EFFECTIVENESS AND EFFICIENCY OF EXPERTS : AN EVALUATION OF AGRICULTURAL ECONOMISTS

JA Groenewald
Department of Agricultural Economics, University of Pretoria, Pretoria

ABSTRACT

The main challenge for agricultural economists is effectiveness rather than efficiency. Effectiveness is the channeling of resources and efforts to those endeavours rendering the highest returns. Efficiency is the extent to which it is done well. Agricultural economists should be system directed problem solvers. Failures to clearly recognize interactions between levels or activities in the total system cause expensive problems. Effectiveness requires such recognition aimed at improving human welfare. Grave inequitabilities occur in South African agriculture and food consumption. Production and consumption are both dualistic, without agricultural economists analyzing inequitabilities meaningfully. They have been effective neither in dealing with problems of commercial agriculture nor with the macro environment in a holistic sense, nor with institutions, nor with consumption economics. The already low effectiveness has been further decreased by some tool-oriented research. In South Africa, effectiveness implies more accent on problem-solving analysis: adaptive and maintenance research. Efficiency requires use of appropriate logic, analytical tools and data. It has lately been lowered by overemphasis on so-called elegant analytical tools and simultaneously, neglect in proper data collection. A reorientation is needed in this respect.

SAMEVATTING

Die hoofuitdaging vir landbou-ekonome is eerder effektiwiteit as doeltreffendheid. Effektiwiteit is die kanalisering van bronne en bemoeienis na daardie pogings wat die hoogste opbrengste sal oplewer. Doeltreffendheid is die mate waar toe dit goed gedoen word. Landbou-ekonome behoort sisteemgerigte probleemoplossers te wees. As daarin gefaal word om duidelik die interaksies tussen vlakke of aktiwiteite in die geheelsisteem te erken, veroorsaak dit duur probleme. Effektiwiteit vereis sodanige erkenning gemik op verhoging van menslike welvaaart. Ernstige onbillikhede bestaan in die Suid-Afrikaanse landbou en voedselverbruik. Produksie en ook verbruik is dualisties sonder dat landbou-ekonome onbillikhede betekenisvol ontleed het. Hul was ook nog effektief in die hantering van probleme van die kommersiële landbou, nog van die makro-omgewing holisties gesien, nog van institusies, nog in verbruiksekonomie. Die reeds lae effektiwiteit is verder verminder deur sommige metodiek georiënteerde navorsing. In Suid-Afrika impliseer effektiwiteit meer nadruk op probleemoplossingsanalise: aanpassings- en instandhoudingsnavorsing. Doeltreffendheid verg die gebruik van gepaste logika, analise metodes en gegewens. Dis in onlangse tye verlaag deur die oorbeklemtoning van sogenaamde elegante analisemetodes en tegelykertyd 'n verwaarlosing van behoorlike data-inwinning. 'n Reoriëntering is in hierdie verband nodig.

1. Introduction

The main objective in this paper is a critical evaluation of the contributions of agricultural economists to today's society and its culture, and more specifically South African society. Agricultural economists do not exist for their own sake. They are there to fulfill a specific social purpose and to satisfy specific needs of society, communities and individuals. Agricultural economists have some things in common with managers: They sometimes misconceive themselves as an end and their institutions as means to his end - something which Drucker (1974) labels as a degenerative disease.

The main challenges to agricultural economists and their institutions consist of some interdependent facets which have to be performed simultaneously:

(i) They must define, in clear terms, their mission as it relates to society, the specific community and/or specific individual(s)/ firm(s) served by them.

(ii) This definition of mission should be seen in context of symbiosis with the environment. No society, community, individual or firm is an island on a calm stormless lake. There is interaction among societies, communities, individuals and firms. These interactions are both inward and outward. Static equilibrium, while being a useful analytical tool, does not really occur. The internal and external environments change continuously.

(iii) The holistic type of mission as described above must be pursued by recognizing endegeneous and exogenous developments within and outside the entity involved, and by using appropriate deductive or inductive reasoning, accompanied by appropriate analytical tools.

(iv) The above implies both pro-active and reactive analyses, the former involved with either preventing forced action based on insufficient analysis or with identifying scope and opportunity. Reactive analysis should have as aim to minimize injuries of past mistakes.

The agricultural economist therefore has to consider both the present and the future: the short and the long run. He should aid in rendering the present system effective, and simultaneously in improving it to be better for a better future. He has to identify the limited resources and find ways to optimize the yield from the resources.

There is the ever present temptation to see this as primarily a need for **efficiency**. But this is erroneous. The optimizing approach should, first and most, focus on **effectiveness** (Drucker, 1974). In Agricultural Economics effectiveness will involve production of revenue and utility, improvement in the distribution thereof, creation of markets and social as well as economic improvement in performance of existing markets. The latter may involve profound change.

The question is not how we can do better in what we have done; it is rather effectiveness: how to channel our limited resources into doing that which will maximize socio-economic returns and secondly, efficiency: doing it as well as possible.

The first prerequisite is to ask the right question and then to find good answers. Finding the right answer to the wrong question may be efficient, but certainly not effective. It maybe both efficient and irrelevant.

2. What is the mission?

Kendrick (1975) regards an agricultural economist mainly as a system-directed problem solver. Thus the interactions among constituent parts, actions and events should be part and parcel of the considerations of the agricultural economist. It should be at the core of his operational philosophy. Dent (1975) identifies four levels in agricultural systems:

(i) biochemical and physical systems, eg. nutrient-growth systems in animals and plants;
(ii) plant and animal systems, eg. animal-pasture and crop rotation systems;
(iii) farming systems, including physical biological and financial parameters as well as systems of marketing firms or institutions; and
(iv) national and international systems which envelop industrial and sectoral relationships, supply and demand situations and matters pertaining to wealth, poverty, growth and stagnation.

The main emphasis of agricultural economists will clearly be on the third and fourth levels. Continuous interaction however occurs among the four levels. A lack of clear leadership on the part of agricultural economists resulted, for example in uneconomical high applications of some intermediate inputs (eg. fertilizer and feed); this in its turn, contributed to economically and ecological maladjusted plant and animal systems and therefore also to financially unsound farming systems in the commercial sector which contributed to maladjustments in South Africa's national and international economy. Failure to read and interpret events on the fourth level filtered through to errors on the third, second and first levels.

In order to be effective, the agricultural economist must recognize past developments, he must analyze the present setup, do his diagnosis and develop prescriptions for future action, while continuously monitoring the prognosis of change.

It is the mission of the agricultural economist to contribute meaningfully, through his analyses, advice and leadership to the optimal improvement in human welfare in primary and secondary production, trade, services and consumption at all levels of the system he is involved in. Though, as pointed out by Boulding (1958), his skills mainly lie in the behaviour of commodities rather than in the behaviour of men, it is the human being that occupies the centre of his mission. If he directs his effort to the areas with the highest potential marginal product, he will be effective, if he does it well, he will be efficient.

3. The playing field

It is necessary at this juncture to do a brief analysis of the playing field - the workshop within which human welfare needs to be improved in the South African context.

South African economic development in general, and agricultural development in particular, have been shown to have been highly inequitable over a time span of approximately 350 years. Through their territorial expansion, backed up by superior weaponry and military technology, Whites in South Africa have (as in Australasia and North America) in the 19th century, gained dominion over about all the land and imperium over the indigenous population (Kassier and Groenewald, 1990). Mining development and subsequent industrial growth have benefited White farmers who were able to capitalise on opportunities for commercial agriculture. These opportunities were not available to Black agriculturalists who were confined to homeland areas in which a traditional land tenure system become legally institutionalized and to which much of the basic infrastructure has not been supplied. A long list of legislative actions have been discriminatory and therefore, unfair and inequitable. The acts passed by Parliament relating to land, mostly aimed at racial divisions numbered over 80 (Kassier and Groenewald, 1990). Other acts (eg. the Land Bank Act, 1912; Marketing Act, 1937; Co-operative Societies Act, 1922; Soil Conservation Act, 1946) discriminated in favour of White commercial farmers and contributed to the dualistic nature of agriculture with the Blacks mainly involved in sub-subsistence agriculture.

Although South Africa produces enough food - with a self-sufficiency index of 130 (Van Zyl and Van Rooyen, 1990), many people in the poorer classes - mostly Non-white - have insufficient food, because of low incomes. Poverty can cause someone to starve to death next to a full granary. This problem is severest within the homelands, but also critical in urban areas where 2 million workers' earnings are below supplementary living levels (Wilson and Ramphele, 1989). Sufficient agricultural output has not resulted in satisfactory nutrition. To the extent that prices of some foodstuffs have risen above free market equilibria due to monopolization, one channel schemes, quotas (or permits) and first world type restrictions have agricultural measures - however will intended - contributed to human hardship.

At the same time, commercial agriculture funds itself in the doldrums; marketing policy, macro-economic policy and managerial deficiencies have been contributory causes.

It thus appears that South African agriculture (as agriculture in many countries) has had a long history of ever increasing government intervention and centralization of decision making. Events of the 1980's have proven this to be ineffective, inefficient and inequitable, both in South Africa and elsewhere - as illustrated by the economic and agricultural problems of Africa and Latin America, the Uruguay Round of the GATT and the demise of Eastern European systems.

In South Africa, the situation is particularly serious due to slower than necessary economic growth, dissatisfaction by a large part of the population (predominantly, but not exclusively Blacks) with the existing economic order and uncertainty in the business community about the rules of the economic game (Brand, 1986).

4. Challenges for agricultural economists

Effectiveness and efficiency of agricultural economists will depend on correct (or approximately correct) identification of challenges and the way the challenges are met. The World Bank (1989) ascribes much of African economic woes to poor public sector management that leads to poor investment decisions as well as costly and unreliable infrastructure, price distortions causing inefficient resource allocation, high wages relative to productivity, a scarcity of intermediate technology and deteriorating quality in government. These conditions appear to be endemic in present South Africa. These situations are to be remedied. The private sector should play a bigger role, prices must reflect demand and supply, technology must become more appropriate (reflecting local conditions), policies should be environmentally sound, and tenure systems must be both secure, efficient and equitable (World Bank 1989).

This implies a few tasks: Agricultural economists should be involved in studies on sustainable development both in the ecological and social sense. Opportunities ought ideally be equal for all people - intratemporarily, but also intertemporarily (Batie, 1989).

Equity has in the past received very little attention, even though it is a vital cog in the wheel of human welfare. Agricultural economists have veered away from this concept -partially because it was expedient in the political climate prevailing for many decades, but also because they have not been able to measure either equitability or inequitability in a meaningful way. However, we can know something is "good" or "bad", even if we are not able to measure it (Johnson, 1986).

Considerations of equity as well as the deregulation and privatization embedded in a move away from ineffective and inefficient centralized decision - making immediately implies more system - directed study of institutions. Institutional economics has been largely neglected by South African agricultural economists. In such studies, a commonly encountered error, that of a weak goal orientation (Barkley, 1986) must be avoided.

Institutional economic studies ought to be concerned both with existing institutions (perhaps with emphasis on forms of institutional pathology as set out by Alderson, 1957) and with development of institutions which will optimally serve new needs for a new future.

Consumer problems and urbanization trends also render it increasingly imperative for agricultural economists to shift much attention away from the farm as a production unit toward problems of rural families as units of consumption and once again, to evaluate how institutions serve the needs of people - a call made over twenty years ago with respect to the USA (Bishop, 1967).

South African agricultural economists should furthermore devote more attention to Consumption Economics (urban and rural). Given the extreme diversity in the South African consumers' public, what product mix, prices mix and institutional mix will optimize consumer satisfaction, farmers' revenues and profits in the market place? Also once more reverting to Institutionalism, what should be the shape and extent of competition?

The question of equity also revolves around factors such as land tenure, the difference between property and possession of inputs, equal opportunity, equal (or at least equitable) access to factor and product markets, and equitability in the division of the proceeds of development.

This, off course, should not be treated as being independent of development or growth themselves. Dividing a shrinking *per capita* cake equitably serves no purpose.

An interesting list of structural shortcomings that need adaptation to and/or correction by restructuring is provided by Haasbroek (1990). In includes: shortage of skilled manpower; shortage of production capital; obstacles to small business development; retrogression in exports; interest conflicts; impersonal industrial relations; population development; problems of the lost generation, trade union participation and rising expectations.

It should furthermore be remembered that most problem-related research is of a multi-disciplinary nature. For the sake of effectiveness and efficiency, agricultural economists must cooperate with other physical, biological, economic and social scientists.

5. Effectiveness: The record

Using hindsight, agricultural economists in South Africa have not distinguished themselves in reading and communicating the signs of the times properly and choosing fields of analysis accordingly. Examples abound: Towards the late nineteen seventies, some agricultural economists warned that if observed trends would continue, South African commercial agriculture would face financial collapse. These warnings were unheeded by the rest of the profession and the authorities who were therefore surprised by the fast pace of events, and pushed into forced action in the form of financial relief and the so-called "crop conversion scheme". The "warning" agricultural economists either failed in effective communication or/and the rest of the profession failed in perceiving the problem and being pro-active in the form of analyses on how to cope with forthcoming, predicted problems. To make things worse: even after research results have shown the "crop conversion" scheme to be non-viable (Mostert and Van Zyl, 1989; Minnaar, 1990; De Jager, 1990), there are no real signs of a rethink on its continuation. This all points at ineffectiveness in the deployment and use of agricultural economists by farmers' co-operatives, farmers, banks, control boards and the State.

Similar examples prevail with respect to price support schemes by various control boards, cognicanze of developments on international agricultural markets (inter alia the changed environment regarding agricultural protection and trade), discriminatory and monopolistic actions on the part of private firms, co-operatives and statutory organizations, land tenure arrangements (particularly in the homelands), equitability of access to production factor and product markets, personnel management practices in agriculture, etc.

The impression is gained that a "blinker mentality" has effectively reduced the effectiveness of agricultural economists.

A form of academic or scientific waywardness has contributed to low effectiveness: A predilection of some agricultural economists toward tool-oriented work. In stead of choosing a real, important problem in real life and selecting and/or adapting appropriate research tools to handle this, some institutions and individuals worldwide, and certainly also in South Africa, have chosen research methodologies or tools and sought problems to solve thereby. Some objections to tool-oriented research and analysis are that it is not oriented to industry and policy issues, is overspecialized, involves questionable practice and is not problem oriented, to the point of posing trivial or even nonexistent problems (Hoch, 1984). It certainly has little to commend itself.

Another fault that reduces effectiveness in the agricultural economics profession is the type of academic/scientific snobbery that leads to a predilection for so-called basic research for the sake of disciplinary knowledge.

This research is not necessarily superfluous in South Africa: situations may occur where for various reasons, such knowledge has not been developed to a suitable level for applied researchers to solve some Southern African problems. In the main, however, South African research - as that in every developing country-should largely be concentrated on what is classified as research for problem - solving knowledge (Bonnen, 1986; 1988; Johnson, 1986). This type of research involves two subspecies: Adaptive research, which will adapt new technologies to local natural, economic and social conditions, and maintenance research to defend productivity and ecosystems against the ravages of higher productive capacities. It has been argued convincingly that in smaller countries, particularly those at lower levels of development, problem - solving research should receive the main emphasis (Ruttan, 1982). Thus will appropriate technology develop; thus will agricultural economists become effective.

6. Efficiency considerations

Whereas effectiveness relates to doing the right things, efficiency involves doing it well. This pertains equally to the logic employed in analyses, the models used and the data involved. It involves both empirical and pure reflective research. In cases where data are non-existent and/or impossible to obtain or where effective analytical tools do not yet exist, there is no scope for empirical research. Efficiency will, in those cases, be decreased by adding empirical research to the effort.

Pure reflective, logical observation will, however, in most cases not yield optimal results. A check with real life is needed. Results should be monitored. In the absence of such empirical backups, faults in logic or probably more frequently and serious, in premises are likely often to lead to erroneous results and therefore to inefficient practice by the agricultural economist.

Agricultural Economics has, more than most other economic disciplines, made its reputation as an empirical science (Bonnen, 1988). To be efficient, the agricultural economist must apply the appropriate analytical tools to appropriate data. Failure to do so will not only destroy efficiency but also effectiveness.

Unfortunately fadism has repeatedly plagued agricultural economists in their choice of analytical tools. Examples spring to mind: Least square regression models, simplex linear programming, Monte Carlo simulation, integer linear programming, stochastic dominance, factor analysis, discriminant analysis, etc. The tail has often swung the dog. This form of inefficiency (which is even worse when problems are sought for the sake of using an analytical tool) stems from mental immaturity and is often a symptom of a desire to gain peer adoration irrespective of whether the analysis aids in understanding any problem whatsoever. Unfortunately over elaboration in tool selection has been a form of pathology not even remotely rare in our profession.

A further problem arises from empirical logical procedures. It has become a common practice, since the advent of the computer, to fit many models and then to select the one that seems best. This reverses the scientific method by using statistical analysis to determine hypotheses (Tweeten, 1983). There is a real danger that the profession may be so mesmerized by its ability to handle quantitative techniques, that it looses sight of the important issues (Barkley, 1986). A result is that in the USA, Leamer (1983) has come to the conclusion that "hardly anyone takes anyone else's data analysis seriously" - a statement which seems to be true also in South Africa.

The efficiency of agricultural economists in the USA (Bonnen, 1988) and most certainly in South Africa has been substantially eroded by a cavalier approach to data. This is partially due to the cost and effort to collect primary data from farmers, traders, workers and consumers. Hoch (1984) mentions an aversion to survey data collection. But the mental or academic snobbery related to elegant, refined statistical or mathematical models has also led many agricultural economists astray, and has yielded a false aura of excellence around refined manipulation of third-rate data. Too many have forgotten of the "Garbage In - Garbage out" adage. This has undermined efficiency of agricultural economists.

A raw empiricism has also reduced efficiency. The practice of employing statistical analysis to derive he hypotheses on which they should be based, is a dull (certainly not shining) example.

7. Conclusion

It is not the author's intention to aver that the Agricultural Economics profession has not been useful and that it has not made substantial contributions in South Africa. Such a statement would be patently false and misleading. The profession is now certainly in better shape than one, two or three decades ago. It has also visibly started what can potentially be a useful, effectiveness and efficiency - increasing exercise of introspection.

Yet, there are glaring deficiencies which reduce the effectiveness and efficiency of the agricultural economist. These can and must be rectified. The South African community needs us, irrespective of whether they do have an awareness of this need. The profession should improve its effectiveness and efficiency and thus rise to the occasion.

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