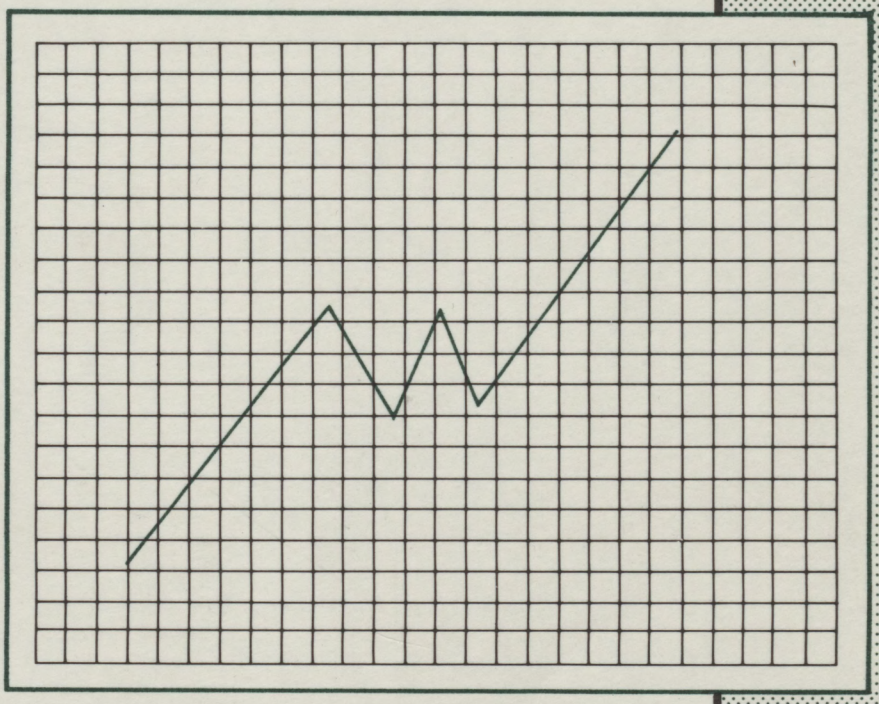

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THE CHALLENGES FOR AGRICULTURAL MANAGEMENT THEORY IN A DUALISTIC ECONOMY

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INTRODUCTION

In accepting the invitation to present a paper on "the challenges for agricultural management theory in a dualistic economy", I had to meet two important requirements, namely:

- to offer you some useful insights, although I left the profession of agricultural economics almost ten years ago; and
- to make a useful theoretical contribution to "agricultural management theory" despite the fact that I never specialised in agricultural management during my years as an agricultural economist.

My overview is therefore of necessity rather the inquisitive prodding of an interested outsider than a penetrating analysis. I intend to use some of the inquiry frameworks of interactive management, social systems thinking and futures studies - i.e. my current fields of *generalisation*. By following the procedures of the generalist, this paper combines diverse insights around a central question: What kind of managerial processes can best serve South African agriculture during the coming years of socio-economic and socio-political transformation?

The presentation is subdivided into the following three sections:

- Firstly, a very brief overview is given of the practice of agricultural economics over the past seventy years and the importance of studies in agricultural management.
- Secondly, broad patterns of change in the world and in South Africa are identified, and the managerial implications of these changes noted.

In conclusion, a few innovations in managerial thinking are identified and some implications for agricultural management practice in South Africa discussed.

THE PRACTICE OF AGRICULTURAL ECONOMICS AND AGRICULTURAL MANAGEMENT OVER THE PAST SEVENTY YEARS

Agricultural management defined

Agricultural management is defined here as a process of planning, decision-making, motivation, co-ordination and control in agriculture which is aimed at specific objectives at the national and farm levels. The concept therefore embraces managerial processes at the national (i.e. agricultural policy management), industrial (i.e. industry management) and farming levels (i.e. farm management).

Agricultural economics defined

Agricultural economics is an applied field of socio-economic studies with specific emphasis on the agricultural sector. Elements of the problems identified by agricultural management studies should therefore form part of agricultural economics. Here the specialised rationale of the rules of equitable and efficient choice in an economic system is of particular importance. Studies in neo-classical economic theory and welfare economics are of importance in the study of the farm enterprises and agricultural policies.

The balance between economic choice and managerial application

There is a logical relationship between choosing between options and being instrumental in implementing the chosen option. The perceived outcome of a decision is produced by the managerial processes of resource acquisition, motivation, co-ordination and control. Therefore, as an applied science, agricultural economics cannot ignore agricultural management. In my view the true value of agricultural economics lies in the effective balance it can attain between the study of economic choice and the study of managerial application in the field of agriculture. Against this background, I shall now touch on aspects of the evolution of agricultural economic studies.

A brief history of agricultural economic studies

The expanding interests of agricultural economists can, *inter alia*, be illustrated by noting how the name of the American Agricultural Economics Association has changed over the past eighty years. It was established in 1910 as the "American Farm Management Association", changed its name for the first time to the "American Farm Economics Association" in 1919, and changed again for the second time in the 1960s to its current name. It is interesting to note the broad spectrum of interests that was covered by earlier studies in agricultural economics. The bibliography of a 1925 textbook by the well-known agricultural economist Henry C. Taylor (1925) discusses and lists references in agricultural economics, farm management, economic theory, co-operation studies, credit economics and marketing and rural sociology. Some of the references which were considered at that time to be

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directly relevant to agricultural economists date back to 1883.

Some examples are:

- Adams, E F, 1899. *The modern farmer and his business relations* San Francisco: N J Stone.
- Adams R L, 1921. *Farm management.* New York: McGraw-Hill.
- Card F W, 1907. *Farm management.* New York: Doubleday, Page and Co.
- Corver T M, 1911. *Principles of rural economics.* Boston: Ginn & Co.
- Gouzier E, 1920. *Economic rural.* Paris: Librairie J-B Bailliere et fils.
- Plunkett, Sir Horace C, 1912. *The rural life problem of the United States.* New York: Macmillan.
- Walker F A, 1883. *Land and its rent.* Boston. Little, Brown and Co.

Taylor (1925:vii) stated the objective of his book as: "Better farm management, better marketing, better land tenure and a better distribution of wealth which will give the farmer a fairer share of the national income as a basis of a satisfactory life, and the nation a better agriculture and a better rural population as the basis of our national life..." Even today this could serve as a sound mission statement for agricultural economics practice.

Taylor also quotes at length from a book by the French writer Gouzier (see the previous listing of books). Gouzier emphasised the relational dimension of the word "economics", i.e. "...laws, or rules of the household, ...the manner of *regulating the relation* of the different elements composing the resources of the household, whether it be their relations to each other or to the members of the household, in order to insure *the greatest prosperity of the family*" (Taylor, 1925:5). I emphasised sections of this quote, because they touch on one fundamental aspect of modern management thinking. The relevant relations as identified by Gouzier were:

- relations of contact between farming enterprises;
- relations of activity between different means;
- relations between means and product;
- commercial relations.

The study of agricultural economics since the 1920s probably followed the usual cybernetic course of modern scientific progress, namely innovation out of need evolves into innovation from capability. For example, the needs of the Second World War produced innovations in operational studies and computing technologies. The capabilities created by these new technologies stimulated developments in the application of matrix algebra and quantitative techniques in economic and management studies.

When we apply this interplay between needs and capabilities in the evolution of science to the evolution of agricultural economics and agricultural management, some useful insights emerge. The need for agricultural economics, especially in the agricultures of the New World (e.g. USA, Canada, Australia and South Africa) shifted with patterns of spatial settlement, with patterns of economic development and with the emerging structural shortcomings of the "developmental squeeze" (Owen, 1966) on agriculture. During the earlier decades of this century, a larger percentage of the total population of these countries lived in rural areas and was dependent on the general economic health of the agricultural sector. Earlier developments in agricultural economics therefore emphasised studies in farm management (with a strong emphasis on financial management) and broader national socio-economic studies (cf. Taylor 1925; Dunmeier & Heflebower, 1940). Superimposed on this were studies aimed at specific subject areas, such as the co-operative movement, farm credit, land tenure and the consequences of the Great Depression for the farming community. The price and income instabilities in the farming sector that became obvious during the 1920s and 1930s stimulated research and theoretical development on the subjects of agricultural organisation, control and price and income policy in agriculture (Hardin, 1956; Schultz, 1952).

Post-Second World War developments

Subsequent to the Second World War, and associated with the dichotomies that evolved on the global development scene, two concurrent issues of great importance for agricultural economists emerged, namely the issue of structural adaptation in modern agriculture (in contrast to cyclical instability) (Heady, 1962; Johnson, 1973; Schultz, 1953) and the problems of stagnation in traditional agriculture (Eicher & Witt, 1964; Wharton, 1970). Professional interest in farm management studies declined somewhat during this period - albeit because of certain "fashionable" developments in agricultural economics that also emerged during the post-World War II years. A brief detour is necessary in order to explain this statement.

A critique on being "fashionable" in science

It is perhaps unfair to label some of the developments in agricultural economic studies during the post-war years as "fashionable". It is clearly the responsibility of a scientist to test the waters of new theories and new methodologies in order to assess the useful practical applications that can flow from them. It is nevertheless important not to lose touch with the primary responsibility of an applied scientist, namely to practise science in praxis. An academic debate is only useful within this context if it can provide a shorter route to implementable processes in real world situations.

In my view this process was introduced by the very important work by Earl Heady with the title "Economics of agricultural production and resource use" (Heady, 1952). Even today Heady's "blue book" is a very useful reference on a variety of subjects in agricultural production economics, agricultural decision-making, planning and agricultural policy. But such is the seductiveness of scientific elegance that it can seduce a whole profession into a philosophical debate that can take them further away from their primary responsibilities.

The intellectual challenge of quantitative economics, of production functioning analysis and of operations research brought its own rewards (see for example Heady & Candler, 1958; Heady & Dillon, 1960; Heady, 1971; Martin, 1977). These rewards were largely academic, and their practical value lay mainly in the increased discipline and sophistication brought to the professional thinking of agricultural economists. Without any doubt, such intellectual discipline enhanced their academic status, and increased the *potential* contribution that agricultural economists can make. It is, however, important to note that the increase in potential was almost exclusively in the study of economic choice, largely at the expense of the study of the behavioural dimensions of managerial application.

I can remember that in 1969, while I was a postgraduate student at Iowa State University, my principal professor, John F Timmons, called me into his office in order to discuss the trend of progressively more Ph.D candidates registering for economics, while registrations for agricultural economics were declining. At that time postgraduate interest in agricultural management studies had all but disappeared at some of the leading agricultural economics institutions of the USA, such as the Cornell Campus of New York State University, the Davis Campus of the University of California, Iowa State University and Michigan State University, while at others, such as Purdue University, it had developed a distinct quantitative character. Universities such as the University of Illinois, which actively promoted the behaviourist dimensions of agricultural management studies, were viewed by "progressive" agricultural economists as being somewhat behind the times.

The expanding interests of agricultural economists

On the other hand, greater intellectual discipline in the study of economic choice in agriculture brought great advances to the macro sphere of agricultural economics practice, such as a price and income analysis (Fox, 1951; Nerlove, 1956; Waugh, 1965; Shepherd & Futrell, 1969), policy analysis (Heady, 1962; Paarlberg, 1964; Johnson, 1973) and, what is also of importance, better integrated agricultural economic textbooks for undergraduate studies (Ritson, 1978). These are all signs of increased sophistication and an ability to synthesise complex insights into simple explanations. In recent years there also appear to have been very useful developments in farm management studies, i.e. when earlier works on the subject (Bradford & Johnson, 1953; FAO, 1958) are compared with some more recent works (Rae, 1977; Boehlje & Eidman, 1984). In addition, specific fields of study within agricultural management, such as agricultural finance (Nelson & Murray, 1967), time and motion studies (Fraser & Lugg, 1962) and co-operative business studies (Abrahamsen, 1967), also received specialised attention.

The increased capabilities of agricultural economists in the analysis of economic choice also presented new opportunities in related study areas such as development economics (for example Mellor, 1967; Gittinger, 1972) and land resource economics planning (Barlow, 1978; Gibson, 1966). Traditionally, agricultural economists received training in the natural sciences, business sciences and economics. This multi-disciplinary background sensitised agricultural economists to the systems inter-relatedness of socio-economic and natural processes in environmental economics, cost-benefit analysis, agrarian economics and a host of similar areas of applied economics.

PATTERNS OF CHANGE AND THEIR IMPLICATIONS FOR STUDIES IN AGRICULTURAL ECONOMICS AND AGRICULTURAL MANAGEMENT

Patterns of change in the less developed world

I noted earlier the growing dichotomy in world development. Most of the world's population growth occurs in those countries that are least able to provide for more people. The poorer (less developed) countries of the world account for 77 per cent of the world's population and approximately 19 per cent of the world's production. The gross per capita national product in these countries is on average thirteen times lower than in the developed regions. The total population of these regions is likely to increase from 3 700 million in 1985, i.e. 77 per cent of the world population, to 4 900 in the year 2000, i.e. 80 per cent of the world population, to 6 800 million in 2025, i.e. 83 per cent of the world population (United Nations, 1986). The most rapid population growth is taking place in Africa; by far the poorest of the poorer regions of the world. According to projections, Africa's population will increase from 550 million in 1985 (11,5 per cent of the world population) to 1 600 million in 2025 (20 per cent of the world population).

These poorer countries are generally beset with problems of institutional maladjustment, political maladjustment, illiteracy, technological and infrastructural shortcomings, aspirational constraints and a general lack of economic and personal resources that could help them break through the vicious circle of poverty and underdevelopment. As a consequence, there is a high propensity in these countries to overexploit their natural resources and, when conditions of land depletion force them out, to migrate in droves to larger urban concentrations. The rates of urban growth are therefore highest in these areas - on average 5,3 per cent per annum in Africa (United Nations, 1986). The percentage of the African population living in urban areas is expected to increase from 29 per cent in 1980 (135 million people), to 43 per cent by the year 2000 (362 million people) and to 59 per cent by 2025 (904 million people).

Within a Third World context, urbanisation represents a flight from rural destruction to urban misery. To reiterate, the inability of traditional societies to stabilise the natural socio-economic systems in rural areas, and thus to turn the process of systematic rural impoverishment around, is the

result of inappropriate institutions, inappropriate technologies, inappropriate aspirations and inappropriate capabilities. The professional qualities of a rural developmental specialist should, therefore, include not only a clear understanding of the processes that produce systematic degradation, and an advanced proficiency in analytical and planning methodologies, but also, above all, the ability to manage the processes involved in change creatively and effectively. It is not sufficient to identify problems and to design developmental strategies. The most difficult challenge in the process of change is to provide leadership and managerial capabilities that can activate whole communities towards self-improvement. The managerial capabilities will, by their very nature, have to focus on the application of some of the latest thinking on organisational and community renewal (Ackoff, 1981; Gharajedaghi, 1986, Huntington, 1973; Quinn, 1980).

Patterns of change in the industrialised world

While the less developed world begets children and poverty, the industrialised nations experience ongoing economic growth and a downward trend in population growth. For example, the average annual rate of population growth in the less developed world is 2,25 per cent and that of the more developed world 0,99 per cent. The proportionate contributions of the agricultural sector to the economies of these countries, both in terms of employment and in terms of contribution to the national product, declined with time until they are generally less than 10 per cent of the total in almost all industrialised countries at present. The farming communities in these countries were caught in a so-called double developmental squeeze (Owen, 1966) of increased production and relatively stagnant markets. The ability of modern industrialised agriculture to increase production outstripped the ability of the market to clear the products. Governments actively promoted agricultural production by means of their support for research and development, and instituted various forms of price and income policies in order to support farm incomes. As a consequence, world agricultural production and marketing systems became totally warped with the passing of time (Johnson, 1973). Agricultural surpluses increased in industrialised countries, but the needy in the less developed world could not afford to pay the market clearing prices that are required to support the high cost of production systems in industrialised agriculture. Understandably, the agricultural surplus problems of the industrialised countries present agricultural economists with stimulating problems of administration, control and policy-making.

South African transformations

The developmental pattern in South Africa reflected the growing dichotomy of world development up to the early 1980s. During this process the core of the South African economy was the main focus of agricultural and industrial development. The institutions and structures that were established in South Africa closely followed the international experience (especially that of the developed New World). The Division of Agricultural Economics and Marketing which was established in the late 1920s followed the example of other overseas institutions such as the Bureau of Agricultural Economics of the USA, which was established in 1922. Governmental initiatives to promote agricultural science (in order to "grow two blades of grass where one grow before"), the development of agricultural co-operatives, farm credit schemes, soil conservation and, during the 1930s, the institutionalisation of agricultural control and marketing schemes, created a professional environment for agricultural economists in South Africa which had a strong influence on their activities until well into the 1970s.

Some of the earliest activities of agricultural economists focused on the development of a sound statistical service for policy-making purposes, and this sector is today favoured with a better centralised statistical service than is available to other sectors of the South African economy.

Other major activities of agricultural economists included production cost studies (especially to support control schemes) and the very valuable agro-economic surveys of the 1940s, which promoted a consciousness of the inter-relatedness of socio-cultural, economic and physical systems in the thinking of agricultural economists of the time.

The capabilities created by these studies in turn motivated a stronger interest in providing a farm management support service in the form of farm records and bookkeeping systems for farmers. Certain officers of the Division of Economics and Markets (and the Division of Production Economics), such as S.J.J. de Swardt, S.P. van Wyk, J.K. Siertsema, H.S. Hattingh & I. Nemeth, contributed to this process, and helped during the 1950s and 1960s to sensitise a generation of young agricultural economists to the need for providing a management support service for farmers.

An important development during the 1950s initiated an alternative route towards professional growth for South Arican agricultural economists. The appointment of Prof. F.R. Tomlinson as the chairman of an official commission of inquiry into the socio-economic situation in black reserves (later to be called "homelands") introduced the problem of "underdevelopment" to the South African population in general, and agricultural economists in particular. Agricultural economists played a major role on this commission, which was headed by a leading agricultural economist. The report itself displayed the propensity for multi-disciplinary and systems thinking that was part of the intellectual constitution of the agricultural economists of the time. It is a pity that the prerogatives of the time nullified the results, and that the government only gradually, almost by default, started to implement some of the proposals of the report during the 1960s.

The Tomlinson Commission was without doubt a major contribution to development thinking in the world at the time. However, the principal authors were given the cold shoulder by the politicians. It took the profession of agricultural economics almost 20 years to come out of the cold and to contribute actively towards development studies. Granted,

certain governmental initiatives during the 1960s, such as the establishment of corporations, channelled greater attention to problems of underdevelopment in South Africa. However, these initiatives were often designed around administrative and political/ideological programmes, with definite developmental objectives receiving residual attention. Within this process "development" was often perceived to be more of a design-and-construct process than a process of human development.

The South African development scene started to change during the mid 1970s, and some important structural limitations became more apparent during the 1980s. The intermeshed South African *problematique* of political instability, declining white population growth, rapid increases in the black population, high rates of black urbanisation since the middle of the 1980s (an average of 900 000 per annum), rising aspirations, low rates of economic growth (an average of 2,0 per cent per annum growth in GDP in the 1980s compared to 5,8 per cent in the 1960s) and increasing unemployment created a totally different environment for agricultural enterprises (Spies, 1987). Some of the business implications arising from these conditions are upward pressure on interest rates, high rates of inflation, balance of payments restrictions that may influence the long-term availability of agricultural production factors and a downward trend in the exchange rate value of the Rand.

It is important to note that these trends are of a *structural and not a cyclical* nature. In other words, they can be turned around only after important structural adjustments in the economy have been successfully implemented. It is, moreover, unlikely that such restructuring can be produced by centralised governmental actions *per se*. The reconstruction of the South African economy represents a challenge in micro-economic restructuring rather than macro-economic planning and policy-making. In this process there is an important role for the type of agricultural management specialist who can provide a support service in the design of appropriate agricultural systems, with relation to inflation, accounting, manpower development, motivational strategies and business strategy. Similarly, in the case of the black rural areas, the most important challenge is to develop a network of agricultural management advisors - perhaps by means of special training schemes for informal leaders - and by designing a cascading process of management extension in selected regions. The importance of infrastructural and institutional development is not disputed. However, the best environment for development cannot support progress when there is a lack of appropriate aspirations and capabilities in communities.

CONCLUSION

Participative management: Influence, not control

One of the most interesting developments in management thinking in recent years is the growing emphasis on participative management processes and the design of self-motivation in management control systems. Concepts such as "quality circles", "community" and "interactive management" in management literature (Ackoff, 1981, Lippitt, 1982), point towards greater emphasis on the study of behavioural processes in business management. The rediscovery of entrepreneurship and leadership in enterprise systems is another pointer through emphasis on a specific style of leadership (Bennis & Nanus, 1985). The new leader is a teacher who empowers people, and aligns them around a common purpose.

The importance of planning: A new emphasis

An associated development is a new perspective on the planning function: the plan is not the most important result of planning - the learning experience during planning is more important. This approach emphasises the need for participation in planning.

These developments in management thinking highlight an aspect of agricultural economic practice that was mentioned earlier in this paper, i.e. the need for agricultural economists to match their capabilities in analysing economic choice with the managerial capabilities of application and implementation.

The need for cost-effectiveness

Finally, I agree with Mix (1987), who stated in a recent article that a fundamental shift has occurred in the practical need for farm management advice over the past twenty years. Mix analysed the situation in the United Kingdom and concluded that, owing to the decline in economic conditions in agriculture, there is a growing need to focus more closely on various aspects of financial management (especially inflation accounting) and cost control. Moreover, in order to be more cost-effective it is often necessary for farmers to be especially aware of technological options. Effective technical management could become even more important for South African farmers over the coming year in view of the cost pressures on existing productions systems. It is therefore imperative for farm management specialists to receive a sound academic education in the agricultural sciences.

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