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Vol. 25 No. 2  
JUNE 1986

Price R2-00  
(R1-79 +21c GST)



Issued by the Department of Agricultural Economics and Marketing

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# THE ROLE OF THE AGRICULTURAL ECONOMIST IN AGRICULTURAL POLICY

by W.L. NIEUWOUDT  
University of Natal

## INTRODUCTION

When the connection between economic theory and agriculture is investigated it would appear to be closest in the area of policy and the most remote in the case of farm management (Johnson). In contrast, in South Africa the agricultural economist plays a limited advisory role in regard to policy matters.

Owing to the importance of food in the national economy one commonly finds that countries have a policy on agriculture. Technical, sociological and political considerations play a major part in determining the aims of this policy. When oil prices were so high certain Arabian countries encouraged wheat production. According to the advisers concerned with the project it would have been cheaper for them to have imported wheat from Kansas by air.

The task of the economic adviser lies chiefly in the evaluation and formulation of alternative policy measures (Breimyer). The economist does not make policy. Policy is made in Parliament by politicians who accept responsibility at the ballot box.

## FORMULATION OF THE PROBLEMS

In South Africa the emphasis falls mainly on the application and implementation of policies. Very little, if any, attention is given to the evaluation and formulation of policy. Brand refers to the former as the bar function of policy analysis and to the latter as the line function. A clearer distinction could fruitfully be drawn between these two concepts. The field in which the agricultural economist can play the biggest part, namely the evaluation, formulation and exploration of policy, is the most neglected in South Africa.

In the USA the technical knowledge of policy possessed by the academic agricultural economist receives more official recognition and eminent agricultural economists such as Don Paarlberg, Ed Schuh and Bruce Gardner are appointed to the Economic Advisory Council that advises the President on agricultural matters.

A wealth of textbooks and publications on agricultural policy appear each year and it is difficult for officials who are engaged in daily routine tasks to keep up to date. On the other hand the universities have skilled staff whose knowledge can be harnessed on a more continuous basis. The

initiative the South African Agricultural Union has taken in getting together with academics twice a year is most heartening. Information is a limiting production factor and the Department's managers should possibly create similar channels by means of which information on the economic implications of policy can reach top management.

In the past the Department has created the impression that economics is not important in policy making. It is also disquieting that agricultural economists are so poorly represented on the many commissions that investigate conditions in agriculture, especially where the problem is clearly of an economic nature.

The contribution of the agricultural economist to policy formation was very well described by Mr S.P. van Wyk. He maintained that meaningful decision-making depends on a system of management that has the expertise and in-depth knowledge to analyse policy alternatives. It is necessary to move away from *ad hoc* measures. Agriculture in S.A. is too important and policy is too sensitive an instrument not to be supported by the best possible managerial system.

## COMPETITIVE POSITION

When determining policy the goals need to be clearly defined. Although various points of view may be mentioned, the promotion of productivity should enjoy high priority in the long term. In the words of Paarlberg (1980) the task of the economist is "to educate not regulate". State expenditure on agricultural research amounts to recognition that productivity in South African agriculture is a high priority. The question is whether control instruments always promote agricultural productivity.

If productivity is important State expenditure on information (extension service and research) can be rationalised in economic terms because research results are difficult to patent (Bullock). The so-called "public good" argument (Just *et al.* p. 283) proves that a "laissez faire" system results in a sub-optimal investment in research. A "private good" is an item which cannot be reused once it has been used by one user. A "public good" can be used by various users without being used up.

There are many measures in agriculture that act as a brake on productivity. Measures come into existence because well-meaning administrators try to improve the system, little knowing that they are interfering in a very effective market mechanism. It

is time to take a look at these measures from an economic point of view and not from the point of view of administrative control.

In South Africa we have a choice: agriculture can be steered in the European direction, where it is over-controlled, farms are small and production costs high, or in the American direction, where there is less control, farms are big and production is efficient. I understand that, owing to Government intervention, countries like Norway have lost their comparative advantage in the generation of hydro-electric power.

The performance of agriculture in South Africa is impressive. South Africa makes up only four per cent of the area of Africa but owns about 45 per cent of the tractors and uses about 38 per cent of the fertiliser.

South Africa has a rapidly growing population, in contrast to other Western countries. This affords a growing market for its agricultural products. It is therefore important that agriculture maintain its competitive position by promoting productivity.

### POLICY INFORMATION

The U.S. Congress has awarded an annual grant of \$½ million to the Universities of Missouri and Iowa State to evaluate the impacts of agricultural policy measures. The University of Missouri uses a simultaneous equation model to generate policy information. Apparently it cost \$5 million to construct this model. My contribution was to incorporate a risk specification into this model. For instance, using this model I concluded that some stabilisation measures in U.S. agriculture will benefit consumers but could actually harm producers owing to the nature of the demand elasticity (Nieuwoudt *et al.*, 1983).

At present the H.S.R.C. provides financial support for an Agricultural Policy Research Unit at the University of Natal. The purpose of this Unit is to generate information on policy research.

Students in the Policy Unit are encouraged to contact the intended users of their findings, such as the vegetable growers etc. Students are further encouraged to attend the commodity speciality groups of the Natal Agricultural Union because it is felt that often there is a lack of communication between the researcher and the farmer he is supposed to serve. A report on the cane transport scheme was, for instance, submitted to the chairman of the Committee of Inquiry into the Cane Industry.

I would not support the building of policy evaluation models as an ongoing research project. More could be accomplished by looking at specific issues in depth.

### EVALUATION OF POLICY

Different criteria can be used in the evaluation of policy measures. Policy makers are more conscious of the monetary cost of a given measure. The economist also considers the hidden cost, which is known as the social cost. For instance, a quota

programme for milk harms consumers more than it benefits dairy farmers, and tariff protection for the fertiliser suppliers.

The economist is more conscious of the welfare redistributional impacts of a measure, namely who benefits. For instance, if it is desirable that farmers should be made better off and consumers worse off then the most efficient measure would be the one with the lowest social cost ratio per unit of rand transferred (Gardner, 1983).

According to Schultz, if economists merely accommodate governments, they serve only to rationalise what is being done and lose their potential as educators. When this occurs economists become "yes-men" or "ja boers" in the halls of political economy.

The purpose of legislation is to take from those who have less political clout and give to those who have more (Paarlberg, 1980). A policy that might benefit a few farmers and harm millions of consumers would be more difficult to rationalise in a country such as South Africa with its dualistic economy than for instance in Western Europe.

Policy issues are controversial. If meat prices increase in the U.S.A. then the cost of living is said to be going up, in South Africa the culprit is more tangible in the form of the Meat Board. The subsequent section is an attempt to look at a single policy issue and to show how simple economic logic could be applied.

#### Who benefits from quotas (permits)? (Nieuwoudt, 1978)

Quota (permit) programmes are common in some industries in South Africa, i.e. in the beef, wine and wattle industries, while other industries have introduced quotas from time to time.

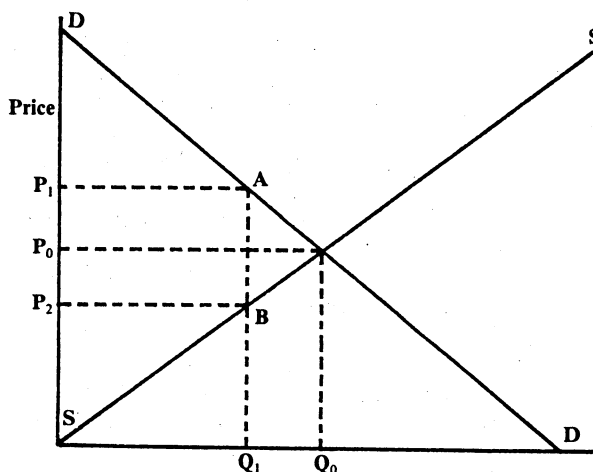


FIGURE 1 - Demand and supply of beef

In figure 1 DD is the demand and SS the supply of beef in South Africa. The free market supply of beef is  $Q_0$  and the free market price is  $P_0$ .

A quote reduces the supply from  $Q_0$  to  $Q_1$  and the price of beef increases from  $P_0$  to  $P_1$ .

In the above diagram the quota value is equal to  $P_1 - P_2$ . The producer who does not qualify for a

quota only receives the price  $P_2$ , which is less than the price he would have received in the absence of the control ( $P_0$ ). The consumer now pays the price  $P_1$ , which is higher than he would have paid in the absence of control.

Beef quotas (permits) are allocated to speculators and farmers by the Meat Board, through its agents. The speculators receive a wind-fall. The farmer who does receive quotas would gain if he could obtain a quota for all his stock.

Quotas (permits) have a monetary value. In the case of beef the value is not visible since quotas cannot be sold (traded). In Natal fresh milk quotas sold for R40 a gallon; in the U.S.A. milk quotas cost as much as the herd and tobacco quotas as much as the land. If beef quotas were made saleable then the Meat Board would realise that these quotas have a market value of say R20 per animal. Effectively, allocating a quota for say 4000 animals to a large speculator would be like writing a cheque for R80 000 in favour of the speculator. The money for this comes from those farmers who do not qualify for quotas because they have no past history of sales on municipal markets, and from consumers.

It must be asked whether the decision-makers understand the economic logic underlying such a scheme and if so do they still support it.

Further, because beef quotas are not transferable (non-saleable) their effect is to shift the supply to the left, as in figure 2. For instance, if a cost survey were carried out on beef production in South Africa, the actual cost figure that would be estimated would be AC whereas the true cost is the distance BC. Intensive feeding of beef may become more common although more costly. The relationship between AC and BC is exaggerated in order to emphasise the point. It is not known whether AC is 1% or 5% higher than BC.

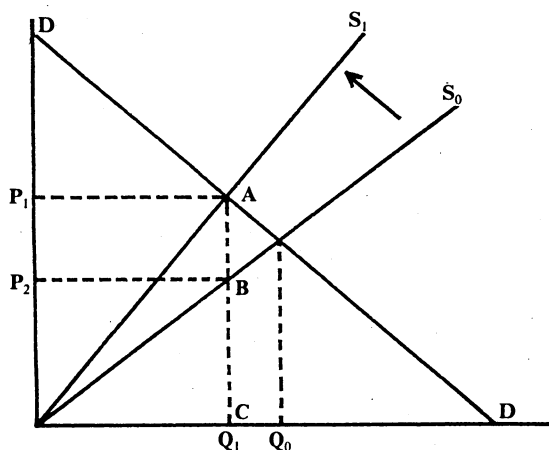


FIGURE 2 - The cost-increasing effect of a quota

The distance AB would vary depending on the season, i.e. whether quotas were readily available or not.

Production costs are important in price policy and the presence of rents would lead to an overestimate of cost if quotas are present that are not transferable (non-saleable). For the same reason, quota rents would be included in cost data for other

industries such as wine, cane etc., which could lead to some overestimation of cost data.

## IRREVERSIBLE DEMAND

The OPEC countries increased their prices by cutting back on production, which is a similar situation to a quota/permit system. In the short run they were highly successful. The U.S.A., however, has switched to smaller cars. For instance, the top of the line at G.M., the Cadillac, is now 4.1 litres compared to an 8 litre machine seven years ago. The same downsizing occurred in regard to all makes. For instance, Ford's top car, the Lincoln is also a 4 litre car. Oil prices, I understand, allowing for inflation, are now at the same level as before OPEC increased their prices. The American public is not going to switch to bigger cars now that oil prices are falling, at least not to the same extent as before. The change in the demand is irreversible.

The same applies to agricultural commodities. Higher fresh milk prices as a result of a pool scheme cause consumers to switch to milk powder. They acquire a taste for it, find that it is convenient and may not switch back if fresh milk becomes competitive. The same may apply to beef, where consumers acquire a taste for chicken.

During times of water scarcity, it has been observed, consumers place a brick in the water tank of their toilets, so that when they are flushed less water is used. When restrictions on water use are lifted the brick is not removed and other conservation measures continue to be adopted (Hogarty and MacKay, 1975).

Farmers may price themselves out of international markets or adopt control measures to reduce exports when world prices are depressed. They may not be able to recapture these markets again during better times, as has happened in the case of cotton, groundnuts and tobacco in the U.S.A. (Paarlberg, 1980).

## PRICE DISTORTIONS

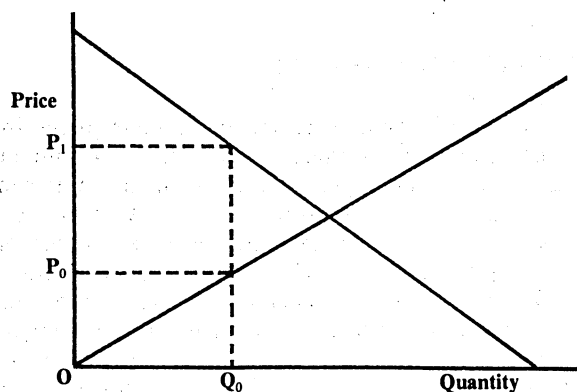
Price distortions cause regions or products to lose their comparative advantage.

Using plant location models, Chadwick demonstrated that the subsidy on sugar-cane transport distorted the optimum allocation to sugar mills. This increases transport costs, which are a major cost component in this industry.

It may be appropriate to review the impact of differential transport rates on agriculture. For instance, how do they affect industry location, employment creation etc.

The ultimate effect of a price distortion could be just the opposite to the intended effect.

For instance, a price ceiling of beef prices ( $P_0$ ), intended to keep food prices down, may lead to a reduction in beef supply after some time has elapsed. The ultimate effect is that prices will increase more (to  $P_1$ ). Efforts to keep input costs down through price regulation may not be effective.



It is possible that income tax concessions lead to bidding up of farm values. In good years farmers do not repay their debt but buy machinery that can be written off against income etc. During adverse climatic conditions these farmers may be in financial difficulties.

Schultz contends that governments in developed countries keep farm prices above market clearing levels, causing surpluses. In developing countries governments keep prices below market clearing levels, which may partly contribute to shortages.

In South Africa control boards are often criticised in the press. For instance, it is asserted that when there is a surplus control boards increase the price. We could rationalise this by saying that the board wants to maximise returns by using price discrimination, but the public will not understand this explanation. Another strategy may be for the board to announce a price cut for a short period. We know that the very short run demand is highly elastic (Shepherd) and that a cut in the price of butter, eggs etc., for a short period (1 week) could deplete the board's stocks in no time. This will switch the storage problem from the farmer to the housewife, who would stock up her deep freeze.

## COMMON PROPERTY PROBLEM

Whereas food production in the commercial agricultural sector has been increasing at a rate of 3,9% a year, food production in the subsistence sector has not been increasing. The policy analyst could approach the problem of low productivity by asking what factors constrain the subsistence farmer and whether these constraints could be removed. Are these farmers receiving the proper market incentives? Livestock production is important in this type of farming but few livestock are slaughtered, and the turnover rate is thus very small. The communal grazing of livestock must contribute to this situation (Crotty). It has also been argued that part of the problem is that livestock are kept as a stock of wealth.

The economic answer to the 'common property' problem is private ownership, but this may not be acceptable to the people concerned. Another solution is a cattle tax. The tax base could be shifted from a

tax on income to a cattle tax. The farmer would be required to pay a tax per animal owned. In effect he would then be paying for the grazing. This could partly solve the problem of overstocking. If taxes are not increased overall then chiefs and cattle owners may accept this system.

Examples of the common property problem in South Africa are the use of our fishery resources, the groundwater table in the Karoo and game management where proper fencing does not exist.

In fishing and hunting regulation effected by means of permits, limits on catches etc. For instance, the management of game in the Lowveld of the Transvaal occurs through permits because the game generally cannot be fenced in and it becomes a common property. Springbok in the Karoo cannot jump the fences and they are consequently private property.

Water tables in some cropping areas in the U.S.A. have been falling, giving cause for concern. The economic answer, as in the grazing situation, is a user charge, a tax on the use of water.

In the above examples, the free market system leads to a sup-optimal solution because property rights cannot be established.

Whenever the private social cost diverges from the public social cost, intervention is justified, for instance, zoning of land for agricultural use may be appropriate (Groenewald, 1973).

Economic interference in the market mechanism can be justified in some cases but as Professor Groenewald contends, more harm is done by interfering than by not interfering.

## RISK (price and production)

Assistance to agriculture is often rationalised as necessary in view of the high risks involved in agriculture.

In the U.S.A., high price supports (target prices) have led to enormous surpluses in recent years. An inflation factor is built into U.S. support prices and when the inflation dropped in recent years, the real price increased correspondingly. In 1983 the government cost of the Payment in Kind Programme, which paid farmers not to produce, was equivalent to the net farm income in the U.S.A. in a normal year. This underlines the point that intervention, even with the best possible information, may cause more problems than it solves. At the time when the U.S. target prices were announced the prices were thought (by Congress) to be too low to have any influence on stability.

The Chief Economic Advisor to the Secretary of Agriculture in the U.S.A., William Leshner, feels that the U.S. should move towards a more market-orientated agricultural policy to ensure that the U.S.A. has the most efficient agricultural sector in the world. There is a feeling that the U.S.A., by cutting back on production as it did in 1983, provided a price umbrella for the rest of the world and that other suppliers filled the vacuum. On the other hand Breimyer, argues that agriculture is inherently unstable and he favours some supply

management. This I believe is very much a minority view.

Disaster assistance to farmers during adverse weather is common in South Africa (1983) and in the U.S.A. There is general sympathy for farmers affected by weather-related disasters since these are beyond their control. In the U.S.A. some areas in Texas, however, have been receiving assistance year after year and the disaster programme has been criticised for encouraging production in risky years. The official view in the U.S.A. now (1983) is that no more disaster payments will be made and that farmers should insure their crops. The present comprehensive crop insurance programme which (includes drought insurance) is financially supported by the U.S. Government. In spite of a 30% subsidy on premiums, only 16% of U.S. acreage is insured. This programme has become a financial headache to the U.S.D.A. Major concerns are high administration costs and low farmer participation.

The criticism has been made that crop insurance programmes have been launched in the U.S.A. after insufficient economic research. The insurer faces an information cost problem since he cannot distinguish between high risk and low risk farmers. It has been stated that crop insurance is only a good buy for the inefficient and high risk farmer (U.S. Congress).

Co-operatives in South Africa interested in embarking on crop insurance would be well advised to acquaint themselves with the complexities of the issue before they make the same mistakes.

In reviewing the agricultural field, one comes to the conclusion that more economic insight is required and a better understanding of the impacts of policy decisions is needed.

## CONCLUSION

Emphasis in the past has been placed on the application and the administration of agricultural policy. The evaluation and formulation of policy have been neglected. Agricultural policy is a sensitive instrument in as much as agricultural policies have ripple effects through the economy. Owing to the importance of agricultural economics and more specifically economic theory, welfare economics and macro economics in policy evaluation, channels should be created by means of which the expertise from academic departments of the agricultural

faculties could be more fully utilised. The final policy decision is made in the political arena but it is paramount that policies should be based on the best possible information. The paper shows, for instance, that current permits in beef production provide a windfall gain to the speculator but harm the cattle farmer who does not qualify for permits.

## REFERENCES

- BRAND, S.S. Policy Management. Proceedings AEASA Congress, Pretoria, 1983
- BREIMYER, H.F. Persoonlike mededeling. University of Missouri, Columbia, 1983
- BULLOCK, J.B. Alternative Approaches to Agricultural Policy. Proceedings of the National Agricultural Policy Symposium. March 27-29, 1983. Published by Department Agric. Econ., University of Missouri
- CHADWICK, G.K. and W.L. NIEUWOUTD. "The Effects of Transport Policies on the South African Sugar Industry". *Agrekon* 22-2 (1983): Pp 25-31
- CROTTY, R. *Cattle economics and development*. Commonwealth Agricultural Bureau, 1980
- GARDNER, Bruce. "Efficient Redistribution through Commodity Markets". *Amer. J. Agric. Econ.*: 65-2 (1983): Pp 225-234
- GROENEWALD, J.A. "The allocation of land among uses - a theoretical view". *Agrekon* 12-3 (1973): Pp 8-16
- HOGARTY, T.F. and R.J. MACKAY. Some Implications of the "new theory of consumer behaviour" for interpreting estimated demand elasticities. *Amer. J. Agric. Econ.* 57: Pp 340-343
- JOHNSON, G.L. "Stress on Production Economics". *Australian J. Agric. Econ.* 7 (1963): Pp 12-26
- JUST, R.E., D.L. HUETH and A. SCHMITZ. *Applied Welfare Economics and Public Policy*. Prentice Hall, Inc. 1982
- LESHER, W.G. "The need to look beyond PIK: Hard realities and tough choices". Proceedings of the Natal Policy Symposium. March 27-29, 1983. Published by University of Missouri, Columbia. Pp 24-34
- NIEUWOUTD, W.L. "Production quotas with specific reference to Meat". *S. African J. Economics* 46-2 (1978): Pp 175-178
- NIEUWOUTD, W.L., S.R. JOHNSON, A.W. WOMACK and J.B. BULLOCK. Measurement of Importance of Risk in Supply Response of Corn and Soybeans. University of Missouri, Columbia, 1983
- PAARLBERG, D. *Farm and Food Policy: Issues of the 1980's*. University of Nebraska Press, 1980
- SCHULTZ, T.W. *Distortions of Agricultural Incentives*. Indiana University Press, 1978
- SHEPHERD, G.S. *Agricultural Price Analysis*, Iowa State Univ. Press, 1963
- U.S. Congress. "Review of Federal Crop Insurance Program". Hearings before the sub-committee on conservation, credit and rural development of the committee on agriculture, 98th Congress, April 20, 1983
- VAN WYK, S.P. Bydrae van die landbou-ekonomies tot die behoeftes van die beleidmaker. Proceedings AEASA Congress, Pretoria, 1983