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Agricultural Economics, 2 (1988) 335-343
Elsevier Science Publishers B.V., Amsterdam — Printed in The Netherlands

A Note on Private Farm Management Consulting Services: The Case of Argentina

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(Accepted 9 August 1988)

Abstract

Gallacher, M., 1988. A note on private farm management consulting services: the case of Argentina. *Agric. Econ.*, 2: 335-343.

The paper discusses the evolution and perspectives of private farm management consulting in Argentina. In the first part, recent developments in consulting services are presented. Because of its importance, particular emphasis is placed in the evolution of consulting work done in the framework of the CREA (Consorcios Regionales de Experimentación Agricola) association of farm producers. Rough estimates show that: (a) private consulting represents 10-15% of total manpower devoted to direct farmer advice, and (b) demand for consulting work has grown considerably faster in areas where farms have mixed (crop-livestock) production systems.

The possible incentives for farmers hiring consulting services are summarized. The widespread (in Argentina) opinion that consultants allow higher yields from a given input mix is not fully supported by the empirical data presented in this paper: there is evidence that yield differences found on farms are caused not only by the presence or absence of consultants but also (and perhaps primarily) by differences in land quality. The fact that the average farmer may be (at least on a yield basis) as efficient as the 'top' farmers should be further studied, as it has important implications from a policy point of view.

Introduction

Argentinian agriculture experienced considerable changes since the mid-1960's. Total grain production more than doubled and the primarily cereal-based crop production mix shifted to include higher-value crops such as sunflower and soybeans. Most of these changes placed considerable stress on decision-making at the farm level.

The subject of private consulting services in agriculture is important because: (a) it is evidence of a 'revealed preference' for information gathering and analysis, and (b) it can contribute to explaining aspects related to differentials in technology adoption and firm growth. In U.S. agriculture, for ex-

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ample, semi-private consulting services are relatively widespread: 8000+ farmers participate in the Illinois farm management association, while Iowa, Kentucky, Virginia and other states also show considerable farmer membership in cooperative record keeping and 'consulting' (Gallacher, 1980). Private consulting in the U.S., however, is more commonly used for specific (rather than 'whole-farm') production problems such as pest control or fertilizer use.

The objective of this paper is to describe the recent evolution and perspectives of private farm management consulting in Argentina. The discussion is organized as follows. The next section provides a general overview of agricultural production and consulting in Argentina, with particular emphasis placed on consulting done for the CREA (Consorcio Regional de Experimentación Agrícola) association of farm producers. Section 2 contains some reflections on the nature of the market for consulting services. In Section 3 the main implications are summarized.

1. Background: Farm production systems/CREA Groups

The main agricultural area of the country (the 'pampas') is a temperate, 50 million ha region of flat to gently rolling and treeless region. It accounts for more than 90% of the total grain production. Wheat, corn, sorghum, soybeans and sunflower are the most important crops. More than 60% of the available land, however, is allocated to beef production based on natural or sown pastures. Most production systems include both crops and livestock. With the exception of irigation and extensive fertilizer use, production technology is similar to that found in the U.S.A., Canada or Australia. Argentine farmers, however, have faced considerable uncertainty related to: (a) fluctuating exchange rates, (b) high and variable export taxes, and (c) high inflation.

Profitable technologies have been adopted fairly rapidly. Hybrid corn reached 80% adoption within 10–12 years as compared to the 8–9 years reported for Iowa (Griliches, 1957). 'Green Revolution' wheat varieties and hybrid sunflower were adopted considerably faster. The latter became commercially available in the mid 70's and was fully adopted by the end of the decade. Input/output price ratios have generally been higher in Argentina than in other countries: e.g. 8–10 kg of wheat has been needed to purchase a kilogram of nitrogen, vs. 2–3 in the U.S.A. Excepting labor, the same pattern can be found for other inputs used in crop production (Cirio et al., 1981).

Different types of professional services have acted as catalysts in technology transfer. These can be classified as follows: (a) state-financed extension, (b) extension financed by cooperatives, (c) professional advice financed by input suppliers and output (particularly milk) buyers, (d) private farm management, and (e) private consulting. The distinction between professional farm management and professional consulting relates to the fact that consultants do not 'manage', they are normally self-employed professionals whose main

function is to act in information gathering, analysis and advice. They are paid, in fact, for the information inputs they supply to the firm. Their cost, moreover, (as opposed to the other types of services) is paid directly by the client.

Accurate data on the relative importance of the different services mentioned above is lacking. Some tentative figures show 700 state-financed extension workers and 400 cooperative advisors. Active consultants probably number 200–250[1]. The 240 000 farms in the pampean region (SEAG, 1977) are a measure of the clientele towards which these services are geared. Private farm consulting in Argentina, on the other hand, has developed in close association with the CREA (Consorcios Regionales de Experimentación Agrícola) association of farm producers: these probably account for 60–70% of the total demand for 'consulting man-hours'. The analysis of consulting activities within this association, then, provides a convenient proxy for understanding consulting services on a country-wide basis.

CREA was founded as a result of a meeting between a small group of farmers in 1957. The basic objective was to develop a "group of intellectual cooperation to find solutions based on the interchange of experience and knowledge" (Foulón, 1982). To do this they formed the first CREA group of 10 farmers, and paid the services of a consultant to provide necessary technical information.

The basic idea was successful: voluntary groups formed in other areas of the country, numbering more than 100 by the late 70's. By the mid-80's, there existed 150 groups, involving more than 1500 farms. These employed approximately 150 consultants and were united in a national association (AACREA) which produced publications and technical studies. Many private consultants, on the other hand, share the impression that the activities of the CREA association contributed to the growth of non-CREA private consulting. Two reasons account for this: (a) work within CREA trained many professionals for work outside CREA, and (b) the explicit CREA policy of sharing technical information provided many consultants with the opportunity to market their services.

CREA membership growth in all areas, nevertheless, appears to have slowed down: 90 new groups were formed in the 60's and only 45 in the 70's. This can be accounted for by a number of reasons which can include (a) the obvious 'clientele' for private consulting (i.e. 'larger' farms) is already either a member of CREA or else employs alternative professional consultants, (b) other information channels (i.e. advice by input suppliers) have developed which substi-

[1]INTA (the primary federally-funded research and extension organization) employed in 1987 some 500 extension professionals (unpublished data provided by INTA). The provincial governments account for 200 more (Jornadas Nacionales, 1982). Consultants working in the CREA organization number 150. Our personal estimate is that there are not many full-time consultants working outside the CREA organization (maybe 50–100 more). The above figures do not include all other professionals working for the agricultural sector (teaching, research, management or government).

tute for consulting work, and/or (c) need for information was more severe in the 60's than in the 70's because many farmers were 'learning' then to cope with new production systems. What will happen in the next decade with CREA membership (and for that matter with the total demand for consulting work) is hard to predict. The experience of 'similar' organizations in other parts of the world, however, can be illustrative. Between 1925 and 1945, for example, the Illinois Farm Business Farm Management Association experienced an increase from 200 to 1800 farmer members. Growth rate after 1945 increased: between 1945 and 1974 5200 new farmers enrolled (IFBFMA, 1974).

Rapid growth in semi-private consulting services as mentioned above for Illinois raise important questions for consulting work in Argentina. A significant issue will be the type of services consultants will have to provide. Until now, consulting in Argentina has been a relatively expensive, individually tailored, service for farms. The consultant will typically spend a whole day (or at least half a day) with his client. In the U.S.A., on the other hand, the consultant or 'fieldman' spends much less time with individual clients. He probably has the responsability of advising 50–60 farmers, as compared with the 15–20 of his Argentine colleagues.

2. Market for consulting services

The extent and nature of the market for consulting is a major issue both from a private and a public point of view. Professional consultants are interested in understanding the possible sources of growth for their services. Public institutions such as INTA are interested in coordinating their extension/research resources with private consultant work. For example, if most large farms find it profitable to hire consultants, INTA could concentrate on transfer of technology for small/medium farms.

Analysis of the market for consulting requires an evaluation of the factors affecting the supply and the demand of these professional services. Supply of college-level graduates in agriculture increased substantially after the mid-60's. Between 1960 and 1980, the total number of registered agricultural professionals experienced a three-fold increase. By the mid-80's evidence seems to indicate a substantial oversupply of young professionals trained in agriculture. Supply of trained consultants, however, is not only a function of the number of agricultural college graduates; consulting probably requires considerable (and expensive) on-the-job training. Most farmers will not find it to their advantage to provide this training. Supply of experienced consultants, moreover, is also a function of opportunities in (particularly) management, private business and upper government.

The nature of the farm production system should influence the demand for consulting services. Decision theory suggests that the value of information (i.e. consulting) is equal to the difference in expected profit of actions taken with

information versus actions taken without (Perrin, 1976). This difference in expected profit is probably contingent upon: (a) the size of the farm, and (b) the complexity of the farmer's decision environment. Complexity of decision-making at the farm level can depend on the number of production activities and the frequency with which input re-allocation can take place. Decisions on a wheat farm, for example, are less complex than decisions on a similar-size cattle-fattening and crop farm. A pasture–livestock system, particularly, can be extremely complicated (Dillon, 1979, p. 86). Extensive cattle breeding, on the other hand, probably represents a situation in which the opportunities for shifts in resource use (and therefore in decision-making) are limited.

Data for the analysis of the above issues are practically non-existent. There is evidence, however, that the demand for private consulting (CREA and non-CREA) is dependent on farm size. In the lowland cattle-breeding area of the province of Buenos Aires, for example, 20% of the 'medium'-sized farms (400–1000 ha) and 55% of the 'large' farms (2500–5000 ha) hire consultants (Ministerio de Economía, Provincia de Buenos Aires, 1982).

Figure 1 shows growth in CREA group numbers in different production areas. Highest rates of growth appear to have occurred in areas where both both cattle-fattening and crop production can take place. Growth in areas primarily devoted to crop production, and areas with extensive cattle breeding, has been lower. In fact, use of consulting services appears relatively unchanged, in these areas, in the last 10–12 years.

Higher farm profits can be obtained, by the use of consultants, from: (a) higher yields with the same input mix, (b) lower average cost due to better input selection, and/or (c) better selection of output mix. Better input selection can include the substitution of consulting services for the (in some cases more expensive) farmer's management time. In this situation the convenience

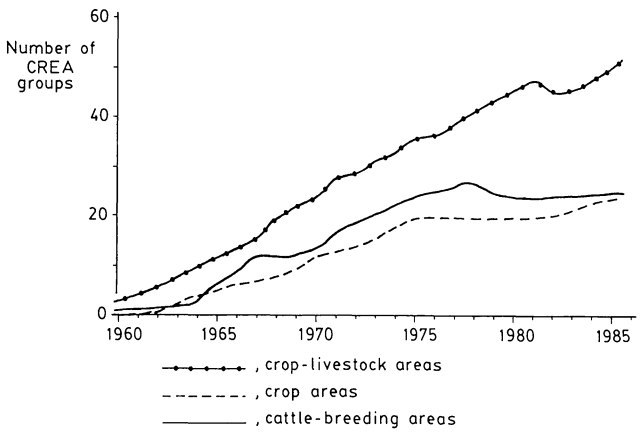

Fig. 1. Growth of CREA groups in crop-livestock, crop, and cattle-breeding production areas.

of hiring the consultant depends on the relative costs of the consultant's fees and the opportunity cost of the farmer's time. If the use of consultants is only a substitute for the farmer's management input, moreover, differences in performance measures of farms with and farms without consultants should not be expected.

Assessment of the marginal productivity of the consulting input requires detailed accounting data. With appropriate data, a production function can be fitted to estimate the VMP's of all relevant factors of production (including consulting). In practice, however, several complications arise. Farms hiring consultants are normally larger and better-endowed with soil resources than the 'average' farms. Overestimation of consulting productivity could result because of co-linearity between this input and farm size/soil quality. Another limitation for the use of a production function approach is the absence of farm-level accounting data in Argentina.

In Argentina conventional wisdom suggests that the most important result of consulting (and extension) relates to the possibility of obtaining higher yields with essentially the same cost structure. The existence of an important yield gap between 'average' and 'advanced' farmers, for example, has been a crucial assumption in recent projections of future Argentine aggregate crop production (Cirio, 1984; Oris de Roa, 1984). It has also been used to justify recent efforts to abandon the current export-levy taxing system in favor of a tax on land. The World Bank, in fact, recently proferred a 300 million U.S. dollar loan on condition of the adoption of a land-based taxing system.

A central question that should be asked is: To what extent are yields on 'advanced' farms higher than those obtained in 'average' farms that normally do not have access to consulting services? Table 1 shows yield differences between CREA farms and the 'partidos' (counties) were the farms are located. Average 'partido' yields are used as a proxy for yields on farms that do not receive consulting services because of the lack of appropriate farm-level data.

The evidence seems to indicate that wheat, corn and sunflower yields were, in fact, higher in CREA farms: +0.4 t/ha for wheat, +0.8 for corn and +0.1–0.4 for sunflowers. Yield differences for these crops represent a 20–25% increase from average 'partido' productivity levels. The economic value of these differences would be (considering FOB prices existing in mid-1987) 30–40 U.S. dollars per ha for wheat, 60 for corn, and 20–70 for sunflowers. Because of export taxes and marketing costs, farm-level differences are (in dollar terms) approximately half of the differences shown above. A 'typical' 300-ha wheat and sunflower farm would have, given the above figures, a strong incentive to employ consultants. Increased yearly revenue of approximately 6000 dollars is well above the 800–1000 dollars per year that would be charged by an experienced consultant. The fact that only a small percentage of 'typical' farms hire

t, metric tonne = 1000 kg.

TABLE 1

Yield differences (t/ha): CREA farms vs. all farms

	All farms	CREA farms	Difference
Wheat			
Corn Belt area	2.3	2.7	0.4
Southern Wheat area	2.4	2.8	0.4
Corn			
Corn Belt area	4.2	5.0	0.8
Sunflower			
South-East area	1.3	1.4	0.1
West area	1.4	1.8	0.4
Soybeans			
Corn Belt area 1	2.0	2.0	0.0
Corn Belt area 2	2.1	1.9	−0.2

All Farms yields estimated from 'partido' (county) data gathered from the Secretaria de Agricultura y Ganaderia.
CREA Farms yields estimated from 6-year (1978–83) average yields of selected CREA groups (10–12 farms) in the chosen areas.

consultants, however, places considerable doubt on these results. It is obviously possible that yield differences shown above are not brought about by consulting alone. As mentioned, yield differences can result from differences in resource endowments. They can also be a result of a higher-level input use. In this case the impact of consulting should be estimated by subtracting the costs of the additional inputs from the increase in revenue obtained.[2]

Soybean is an interesting case for analysis. The crop was virtually unknown in Argentina in the early 70's. It was adopted, nevertheless, at a very rapid pace: by the early 80's, no less than 50% of the 'corn belt' was planted with this crop. Soybean production, however, needs careful husbandry practices (notably careful planting, and insect and weed control). Because of this, and also of the relatively scant experience that Argentinian farmers have had with the crop, it would be reasonable to expect yield differentials between farmers with and without consulting inputs.

Table 1 shows, however, that soybean yields on both types of farms are similar. These results are somewhat suprising given the relatively high yield-differentials noted for other crops (all non-legumes). An explanation that can be advanced is that soybean, because of its nitrogen-fixing capabilities, is less dependent on natural soil fertility than wheat, corn or sunflower. If this is the

[2]It should be noted that a decrease in the price of variable inputs (fertilizer, herbicides, etc.) will bring about an increase in their use. A possible hypothesis is that it will also result in a increase in the demand for consulting inputs through an 'expansion' effect. This possibility, of course, is contingent upon the shape of the firm's isoquant map (i.e. the relation between the MP's of consulting and 'other' variable inputs).

case, crop management technologies in 'advanced' (CREA) farms are not necessarily different than those found in 'average' farms. Higher-quality soil resources, due to less soil erosion, higher fertility due to rotation with pasture, or other factors, are possibly the main determinant of yield differences.

If the above data are representative of the situation found in the main crop-production areas of Argentina, it would appear that mere productivity differentials do not explain the demand for consultants. Most probably these are employed for reasons related to savings of expensive management time and/or better decision-making in financial and farm-planning areas.

Summary and Implications

Farm consulting represents an important (15–20%) fraction of total manpower devoted to professional farmer advice in Argentina. As compared to alternative extension activities, its impact has been probably greater than what is suggested by these figures: consultants work on larger farms and, moreover, have a high personal productivity due to the fact that they are accountable directly to their client.

In mixed-farming areas (crop and livestock farms) this input has been increasingly used by farmers. The Argentine experience suggests that private consulting activities can grow if farmer-based organizations provide initial support. The fact that scale economies exist in information-gathering and analysis is a strong argument for cooperative efforts in the hiring of consultants.

Increased crop yields provide only a partial explanation for the demand for consultants. Reasons such as improved decision-making (farm planning, marketing etc.), or reduction in control costs (less management time needed) appear as alternative explanations. Future research on the impact of both consulting and also state-financed extension will probably need farm-level data which does not exist now in Argentina. This type of research can be of interest (particularly) to farm consultants and to officials who have to decide on the allocation of federal and provincial funding.

The following implications result from the fact that differences in 'efficiency' noted among farms can be caused by differences in resource endowment (and not necessarily access to consultant expertise). Firstly, aggregate crop-production projections should not assume that there exists an important 'technological gap' between more and less-efficient farmers that can allow important increases in production levels given the actual technology and output price levels. Secondly, the 'land tax' scheme favored not only by local agriculturalists but also by foreign (i.e. World Bank) specialists should be analyzed carefully before implementation. Under the assumption that the differences in productivity observed between farms are largely a function of differences in land quality, a tax system such as is proposed loses much of its justification.

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