

‘OPERATION GROUNDNUTS’: LESSONS FROM AN AGRICULTURAL EXTENSION SCHEME

Elizabeth Hopkins*

In 1964, a large-scale agricultural extension scheme was initiated in Senegal’s ‘groundnut basin’. It was run by a French company, and its main objective was to increase groundnut production by 25%, to reach a total production of a million tonnes. Instead, average sales of groundnuts actually declined over the period of the project. What were the reasons for this embarrassing result? And how far were the problems which arose due to the structure of the scheme? Our research was designed to look at the scheme from the point of view of individual farmers, but as a by-product we can offer some tentative answers to these questions.

It could be argued that the scheme was doomed to failure simply because of its scale. Certainly it was ambitious, covering a total area of some 24,000 square miles, with an agricultural population of about 1 million (a quarter of the total population of Senegal). The aim in the initial stages was blanket coverage of all farmers in the area, which inevitably led to an over-simplification of recommendations: advisers had to offer universal panaceas rather than individual prescriptions. However, (on paper at least) the administrative organization of the scheme was a model of its kind. The head office in Dakar exercised overall supervision, and employed several agronomists (and even one sociologist!) At local level, each of the three regions covered was under the overall command of a regional director, with university qualifications and broad experience. Within the regions, each *arrondissement* (district) was in charge of a district supervisor (about 45 in all), with at least technical agricultural qualifications, each of whom was responsible

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for about 20 village level workers. These men were chosen from the local farming community; they had usually (though not always) attended primary school, but they had no formal agricultural qualifications. Each was in charge of a sector with an average area of some 50 square km., containing normally 8 or 9 villages. Instructions were passed down this chain of command, and regular training sessions were organized; conversely, information about field conditions and achievements was supposed to pass upwards, so that policies could be revised where necessary.

Inevitably, communication was imperfect. In the early stages of the scheme, all the workers at the level of district supervisor and above (probably totalling at least 70 people, including the staff of the Dakar head office) were non-Senegalese: mainly French, they included a few from other European countries to emphasize the E.E.C. nature of the project. Despite all efforts, it was hard to bridge the gulf between them and the village-level workers, with their imperfect knowledge of French and their ignorance of technical terms. As the scheme proceeded, Senegalese nationals gradually took over, so that by 1971 only about 20 Europeans remained. Language barriers became less significant, but there was still a gulf of training and outlook which meant that many facts which appeared commonplace to village-level workers were not grasped by the higher echelons (and, of course, vice-versa). Perhaps some of these misunderstandings could have been eliminated by more thorough pilot projects: but the scheme had to be accelerated for political reasons, and the French company was proud of the speed with which the network was installed.

In explaining the 'failure' of the scheme, however, there are even more basic reasons which must be considered. If an agricultural extension scheme is to 'succeed' (in terms of its own objectives), the first precondition must be that its aims coincide with those of the farmers who are being advised. Because this condition was not fulfilled, one might say that the Senegalese scheme was doomed to 'fail'. The discrepancy in aims between farmers and advisers arose partly from the special conditions in which Senegal found itself in the early 1960s. EEC rules demanded the phasing-out of the privileged entry of Senegalese groundnuts on to the French market by 1968. As 80% of Senegal's export earnings came from groundnuts and groundnut products, sold almost exclusively to France, this was

a serious threat to the economy; it was estimated that, allowing for multiplier effects, the likely 25% fall in export price might reduce the G.D.P. by as much as 10%. Lacking alternative major export prospects, Senegal's only hope of maintaining her export earnings seemed to be to sell more groundnuts at the lower prices she now faced: hence the objective of a 25% increase in groundnut production. In other words, the scheme was designed with macro-economic ends in view.

From the point of view of individual farmers, the appeal of increasing groundnut production at a time of falling prices was far from obvious. In considering their reactions, it is important to realize that groundnuts are not a new crop in the area. On the contrary, they have been grown since the end of the last century by peasant farmers, who are thus fully attuned to participation in a market economy. Many farmers recall that during the 1950s and early 1960s they (or their fathers) grew almost exclusively groundnuts, relying on the proceeds from their sale to buy food for their families. The food they bought was mainly rice, since there is no large-scale trade in millet or sorghum (the basic subsistence crops of the area). But between 1963 and 1968 the producer price of groundnuts fell by 25%, while the price of rice rose by about 35%. Whereas in 1963 a kilogram of rice could be bought by selling 1½ kg. of groundnuts, by 1968 nearly 3 kg. were needed. As relative prices have changed, farmers have responded in an 'economically rational' manner, by devoting more of their own resources to growing food, and thus cutting down groundnut production. This tendency has been reinforced by climatic conditions in the years since the extension scheme began. Even before the present catastrophic drought, the rainy seasons of 1966, 1968 and 1970 were all extremely poor, in terms both of total rainfall and its distribution through the season. As well as having a direct effect on groundnut yields, this probably caused farmers to shift back towards subsistence production. After a bad year, food prices are likely to be even higher, whereas government-fixed groundnut prices do not respond to changes in output. If a farmer does achieve a food surplus in a poor year, he is sure to find a profitable market, and by concentrating on food crops he is more likely at least to be able to feed his family. With a run of poor years, prudence dictated a return to food crops, reinforcing the economic incentive of relative price changes.

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Of course Senegal's situation in relation to the French market, which gave rise to this particular conflict of aims, was unusual, but it cannot be dismissed as unique. Even if other countries do not have to cope with a withdrawal of price supports, they may well face a decline in world prices for their major exports, in a situation where the possibilities of diversification are limited. However, there is a more basic problem which may prove equally disastrous for extension schemes: a government programme must take a long-term perspective, which will probably not correspond with the time-horizons of individual farmers. For example, the Senegalese scheme has found it difficult to arouse interest in long-term measures for restoring soil fertility, which involve expenditure of money and effort now for the sake of some (doubtful) future gain. Moreover, farmers who begin to use draught often do so not, as the scheme intended, in order to make more intensive use of their existing land, but in order to be able to cultivate a larger area. Extensive farming in many parts of the groundnut basin does give a higher yield per man-day (though not, of course, per hectare) than the intensive techniques advised by the scheme. The extension service and the government must look ahead to the day when land will be the scarce resource to which returns have to be maximised, but in areas where land is still plentiful one cannot expect individual farmers to be so foresighted. On the contrary, they have an interest in acquiring cultivation rights over as much land as possible, against the day when it does become scarce. The granting of credit (in this case through cooperatives) can encounter similar problems. When ready cash is scarce and private credit rates are high (as much as 150% interest may be demanded for a 6 month loan), it may be perfectly logical from an individual's point of view to obtain fertilizer or equipment on credit from a cooperative, and sell it immediately to raise cash rather than using it to increase his output. From the national point of view, however, this may well be seen as a non-optimal use of cooperative credit.

Some of these conflicts of aims could have been resolved. For example, since groundnuts are now marketed entirely through cooperatives, it would have been possible to adopt a different price policy. Instead of allowing the producer price to fall in step with the export price, some of the funds allocated to the extension scheme could have been used to support the producer price, at least until the

new production techniques had been adopted and the resulting yield increases appreciated by farmers. In fact, the *Fonds Européen de Développement* has recently decided to finance such a subsidy temporarily, as the only hope of restimulating groundnut production in Senegal. Even if producer prices had been supported, some movement away from groundnut production might still have taken place because of the climatic factors discussed above; but even these would have affected projected results less if the projections had been more realistic. As late as 1971, the extension service was still basing projections on the assumption that one year in four would be 'bad', whereas recent figures suggested that to assume one 'bad' year in two would be nearer the truth. There was over-optimism, too, about farmers' capacity to withstand bad years. For example, the recommended fertilization programme for groundnuts, based on research station data (with unlimited weeding labour available), gave increases in yields which more than covered the annual costs, taking good years with bad. But after sustaining losses in a bad year farmers could not risk incurring themselves further in the next year in the hope of achieving profits if the rains were good (and if they were able to cope with the increased weed growth). It is not surprising that after the poor rains of 1968 purchases of groundnut fertilizer fell from the 44,000 tonnes of 1967 to a mere 10,000 tonnes in 1969 (although it did seem to surprise the government, which had entered into a forward contract with the local fertilizer company). The more basic problems, like the divergence of time horizons, may prove to be insoluble — which does not mean that they should be ignored.

Although it failed to achieve its main objective, this extension scheme has had effects which may prove to be far more significant in the long run than a mere increase in groundnut output. At least in its early stages, the scheme was a 'mass' one, with recommendations addressed to all farmers, but some were obviously in a better position to respond than others. Those who have been enterprising or fortunate enough to grasp the new opportunities are drawing rapidly ahead of their neighbours, taking possession of the spare land and gaining privileged access to official credit facilities and to extension advice; they are the beneficiaries of the new 'selective' schemes. Those who have been foolish or badly-advised enough to over-equip themselves may be poorer than before, because the debts they have

incurred have not been matched by increases in output. (The *Fonds Européen de Développement* found this problem so worrying that part of its new aid to Senegal is being used to annul bad debts at the cooperatives — which should have interesting implications for future repayment rates). Moreover, the introduction of draught equipment has tended to make farming households more independent of each other. When essential operations can be performed more quickly, there are fewer crises (e.g. fields choked with weeds) in which the assistance of neighbours is required. Exchanges of labour between households are increasingly taking place on a paid basis, instead of the traditional 'labour parties'. There are even signs that relationships within households may be changing, with young men (whether relatives or seasonal labourers) asking to be paid for the work they do for the household head in cash, instead of simply being allocated a plot of land to cultivate. At the moment, there are no genuinely landless labourers in this part of Senegal; every adult farms at least one plot whose output belongs solely to the cultivator, even if the land is 'owned' by someone else. It seems unlikely that this situation can continue indefinitely, as land becomes more scarce (natural population increase in this area is swelled by inward migration) and as inequalities between households increase, but it is too soon to foresee the form which changes will take.

While the visible benefits of the extension scheme have been unevenly distributed, there has been at least one virtually universal effect. Not only has the scheme trained its own workers (which was one of the original objectives), it has also trained thousands of farmers. Even those who have rejected the advice offered to them have been forced at least to consider the possibility of adopting new techniques. They have had to evaluate proposals and make choices, and in most cases they have been highly rational in accepting the techniques which appealed to them (e.g. new seed varieties for food crops were enthusiastically adopted, and purchases of fertilizer for grain increased steadily even when groundnut fertilizer was rejected). Farmers have certainly become more aware and more articulate in their dealings with matters outside their own immediate environment. In particular, this has led to violent criticisms of such bodies as the cooperatives, as instruments of a government policy which is seen as trying to make farmers work harder on the one hand, and cheating them on the other. 'If the cooperative were a

man', wrote the secretary of one radio listening group, 'we should have killed him long ago'.

The apparent failure to give any consideration to the deep social implications of the extension scheme warrants much more serious criticism than the failure to achieve specific production targets, yet it is in terms of production targets that the 'success' or 'failure' of this scheme has been discussed by the aid-giving bodies and the Senegalese government. What is particularly worrying is that this narrowness of approach may be an inevitable feature of the way in which the scheme was organized, which seems to be general practice for schemes financed by E.E.C. aid (as this one was in its later stages). Projects are put out to tender and the contract is awarded to the chosen company. This happened in this case to be a French company, the *Société d'Aide Technique et de Coopération*, which is a *société d'état* (based on state capital), but it could have been any one of its numerous competitors in Europe, some of which are wholly private companies. Although the personnel of these companies exhibit a high degree of technical competence and of commitment to the projects in which they are engaged, their primary loyalty must be to the company which employs them. To treat agricultural development as though it were a series of road-building projects, to be handled piecemeal by commercial companies, has obvious dangers. These appeared only too clearly in Senegal, where privately-run schemes to encourage peasant production of cotton, confectionery, groundnuts and tobacco respectively (not to mention the normal government extension service) were all operating in the same area as the SATEC project. Each had its funds and its objectives, and each insisted on going its separate way, often to the bewilderment of the farmers.

Of course, such companies do offer technical skills which are lacking in less developed countries. The Senegalese would certainly have been unable to carry out an agricultural development programme of this magnitude without considerable technical assistance; the question is whether the form in which they received that assistance defeated its own ends. This is a question with which we in Britain should now be seriously concerned, since as members of the EEC we are committed to offering aid to be disbursed in this way (and British firms are eligible to tender for projects). As well as the obvious dangers of a piecemeal approach, there are other

problems. Can private firms employed on pre-project studies be relied upon to produce unbiased reports when they intend to tender for the projects? Can firms actually deliver what they promise in tenders, when they offer their most experienced staff for several projects simultaneously? How many of the firms in this 'business' are (unlike SATEC), purely private companies, concerned primarily with their own profits? We need answers to these and other questions before we can decide whether aid given through schemes operated by private companies can genuinely help development. Will it simply lead to a series of uncoordinated projects whose 'success' or 'failure' in terms of their own objectives is ultimately irrelevant to development?