These fluctuations amount to "risk" in the technical sense. "Risk" is sometimes insurable and is always open to the mitigation of the law of large numbers--over a reasonable number of years it evens out. The CAP, on the other hand, produces uncertainty--fluctuations that are inherently unpredictable even in a probabilistic sense. The CAP's major decisions are political and long-lasting; thus rather than studying weather patterns, developing country economic managers must try to predict political pressures, and with the knowledge that a mistake could cause not two years of low incomes but a decade of misery if, for example, the EC decided to reduce its imports of a good after new processing capacity had been introduced.

Some developing countries experience direct effects from the CAP by basically becoming part of it. They do not necessarily gain from it, however. The Lome Convention accords African, Caribbean and Pacific countries preferential access to the EC market, but has hardly any impact on agricultural trade because most temperate products are either excluded from it or are subject to extremely small margins of preference. The General System of Preferences extends certain preferences to other developing countries, but not on goods subject to variable levies (i.e. the main ones in agriculture). More direct preferences are granted on beef, sugar, bananas and rum, for which quotas of duty-free access are granted to particular former colonies while other suppliers are kept out. Sales of the

permitted imports command high prices inside the EC and offer significant transfers of income to the lucky exporters. They also have caused a tremendous expansion in production in these countries, in some cases at the expense of other goals. The banana boom in the Caribbean has discouraged diversification in a classic "Dutch disease" syndrome, and has led producers to plant on fragile slopes, threatening serious damage to the fisheries and tourist industries from the consequent erosion and run-off. Moreover, these preferences also drive down world prices because they serve either to increase the EC's surpluses (beef and sugar) or to reduce its imports from elsewhere. This fall in the world price is the only effect felt by most developing countries - i.e. those with only small or zero quotas; moreover, it may outweigh the transfer effect in total if, by buying from inefficient suppliers, the EC policy increases developing countries' total output rather than merely redirecting it. The benefits of these quota policies fall very unevenly and bear no relation to recipients needs for foreign aid.

III. JAPANESE AGRICULTURE SUBSIDIES AND INTERNATIONAL TRADE

The Organization for Economic Development, in a 1987 comprehensive study of agricultural subsidies (producer subsidy equivalent) showed that Japan has the highest agricultural protection in the world. The price of rice in Japan is six times the world price while the price of beef is up to ten times the world price. Farmers are paid four or five times the world price for producing wheat and soybeans, and four times the world price for silk.

Japan's agricultural protectionism began with the Russo-Japanese war, when Japan imposed a 15 percent tariff on rice to help finance the war. In 1918,

there were major riots in Tokyo over rice shortages. In 1942, as part of the war effort, the government sharply increased subsidies for rice production. As with Europe, the severe hunger experienced in Japan during and after World War II made the public receptive to subsidizing farmers in order to secure adequate food supplies. The government has committed itself to an official policy of rice self-sufficiency.

Japan's agricultural trade barriers are legendary. Rice imports are strictly prohibited: people have been arrested at Tokyo Airport for attempting to smuggle five pounds of rice into Japan. Japan has quotas on milk, cheese, cereal flours, starch, meat preparations, sweeteners, fruit juices, and even tomato sauces. All food importers must be licensed and the Ministry of Agriculture, Forestries and Fisheries is notorious for "jawboning" licensees to limit their imports, as Bela Balassa (1987) pointed out.

Rice is the foundation of Japanese farm policies. While world rice prices have fallen sharply in recent decades, the Japanese government has awarded farmers higher rice prices almost every year since 1942. (Only very recently have rice prices fallen slightly.) Since rice is the primary food item in Japan, higher rice prices pull up the prices of other food items.

Japanese policy has sought to preserve almost all farmland in the nation. Special tax advantages and subsidies have driven the value of rice land to over $90,000 per hectare--over 50 times the value of good American farmland. High farm subsidies have, by making it very difficult to buy land, contributed to a severe housing shortage in Japan: the average Japanese citizen has less than half as much housing space as the average American.

Japanese government policies have created perhaps the least efficient farmers in the industrial world. It would take over 150 average Japanese farms

to equal the size of one average American farm. Because Japanese farms are so small, farmers lack the economies of scale of their competitors and cost of production for major crops is far higher in Japan than elsewhere. Comparing the ratio of labor productivity between agriculture and overall average labor productivity in the economy shows profoundly different results for the U.S. and Japan. In 1955, labor productivity in United States agriculture was only 51.7 percent of the productivity of the entire economy. But, by 1980, agricultural labor productivity was 20 percent higher than that of the general economy. In Japan, in contrast, agricultural labor productivity was 23.3 percent of general productivity in 1955 and fell to 18.2 percent by 1980.

Yet, despite this abysmal productivity, Japanese farmers enjoy higher income than non-farmers, thanks to government subsidies. Only fourteen percent of Japanese farmers are full-time: the other eighty-six percent have jobs off-the-farm. This partly explains the low productivity, since part-time workers lack the time or devotion to farming that full-time farmers have. The government is determined to maintain parity of income between farmers and non farmers--and as farmers become increasingly less efficient, the government has had to drive up food prices higher and higher in order to provide them with a good income.

Farm subsidies impose a brutal cost on Japanese consumers. Japanese consumers spend 32 percent of their income on food, while Americans spend only 13-14 percent of their income on food. A 1987 study by Anderson and Tyers concluded that the per capita costs of Japanese farm policies are four times higher than the European Community's farm subsidies. The average Japanese citizen consumes only six kilos of beef a year. The U.S. International Trade Commission estimated the tariff equivalents of Japanese non-tariff barriers on farm imports as 595 percent on butter in 1986, 344 percent on nonfat dry milk,

542 percent on butter, and 733 percent on rice. (U.S. International Trade Commission 1990).

In 1961, the Japanese Diet passed the Agricultural Basic Law, which enunciated a clear goal of achieving income parity between farmers and non-farmers. As Hillman and Rothenberg (1986) note, "Since 1975, average [Japanese] farm household income per capita has been higher than urban household income per capita by as much as 15 percent." As Fitchett noted in a 1988 World Bank study noted, "During 1984-6, average farm household incomes exceeded average blue-collar household incomes by 30 percent". The difference between farmers and non-farmers' financial condition is even more stark when considering net worth. Since farmland prices are so high in Japan,--farmers' average net worth is many times greater than the net worth of non-farmers. A recent study by economist D. P. Vincent, of the Center for International Economics in Australia estimated that Japanese agricultural policy results in a reduction in the average real wage level by 2.5 percent--equivalent to about 101,000 yen per worker in 1984. Vincent concluded, "A particularly important consequence of Japanese agricultural protection is to reallocate significantly a diminished aggregate income away from Japanese wage earners and towards the owners of rural land. The rental price of rural land is raised by about 68 percent."

Most of Japan's overt protectionism is now agricultural, and is the lightning rod for catching the world's frustrations with Japan's mercantilist export-at-any-cost policies. While Japan insists on its right to export unlimited amounts of products to the world, it refuses to buy other countries' products even when foreign nations have a clear comparative advantage. Japanese farm lobbies have worked hard to stir up hostility to and distrust of foreigners in order to persuade the public of the need to perpetuate farm subsidies. Heavy-

handed (and often hypocritical) pressure from the United States for farm trade reform has helped divide the two nations.

Japanese farm policies clearly distort world agricultural trade, but it is unclear exactly who would be the beneficiary of Japanese trade liberalization. U.S. cattlemen are anxious for the lifting of Japanese beef quotas--but, free beef imports would slash Japanese farmers' purchases of American feedgrains, and Australian and Canadian cattlemen could reap much of the increased beef sales. When Japan was considering abandoning its quotas on citrus imports, the largest American export company--Sunkist--publicly opposed trade liberalization because it was concerned about being forced to face new competitors. If Japan opened up its rice market, it is likely that Thai farmers would reap the benefits, since they are lower-cost producers than American farmers. Hillman and Rothenberg (1986) estimated that Japanese trade barriers were costing Thai farmers alone $270 million per year.

It is likely that agricultural liberalization would do little to reduce Japan's trade surplus, though the removal of such flagrant protectionism might ease some foreign countries' hostility towards Japan.

CHAPTER 3

GOVERNMENT INTERVENTION IN AGRICULTURE IN DEVELOPING COUNTRIES

In many developing countries there is little recognition of the notion that farmers' rights to the fruits of their labor are no less important than those of consumers. In the absence of such notions of inherent economic rights, the deck is stacked against agriculture, especially with respect to food pricing policies and exchange rate policies, since producers (even if numerically superior to urban interests) are poorly organized and usually lose battles with politically volatile consumers in the cities. Policies are analyzed in terms of whether they meet certain objectives (income distribution, self-sufficiency, exports, etc.), rather than in terms of whether they erode or preserve the individual's ability to make economic choices. This disregard of the concept of economic rights was so deeply rooted that governments in some countries, (for example, in the socialist economies of Africa) viewed almost any unconstrained trade between individuals as likely to be against the public interest. In Ethiopia and Tanzania, traders who attempted to buy grain in one region and sell it in another were harassed and even thrown in jail, with the result that serious shortages in some parts of the country co-existed with surpluses in others.

The pervasive rejection of farmers'--and for that matter, other individuals'--inherent economic rights, led naturally to a profound distrust of market mechanisms. Thus, nearly every perceived problem--be it inequality of income distribution, high margins in processing or distributing agricultural products, or low levels of food self-sufficiency--prompted a new government

intervention. Basic development strategies called for industrialization, usually to be accomplished by overvaluation of exchange rates and restrictions on imports of manufactured items.[3] But this hurt farmers, reduced agricultural exports and increased food imports. Offsetting measures became necessary, such as subsidized fertilizer, credit, and irrigation. But these were costly and their financing required higher taxes and increased external borrowing, further overvaluing the exchange rate. Price controls instituted to help urban consumers reduced or eliminated profits of farmers drove private traders out of the market; the solution was to give legal monopolies to marketing agencies. Prices that differed across time or regions of the country were taken to indicate inefficient, speculative, or exploitative private trading activities; the solutions were regulation of trade (margin controls, banning of trade by certain ethnic groups, regulations governing the movement or storage of commodities) and, again, parastatal monopolies. Over the years, these policies have created the attitude that all characteristics of the economy are the responsibility of government. The cycle is perpetuated; intervention begets pressure for more intervention.[4]

In most developing countries, government interventions have profoundly disrupted the agriculture sector by directly and indirectly taxing farmers and subsidizing consumers. Prices received by producers and paid by consumers are usually set by administrative decree to meet political objectives. Low politically-decreed prices to producers and consumers have tended to sharply

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3 In fact, these macroeconomic distortions have imposed greater costs on the agricultural sector than has direct taxation. See Krueger, Schiff, and Valdés (1988).

4 One developing region that is an exception to this stereotypical scenario of policy development is East Asia.

reduce farmers' incentive for production while increasing consumption of urban dwellers. By lowering farmers' prices while subsidizing and controlling consumer prices, many developing country government have had to rely on imported foods, dumped by industrial countries as a result of their farm policies. In severe cases when foreign exchange is scarce or domestic production is unusually low, this policy has resulted in severe food shortages. As a consequence, many farmers have abandoned their farms to migrate to cities, many finding even more severe poverty. Though agricultural producer prices are generally suppressed in developing countries, the actual effects of government policies varies widely among developing nations. But, whatever the goals of policy, the policy tools used--especially government (parastatal) price controls enterprises, and trade quotas--greatly increase the cost of reaching the objectives.

Governments have attempted to offset the anti-agricultural bias by subsidies to fertilizer and credit and public investment in infrastructure (especially irrigation). The input subsidies inevitably go primarily to large farmers and have encouraged environmental degradation and discouraged employment of rural labor. Governments have aided agricultural development with investments in rural infrastructure; unfortunately, such investments have been radically reduced in the 1980s as many nations struggle with the debt crisis. The net effect on production of the combination of suppressing crop prices and subsidizing farm inputs is generally to depress farmers' profits. And the conflict of policies results in a large waste of resources and nations with impoverished farmers and hungry consumers.

I. PARASTATAL MARKETING ORGANIZATIONS

Parastatal enterprises, usually organized as government-owned corporations,[5] afflict agricultural sectors throughout the developing world. They operate in (and often monopolize) markets for agricultural inputs, outputs, services and trade. While most were originally organized to perform a marketing function, a number have evolved to the point where they control all aspects of production, from determining which varieties must be planted (the Zimbabwe cotton board) to distributing seeds and other inputs, to directing the harvest (the Cyprus potato board). (See, e.g., Abbott, 1987.) They are most pervasive in Africa and the history of their genesis there is instructive (Lele and Christiansen, 1988). The early marketing boards were put in place by colonial governments as convenient ways of using the coercive powers of the state to regulate small African growers, thereby protecting large European farmers against competition. After independence, the boards were retained and expanded by governments who wanted to control all aspects of production and marketing, and especially to discriminate against certain ethnic groups that were active in trading (e.g., those of Indian extraction in East Africa[6] and of Lebanese in Senegal). New boards proliferated; in Tanzania in the mid-1970s, for example, there were ten parastatals handling production, processing, transport and marketing of 42 crops. These boards often displaced private traders that, when the comparison has been studied, were more efficient. This has been documented,

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[5] In a few countries in Africa (e.g., Tanzania, Cameroon, Senegal), producer cooperatives have also operated as parastatals when the governments began to appoint managers and apprcve budgets.

[6] Malawi went even further, and legally forbade Asians from living in small towns or rural areas (Lele and Meyers, 1987).

for example in Kenya, Indonesia, Senegal, Sri Lanka, and Tanzania (Lele and Christiansen, 1988; World Bank, 1986; Bryceson, 1985). This explosion in the role of parastatals was encouraged by the neutral or even supportive attitude of the donor community. The countries that received the most foreign assistance (e.g., Senegal, Tanzania) were those in which they multiplied the fastest.

While parastatals in other regions do not share the African parastatals' colonial origin, they were all conceived as ways of exercising government control over agricultural production and marketing decisions through pricing policy and direct intervention. The vast majority also share a common outcome; they create tremendous distortions in incentives, operate inefficiently, and drain national treasuries. Table 3-1 shows how onerous is the burden of some parastatals in the 1980s. Column (a) shows the size of government transfers to the parastatal in relation to the size of the budget, indicating how much they reduce public resources available for other purposes. Column (b) shows transfers plus borrowing, in relation to national production, indicating the magnitude of the burden on the economy as a whole. By either measure, the parastatals have imposed very large costs. The reasons behind this outcome can be found in both the pricing policies followed and problems in their design and management.

Pricing

Prices of important agricultural products in developing countries are almost always set in the political arena, either by the parastatals or by legislation. The usual policy is to set prices low relative to their

international levels,[7] and at uniform levels throughout the country and throughout the year.

It has long been recognized that agriculture in most developing nations is heavily taxed, though the patterns of policies by which this is done have only recently been systematically compared across countries. A study of 18 representative countries found that the domestic prices of export crops were in almost all cases kept below international prices (converted at the official exchange rate), by an average of 11 percent (Krueger, Schiff, Valdés, 1988). Imported food crops were a different matter; most countries kept domestic

Table 3-1: Selected Agricultural Marketing Parastatal Losses

Country	Parastatal	Period	Loss/Subsidy as percentage of (a) Govt. Cur. Exp.	(b) GNP or GDP
China	Grains	1988	10.5	2.0
India	Grains	1984-85	4.6	0.5
Gambia	Groundnuts	1982-87	10.8 (26.6)	2.8 (14.4)
Kenya	Grains	1985	3.7	0.7
Malawi	Crops/inputs	1983-87	2.6 (2.8)	-4.3 (35.8)
Mali	Grains	1982-85	8.8 (10.4)	1.3 (1.5)
Mexico	Milk, Grains, Oilseeds	1982-85	3.5 (5.2)	
Niger	Grains	1982-85	0.3 (0.3)	0.2 (0.3)
Senegal	Groundnuts	1982-86	1.5 (3.8)	0.6 (0.6)
Tanzania	All crops	1980-81	12.4	1.7
Zambia	Maize, Fertil., Cotton	1980-86	4.0 (11.6)	3.2 (7.2)
Zimbabwe	All crops	1983-87	5.6 (6.4)	4.6 (5.3)

Sources: Swanson and Wolde-Semait, 1989 (Gambia, Malawi, Mali, Niger, Senegal, Zambia, and Zimbabwe); Lele and Christiansen, 1988 (Kenya); World Bank, 1983 (Tanzania); World Bank, 1986, p. 89 (India); World Bank, 1989, p. 17 (Mexico); World Bank, 1990, p. 4 and 17 (China).

a/ Figure in "Loss/Subsidy" column (a) refers to median government transfer to parastatal for years indicated. Figure in parenthesis is the highest figure for those years. Figure in column (b) refers to median government transfer

[7] In many cases, stabilization policies have caused domestic prices in some years to exceed world prices, but the average effect over the price cycle is to depress them.

plus deficit for the years indicated, as a fraction of GNP or GDP. Figure in parenthesis is the highest figure for those years. For China, figures represent financial losses of grain bureau enterprises, as percentage of total government expenditure and GNP.

producer prices higher than world prices, by an average of 20-21 percent. However, an additional "hidden" tax was imposed on all tradable crops by overvaluation of the exchange rate and protection of the industrial sector. The study found this indirect mechanism to be by far the most significant way of taxing agriculture, overwhelming even the apparent protection provided by pricing policy for imported food crops. On average, the total effects (from pricing and the hidden tax) were equivalent to a tax of 36-40 percent or export crops and a tax of 5-6 percent on imports.

In other countries not included in this stu , the effect of pricing and exchange rate policy has been even worse for agriculture. In China, grain producers are forced to sell part of their crops at below-market prices, at a cost to them in lost revenue in 1988 equivalent to 1.7 percent of all GNP (World Bank, 1990). In Tanzania by 1984, official prices for export crops (almost all of which could be legally marketed only by parastatals) had fallen in real terms to about half their levels of 1970, in spite of higher border prices. When adjusted for overvaluation of the currency, the official prices in 1984 were less than 20 percent of their values in 1970. In Senegal, groundnut producers only received about half the export value of their crops. In addition, for some years they were paid in "bonds" that could be redeemed for cash only after considerable delay (Caswell, 1985).

Such low-price policies have important unintended effects over a period of time (World Bank, 1986). One effect that was particularly pervasive in Tanzania was the emergence of parallel domestic markets. This tendency was exacerbated

by the pan-territorial pricing policies discussed below. A second is a decline in production. Though it is believed in some circles that peasant farmers do not respond to price incentives, this is clearly not the case. Countries in which producer prices have been severely depressed have consistently found production declining. In the early 1960s, Sri Lanka accounted for a third of world tea exports, while Kenya's market share was less than 3 percent. Over the ensuing decades, however, Sri Lanka taxed the sector quite severely; average tax rates were over 50 percent in the 1970s and over 35 percent in the late 1970s to mid-1980s. Kenya's taxation was much more reasonable; in 1985, rates were on a sliding scale based on the world price, with the top average rate about 15 percent. By the early 1980s, Sri Lanka's share of the market had declined to 19 percer while Kenya's had more than tripled to 9 percent. In Argentina, another country with a strong policy bias against exports, it has been estimated that a more neutral policy environment could have doubled agricultural exports (Sturzennegger, forthcoming).

A third effect of such pricing policies is to encourage (in some cases, virtually force) producers to smuggle their crops out of the country. Ghana's Cocoa Marketing Board's pricing policies, combined with overvaluation of the exchange rate, raised the effective taxation of cocoa from an already-high 54 percent in the late 1960s to 89 percent in the late 1970s. Ghana's market share dropped from 40 percent to 18 percent. Neighboring Cote d'Ivoire's share rose from 9 to 29 percent. Some of Ghana's decline and the Cote d'Ivoire's rise in market share was due to production effects. But, since the increase in Cote d'Ivoire's exportable production could account for only part of its increased exports, it is clear that a significant part of the increase in exports from Cote d'Ivoire came from cocoa ggled out of Ghana. Ghana's pricing policies not

only impoverished the Ghanaian producers, but also deprived the treasury of revenue.

Other aspects of pricing policies are generally not as detrimental to producers as depressing prices overall, but have serious consequences nonetheless. One common policy for food grains ("pan-seasonal pricing") is to maintain prices the same year-round, irrespective of the proximity of the harvest or the state of stocks. The major adverse effect of this is to discourage the private sector from holding stocks, since normally prices must rise from times of abundance (immediately post-harvest) to times of scarcity (immediately pre-harvest) in order to cover the costs of carrying stocks. As a result, there is a chronic shortage of private storage facilities in almost all developing countries, leaving storage responsibility largely to the parastatals. Because of their usual inefficiency and undercapitalization, physical storage losses can be quite high. Estimates of losses in Tanzania run as high as 30 percent (Bryceson, 1985). Pan-seasonal pricing also encourages consumption and discourages production off-season, when the full cost of providing the product (growing it plus storing it for a long period) is highest. This effect is most serious in countries like Peru, where each of the two major regions can grow rice in the season when the other is not producing.

Another policy commonly followed for both exports and food crops ("pan-territorial pricing,) is to pay producers the same price throughout the country. Taxpayers, consumers,and producers close to consumption or shipment centers are essentially forced to subsidize those in distant locations, where prices would normally be lower because of the high cost of transporting the product. This practice is usually justified as a measure to promote development of a backward region, but in general, infrastructure investment would be a far better way of

supporting such a goal. In some countries, this policy is carried to an extreme, as in Peru, where rice producers in the inaccessible jungle region are paid a higher price than those in the coastal region, where transport costs are lower by about US$72 per ton. In Tanzania, costs of transporting maize ranged among the 20 regions from 22 to 660 shillings per metric ton (US$3 to US$81 at the official exchange rate) in 1979. The pan-territorial pricing generated losses for the National Milling Company of several hundred shillings on each ton transported from the remote southern region, Ruvuma; where large maize surpluses were produced. Costs have also been shown to be quite high in Zambia, in terms of production foregone and government subsidies (Kydd, 1989).

Pan-territorial pricing has had two very different effects in different countries, depending partially on the relation between official and market prices. In Tanzania, the uniform official price for crops has often been very high relative to the market price for remote regions, but low for regions where transport costs are low. This has caused a segmentation of the market. The National Milling Company buys virtually all the crop in outlying areas, while a thriving (but illegal) private sector handles the crop in other areas. Official channels in 1984 handled less than one-third the average annual quantity of rice handled in the 1970s. This is typical of many other African countries, where in spite of regulations and rhetoric, the public sector markets only a small part of the harvest (Hopcraft, 1987; Green, 1989). This also means that most consumers must buy grain in the parallel market, where prices in Tanzania have commonly been 4 to 5 times, and sometimes up to 10 times, the official price (Hopcraft, 1987; World Bank, 1986). In Ethiopia, the parallel market price of tef (a local grain) in the capital rose to over 7 times the official producer price (Hopcraft, 1987). The grain sold at the official price must be rationed,

and typically goes to politically powerful urban groups or the armed forces (Arhin, Hesp, van der Laam. 1985).

But in the other countries, the combination of low consumer prices, pan-territorial and pan-seasonal producer prices, and/or a parastatal marketing monopoly have driven the private sector completely out of many agricultural markets. Or, even when the parastatal does not have a de facto monopoly, it may have to give private processors subsidies to cover losses caused by the low, controlled selling price, as was the case in Mexico until recently. Colombia uses a complicated system to subsidize private storage, with effective rates of subsidy (as a percentage of the price) varying from 5 percent to 14 percent for different crops in 1980, and changing over time as well. Any of these policies that force the parastatal to cover losses incurred on the entire domestic crop (and often on imports as well) can quickly cause operating deficits to balloon out of control, resulting in the financial and efficiency costs indicated in table 3-1.

Management and Operation

In addition to uneconomic pricing structures over which they sometimes have little control, parastatals the world over are beset with a plethora of management difficulties. As one might expect of agencies whose employees handle large sums of cash and exercise considerable control over other peoples' lives, outright corruption is a persistent problem. Estimates of its magnitude are hard to come by, but to give some idea of its seriousness, reports from Senegal indicate that the government admitted fraudulent losses of the major parastatal ONCAD of an amount equal to 44 percent of the public sector investment budget. In addition to the direct siphoning of funds (Bryceson, 1985), leakage of

supplies purchased by the parastatal into the higher priced parallel market are common (Hopcraft, 1987).

But even disregarding the out and out fraud, parastatals often fulfill their missions inefficiently, if at all. Since they are not good forecasters of crops (partially because they often operate without basic data) they end up buying, accumulating stocks, and selling at the wrong times, thereby destabilizing the very markets they were intended to stabilize (Idachaba, 1985). (As shown in Box 3-1, in 30-35 percent of the countries and export crops studied, actual domestic producer prices were less stable than if they had simply followed world levels.) The segmentation of markets into official and parallel sub-markets also magnifies the effect of supply and demand shocks in each. Sometimes prices for the next harvest are not announced until <u>after</u> the crop has been planted, exacerbating the uncertainty facing producers. This is standard practice in Zimbabwe (Gael, 1988) and Tanzania, where it is justified as a measure to discourage speculators. (Ironically, speculation is considered detrimental precisely because of the instability and uncertainty it allegedly creates!) In other countries (including the United States), late announcement of prices is an unintentional but inherent result of setting prices through a time-consuming political process.

But above all, parastatal marketers operate inefficiently because they operate inflexibly. They cannot adapt readily to changing market circumstances. In Zimbabwe, Kenya, and Malawi in 1986, for example, official prices were kept constant in spite of massive oversupply and severe budgetary losses that should have lowered the price (Hopcraft, 1987). Conversely, in other countries, official prices have been maintained at low levels even in times of major shortages (Ethiopia). Private marketers have been shown to stabilize producer

prices by adjusting margins pro-cyclically.[8] Parastatals simply cannot respond flexibly like this, because it is usually politically impossible for them to quickly shed labor and take other cost-cutting measures in a timely manner. Bureaucratic inertia delays decisions, so that a response to a given market condition may be completely inappropriate to the conditions at the time the response is finally made.

Reforms

While great emphasis is sometimes placed on reforming parastatals, it should be noted that many if not most of the problems enumerated here are intrinsic to an organization structured as a parastatal. Parastatals are by definition public institutions and therefore political. Their goals are politically determined. Though they are usually enunciated in the lofty rubric of social welfare, the objectives are to extract wealth from some groups and bestow it upon others. Who gains and who loses depends on the relative political clout of different groups. But the very fact that the goals are non-commercial implies that there will be financial and economic losses, even if the agency were otherwise efficiently run. Moreover, its political nature guarantees that it will be run to meet a variety of objectives, many of them noneconomic, as all of its operations are ultimately judged by politicians, not by impersonal market forces that force commercial enterprises to cut costs.

With some exceptions, parastatals are headed by political appointees. Politicians universally interfere, often and arbitrarily, in everyday management

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[8] For example, when prices of an export crop fall, margins are reduced by cutting costs. This means that producer prices fall less than they would if margins stayed constant.

decisions (Nellis, 1986). And the major decisions (such as pricing) are often taken outside the control of the agency's management. All of these characteristics make it inevitable that the operations will be inflexible and inefficient. And, as the power of the state gives its agents (from purchasing agents at the farmgate to top managers) the ability to make decisions that confer financial gain or pain on others and on themselves, corruption and fraud are inevitable as well. Finally, the de facto or de jure monopoly nature of the parastatals, and the assurance that losses will be covered by the government (either through direct budget transfers or through governmental guarantees when parastatals borrow in commercial markets) ensures their immunity from incentives to operate efficiently. Because these problems are inherent in their structure, their resolution will require more than "reform," as that term has normally been used.

Meaningful reform would require abolition of monopoly power, exposure to competition, removal of government subsidies (including the underwriting of commercial loans), and insulation from political pressures, as well as making managers accountable and giving them incentives to operate efficiently and turn a profit. But this would mean that the parastatals would no longer be parastatals; they would be commercial enterprises. In other words, to be reformed, parastatals must be liquidated or privatized. Concurrently, other policy reforms could more efficiently meet some of the parastatal's social goals. Food subsidies targeted to the poor, for example, could replace generally subsidized food prices as a way to help the poor without burdening producers or creating huge deficits.

A number of countries have undertaken piecemeal reforms such as allowing some private sector competition, while still maintaining control of pricing

margins. Such reforms may be a step in the right direction, but the threat of unfair competition from a parastatal with the resources of the government at its disposal will always keep these markets from operating in a fully competitive way. Only a handful of countries have begun serious reform of the type outlined above. In Ghana, Mali, and Nigeria, export crop marketing boards have recently been abolished and their functions privatized, with good results. Nigeria's abolition of marketing boards for palm oil, cocoa, rubber, cotton, and groundnuts, together with exchange reforms in 1986, led almost immediately to a 6 percent increase in cash crop production in 1987 in spite of bad weather. Guyana has retained its marketing board in name only, completely changing its role from directly intervening in the market to providing information and export brokerage services. The results have been favorable, though the chaotic conditions of the macroeconomy has been a serious constraint. Following a decade of stagnation under government parastatal control, the banana sector in Belize was completely privatized in early 1985. This generated a flurry of investment and improved cultivation practices, with a consequent rise of production by 150 percent by 1987 and expansion still continuing. It is also noteworthy that the most vibrant agricultural subsectors in many countries are those in which governments have played little if any marketing role, such as fruits and vegetables in Chile and Mexico, cut flowers in Colombia, and cocoa in Belize.

II. THE QUESTIONABLE GOAL OF PRICE STABILIZATION: THE GOVERNMENT'S ROLE IN OUTPUT MARKETS

Objective of Price Stabilization

Governments' efforts to control domestic prices is euphemistically, but almost universally, known as "price stabilization." Often the announced intention to "stabilize" price is little more than a smoke screen to obscure the reality that prices are being systematically depressed or (on rare occasion) raised. When the actual policy goal is to stabilize domestic prices--that is, decrease domestic price fluctuations compared to world price fluctuations--the rationale tends to be both to minimize the macroeconomic effects of international price movements and to reduce the impact of price changes on producers and consumers.

One effect of price movements of staple commodities (or "wage goods") is alleged to be a tendency to create or exacerbate inflation. This happens, the argument goes, because increases in crop prices drive wages up and start an inflationary spiral, while crop price decreases do not cause a symmetric fall. However, economic studies and investigations have failed to find such an asymmetrical effect of crop price changes. A second effect of price fluctuations comes from the resulting ups and downs in foreign exchange flows, which could potentially destabilize fiscal and monetary policies and variables if the commodity is an important export. When the foreign currency inflows following a commodity boom cause the real exchange rate to appreciate so much that it greatly disrupts other tradable goods sectors, the country is said to have caught "Dutch disease."

In examining actual case studies of countries whose exports are going through boom-bust cycles, one finds that the macroeconomic problems sometimes

attributed to the commodity price fluctuations are really a result of macroeconomic and trade policy choices (Box 3-1). In many countries, booms have been accompanied by increased, rather than reduced, fiscal deficits and foreign borrowing, turning what might have been a mild and appropriate appreciation of the currency into full-blown Dutch disease. Studies have documented that expansionary fiscal and monetary policy during and following commodity booms in Nigeria (oil), Cote d'Ivoire (coffee and cocoa) Senegal (phosphates), and Colombia (coffee) have artificially overvalued exchange rates and devastated agricultural sectors outside the booming commodity. Furthermore, whether or not fluctuations in foreign exchange earnings are undesirable, stabilizing domestic prices is likely to have only a marginal effect in reducing the magnitude or adverse impact of exchange flows.[9] "Price stabilization" often results in destabilization of the government's budget which then leads to macroeconomic problems, and (in the case of food imports) the balance of payments. The high world prices of food grains in 1972-74 dramatically increased the food subsidy budgets of countries that tried to maintain low domestic prices, such as Bangladesh, Korea, Morocco, Pakistan, Sri Lanka, and Tanzania (World Bank, 1986).

BOX 3-1: COMMODITY BOOMS AND POLICY RESPONSE: AGGRAVATING OR AMELIORATING THE "DUTCH DISEASE"

An often-expressed worry in developing countries is that concentration of export earnings in primary commodities subjects an economy to large shocks when the commodities' international prices or domestic production rises or falls.

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[9] Stabilizing domestic prices of exports can have some effect on foreign exchange flows in two ways. First, it keeps producers from fully adjusting supplies to world price movements, preventing change in production volume from magnifying the effects of price movements and thereby making foreign exchange revenue slightly more stable. Second, if stabilization is done by border taxes or subsidies, it may facilitate countercyclical fiscal and monetary policy.

When export earnings increase precipitously as a result of price or production changes, the result has come to be called "Dutch disease," after the effect on the Dutch economy of such increases in its natural gas exports. Increased foreign exchange earnings, it is feared, will appreciate the real exchange rate, reducing incomes in tradable goods' sectors outside the booming sector itself. This expectation is correct, to one degree or another. But in spite of the pejorative title, the "Dutch disease" per se is not bad. Exchange rate appreciation sends the appropriate signal that domestic resource allocations should probably change, with tradable sectors not producing the "boom" commodity (notably agriculture, when oil or mineral prices boomed) contracting. How much of a change actually takes place, of course, depends on how long the increase in exchange earnings is expected to last, as well as such factors as whether capital markets are sufficiently well developed to allow temporarily unprofitable firms to borrow and stay in business during a period of currency appreciation.

What has often been more damaging to agriculture than the direct effect of the increased earnings from the booming commodity, however, is the government's policy response to the boom. Rather than using the windfall to increase savings and investment (and possibly partially pay off existing external debt) while following contractionary fiscal and monetary policies, many governments have done exactly the opposite--spending lavishly on public employment or questionable public subsidies. When the boom ends, governments are left with large debts and expensive programs that are hard to cut back and must be financed by inflationary budget deficits. Public investment institutions are left with an atrophied apparatus for evaluating and selecting among potential projects, since they were able to avoid hard choices when resources were abundant.

In response to the coffee boom in 1976-80, government expenditure in Colombia began growing rapidly in 1977 and accelerated even after world prices peaked in 1980. The average growth rate over 1977-80 was 38.5 percent per year. Most of the increase was in government consumption, which rose from 7.7 percent of GDP in 1977 to 10.1 percent in 1980. Government revenues grew modestly, and the fiscal deficit expanded, financed mostly by external borrowing. Monetary policy was expansionary. The net effect was an appreciation of the real effective exchange rate (trade-weighted) by 30 percent between 1975 and 1982. While the government's stated objective was to diversify exports into non-coffee agricultural and non-agricultural commodities, its actual macroeconomic policies worked against this. Non-coffee exports fell from 7.7 percent of GDP in 1976 to 4.3 percent in 1983, completely reversing the diversification that had occurred between 1967 and 1974. Other countries whose governmental spending and borrowing policies have similarly exacerbated the impact of commodity booms on agriculture and other tradable sectors include Mexico (oil), Nigeria (oil), Cote d'Ivoire (coffee and cocoa), and Senegal (phosphates).

In addition to macroeconomic policy, trade policy also can exacerbate or mitigate the effects of a boom. In a period of foreign exchange abundance, there is a natural tendency for consumers and producers to spend some of this on increased imports. When quantitative restrictions on imports prevent this from happening, the exchange rate appreciates even more than it otherwise would, with the consequent negative effects on exportable sectors. The government's restrictive trade policies at the beginning of the boom, and reluctance to

liberalize even after it was well underway, was one factor contributing to Colombia's steep appreciation. Trade restrictions may also create unforeseen distributional consequences. In Kenya, higher coffee prices in 1976-79 were initially reflected in higher producer income. But capital controls and restrictions on imports greatly increased the rents to suppliers of capital and consumer goods, so much of the gain ended up going to urban areas.

The experience of a number of countries supports a conclusion that a more appropriate policy environment--particularly tighter restraints on government spending and fewer import restrictions--can prevent a mild appreciation from deteriorating into full-blown "Dutch disease," or at least keep the patient out of the emergency room.

Sources: D.L. Bevan, P. Collier, and J.W. Gunning, 1987, "Consequences of a Commodity Boom in a Controlled Economy: Accumulation and Redistribution in Kenya 1975-83," The World Bank Economic Review 1 (May); S. Devarajan and J. de Melo, 1987, "Adjustment with a Fixed Exchange Rate: Cameroon, Cote d'Ivoire, and Senegal," The World Bank Economic Review 1 (May); W. Easterly and J. Cuddington, 1986, "Management of Coffee Export Booms in Colombia."; B. Pinto, 1987, "Nigeria During and After the Oil Boom: A Policy Comparison with Indonesia," The World Bank Economic Review 1 (May); V. Thomas, 1985, Linking Macroeconomic and Agricultural Policies for Adjustment and Growth: The Colombian Experience, Baltimore, Md.: Johns Hopkins University Press.

Most of the adverse microeconomic effects that are cited to justify price stabilization have to do with the uncertainty created by price movements. To the extent that various economic agents are risk averse, this added uncertainty deters investment and reduces production. While economic theory is clear that uncertainty acts as an added cost of production, the magnitude of the effect on production is an empirical question, and the answer seems to be that the measurable impact is small or non-existent. Regarding the investment effect, most studies have found no relation between instability and aggregate investment in the economy, though a few have found negative or positive relations.

There are major costs in price stabilization programs that are often not recognized. Prices fluctuate because of changes in supply and demand. Each price

change sends a signal to every producer and every consumer. The price system is an information system, and government cannot control prices without engendering ignorance about the actual supply and demand for a product. If the government misleads the public by understating the costs of a product, there will be overconsumption; if government misleads producers by holding down the value of a product, there will be underproduction. Either way, resources are misallocated.

The benefits of intervening to forcibly stabilize prices are brought further into question by the fact that price fluctuations are sometimes predictable. When a freeze damages coffee trees in Brazil, for instance, coffee producers in the rest of the world know from experience that world prices will rise and stay high for a few years. There is little uncertainty. Farmers' natural response to such movements is to increase fertilization, intensify harvesting efforts, and adjust other practices to increase supply to the market (and conversely, when prices predictably fall). Of course, if producer prices are insulated from world price movements by domestic price stabilization, this supply response does not occur. While such insulation decreases the magnitudes of foreign exchange fluctuations (footnote 9), it also lowers average profits over the course of a price cycle, and makes the country poorer.[10]

Governments also use domestic price stabilization schemes to subsidize food prices to consumers in years when world prices are high. This, however, is an inefficient way of helping the poor, since most of the subsidy goes to the middle and upper classes. One study of the rice price subsidy in Peru concluded that

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[10] Countries whose exports of a commodity are constrained by international agreement may need to lower average production, but even here, the most efficient way to produce a given quantity of exports may be to reduce the average price without affecting its variability.

36 percent of the subsidy benefitted the middle and upper classes (Nash, 1983). Anecdotes from other countries--such as bread being used for animal feed in Egypt--illustrate the wasteful folly of untargeted food subsidies. It also increases the country's import dependency in the longer run by lowering the average profit of farmers who grow the food crop. Better ways of targeting subsidies are almost always possible. Finally it should be noted that to the extent stabilizing a crop's price makes its production more attractive, it discourages farmers from diversifying into other crops and adopting production practices that reduce variability of yield, a strategy which in the long run might be more effective in reducing risk.

Thus both the macro-and microeconomic foundations of price stabilization policy are shaky at best. And in spite of their efforts to the contrary, government sponsored stabilization programs--especially those for exports--often actually make real domestic prices more unstable than world prices (Box 3-2). But the case for government-sponsored stabilization becomes even more tenuous when the administrative costs and incidental effects of the stabilization mechanisms themselves are considered. Although governments in a few countries (e.g., Chile, Malaysia, Papua New Guinea) have relied mainly on border taxes to stabilize domestic prices, most have opted for elaborate and costly direct intervention in agricultural markets, as the following section explains.

BOX 3-2: HOW SUCCESSFULLY DO GOVERNMENTS STABILIZE PRICES?

Almost all developing governments try to control the domestic producer and consumer prices of important crops and food products, either directly, or indirectly through parastatals or border tax measures. One of the professed intentions of these efforts is to make price and producers' income fluctuations smaller than they would be in the absence of control. How successful have the schemes been in meeting this goal? To answer this question requires the

estimation of the hypothetical "without stabilization schemes" instability of price and income. For non-traded products, this would be a complicated task, but for commodities that are imported or exported, the domestic price would be roughly equal to the price on the international market converted to domestic currency at the prevailing rate of exchange.[1]

Hypothetical price series were constructed for 15 crops across 37 developing countries (not all crops in all countries). Instability indexes of these series were compared to indexes of series of actual domestic producer prices for the corresponding crops and countries. (All prices were deflated by a domestic price index before instability indexes were computed.) Both types of price series were also combined with production data to yield series of producer revenue with and without stabilization, and instability indexes constructed from these series. For each observation (price or producer revenue for a crop in a country), the difference was taken between the instability index with and without stabilization. Summary statistics across all observations, divided by product group, are reported below in Table 3-2-1.

TABLE 3-2-1: Summary Statistics for Differences In Instability of Variables A and B

	A: Producer Price B: Border Equivalent Price		A: Producer Revenue B: Border Equivalent Producer Revenue	
Grain	Mean	-15.0		-12.0
(89 obs.)	Std. dev.	12.7		13.1
Beverage	Mean	-6.9		-5.4
(29 obs.)	Std. dev.	13.4		12.6
Fiber	Mean	-3.9		-2.5
(21 obs.)	Std. dev.	11.3		12.8

Source: O. Knudsen and J. Nash, 1990, "Domestic Price Stabilization in Developing Countries," Economic Development and Cultural Change, 38 (April):539-58. Instability indices calculated on basis on FAO price data.

For each product category, the with-stabilization variable was on average more stable that the hypothetical without-stabilization variable, as indicated by the fact that the mean difference was negative. It is also noteworthy, however, that the size of this average reduction is small relative to the

standard deviation within the sample. In other words, for a sizable fraction of the cases, actual domestic prices and producer revenues were less stable than they would have been in the absence of any attempt to stabilize them. For grains, this was true for 9 percent of the price observations and 15 percent of the revenue observations. Corresponding figures for beverages are 31 and 31; and for fibers 35 and 38. (The latter two categories are mainly exports from developing countries, while grains are mainly imports.) Given the high costs of the stabilization schemes used, they have failed in their objective in a remarkably high percentage of cases.

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1. Changes in marketing margins are only a minor source of instability, relative to movements in world prices and exchange rates, so margins are assumed to be constant.

Trade Policy

The necessary corollary to pricing policies that cause domestic prices to deviate from their international levels is restricting trade with the outside world. This is often done by giving a parastatal marketer exclusive authority to import or export the crop. But even where this is not done (and sometimes even where it is), governments impose a variety of other controls on international trade in agricultural products.

Commonly, both imports and exports are taxed, with the volume of trade in many products closely controlled and restricted by requirements that licenses be obtained from government ministries. Venezuela is not unusual; before the trade reform program began in June 1989, only 5 percent of all agricultural (and 9 percent of agroindustrial) product categories in the tariff schedule were free of some restrictions. (Tariffs are not counted here as restrictions.) Imports of 20 percent of the agricultural (and 30 percent of the agroindustrial) products were prohibited altogether. In a large sample of developing countries, about 48 percent of food items and 37 percent of agricultural raw materials are

affected by such nontariff measures (Erzan, et. al., 1988). The effect (and probably the real purpose) of such restrictions is often to partially compensate for the anti-agricultural bias implicit in policies of exchange overvaluation and industrial protection, though the public justification is usually to promote self-sufficiency in food.

Such restrictive tendencies of policy-makers have been reinforced by the industrial countries' agricultural policies that have depressed and destabilized prices of major food crops. Developing country governments restrict imports because they believe, with some justification, that if cheap imports were freely allowed, the effect on local agriculture would be devastating. However, two points get lost in the political rhetoric about protecting local farmers from unfair competition. One is that the government's own exchange rate and industrial policies create much more serious problems for agriculture than would external competition, even from subsidized products. The other is that import prices are "unfair" because they are a gift subsidized by taxpayers in industrial countries. An importing country that does not accept the gift ends up producing the product at a cost higher than its import price. It may be better to accept the gift, allowing the agricultural sector (or certain agricultural subsectors) to contract and release resources to be used more productively in other sectors (or agricultural subsectors).[11]

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11 The issues here are complicated. Industrial country policies may be temporary, which, given costs of adjustment, might imply that resources should not leave the agricultural sector, only to come back when the subsidies are eliminated. Even this possibility, however, does not necessarily call for artificial incentives to keep the sector from contracting. There is little reason to think that governments are better predictors than the private sector of whether and when subsidies will be eliminated.

But, such economic arguments seem unlikely to carry the day in the face of political diatribes made possible by the industrial world's subsidies. And, even though trade restrictions imposed against subsidized agricultural exports may not make economic sense from an individual developing country's point of view, they may have the same collective economic rationale as do the GATT-sanctioned restrictions on imports of subsidized manufactured exports. That is, if all or most countries impose such restrictions, it will make it more costly for the exporting countries to subsidize the exports in the first place, thereby deterring the subsidies, which are themselves economically inefficient on a global level.

Restrictions and taxes when applied to exports have the effect of keeping domestic prices low. In many countries, the major purpose is to raise revenue for the government by taxing export producers. In others, the policies are aimed at keeping domestic prices low for consumers (beef in Mexico) or agroindustrial processors (cotton in Venezuela, logs in Belize). Sometimes the export restrictions are made necessary by subsidies that make domestic food prices lower than world market prices. When price differences are large, of course, the restrictions are widely evaded. In Venezuela, a number of products were so heavily subsidized that as much as 20 to 35 percent of apparent consumption was actually contraband, despite export prohibitions. The negative effect of depressing export prices is discussed in section B.2.a. But trade restrictions have negative effects that go beyond their impact on prices. The licensing procedure itself typically imposes an onerous burden. In Madagascar, despite recent trade policy reforms, exporters still are required to have 51 documents stamped and verified three times, on average. An average shipment requires three

man-days just for the paperwork. Giving bureaucrats such extensive power also fuels rent-seeking and corruption, further discouraging exporters.

Many governments provide heavy protection to the agroindustrial sector by tariffs, nontariff trade barriers, or export incentives with the professed intention of benefitting domestic farmers. In reality, a given level of protection on agroindustrial production gives a higher level of true effective protection for activities with a low domestic value added than for activities with a high domestic content.[12] Thus, the links forged with local agriculture tend to be quite limited. Instead, this trade policy produces agroindustry based entirely on imported inputs. In the Caribbean, for example, agroindustry tends to be either very capital intensive, with a domestic content of 6 to 10 percent, or quite intensive in labor and domestic raw materials, with domestic content of 80 percent or more. The protection for agroindustry tends to favor the former and produces such anomalies as a large soybean crushing industry in Trinidad and Tobago, and wheat millers in a number of tiny Caribbean islands.

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12 As an example, consider two hypothetical agro-industries. Industry A imports oil-seeds and extracts the oil for local consumption. It relies on imported capital equipment, raw material, and intermediate inputs (fuel, lubricants, chemicals, etc.), so only, say 10 percent of the price of the final product is either cost of local nontradable inputs (e.g., labor) or profits. That is, domestic value added is 10 percent. Industry B processes fruits (which are not of export quality) into jelly for the local market Since the process does not require elaborate machinery or imported raw materials, the domestic value added is, say 80 percent. Now, suppose that imported inputs are not taxed and consider the effect of a 20 percent tariff on imports of both edible oil and jelly. The tariff will raise the domestic price of both by 20 percent. But, since the domestic context of A is much smaller than that of B, the 20 percent rise in the price of the product is reflected in a much larger rise in the return to the domestic inputs and higher profits in industry A. In this example, the equal tariff gives an effective protection rate of 200 percent to oil production and 25 percent to jelly-making.

III. SUBSIDIZING THE LARGE FARMER: THE GOVERNMENT'S ROLE IN INPUT MARKETS

Governments have often tried to compensate for explicit or implicit taxes on agriculture by providing inputs--fertilizer, credit, irrigation services, improved seeds, and electricity--at subsidized prices. These subsidies, which by definition are distributed in proportion to the products' sales, have done little if anything to compensate the poorest farmers, who use few purchased inputs, produce relatively small saleable surpluses, and are not well enough connected to be allocated a fair share of inputs whose shortages are created by the system (e.g., credit). One study in Morocco found 70 percent of the subsidies benefiting the richest farmers (Seddon, 1989). Instead of helping the poor, subsidies have misallocated resources, skewed rural income distribution, imposed a burden on the fisc, and sometimes encouraged environmental degradation.

Fertilizer Subsidies

Most developing countries subsidize the use of fertilizer by making the selling price lower than costs of producing (or importing) and distributing it. The implicit agenda here is the same as with other input subsidies: maintain farmers' political support by (partially) compensating them for the policies that depress their output prices. The public justification is generally couched in terms of encouraging farmers to take advantage of the higher yields that fertilizers produce. Re-phrased in a way less flattering to farmers, the idea is that since farmers are too backward to understand that expenditure on fertilizer pays off handsomely in higher profits, they would be unwilling to buy much of it if they had to pay as much as it costs to produce. This paternalistic

attitude is just one manifestation of the general government view in developing countries that rural residents are irrationally unresponsive to financial incentives. While such myths have long ago been de-bunked by serious studies (see, for example, Schultz, 1964), this notion continues to form the basis for fertilizer pricing policy in many countries.

There is little question that these subsidies have at least partially achieved their ostensible objective; fertilizer use has been increased. But the cost has been high in a number of respects. The most obvious cost is the burden upon the fisc. Table 3-2 shows estimates of the size of subsidies relative to total price, the agricultural budget, and GDP in some countries for which data is available. As this last comparison makes clear, the size of the subsidy is large enough to have significant adverse consequences for the fiscal deficit and macroeconomic variables in most of these countries. Subsidies that ranged from 0.4 to over 1 percent of GDP in some countries obviously added inflationary pressure to economies that could ill afford it.

On a microeconomic level, underpricing of fertilizer, as with any product, results in inefficiently intensive use. When fertilizer is priced at $1 per pound (assuming a subsidy of 50 percent of the border price of $2) farmers will apply enough of it so that the value the marginal pound adds to production is $1, in spite of the fact that the pound of fertilizer costs society $2 to produce or import. While aggregate quantitative estimates of this kind of loss are difficult to make, it is clear that subsidies that in most cases exceed 50 percent, and in some cases approach 95 percent, produce large distortions and therefore large costs. Furthermore, overuse of fertilizer has environmental effects. In some areas, it poisons groundwater and runs off into rivers or coastal areas, where it damages wildlife habitat and fisheries.

The costs of the subsidies are further magnified by the way in which they are administered. Production, distribution, and importation are frequently handled by inefficient parastatal organizations that have limited incentives to achieve cost savings, since losses are covered by the government. One study estimated that the public sector fertilizer plants in India are only 40 percent as productive as private sector plants (Srinivasan, 1986). Imports are controlled by the government in ways that limit the competition and pressure for efficiency that free imports would provide.

In some ways, policies seem obsessed with uniformity. Prices (or margins) are often uniform across locations and seasons, regardless of the different costs of storing and delivering the fertilizer to farms. This encourages use in uneconomic locations and seasons. In India, it also meant that dealers tended to deliver fertilizer only when they could do it cheaply, reducing fertilizer availability at other times (Narayan, 1986). Often only one or a few varieties of fertilizer are available, forcing farmers to use the same kind on crops with different needs. A study in Senegal compared the standard fertilizer sold by the parastatal with more appropriate mixes, and found that equal yields could have been achieved at 20 percent lower cost if better blends had been available.

Yet in other ways, non-uniformity is the rule. The degree of subsidy often depends on the type of fertilizer, the type of crop to which it is to be applied, or the identity of the target user, further distorting incentives. This sometimes works against other worthwhile goals: in Colombia, the only crop for which fertilizer subsidies are available is coffee, thereby undermining the attempt to diversify production. It also leads to diversion; in Malawi, estimates of leakages range from 10 to 25 percent (Lele and Meyers, 1987). The private sector can seldom compete with the subsidized operation of the parastatal

in making or distributing fertilizer, even where there are no legal sanctions for doing so. Thus, the private sector is crowded out, and farmers are left without a reliable distribution network, as one study found in Morocco (Seddon, 1989).

TABLE 3-2: Fertilizer Subsidies in Selected Countries*

Country	Years(s)	As % of Price	As % of Ag. Budget	As % of GDP
Colombia	1983		8	
Cote d'Ivoire	1980	60-100	5	0.2
Egypt	1984	46-76		
Gambia	1983-84	61-96	2	
Hungary	1980-84			0.7
India	1980-85			0.4
Indonesia	1983-84	34-45		
Mexico	1986			0.4
Nepal	1980-83			0.3
Nigeria	1980-83	75	32.1 (1985)	0.2
Pakistan	1980-84			0.7
Philippines	1980-81 a/			0.1
Sri Lanka	1981-83	57-74 (198)		1.0
Tanzania	1981-82	83		0.4
Turkey	1980-83		80 (1980-84)	1.0
Venezuela	1984	50	8	0.1
	1987			0.4
Zambia	1980-84	1-25	29	0.4

a/ Subsidies abolished mid-1982.

*Sources: Seguro, et. al., 1986; Harris, 1984; World Bank, 1988; Lele and Christianson, 1988.

Irrigation

Irrigation has been the single largest investment expenditure in agriculture. The International Food Policy Research Institute estimated that it would account for over half of all agricultural investment in the 1980s in 36 important developing countries. Despite this emphasis, results have been disappointing, whether compared to what was projected, what is technically achievable, or what is produced under private irrigation schemes. Many of the

problems are traceable to the policy environments in which the investments were made, particularly the pricing of water at rates far too low to recover costs.

In few countries do water charges come close to covering even the costs of operating and maintaining the irrigation system, much less servicing the capital costs to build it. In a group of 7 Asian countries for which such estimates are available (Bangladesh, Indonesia, Korea, Nepal, Pakistan, the Philippines, and Thailand), operation and maintenance costs exceed user charges in every country except the Philippines. On average, these costs were 2.2 times charges. Total capital and recurrent costs were an average of 9.6 to 16.2 times charges, depending on how the costs were estimated. In Mexico, the average recovery of operation and maintenance was 70 percent between 1952 and 1970, but had deteriorated to 36 percent by 1986 (World Bank, 1989) while in Venezuela in 1987, the recovery rate was estimated at no more than 10 percent, since nominal water charges had not changed in more than 20 years. In a sample of World Bank projects, revenues covered only 7 percent of project costs.

In most developing countries, charges cover no more than 10 to 20 percent of the full cost of delivering the water (Postel, 1989). Providing a valuable resource at giveaway prices has a number of undesirable consequences. One of the most obvious is the incentive this creates for inefficient overuse of water. Farmers sometimes flood fields in Sri Lanka, for example, as a substitute for weeding (Chambers, 1977). There are no incentives to design projects, or for users to behave, so as to conserve such a cheap (to farmers, that is, but not to the economies) resource. Consequently, only 25 to 30 percent of the water diverted is typically available for use on the farm (Rangley, 1987). Even less is available to the users near the lower reaches of the system, since those near the head take all they can possibly use. This overuse of water in the fields,

as well as the large quantities that leak from damaged or obstructed canals in transit, wreak environmental havoc. In India, 10 million acres of cultivable land have been lost through waterlogging, with another 25 million threatened by salinization, another consequence of overuse (Jayal, 1985). In Pakistan, 12 million acres are waterlogged and 10 million saline (World Bank, 1982). Pakistan devotes half its irrigation budget to mitigating the salinization (Postel, 1989). In Peru, 25 percent of the 80,000 irrigated hectares in the productive coast area have salinity problems. It is estimated that salinization in Mexico reduces crop output by the equivalent of 1 million tons of grain per year - enough to feed 5 million people (Postel, 1989). Worldwide, FAO estimates that half of all irrigated land is salinized to the extent that yields are decreased (Carruthers, 1983).

Less obvious are the undesirable effects of the enormous rents created by these policies. The "rents" are just another aspect of the underpricing: when the benefits to the farmer are 3 to 20 times what he is charged there are tremendous incentives to spend resources to take full advantage of the bonanza. One consequence is corruption of the system operators that control who gets the cheap water. Operators sometimes oppose and circumvent efforts to publicize operating rules and schedules, since this limits their discretion. At times, they create artificial shortages to increase their clout (Bottrall, 1978). The politically powerful and well-to-do are the main beneficiaries of cheap irrigation all over the world, not only because they have more land to irrigate but also because they are better equipped to lobby for preferential treatment in design and operation. Irrigation tends to widen, rather than reduce, income disparities, as studies in Mexico, India, and Indonesia have shown (World Bank, 1983; Rao, 1985; Small, 1986).

The underpricing distorts project design decisions as well. Politicians anxious to dole out as much patronage as possible pressure for extensive projects that cover far more area than could be economically justified. Irrigation projects the world over thus have been implicated in aquatic and forest habitat destruction (and consequent destruction of fisheries when eroded soil smothers coastal breeding areas), seawater intrusion into rivers, and creation of breeding grounds for disease and agricultural pests (Goldsmith and Hilgard, 1986; Pelts, 1984; Nair, 1985). New projects that create more patronage are preferred to rehabilitation of existing ones. (In contrast, in the Philippines, where user groups must repay part of the construction costs, the farmers exert pressure for minimalist design - Small, 1986). And since pricing does not guide users' decisions, consumption gives no guidance to project designers on how projects should be designed. Once built, dual use projects tend not to be operated for the benefit of agricultural water users, since the low prices would make the project appear to be uneconomical. Rather, they are operated so as to maximize power generation, making the project look financially successful, as has been documented in North India (Reidinger, 1974).

Finally, the underpricing means that projects must be funded from general revenues. Apart from the obvious financial burden this imposes, it has other insidious effects. It implies, for example, that irrigation agencies are not answerable to farmers. To the contrary, in irrigated areas in some countries, the farmers are little more than state employees, since the government makes all important production decisions, as in Morocco (Seddon, 1989). Comparative studies in the Philippines, Korea, and China have found, not surprisingly, that agency staffs are more responsive to farmer needs when their funding comes from the farmers (Small, 1986; Nickun, 1982; World Bank, 1982; Wade, 1982). And,

conversely, when farmers feel their needs are met, they are more willing to contribute to funding the system. Thus, farmers are willing to pay handsomely for private irrigation systems they control. Funding from the Treasury rather than from users also means that both operation and maintenance and new construction tend to be slighted during periods of austerity, as in the 1980s. Many systems now suffer from inadequate maintenance and years of neglect. In contrast, in the Philippines, where the National Irrigation Agency is funded completely by revenues from users, farmers participate in decision-making, the infrastructure functions well, and rice yields have increased impressively (Postel, 1989).

Credit

Providing cheap credit to farmers has been a major way of subsidizing production and shoring up political support in rural areas. But the strategy is costly and ineffective. Typically, credit is provided to a large extent by donors and channelled through special government lending institutions. The rates charged are below commercial rates and in inflationary environments are often lower than the rate of inflation, making returns negative in real terms. Political and other considerations make it difficult to take action to collect delinquent loans, resulting in high default rates, typically between 20 and 50 percent, but sometimes rising as high as 80 percent (Feder, et. al., 1989). The direct budgetary cost of these policies is extraordinarily high by any measure. Estimates of the credit subsidies from negative real rates alone (not including default costs) for six Latin American countries show that the subsidies have at times exceeded government expenditures on research, extension, irrigation, land reform, and education and health in rural areas (Elias, 1985). In the late

1970s, credit subsidies in Brazil exceeded 5 percent of GDP (World Bank, 1986). In Mexico, the cost to the government over an extended time has been greater than the total amount lent. Subsidies have been estimated at 0.7 percent of GDP in Mexico, 0.2 percent of GDP in Venezuela and up to 0.3 percent of GDP in Jamaica (World Bank, 1989; Knudsen, 1989; World Bank, 1990). In Asia, where lower inflation makes negative real rates less of a problem, the default costs have been high -- 50 percent in Thailand and India, 40 in Malaysia and Nepal, and 71 in Bangladesh (Feder, et. al., 1989). These costs either inflate governmental budget deficits, or, when commercial banks are forced to absorb them, are reflected in very high rates for unsubsidized loans. Subsidies also keep deposit rates low, both in order to reduce the cost of the subsidy and to discourage borrowers from just re-depositing their loans to earn the interest.

The government involvement in rural credit is based on the perception that otherwise credit would be unavailable or available only at exploitative rates. Yet when surveys have been done, it turns out that most farmers have access to other sources of credit, and the informal credit markets are competitive, not monopolistic (Harris, 1983; Singh, 1983; Wells, 1983). The high rates of interest charged by informal lenders turn out to be due to high transaction costs on small loans. (Administrative costs for small and medium loans can reach 20 percent of the loan amount.) The government institutions cannot avoid these costs, but often fail to pass them on to borrowers, further increasing the real subsidy.

Commercial lenders, of course, cannot match the subsidized rates and are crowded out of the market. While experience in India, Indonesia, Korea, Kenya and other African countries has shown that even small farmers can mobilize savings when they have good investment opportunities (AFTAG, 1989; Wague, 1988;

Cuevas, 1988; World Bank, 1986), subsidized credit programs discourage development of viable rural savings institutions. Thus, the apparent shortage of credit is largely illusory. The problem is caused in large measure by the institutions whose raison d'etre is to solve the problem! Where true rural financial institutions have been treated with benign neglect, they have thrived. Savings in rural credit unions in Cameroon grew at an average rate of 25 percent per year in 1982-87, while the formal banking sector was in trouble (World Bank, 1989). The experiences of 'Banques Populaires" in Rwanda and other rural credit institutions in Benin, Burundi, Cote d'Ivoire, and Togo have been similar. In the Philippines, rural credit markets have developed through sellers of farm implements, most of whom were previously farmers. These credit markets have been very flexible and efficient in meeting farmer needs.

Credit has proven to be an ineffective vehicle for achieving the intended objectives of increasing production or helping small farmers. One major problem is that money is fungible; once lent, it can be (and often is) spent for non-agricultural investment or consumption. This makes credit a poor way of redressing the anti-agricultural bias created by policies that depress output prices; low output prices make returns low on agricultural investment, increasing incentives to divert the funds to other uses. Studies in Mexico, Pakistan, and the Philippines showed that only 25 to 50 percent of loan funds went to increase agricultural investment.

Most of the subsidies are windfalls to large farmers, not small- holders. As with all subsidies to inputs, large farmers benefit most because they use the most inputs. But other characteristics of the credit market work to reinforce the bias against small borrowers. Because there is not enough credit to meet the demand at the low interest rate, the money must be rationed. Making a few

large loans instead of many small ones is a way of minimizing the institution's administrative costs and risks and so is the preferred way of rationing the limited supply (Braverman and Guasch, 1989). From the demand side, the high fixed transactions costs in government-run credit markets make it cheaper for small borrowers to go to the informal market. In Bangladesh, for example, the total effective cost (including transaction and interest costs) for small loans is 146 to 169 percent in the formal market, but only 57 to 86 percent in the informal (Ahmed, 1989). Another cross-country study estimated transaction costs to be up to 245 percent of the official interest rate for small loans, but 3 to 56 percent for large ones (Cuevas, 1988), indicating the seriousness of the bias against small borrowers. In the formal credit market in Bolivia, borrowers must incur costs of 18 percent of the loan amount even before knowing if the loan would be approved, compared to a cost of 8 percent in the informal market (Ladman, 1984).

Making credit cheaper, in addition to draining the treasury, has the unintended consequence of making capital cheaper relative to labor. Predictably, this leads to a shift to less labor-intensive production. One study showed that in India the main effect of the availability of cheap credit was the substitution of purchased inputs and machinery for labor, with only a small impact on output (Binswanger, et. al., 1989). Such changes in production techniques further impoverish rural landless workers, who are the poorest of the poor in most societies.

IV. SUBSIDIZING THE PRESENT WITH THE FUTURE: EFFECTS OF GOVERNMENT POLICIES ON PUBLIC INVESTMENT (OR HOW TO MAKE PORK OUT OF WHITE ELEPHANTS)

Well-designed public investment can complement private investment and contribute greatly to increasing productivity in agriculture and other sectors. Improving infrastructure, doing basic research, disseminating information helps lubricate the economy and aids private agents in maximizing output of the most valuable products and responding flexibly and intelligently to new investment opportunities. But the sad fact is that public investment portfolios have suffered ill effects from periods of both boom and bust.

In the periods when foreign exchange was readily available (from booming commodity exports and external credit), particularly in the 1970s and early 1980s, public investment budgets expanded rapidly along with other government expenditure, and became bloated with unproductive large-scale "white elephants." These provided high visibility for politicians and made good "pork barrel" projects for local constituents, but had poorer rates of return than alternative investments. Sometimes the low rates of return were due to the use by the government of investments to discriminate in favor of certain regions, as in Kenya, where four large projects consumed half of agriculture's development expenditure and crowded out investments in agricultural research, rural physical infrastructure, and human capital. An ex post evaluation of the World Bank's agricultural investments in this period in 6 African countries showed 36 percent (by value) had negative economic rates of return (including 72 percent of the projects in Tanzania), while another 18 percent had positive rates of return less than 10 percent, which is certainly less than the opportunity cost of capital (Lele and Meyers, 1987). (Even this bleak picture probably overstates the value

of the whole investment budget, since projects by the Bank are presumably subjected to more stringent scrutiny than average.) An analysis of Mexico's agricultural investment portfolio in 1986 (even after a considerable degree of retrenchment) showed 26 percent of the projects were uneconomic, with a benefit-cost ratio less than one (World Bank, 1989).

Another unfortunate result of the expansion of public budgets in this period, and a characteristic that would later haunt agricultural investment budgets, was the large and rapidly rising public sector payroll. In Mexico, public employment increased by 700,000, between 1981 and 1984, before reductions began in 1985. As a result of a major push for food self-sufficiency, the Ministry of Agriculture swelled to 152,000 staff, with 22 percent located in Mexico City, far removed from the farm community. In Tanzania in the mid-to-late 1970s, public sector employment was growing at 15-16 percent per year (Lele and Meyers). Much of the growth in payrolls in many countries was concentrated in the parastatals. In Tanzania, 70 percent of public sector employees were working for the parastatals; only 10 percent were involved in providing basic services in the Ministry of Agriculture, in spite of the fact that agriculture accounted for around 52 percent of GDP and 80-85 percent of employment in the early 1980s.

In the 1980s, rising interest payments and declining capital flows forced governments to cut spending. But the expenditure cuts were not made "across the board"--some cuts were politically easier to make than others. Government payrolls were hard to pare down, as were transfers to money-losing parastatals. Consequently, the capital budget got squeezed the hardest. Thus, in a sample

of 24 countries' expenditure cuts from 1974-84,[13] capital expenditures fell by about 28 percent, while subsidies (including transfers to parastatals) fell by only 11 percent and the public sector wage bill by 14 percent (Hicks, 1988). By sector, the steepest declines were in infrastructure (25 percent) and the productive sectors (19 percent), while defense and social sector spending declined by only 7 and 11 percent. Even within the capital budget, infrastructure and the productive sectors declined the most (41 and 42 percent). Thus, investment in these areas was a declining part of the capital budget, which was a declining part of the overall budget, which was itself declining.

Undoubtedly, some relatively unproductive investment projects got cut in this process. But it is also clear that the squeeze hit hard at maintenance and rehabilitation budgets (which always tend to be low priority because of their low visibility) and at many good investments. Cross-country information on exactly what happened to spending on different categories within the agricultural budget is hard to come by. But Mexico's pattern does not seem to be atypical. There, the agricultural budget fell in real terms by 1987 to 26 percent of its level in 1981. In the meantime, only late in the game (1985) was action taken to begin unloading some of the 89 parastatals (most of them a budgetary drain) under the control of the Ministry of Agriculture. Spending on specific programs within the agricultural budget in 1987 as a percentage of 1981 levels was as follows: administration, 28; technical assistance, 21; university, 35; irrigation, 26; rehabilitation, 13; livestock, 19; forestry, 44; research, 41; urban water conduction and storage, 24. Of all categories, rehabilitation was hit the hardest.

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[13] Results were very similar in another smaller sample of countries' cuts between 1979 and 1985.

Venezuela's agricultural budget has also shown a strong bias toward cutting investment (mostly irrigation and rural roads) rather than current spending. There, a budgetary cut of 61 percent in nominal terms between 1987 and 1989 was achieved by reducing investment by 95 percent, while current spending grew by 55 percent (World Bank, 1990). To a very large extent, the cuts in investment were made to continue the subsidies (mainly to fertilizer and credit) and support for public sector financial institutions, which together by 1988 accounted for 55 percent of the agricultural budget. Rural infrastructure expenditures were only 35 percent of amounts budgeted for them. Because of similar patterns throughout the region, agricultural engineers familiar with Latin America estimate that about 70 percent of irrigation schemes suffer from significant deterioration because of lack of maintenance.

CHAPTER 4

R'' EFINING THE ROLE OF GOVERNMENT IN AGRICULTURE

The first three chapters of this monograph have shown how government policy in agriculture has been costly and misdirected both in developed and developing countries. In developed countries, it has cost the world's taxpayers and consumers hundreds of billions of dollars yet has failed to provide low cost food while sustaining farm incomes. Furthermore, it has disrupted world trade and threatens to lead to future divisive trade conflicts that could have ramifications well beyond agriculture. It has enriched larger farmers and agro-industrialists and probably accelerated the replacement of the family farm with large farm businesses. Possibly most important in the long run, it has contributed to the degradation of the environment--through soil erosion, as well as pollution of streams and rivers and ground water. In developing countries, it has impoverished rural people while not providing the food security desired by urban consumers and policymakers. The immense funding that has gone to subsidize fertilizer, credit, and urban consumers should have gone to developing infrastructure and providing education, health and other services for the poor. Instead it has been largely wasted and unfortunately is irrecoverable.

This need not continue. Many governments are dissatisfied with their agricultural policies and the costs that they induce. Multilateral negotiations in the Uruguay Round will hopefully establish once and for all that trade in agricultural commodities should be treated like that of all other commodities and made subject to the full disciplines of the GATT. Unfortunately, to bring agriculture fully into the GATT will be politically difficult. And it cannot be left to industrial countries alone. Developing countries have a role in

bringing this reform about. But it requires changes in how the role of government in agriculture is perceived and how developing countries participate in the GATT.

Redefining the Role of the Government

Many of the unproductive policies described in earlier chapters share a common cause--a tendency by governments in both developing and developed countries to regard any perceived problem as potentially resolvable by taking income from some and giving it to others. This problem is very basic; the issue is far more profound than would be implied by the terms in which policies are usually discussed. It is not enough just to recognize, for example, that all of the interventions described in earlier chapters have costs and acknowledge that they should be subjected to some cost-benefit criteria. Nor it is generally sufficient to eliminate the legal monopoly of a parastatal. The political pressures that generated the detrimental policies or the monopoly power remain in place, largely unchecked. Cost-benefit evaluations can be manipulated (especially when factors such as effects on income distribution, regional development, and self-sufficiency are considered legitimate costs or benefits), and pricing policies of parastatals can create de facto monopolies by driving out the private sector, even if there are no legal barriers to entry. Thus, as long as government actions remain unconstrained by basic changes, the outcomes are not likely to be significantly changed by superficial reforms. What is needed is a re-consideration of the government's proper role in agriculture, with the consequent institutional changes. A solution to the problem requires withdrawal of most government intervention from agricultural markets and recognition of economic rights--for farmers to produce whatever commodities

using efficient technologies they feel will best profit them and sell their products freely at home or abroad; for traders to move goods in the expectations of profits unconstrained by fear of repression; and for consumers to buy foods at the lowest prices, whether from foreign or domestic sources.

BOX 4.1: COW HORMONES: WOE TO THE CONSUMER LEST HE BENEFIT

Cow hormones (bovine somatotropin) offer the potential to substantiating increase milk production. Although some consumer groups contend that the use of hormones has not been adequately tested for potential health effects on humans that drink milk, the Food and Drug Administration has found the milk safe. Nevertheless, the United States No. 1 dairy state has prohibited its use until at least June 1, 1991. The Washington Post (April 28, 1990) states the real reason for the ban: "opponents of the hormone said that the potential 10 to 25 percent increase in milk production and resultant lower milk prices would harm family dairy farms." Of course, it would benefit consumers of milk, but as with most farm programs they must be protected at (almost) any cost from lower prices. Yet, the dairy lobby fears that the falling prices of milk would disrupt the dairy price support program. There are also concerns that, if milk becomes more plentiful, public support for a government program to assure plentiful supplies of milk will decrease.

A re-examination of the government's role in agriculture should start with not only a concept of these rights, but also with recognition that when individuals are allowed to transact freely, the resulting markets work quite well, with a few exceptions. Even in the case of those exceptions, before a decision is taken to intervene, it is necessary to ask whether the government failures are likely to be more serious than the market failures. Though markets have their weaknesses, markets have not resulted in paying farmers to leave idle 60 million acres (as the United States government did), or in letting mountains of butter slowly rot (as the European Community does). Nor would the market send a signal to the farmers of Ethiopia to absolutely avoid storing any of their

surplus grain, or to the farmers of India to drown their crops in too much water, or to the farmers of Brazil to slash and burn rain forests to graze cattle.

The best case for intervention is in activities for which individuals do not absorb the full costs or benefits of their actions, that is, where there are significant externalities. In agriculture, this includes carrying out or sponsoring either basic research or applied research that leads to the development of inputs or techniques that could not (realistically) be patented. Governments all over the world carry out this function, though many extend their research activities into areas where private markets could be expected to work well if given a chance (and do work well in some developed countries), since the resulting products could be patented and privately marketed--hybrid seed, for example, or mechanical production hardware. And, even in research, the need for government intervention may be decreasing. In the United States, private companies already conduct 74 percent of all agriculture research, and the role of private companies is expected to increase as issues like patenting new forms of biotechnology are resolved. While much of the government's research funding is distributed by members of Congress to their constituents, based mainly on political connections and not necessarily merits, private research is directed only at achieving the maximum return on the investment.

Another area in which individuals do not fully absorb the cost of their actions is activities with environmental effects. Farmers that over-use pesticides or fertilizers or that allow their land to erode impose significant costs on fisheries and tourism in some countries, since the runoff poisons or smothers coral reefs, estuaries, and other breeding and juvenile rearing areas; over-pumping of groundwater for irrigation lowers the water table and raises costs for others. So far, the role of government policies in controlling these

problems has been predominantly negative. Policies that underpriced inputs or artificially promoted production have encouraged overuse. And failure to recognize individual property rights in some countries removes a farmer's incentive to invest in anti-erosion farming techniques to ensure the long-term viability of the farm. Governments should reform their policy to put primary emphasis on the goal of preventing environmental degradation. Then the appropriate policies will be taxes (and perhaps subsidies) aimed at assuring that the full costs (and benefits) of the farmer's actions fall on him. In the suggestive language of environmental economics, the tax/subsidy policy would "internalize the externalities." This has already been done in Iowa, one of the United States' largest corn producing states, as the state legislature now imposes penalties on excessive run-offs of fertilizer, pesticide, or erosion from private farmland.

A final area in which agricultural regulations can be justified on the grounds of externalities is health and sanitation. It is usually difficult to trace the source of an epidemic among crops or livestock, and in many countries it would be difficult to collect from the party responsible an amount sufficient to compensate the losers. There is thus legitimate reason to regulate, for example, the import of foreign plants and animals when there is some realistic chance that they might harbor pathogens. Unfortunately, such regulations have often been used as devices to restrict imports to protect domestic production from foreign competition, rather than for their legitimate function; again, a re-orientation of objectives is in order.

In addition, there are a few cases where the absence of an important market or political sensitivities may justify (or necessitate) limited intervention. The importance of food in the budgets of the p or, absence of futures markets

in developing countries, and the high costs of insuring small transactions may mean that it is reasonable to implement well-targeted food subsidies for poor consumers, measures to directly support incomes of poor farmers in ways that do not distort price signals, and measures to keep price instability from imposing real hardship and political instability. None of these policies is without cost, however, and usually the best policies are those that are aimed directly at the root of the problem, rather than the symptoms. For example, two primary reasons for the failure of farmers and agroprocessors to insure themselves in international futures markets may be macroeconomic policies that generate uncertainty as to the level of the real exchange rate and restrictions on trading in foreign currencies.[14] Here, the best policy would be to improve the macroeconomic and exchange rate policies, rather than trying to create an alternative insurance scheme by stabilizing prices.

If a developing country government intends to stabilize prices, (perhaps because the commodity is a basic food staple and a large part of the poor's food basket) the experience of many countries shows that it is crucial that the government pursue this goal in a manner that avoids government control and ownership of the crops. Stabilizing domestic prices by a system of variable border taxes (and possibly subsidies) instead of by direct procurement makes the system transparent and predictable (assuming it operates by well-known rules). This system also minimizes the possibilities for distortion of pricing in the distribution chain (i.e., by regulating processing and distribution

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14 Small farmers in developing countries, of course, would probably not use futures markets directly. But the agroprocessors or other large-scale marketers that buy from many producers could be expected to do so, and would then be able to enter into contracts with the farmers for future delivery of crops at a guaranteed price.

margins). It also eliminates the need for the large staff and costly hardware that are needed to run a procurement program, and so reduces both the possibilities for corruption and the size of the agency's budget. Another lesson of experience is that the system should operate under rules that buffer but do not break the link between domestic and international prices except at times of severe instability. The purpose of stabilization is to insure against risks associated with international commodity price movements. Just as insurance is only taken out to guard against serious risks, so the stabilization system should only be used to reduce the largest price fluctuations. Within a fairly wide band, then, the system should allow domestic prices to move freely, with the variable taxes/subsidies only being used to buffer the effect of very high or very low international prices.

Most developing countries also lack capital markets of a size sufficient to finance rural infrastructure, such as large irrigation projects and roads. Consequently, the government may have to carry out such investments. Even here, however, while the investments must be financed in the first instance by the government, the taxpayers should not necessarily be forced to foot the bill. In most or all irrigation projects and some road projects, the beneficiaries are a clearly identifiable group of users, from whom the costs can be recovered through taxes or user fees.

Unfortunately, as pointed out in Chapter 3, the legitimate roles of government in agriculture--especially investment and research--have often been subordinated to roles for which government has shown little competence such as interventions in markets and price setting. These priorities must be reversed if agricultural growth is to resume. As Box 4-1 points out, there is ample opportunity to do this.

Box 4-2 RESTORING AGRICULTURAL INVESTMENT IN DEVELOPING COUNTRIES: EXPENDITURE-SWITCHING

Adjustment programs aimed at restoring conditions conducive to growth often must be carried out at the same time as macroeconomic stabilization measures. For agriculture, this may mean that agricultural public investment budgets (broadly defined to include expenditure on legitimate public sector activities aimed at enhancing private sector productivity) should be maintained or increased in the midst of overall fiscal austerity. One way to do this is to reduce investment funds going to other sectors, while maintaining or increasing agriculture's. Politically, however, this may be difficult to do when each cabinet minister is scrambling to guard his budget. A more politically palatable alternative may be to reduce agriculture's overall budget, while switching funds to appropriate investments. This, however, raises the question of how much room there is to squeeze other parts of the agricultural budget.

In Mexico, one country where good information is available on expenditures, it is clear that there is a great deal of opportunity to cut other parts of the budget sufficiently to greatly increase the budget for enhancing productivity, and even for improving the "safety net" for the truly needy. The estimated expenditures in 1989 in various categories related to agriculture are presented below:

	Millions US$
Credit and insurance subsidies (not volumes)	1,700
Untargeted food subsidies	1,100
Targeted food subsidies	250
Electricity subsidies	400
Fertilizer subsidies	150
Irrigation operating and maintenance subsidies	100
Public investment in irrigation	250
Research and extension	100
Total	4,050

Out of the total expenditures of $4.5 billion, only $0.35 billion went to growth-enhancing spending (irrigation and research and extension), with another $0.25 billion going to create a safety net with targeted food subsidies (defined as subsidies with some kind of means test to try to assure they go only to the poor). About 85 percent of the spending went to untargeted food and input subsidies. If this part of the budget were cut in half, the budget for irrigation, research and extension, and targeted subsidies could be doubled, while still reducing overall sectoral spending by over 28 percent. It is, however, noteworthy that such decisions could not be taken by the Ministry of Agriculture acting alone, since much of the spending (around 90 percent) is outside of its direct control. Such a program would have to form part of a budget package. But the fact that the package would be expenditure switching among agriculture-related budget categories should make it more feasible than if other budget categories had to be raided to support agricultural investment.

Source: "Identification and Preparation of Sector Operations: Experience from Mexico and Central America," presentation by Hans Binswanger at RUTA-IICA Workshop on Identification and Preparation of Sector Operations, San Jose, Costa Rica, February 23, 1990.

Strengthening GATT and Agricultural Disciplines

In the current international environment, it is unlikely that individual developed or developing nation governments will have the fortitude to unilaterally reform their own agricultural support and trade programs. It is noteworthy that even two strong recent reformers--Mexico and Venezuela--have made relatively little progress in agricultural (especially agricultural trade) policy reform. Politically, it is difficult for one government to fully liberalize its trade in agriculture while a major trading partner continues to subsidize and dump its surplus supplies into international markets, threatening to ruin the farmers of any country that allows these surpluses free entrance into the domestic market. But negotiations of agricultural policies are less difficult at the bilateral level or preferably at the multilateral level. Coordinated reform simply eliminates the rationale for much of the intervention. One U.S. farmer said it best in a recent interview (Washington Post, 1990), "Everybody in the world has farm subsidies and you can lose your shirt to the stroke of a pen...We can't fight someone's foreign ministry, so we need protection." But he stands solidly behind efforts to negotiate freer world markets so he "would be able to compete without worrying about politics."

To have substantial world wide reform take place first requires that the two strongest subsidizers of agriculture--the United States and the European Community--agree to reduce or eliminate their subsidization and protection of

the agricultural sector. In particular, the US has to give up its Section 22 waiver under the GATT and the EC must substantially modify its CAP, specifically by eliminating the use of variable levies and export restitutions (subsidies). In doing this, it must agree that tariffs are the only recognized form of protection strictly allowed in the GATT and these must be bound at low or zero levels. If the US and EC can make such a substantial and complete move on its agricultural policy, the rest of the industrial world will soon follow. Realistically, to make such a concession in policies requires the type of negotiating forum offered by the GATT where the political costs of such reforms can be counter-weighed by the substantial gains in other trade areas, such as in services or intellectual property rights. That is why the Uruguay Round and the Rounds of trade negotiation that may follow it are so important.

BOX 4.3: GATT AND AGRICULTURAL TRADE

The General Agreement on Tariffs and Trade (GATT) sets strict rules on what countries are allowed to do with their trade regimes and with subsidies for all products that are traded. Governments learned long ago that if trade is not governed by international rules, trade wars can erupt whereby each country either dumps their goods at subsidized prices on other countries' domestic markets or erects higher and higher barriers to trade. This is what happened in the 1920s and it helped launch the Great Depression. The GATT is supposed to avoid this possibility by prohibiting certain types of protection (such as quantitative restrictions and some other nontariff barriers, limiting tariffs to negotiated levels, and outlawing export subsidies. In this way trade can be conducted in a largely transparent and fair manner to the benefit of all countries. Also, with each negotiating session (called Rounds), the tariffs can be lowered through the principle of reciprocity, whereby one country reduces tariffs if another country does also. Through the "Most Favored Nation" treatment all countries benefit from these negotiations since each party to the GATT receives the lower negotiated tariff, that is, each country has the right to receive the most favorable tariff for its trade. Discrimination among trading partners is prohibited. So far nearly a hundred countries are members of GATT and are obligated to trade under its rules.

Under the GATT, most trade in manufactures has prospered, with world trade in 1988 almost six times its 1973 level. Yet agricultural trade has floundered

in a morass of protection and export dumping. There has been a gigantic gap between what countries should do under the GATT and what they actually do. Unlike manufactured products, agricultural trade has not been liberalized. More worrisome is that every so often small agricultural trade wars--for example over pasta or poultry--break out between the major trading partners. Like in any war, these small skirmishes could explode into major trade conflicts, even to the extent that they impinge on all trade. This concern has brought the major and even minor agricultural trade transgressors to the bargaining table in Geneva. There is great dissatisfaction with this state of agricultural trade and finally after several attempts in earlier Rounds of trade negotiations, agriculture is being addressed in the current negotiations in the Uruguay Round.

How did this come about? How is it that this very important bloc of trade has been excluded from the rules of international trade? First, it should be understood that the GATT itself does not make any real distinction between agricultural and industrial commodities in applying these rules except in very special circumstances (Box 4.4).

The problem has arisen largely because under threat of United States withdrawal from the GATT because of conflicts between GATT provisions and Section 22 of the Agricultural Adjustment of 1935, the United States was granted a waiver in 1955. The waiver allowed it to use quantitative restrictions on agricultural imports that may interfere with price supports. Such restrictions have been applied to a wide variety of products and are still in effect for dairy products, peanuts, cotton, refined sugar, and sugar-containing products. Others naturally followed--not through the formality of a waiver--but in strict violation of the GATT. The EC widely and purposefully controls imports through the CAP and variable levies. Agriculture is treated differently in the GATT for reasons that have nothing to do with its laws but because of political imperatives--special favors to politically important constituents--and because other countries have permitted it to continue.

But what about the developing countries? Is it not important that they also reform their policies? As Chapter 3 pointed out, agricultural policies in developing countries are also a self-defeating tangle, imposing high costs on farmers, governments and to some extent consumers. But the current Articles of the GATT actually give little incentive for developing countries to go along with world-wide reforms and make substantial changes in their policies. This reluctance is caused in part by the less-than-full obligations under the GATT required of developing countries. Unfortunately the waiver of the full

obligations for developing countries is not a benefit but a cost to developing countries. It makes developing countries less than full members of the GATT and less able to win concessions from their trading partners. It is a situation that must not continue.

Negotiations in the GATT are based upon reciprocity: one country gives a trade concession and receives in turn a trade concession from another. Each party benefits and most importantly all countries receive the trade concession because of the rule of Most Favored Nation. As a result, world trade becomes more liberalized. But the key is the reciprocity--one country giving while the other reciprocates.

BOX 4.4: GATT "RULES" ON AGRICULTURAL TRADE

One of the most important provisions of the GATT is the general prohibition of quantitative restrictions on trade (article XI), with a few exceptions:

- Export restrictions to prevent or relieve food shortages;
- Import restrictions for fish and agricultural products when necessary for enforcing domestic marketing or production restriction programs, or for eliminating temporary surpluses, provided "that the import restriction shall not be such as to reduce the total of imports relative to the total of domestic production"; and
- Import and export restrictions necessary for applying standards to commodities classification, grading, or marketing.

Export subsidies are prohibited on processed but not primary products, though countries are advised only to "seek to avoid" the use of export subsidies on the latter. If such subsidies are used, the Code on Subsidies and Countervailing Duties requires that countries not apply them in a manner that will lead to their acquiring "more than an equitable share of world export trade" or that results in material price undercutting. Domestic subsidies are not prohibited, but the code attempts to regulate the use of domestic subsidies that would adversely affect the trading interests of other countries. The GATT does not deal directly with several common agricultural trade barriers, such as unbound tariffs, variable levies, minimum import prices, and voluntary export restraint agreements.

Source: Ballenger, Doering, and Mervenne

By amendments adopted since the original GATT was negotiated, developing countries have been "relieved" of the reciprocity obligation through Part IV of the GATT. This was supposed to be a concession given in recognition of their less developed status, based on the notion in vogue at the time that import substitution through trade restrictions was the road to development. In fact, this "concession" is a poison and has contributed to developing countries' extremely protectionist policy inclinations. It is now well recognized that integration into the world economy is crucial for development. This requires more open trade regimes in developing countries. But it is also clear that it is politically difficult to lower trade barriers, since the protected parties are often better organized to exert political pressure than are the potential beneficiaries of reform. GATT tacitly recognizes this by treating freer access to other countries' markets as a benefit that a country receives in exchange for incurring the cost of opening its own market. This reciprocity principle creates a constituency for reduction of protection--the potential exporters to counterbalance the protectionist lobby. But by exempting developing countries from such an obligation, GATT has undercut the incentive for governments to adopt trade policy reforms that would be in the best interest of their own countries and the world trading system. Other countries' markets are opened to them whether or not their markets are open to others.

If non-reciprocity were the only loophole for developing countries in the GATT articles it would be bad enough--but it is not. Unfortunately, there are more; in fact, others that are more debilitating to developing countries. One

is a clause that allows protection of infant industries--another reflection of the development theories prevailing when the GATT was negotiated. Unfortunately these industries never grow up and generally have turned into perpetual drains on their economies. But in particular, Article XVIII, clause B is the kiss of death. It allows developing countries to institute whatever protection they wish for balance of payments reasons. This includes even discarding agreements that they may have made in negotiations where they were forced to give reciprocity. And hiding behind Article XVIII B is not a temporary expedient. Some countries have used it for more than forty years! South Korea even tried in 1989 to use it to justify its protection despite balance of payment surpluses in the tens of billions of dollars.

But the damage caused by Article XVIII B goes beyond the deleterious effects of excessive protection of domestic markets and the inefficient industries that this creates. Such an exception means that the agreements that could be won through reciprocity have little meaning if one party--a developing country--can obliterate them at any time by claiming balance of payment problems. It is like signing a contract in disappearing ink. No wonder developing countries are unable to win trade concessions from industrial countries. Developing countries are unable to give binding concessions and as a consequence have nothing to bargain with in the negotiations. They have to come to the Round with their hand out, accepting only the benefits that trickle down through Most Favored Nation treatment. Thus, the protection of industrial countries continues to discriminate disproportionately against commodities of most interest to developing countries--while developing countries strangle their economies behind high trade barriers. It is then not surprising to find that agricultural products which are of particular interest to developing countries are much more

discriminated against in trade than industrial commodities produced by developed countries.

BOX 4.5: THE AGRICULTURAL NEGOTIATIONS IN THE URUGUAY ROUND

The next decade could introduce some of the most profound changes in agricultural policy since the end of the Second World War. For the first time, agricultural policy has been placed on the agenda of the multi-lateral trade negotiations under GATT and some agreements are likely to be reached by the end of 1990. These agreements will most likely prepare the way for a process of reduced subsidization of agriculture by industrial countries and more liberal access to developed countries' markets. The implications of these changes for developing countries could be substantial and their impact could go well beyond all the development assistance to agriculture of the past 40 years (subsidies both direct and indirect are estimated to be over $ 200 billion per year). In other words, the world could be on the brink of profound changes in agricultural policy. Its implications for food importing countries (net food imports in 1984-86 stood at $ 27 billion for these developing countries) and agricultural exporting developing countries (net food exports for these countries was $ 17 billion) could be substantial. And for world agricultural trade in general the effects could be considerable--possibly with effects comparable to the liberalization of manufacturing products that accompanied the earlier Rounds of multi-lateral trade negotiations.

The major issues are direct subsidies for agricultural production, market access, and export subsidies in industrial countries. However, most proposals envision that developing countries would have to comply with any agreements on these issues but on a longer time horizon. In other words, special and differential treatment would not exempt developing countries, only extend the time for compliance.

Although the negotiations are intended to be multilateral, in practice the debate has been primarily between the EC and the United States over specific trade proposals. The Cairns group has been another major third party that has influenced the negotiations. While both the EC and the US agree that reduced subsidization of agriculture is in their own best interest, the extent and the means for achieving this objective are at odds. The EC is apparently willing to reduce subsidization but under a broad aggregate measure that allows flexibility in what programs and commodities are selected for adjustments. The United States wants substantial reduction eventually leading to elimination of subsidies and tariffication of all border measures, including the EC variable levy. Japan, another major player in the negotiations, wants the elimination of export subsidies but the right to support certain crops for food security reasons.

The primary issue that is of concern to many food importing developing countries is the impact on their food import bill. Most global models predict increases in world prices for food as a consequence of full agricultural trade liberalization. However, these estimates are crude and based in many cases on

old data. Furthermore, the liberalization is unlikely to be only partial and over a long period, ten years or more. This does not mean that the impact may be minimal: partial trade liberalization especially in certain commodities could have major impacts on world prices if not accompanied by liberalization in other areas. For example, lack of liberalization in livestock products while support for other commodities is reduced or eliminated could synthetically maintain the demand for feed grains and have a substantial impact on prices for food grains. Unfortunately, the possible implications of partial liberalization outcomes have not as yet been researched.

An additional concern is what will happen to food aid. A large inducement for food aid has been the disposal of excess stocks. If stocks are reduced or eliminated, food aid may drastically decline. The Food Aid Convention by establishing minimum levels of food assistance could be a remedy. A renewed and increased commitment to the Food Aid Convention could help ensure that this form of foreign assistance will not diminish as a result of an Uruguay Round agreement.

What Needs to be Done: The Bargain

The dismal state of agricultural policy in the world cannot be separated from the lack of obligations that developing countries have taken in the GATT. The development of agriculture is important to developing countries for export earnings, poverty alleviation, and employment. It is also widely recognized that industrial development needs the support of a viable agricultural sector. Reform of agricultural policies on a world wide level is then a prerequisite for the sustained growth of many developing countries. To bring about reform requires that agricultural commodities be brought fully into the GATT--that they be treated the same as industrial products. But for this to happen requires the full participation of developing countries in the GATT--that is for developing countries to not only take on the rights of the GATT but its obligations also. Developing countries have made it known that they demand a solution to the agricultural problem for them to accept the results of the Uruguay Round. If they are true to this demand, then the survival of the GATT hangs in the balance.

The conclusion of the Uruguay Round of negotiations thus is an ideal opportunity for a bargain to be struck between the developed and developing countries of the world. The elements of the GATT bargain would be the following: (i) Agricultural trade would be made subject to the full discipline of the GATT by eliminating the waivers and exemptions that have thus far set agricultural commodities apart from other products in their treatment under the GATT. (ii) Developing countries would be brought fully into the GATT, by eliminating their special status that allows them to avoid reciprocity in trade policy reform and to protect infant industries or use quantitative restrictions for balance of payments purposes. (iii) All countries would begin reform of their agricultural policies to reduce the myriad of policy-induced distortions that plague the sector. Policies that would require reform include import restrictions, export subsidies, and dumping of surplus commodities by the OECD countries; as well as subsidies to fertilizer, irrigation and credit which distort trade incentives in both the developed and developing countries.

This kind of bargain would be a major step in reducing the role of government in agriculture back to the core functions that it performs best. It would slow down and eventually reverse the adverse effects that agricultural policies have had on the environment. It would have the immediate benefit of reducing the high fiscal costs of current subsidies. This would contribute in the U.S. to reducing the budget deficit; in the E.C., to reducing the friction over the budget of the Common Market; and in developing countries, to fiscal stabilization and to restoring agricultural investment budgets. For developing countries, undertaking full GATT obligations would lend credibility to trade policy reforms (which many countries are undertaking, in any case, whether or not under the auspices of the GATT) and increase their ability to open other

countries' markets in the negotiations. In particular, it would improve their negotiating leverage in products in which they have a special interest (e.g., tropical and agricultural products) and add more pressure for reform in those areas. With fewer trade distortions in international markets, commodity prices would possibly be significantly higher, and would certainly be far more stable than at present. This would eliminate the raison d'etre of many of the interventions in agricultural product markets by developing country governments, including parastatal involvement in pricing policy and procurement, since these policies are often intended to protect farmers and stabilize prices. (Erzan found that many agricultural trade policy restrictions in developing countries are in response to developed country policies.) The deleterious policies discussed in Chapter 3 could thus be phased out. With fewer market-distorting policies, all countries would find fewer reasons to challenge imports on grounds of dumping or unfair subsidies, and this would reduce agriculture's current role as an important source of friction in trading relationships. On balance, the results of such a bargain would indeed be a re-definition of governments's role in agriculture, increased ectoral efficiency on the national level, and a more smoothly functioning and tightly knit world agricultural trading system.

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