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AGRICULTURE IN A TURBULENT WORLD ECONOMY

PROCEEDINGS
OF THE
NINETEENTH
INTERNATIONAL CONFERENCE
OF AGRICULTURAL ECONOMISTS

Held at Málaga, Spain
26 August–4 September 1985

Edited by
Allen Maunder, Institute of Agricultural Economics, University of
Oxford, England
and
Ulf Renborg, Department of Economics and Statistics,
Swedish University of Agricultural Sciences, Uppsala

INTERNATIONAL ASSOCIATION OF
AGRICULTURAL ECONOMISTS
INSTITUTE OF AGRICULTURAL ECONOMICS
UNIVERSITY OF OXFORD

1986

Gower

JAN DE VEER

*National Agricultural Policies, Surplus Problems and
International Instability*

SURPLUSES AND SHORTAGES

There is a painful contrast between the agricultural surplus production problems of the developed market economies and the protein-calorie malnutrition problems of large groups of the population in many developing countries. It is tempting to link these two problems. A transfer of about 2 per cent of the world's grain production from surplus areas to the malnourished in the developing countries could eliminate malnutrition in the developing countries (World Bank 1980).

However the hunger problem in the developing countries is not a matter of counting calories and proteins that can be solved by logistic measures. It is also not a matter of an insufficient food production potential. Available estimates of the global population supporting capacity indicate a potential to feed a multiple of the present world population.¹

Food shortage in developing countries is not primarily rooted in the insufficient production of food or in physical constraints for the expansion of food production, but is a feature of the general poverty problem and, therefore, more a problem of distribution than of production. Chronic and temporal lacks in the entitlements to food on the level of countries, regions, social groups or individual families due to a chronic low level of income or a temporary fall in income are the main cause of food problems (Sen 1981). An analysis of the connection between the agricultural policies of the developed countries and the food problems of developing countries should, therefore, focus on the impacts of these policies on the economic development and the income distribution in the developing world. However, a characteristic of developing countries is also that agriculture is an important source of income and still more of employment. The majority of the poor people in the developing countries live in the rural areas and, directly or indirectly, depend strongly on agriculture for their living. Particularly in the developing countries, agricultural policy is not only an instrument for the

national agriculture and food policy but also for regulation of the personal and regional income distribution with opposite effects on the low-income groups in the rural and in the urban areas.

The agricultural policies of the developed countries with their extensions of export, food aid and surplus disposal policies are important determinants of the agricultural and food policies of the developing countries. They affect the terms of trade for (potential) exporters of competing products and the political conditions for the national market and price policies of food-importing countries. The agricultural sector is also an integral part of the total economy and agricultural products are an important factor in international trade. The national agricultural policy is, therefore, also strongly connected with economic and monetary developments.

After a discussion of the agricultural policy and particularly the surplus problems of the developed countries and their direct impacts on international trade and agricultural development we shall, therefore, discuss the position of the agricultural sector in the context of the total economy and the impact of international economic and monetary developments on the development of agriculture.

AGRICULTURAL POLICY AND SURPLUS PRODUCTION

Agricultural production in the industrialised countries is expanding steadily whereas domestic demand is stagnating, due to reduced growth rates of population and consumer expenditures and decreasing income elasticities of demand. This has resulted in increasing self-sufficiency and the development of mounting production surpluses. The disposal of these surpluses through subsidised exports or domestic market outlets, the accumulation of stocks and the financing of deficiency payments, premiums on output restriction, etc. cause an increasing financial burden for the national treasuries which increasingly conflicts with the necessity to reduce budget deficits.

Countries with important shares in the world exports of a specific commodity and a correspondingly lower price elasticity of export demand also face a deterioration of their terms of trade resulting in low or even negative marginal export revenues (Meester and Oskam 1983.) Such countries also suffer from the growing self-sufficiency rates of importing countries and particularly by the penetration of their traditional export markets by countries which have turned into exporters to dispose of their surpluses. This adds considerably to existing tensions in international trade relations arising from economic recession, the restructuring of the world economy and monetary imbalances.

The increasing budgetary expenditures and, to a much less extent, international trade considerations force governments and politicians to consider revisions of the current policies. They are generally much less worried about the national social costs which arise from allocation losses in production and consumption and negative terms of trade effects for

agricultural exports. These social costs are much less conspicuous and their exposure requires a rather complicated theoretical and quantitative economic analysis. Generally the social costs are, moreover, small in comparison with the total transfer of income from consumers and taxpayers to the farming sector and in relation to total national income.²

The quantification of the national social costs of the price support policies is generally based on a comparative static and partial analysis of the price effects on supply and demand and results in a recommendation of more market-oriented policies with a preference for direct income payments above price supports as an instrument for income redistribution in favour of the farming sector (see a.o. the Siena Memorandum, 1984). Politicians and governments, however, have to deal with inter-regional (within the EC also interstatal) and intersectoral conflicts of interests and with the 'social actions' of strong pressure groups. A system of direct income payments generally faces a strong opposition from these pressure groups and, certainly in the short run, also does not solve the budgetary problems.

The political solutions, therefore, generally aim at the continuation of price policy as the main instrument for the allocation of income to farmers with supplementary measures to reduce surplus production and to diminish the budgetary expenditures for surplus disposals on external and domestic markets. Such measures include individual quota systems and production thresholds, in combination with levies on the total farm deliveries or excess deliveries, home consumption price schemes, etc. and measures to divert production from surplus products to products with an import surplus. The ultimate effect of these measures is generally a rather modest reduction of the surplus production and a shift of the financial burden from taxpayers to domestic consumers. From the viewpoint of international trade this is an unfavourable development. It must be feared that with the alleviation of the budgetary problems also the preparedness to strive for more discipline in international trade will diminish and that to a greater extent the costs of the policy will be rolled off to less protected producers in the rest of the world.

SOME REMARKS ABOUT PRICE POLICY

The analysis and recommendations of economists with respect to price supports are generally based on a strong 'price fundamentalism' (Krishna 1982 and Evenson 1983). Overproduction and underconsumption are attributed to price distortions; downward price and adjustments are recommended to eliminate or at least reduce these imbalances. Particularly with respect to supply the attention is focused on the comparative static effects with a neglect of possible long-run dynamic effects of prices and of the effects of other policies like research, development and extension policies, irrigation and rural development programmes, investment subsidies, etc.

In actual practice agricultural price policy consists of a range of policies for the direct and indirect support of the prices of the various farm products. There is a great variation in policies depending on the specific characteristics of products and markets (a.o. price flexibility, rate of self-sufficiency, international trade considerations, perishability and seasonality). Because of the interdependencies between the products a lowering of administered prices will work out in a general lowering of all farm prices including the products which are indirectly protected and supported by the price supports of 'base products'.

We have many estimates of single crop responsiveness to price changes but very few on cross-supply-responsiveness and aggregate price elasticities of supply; generally the long run aggregate price elasticities of supply are in the 0.2–0.4 range (Krishna 1982 and Evenson 1983). Compared with the supply shifters (trend variables) and the growth rates of global productivity, crop and milk yields and the total agricultural production, which are generally in the range of 1.5–2 per cent, the aggregate price elasticity is low. The once-over effect of a price reduction of say 20 per cent will be overtaken in only a few years. Price policy, therefore, is rather to be considered as a conditioning factor co-operating with other factors at the inducement of innovations and the creation of conditions which raise land productivity.

The major share of agricultural production (70–80 per cent) in the developed countries is presently produced by a relatively small part of the farms (20–30 per cent). These farms are in many countries sufficiently large to capture most of the economies of scale attainable at the present stage of technological development (e.g. Penn 1981). It is, therefore, true that the price policy above all benefits the bigger and more efficient farms. However, owing to non-farm income, lower indebtedness, less employment of hired labour, etc. the differences in total disposable family income between the larger and smaller farms are surprisingly small (USA: Penn, 1981; Canada: Brinkman, 1981; Japan, Ministry of Agriculture and Forestry 1984; Fed. Rep. of Germany: Krüll 1984 and Netherlands: de Veer 1985). Taking into account the necessary financial reservations for the future of the farm and the family and differences in the number of dependent family members, the differences in the level of family expenditures are even smaller (de Veer 1985). The standard of living of farm families is moreover generally not above that of wage earning families.

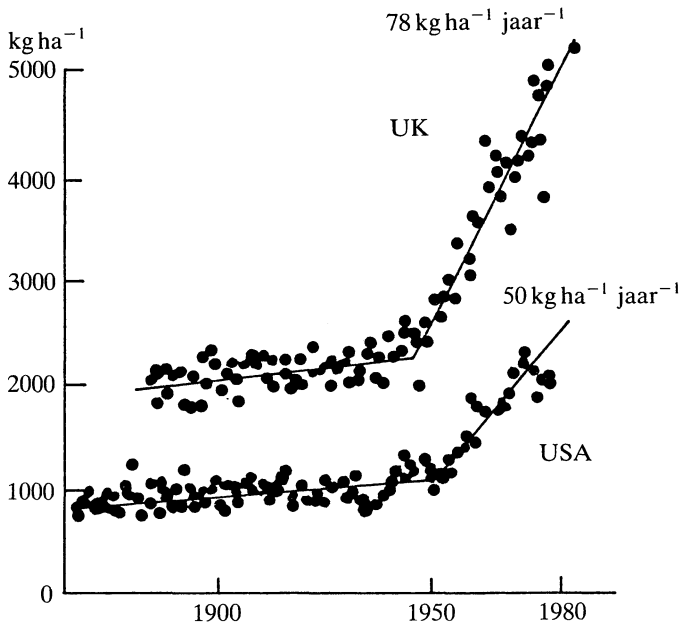
The mechanisation and use of labour-saving farming systems furthermore does not depend directly on farm product prices but on the price ratios between labour and labour-saving equipment. The contribution of farm prices is indirect via the opposite impacts of an increased availability of capital from savings and borrowing and a reduced supply of land from liquidating farms due to the retarding effect on structural adjustment.

As a consequence high farm product prices tend to creep into the value of assets, particularly of agricultural land. However, most of the farm land and other assets is financed by own capital or rented at a low rent, and the imputed interest does not affect disposable farm income. For the

farming sector as a whole high land prices affect mainly the refinancing of the outflow of capital in relation to taking over the assets from outgoing farmers and intergenerational farm transfers. The debt-to-asset-ratios are generally low for the Netherlands – 20 per cent on the average (L. E. I. 1985) – and for the USA on cash grain farms (1974) even less (Penn 1982). Taking into account the income situation of farmers it is difficult to maintain that a vicious circle exists of high product prices–high lands prices–high product prices.

The popular statement that high farm product prices and high land prices stimulate land saving and yield increasing technological development also should be qualified. At the economic optimum farms will extend the use of yield increasing inputs and cultivation practices up to the point where marginal revenues equal marginal costs. That optimum is not directly affected by the level of land prices but depends on the price ratios of outputs and yield increasing inputs.

In modern science-based farming the levels of yields are moreover not very sensitive any more to price; for many of the yield increasing inputs – e.g. fertilizers – further yield increases do not require higher inputs and vice versa (de Wit et al. 1985). The ‘green revolution’ which in the developed countries started in the 1950s may have been supported by favourable product prices, but is not reversible by lowering these prices (see Figure 1).



Source: FAO-handbooks, de Wit 1985.

FIGURE 1 The course of the yield of wheat in kg/ha in the United States and the United Kingdom during the last 100 years

Favourable product prices may have contributed to induce not only the yield increasing technological innovations but also the government policies in the field of rural reconstruction, soil improvement, irrigation, water management, farm development, land reclamation, etc. This, however, is also an irreversible process. As in modern farming bigger farms tend to have a comparative advantage in the acquisition of technical know-how and the application of science; an accelerated structural development may even result in a more rapid diffusion of yield increasing technology, as has been the experience with the expansion of modern dairy farming in Western Europe.

There is little research on the type of adjustments which will take place after a radical lowering of farm product prices. As it must be expected that the impact on the productivity of land and livestock will be small, the adjustment of supply will mainly have to take place by putting out of use marginal land. If this is solely to be performed by the price mechanism, it will be a lengthy process, require a long period of depressed prices and farm incomes and have far-reaching consequences for the regional distribution of agricultural production and the fate of peripheral, agriculturally less favoured and economically less developed regions. Taking also into account the ecological impact, it is unthinkable that such consequences will be socially and politically acceptable.

The introduction of more market-oriented policies will require flanking measures to mitigate the income consequences and to regulate the adjustments of the regional distribution of agricultural production and of agricultural land use which are appended to such a policy.

IMPACTS ON INTERNATIONAL TRADE AND AGRICULTURAL DEVELOPMENT

Part of the social costs of agricultural policies in the industrialised countries are rolled off to other countries through the depressing and destabilising effects on world markets. The agricultural protection resulting in a reduction of the domestic demand and an increase of supply diminishes the export demand for exporters and potential exporters of competing products. These are not only limited in their access to the domestic market of the industrialised countries but also face the competition with subsidised exports of surplus products on other export markets. In particular, less developed countries with a comparative advantage for the development and expansion of the agricultural sector are impeded in the full exploitation of their natural resources and the creation of employment in rural areas, and are deprived of a source of foreign currency.³ These countries are, moreover, generally not in a position to compensate their farmers by interventions on their domestic market at the cost of domestic consumers or taxpayers.

Valdès and Zietz (1980) calculated the total increase of developing country exports if industrial countries reduced their exports by 50 per cent for 99 agricultural products to be \$3.4 billion at 1977 prices or 12.4

per cent of their total agricultural exports in 1975–77. A third of this increase was attributed to a lower level of protection for sugar. Also beef and fruit exports are relatively strongly affected. By their isolation from world markets the industrialised countries also roll off the instability of their domestic supply and demand to the residual world market and do not take their part in the absorption of world market instability. However, actually – and particularly for cereals – the major part of the domestic instability and even part of the external instability in the 1970s have been absorbed by storage, price and quota adjustments or offset by incidental variations (Blom 1982; Josling and Barichello 1984). The USA especially is found to act to stabilise world cereal markets.

Cereal importing countries, therefore, in the second half of the decade could benefit from low and stable world market prices and rely on world markets to cover their fluctuating import needs. Some countries, moreover, acquired food aid or could purchase at concessionary terms. This enabled many countries, particularly in Africa, to conduct cheap food policies in favour of urban consumers. This had a very depressing impact on the development of their domestic food production and contributed to increasing balance of payment deficits and debts. The accumulation of debts and the strong rise of interest rates now require socially painful and politically difficult adjustments (see a.o. Pinstrup Andersen 1984). It can be questioned if the price support, export and food aid policies of the industrialised countries can be held responsible for this situation. However, they certainly created the conditions for a policy which discouraged domestic food producers and frustrated agricultural development.

The agricultural price support policies of the industrialised countries, therefore, presumably have had a negative effect on the development of agriculture and food production in developing countries – not only for food exporters but also for many food importers (see also Linneman et al. 1979).

INTERNATIONAL ECONOMIC INSTABILITIES AND NATIONAL ADJUSTMENT POLICIES

In the 1980s the instability of agricultural world markets and of the international terms of trade for agricultural imports and exports has become increasingly dependent on the overall international economic and monetary instability. These disturbances arise primarily from developments in other markets – including the monetary and capital markets – and the national macroeconomic and monetary adjustment policies to these disturbances.

Under the prevailing system of floating exchange rates there is no mechanism by which national adjustments to world inflation and to changing international terms of trade evolve directly from the impacts on the national internal macroeconomic and monetary equilibrium, domestic prices and sectoral terms of trade. Individual countries can isolate

themselves, and avoid, or at least postpone, the necessary adjustments by letting their exchange rates float.

Because of the development of the international capital market exchange rates are also increasingly dependent on international capital flows and expected returns on capital (Schuh 1983). These expected rates of return in turn depend strongly on the macroeconomic and monetary policies of the economically powerful industrialised countries, particularly the USA. The relationships between international purchasing power parities and exchange rates of national currencies have become weaker. There are also, moreover, important impulses from fluctuations on financial markets (real interest rates, exchange rates, etc.) on commodity prices (Frankel 1984). In particular, the rapid appreciation of the US dollar and the strongly fluctuating dollar exchange rates in combination with the rigidity of the USA's agricultural export prices and the dollar-prices of other basic commodities in the past years have increased the instability of the international (commodity and income) terms of trade, particularly for agricultural importers and exporters. The rather erratic fluctuations in agricultural terms of trade reinforce the tendency to isolate the national agricultural and food sector from world market prices.

There are also, particularly for depreciating countries, short run macroeconomic and monetary policy considerations for such an isolation. Exchange rate adjustments have immediate effects on the terms of trade for the tradable sectors of the economy. These sectors which are exposed to international competition either on export markets or on the domestic market benefit from higher export and import prices after a depreciation and vice versa. A contraction rather than expansion of these exposed sectors is needed to restore the external equilibrium. However, if not followed by appropriate measures to adjust the internal macroeconomic and monetary equilibrium the price changes in the tradable sectors will soon work their way through the entire national economy and offset the primary effect of the exchange rate adjustment. To be effective a depreciation of the national currency should be followed by a deflationary policy or price regulations to achieve a contraction of the non-exposed sectors such as servicing industries and the public sector and an appreciation by an expansion of the non-exposed sector (Corden 1980).

In this macroeconomic and monetary policy framework the agriculture and food sector takes a special position. On the one hand, agricultural goods are tradables and the agriculture and food sector is an exposed sector; on the other hand agricultural prices in most countries are administered prices. A rise in food prices, moreover, has a strong impact on the cost of living – especially of the low-income groups – and on wages. Agricultural goods are both tradables and wage goods. Because of the low short-run price elasticities of supply and demand, price adjustments in the agriculture and food sector also in the short run contribute little to restoring the external equilibrium.

For depreciating countries it is, therefore, attractive in order to suppress inflationary tendencies and to facilitate the internal adjustment process not to raise farm product prices. Such a policy in the first instance also does not face much opposition from the farming sector, which reacts much more strongly on abrupt nominal price changes than on a gradual decline of real prices. In appreciating countries, on the contrary, a nominal price reduction of farm prices, although it would contribute to the internal adjustment, will face a strong opposition of farmers. Also the institutional rules will often not allow a nominal lowering of administered prices in response to an appreciation of the national currency.⁴

In the longer run the isolation of the national agriculture and food sector from both the national general price development and the development of the international terms of trade will raise difficulties. This is especially the case for countries with a tendency to inflate more strongly than their trade partners which regularly have to depreciate in order to restore the external equilibrium. This upward rigidity of agricultural prices has a depressing effect on the agricultural development and results in a deterioration of the agricultural trade balance. Particularly in many developing countries this results in increasing food deficits and a structural deterioration of their balance of payments position. The international debt problems now force such countries to painful adjustments of these policies.⁵

THE AGRICULTURAL SECTOR AS AN INTEGRAL PART OF THE TOTAL NATIONAL AND INTERNATIONAL ECONOMY

It is, of course, a platitude to say that agriculture is an integral part of the total economy. However, both nationally and internationally, the linkages with general economic developments have become more intense. This raises the need to widen the scope of the analysis of agriculture and food policy problems. On the national level the linkages with macroeconomic and monetary development and policies have to be included in the analysis of agriculture and food policy problems. On the international level, not only the linkages between agricultural supply and demand and the national agricultural policies of the various countries but also the interdependencies with respect to the general development of the world economy, world trade, and international capital markets and monetary developments need to be integrated in the analysis.

National agricultural policies affect not only the internal regional, sectoral and personal income distribution and the agricultural balance of trade and the international repercussions are not limited to agricultural world markets. The impacts expand over the whole world trade system and through the balance of payments also have repercussions on the international competitiveness of non-agricultural sectors of the national economies. The further development of global models which integrate these various factors and take proper account of the interdependencies in the world economy can therefore contribute to a better insight

(Linneman et al. 1979; Parikh and Rabár 1984; Gunning, Carrin and Waelbroeck 1984; Burniaux 1984). Agricultural protection and the isolation of domestic markets from world markets therefore also constitute obstacles for the overall world economic development and international trade.

In my opinion, it is, however, an illusion to think that national governments – particularly in the industrialised countries – will be prepared to fully expose their national farming sector to the hazards of the world market and let farm prices and farm incomes go beyond their control. It will not be politically and socially feasible to leave the radical adjustments in farming structures, regional distribution of agricultural production and adjustments in land use completely to the operation of market forces and to accept the consequence of a lengthy period of depressed prices and farm incomes needed to achieve in the end a better balance of agricultural supply and demand in line with the international terms of trade. Such a policy will also conflict with objectives regarding a balanced regional development, protection of rural landscapes, natural resources and ecological macro-systems and the long run development of agriculture. Flanking policies to regulate the adjustments, which are needed anyhow, will be required even if they conflict with the rate at which adjustments take place.

However, the repercussions on international trade relations and the conflicts with national interests of trade partners will also enforce more disciplined behaviour and more regard for the international impacts. The lack of international co-ordination of national policies increasingly threatens the development of international trade and adds to the danger of a wave of protectionism and cut-throat competition with subsidised agricultural exports.

A revision or a sharper application of the GATT rules on agricultural trade imposing more severe restrictions on national price and income support policies with respect to a further decline of agricultural imports and, particularly, the subsidising of agricultural exports and, allowing more penetration of world market price fluctuations on domestic markets seems the highest attainable in the coming international trade negotiations. The recommendations of the GATT's Committee on Trade in Agriculture go in this direction. The disturbances of international terms of trade arising from macroeconomic and monetary instabilities could, however, hamper progress in achieving more co-ordination of agricultural policies and might require additional rules allowing countries to take temporary stabilising measures to protect their farmers.

NOTES

¹For a survey of recent estimates of the global population supporting capacity see Parikh and Rabár, 1981, p. 40.

²For the European Community the gain of a transition to world market prices has been estimated to be approximately 0.40% of total GNP.

³For a discussion of these effects see Lutz and Bale (1980); Mackel et al. (1984) and

Tangermann (1982). Quantitative estimates have been made a.o. by Valdès and Ziets (1980), Koester and Schmitz (1982), Tangermann and Krostitz (1982). For a recent survey see Matthews (1985).

⁴These specific characteristics of the agriculture and food sector can explain the system of border taxes and subsidies – monetary compensation amounts – set up within the European Community during the 1970s to compensate for the impact of exchange rate adjustment on national farm prices.

⁵Also within the European Community the long-run effects on agricultural supply and demand and on the development of intra-community trade have led to the abolition of monetary compensation amounts.

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