

PROBLEMS OF AGRICULTURAL EXTENSION AND DEVELOPMENT IN THE SOUTH PACIFIC

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INTRODUCTION

The fifteenth Pacific Science Congress was held during the first two weeks of February, 1983, at the University of Otago, Dunedin, New Zealand. This was the latest in a series of congress organized every four years by the now-venerable Pacific Science Association. The presence of more than 1700 scientists at the various sessions in Dunedin is clear evidence that the Association fulfils a needed and appreciated role in fostering the interests of scientists in the vast Pacific region. The next Congress is scheduled to be held in Seoul, South Korea.

Section N, Science Communication and Education, included some lively papers and workshop discussions on agricultural extension services and problems in South Pacific countries. Allied papers were also presented on agricultural aid projects and on education in agriculture in these countries. This present paper includes some of the ideas put forward by the various authors.

My keynote address to the agricultural extension sub-section recognized the importance of people in agriculture and the services which support it. To consider only impersonal concepts such as rural communities, or government, or authority, is not very helpful. Rural communities comprise farmers and their families; government is made up of politicians and officials; authority is wielded by some people over others. Extension is a service rendered by people for people, and the successes as well as the failures of extension programmes result from the actions taken by people. We need to look at three groups of people. To use a little alliteration, we could call these groups the clients, controllers and change agents; or, perhaps, the planters, planners and practitioners; or, maybe, the farmers, facilitators and field officers.

CLIENTS

In general terms, we can follow Foster in describing the social environment of farmers and their families as societies in which they are linked to other members and groups by rights and duties, expectations and obligations. Each society has a structure which includes such institutions as the family, religion and some form of economic system. An individual member has a clearly established status and role in each institution. In meeting these, his behavior and actions will be governed by the rules of the society, or its culture, and by his own psychological nature. Values, attitudes, aspirations and motives all arise from the complex interplay of these factors. In many Pacific societies, honor and dignity are important values, while conformity to social norms is an attitude expected from all members.

We can also follow Lewis in saying that social life is not governed by 'shrewd logic and sweet reason', so that we become interested in the social implications of such emotions as personal ambition, greed, jealousy and anger. The tensions caused by such emotions can rise from the multiple poles that an individual must fill, and lead to many internal stresses in the apparent unity of a village society. The requirements of ensuring family security, obeying authority and meeting obligations impose substantial curbs on behavior, but must be accepted if the criticism and sanctions leveled at any member deviating from customary behavior are to be avoided.

The motivation of an individual to conform within his society follows a scale of basic needs from survival, through security, affiliation with other members and recognition by them, to self-satisfaction with attainments and achieved status. An individual's aspirations will be influenced by his position on this scale, and his reception of extension

contacts of various types will also depend upon it. It follows that use of inappropriate extension methods or of inexperienced and not-fully trained field staff is a sure way to fail in communication.

Only if communication processes are effective can extension in agriculture (and many other aspects of living) be successful. The actions that a field officer stimulates will correlate closely with the way he gets his message across to his clients. But the ability of extension personnel to influence decision-making in the villages will depend largely on whether or not they are accepted by senior members of the village communities. In the delicately structured hierarchy of Polynesian Samoa, the spoken word is central to living and it is all too easy in extension for the wrong message to go to the wrong people, passed on by the wrong person in the wrong language at the wrong time and place.

Western criteria of economic and technical efficiency are not very relevant in Pacific island countries. Village goals are not simple monetary profits, and technical information is often a minor factor in making decisions about production. Extension programmes must be planned and operated for the particular and special conditions of this region; how to do this, and even what these conditions are, has not yet been adequately worked out. What is known from many experiences is that while an excellent flow of information does not necessarily ensure extension success, poor communication channels will certainly ensure extension failure.

South Pacific countries face many problems, even insurmountable ones, from the geographical nature of the region. Small size in terms of population, land area and economic parameters (see table attached), together with isolation due to the many hundreds of miles between islands and archipelagos are features that dominate all aspects of life. Fragmentation is also important in some cases; the Cook Islands are an extreme example, with 19,000 people on 240 square kilometers of atolls and high islands in a total area equivalent to Afghanistan, Pakistan and Thailand together, or nearly two million square kilometers.

Smallness and isolation have many effects upon population and agriculture. Here we will mention only a couple. Recent years have seen considerable out-migration from villages to

urban centres or overseas, mostly by young people. The hard work of farming, plus the boredom, the low and variable monetary returns, unequal profit sharing and land tenure problems make village life rather unattractive in comparison with the wider world outside. The impact of advertising, radio and films, together with the mobility of modern transport and the example of kin or friends who have already migrated, are strong drawcards. Among the effects have been weakening of respect for traditional authority and moral obligations, and a significant shortage of labor for many projects in commercial agriculture.

A small population also means that many roles have to be played by relatively few individuals. Kinship, political, religious and economic systems often coincide, or nearly so, and the same individuals come into contact again and again in various activities. The public roles of office become interwoven closely with the private roles of kinship and obligation. This leaves little room for manoeuvre to avoid effects from family influences, personal antipathies and similar relationships. A person tends to be judged for who he is, rather than for what he does, and family ties rather than impersonal merit carry most weight in decisions about a person's roles and status.

Agricultural extension is concerned with the diffusion and adoption of new technology in farming practice. Everett Rogers has published widely on this subject, and his adopter categories of venturesome innovators, respectable early adopters, deliberate early majority, skeptical late majority and traditional, cautious laggards have been of seminal importance for the study of innovativeness. In the South Pacific, Bollard on Atiu island in the Cooks recognized each of those categories, and also a further group which comprised about one-third of the total of farmers. This group could be called reactionaries, who never joined the several government-promoted crop projects. Most of this group has second jobs, often in government service, and their incomes from these meant that farming for subsistence or sale was in the nature of a sideline activity. A few other reactionaries were so tied by cultural conservatism that they would not tolerate the changes required for the crop promotion projects.

In a sense, both innovators and

reactionaries had opted out of conventional agricultural society. In particular, the innovators would not drink in the community 'bush beer' work gangs, employed labor, enjoyed earning money, and sold produce to relatives. All these activities are seen by others as anti-social, and therefore deviant.

Opinion leaders are often members of the early adopter category, through force of personality and action. On Atiu, farmers showed little initiative. Thus, such signals as produce market prices are usually ignored. In 1974, for example, copra fetched record prices on world markets, but these farmers made no response even though the experience and facilities to greatly increase local copra output were there. On Atiu, some community characteristics important for crop promotion projects are the limited need for income and the strong preference for leisure, a deep distrust of risk and uncertainty, little concern for time or the future, and a psychological attraction for working in company. Important questions for extension in this and similar communities are how to recognise opinion leaders. Can they be used to encourage adoption of innovations? To what extent do felt needs, and the tensions these create, motivate individuals to adopt new technology that is promising but unproven?

In communities like Atiu, a short time sense will cause problems with perennial crops. It is difficult to convince growers that inputs like fertilizers, weeding, insect controls and pruning during the prebearing years have important effects on later productivity. Expenditure on these and similar items will not voluntarily be made, and it may require some form of supervised credit advance to ensure that adequate husbandry is done in the early stages of perennial crop promotion projects.

At the present time an interesting dialogue is continuing about agricultural production system for the future in the South Pacific island countries. Four major systems can be recognized, but there are, of course, many permutations of these. Firstly, there is the old but now rare fully subsistence system with virtually all the needs of a community produced locally, with no monetary exchange and little or no specialization of labor. Crops produced are only partly consumed as food; crops also are important features of social exchanges and ceremonials. Secondly, we have

the widespread mixed subsistence-cash cropping system which arose from pressures for the production of primary products that could be sold. The pressures were both internal, where villagers needed cash to purchase newly available consumer goods of many types, and external where governments sought export commodities that would generate foreign exchange. This system has in general given disappointing results in terms of output, despite a marked trend for official policies to place emphasis on this sector. The system is not fully commercial, and the rigorous work discipline required by commercial agricultural production is completely foreign to subsistence farmers. At the same time, social and market obligations clash, and farmers must make difficult decisions over the priorities and precedence they will accord to their range of productive enterprises. For reasons such as these, the mixed subsistence-cash cropping system is not likely to satisfy the growing demands upon commercial agriculture being made by both the farmers themselves and the governments.

Thirdly, the plantation (or estate) system was introduced with early European settlement in the island countries, and operated typically by expatriate management and often labor. Large-scale monoculture of various crops became established in the area, and the plantation sector for many years was of great importance for export crops, the handling, storage and shipping of which was typically performed by overseas firms. However, as these countries have attained independence in recent years, the plantation system has become politically unacceptable, and many changes have been mooted which invariably seem to result in lowered productivity and output. A fourth system of much current interest combines certain features of plantation management with smallholder producing units. A successful example comes from the cane sugar industry in Fiji, where an indentured labor system on estates was replaced by 1920 by a system of smallholding tenant farmers (both Fijian and Indo-Fijian) producing cane under the direction of central mills. The mills also provided some inputs such as planting materials and fertilizers, and processed the smallholders' crops. A more recent example of the system is the nucleus estate with associated satellite smallholdings for oil palm in

Papua New Guinea, while proposals have been made elsewhere in the region for citrus, cocoa, bananas and for fresh vegetables for export to New Zealand during the winter months.

In 1979, an expert group set up by the Asian Development Bank recommended that this fourth system of production should receive preferential support in the island countries. This recommendation was disputed by a number of interested parties, some of whom took exception to the group's use of the term 'plantation mode of management' (not production!). The word 'plantation' to many people means large-scale alienation of land, as under the third system above, but even this is not universally true in the Pacific. Thus, a Samoan will say he is going to work in his taro plantation, which means he will be working in his family's relatively small taro garden or plot. In this sense, there is a distinction between a plantation and an estate. It is obvious that people interested in the welfare of small-holding villagers would not wish to see estate-type pressures put upon land resources.

Two factors bear upon the choice and development of farming systems. Commercial incentives work through economic forces, often being related to marketing processes. There is also a passive reaction factor, arising from the culture of a society and serving as a buffer against the uncertainties of change. In the South Pacific countries, the reaction factor still retains much strength, with village social values and traditional mores being preserved in rural life. Many of these communities will be aiming at maximum utility, by producing enough for subsistence, some for meeting social obligations, some for sale, and still having enough time for leisure and for playing their due roles and maintaining status.

If there is a genuine consensus for immediate increases in production and productivity, little can be done, at least in the short term of a few decades, by changing the ingrained attitudes and work habits of semisubsistence farmers, or the land tenure systems. These will take many years to modify. An earlier response might be obtained by encouraging true commercial production regardless of the farming system as such, and of the apparent inequalities which will be induced. The detailed recipes for commercial agriculture largely remain to be planned,

developed and carried into effect; not the least problem that will have to be faced is what form extension services should take so they can perform their essential role in the changing agriculture of the region.

CONTROLLERS

Our second group of people involved in agricultural extension and development are the controllers, the directors, the administrators. It is unfortunately true that many shortcomings and failures can be laid at the doors of these people. At recent extension tutors' courses in Sri Lanka and Western Samoa, participants attributed more than 80 per cent of what they saw as the causes of extension failures to controllers. Often, these causes were deficiencies, such as a lack of motivation (due to unclear objectives, and conflict between farmers and departmental objectives), of strong and positive leadership, of support from senior people, of delegation, and of in-service or other training opportunities. It is the field people who should be putting the Ministry of Agriculture into a highly visible and well-regarded relationship with farmers, and this in turn requires departmental controllers to see extension as the sharp, cutting edge of their Ministries.

A further effect of the smallness and isolation mentioned earlier has been the lack of specialized extension services in most Pacific countries. Extension too often is cast in a minor role in comparison with research and subject-matter specialities, and this is often reflected in lower salaries and poorer working conditions. Where extension staff in the field are also required to carry out regulatory duties under departmental legislation, or other work of a non-advisory nature, the service available for farmers becomes almost part-time and fairly superficial.

Planning is an important function of controllers. Too often, though, plans are designed and imposed from the top down, with farmers and rural communities excluded from any of the planning processes, even from agreement on objectives. Such 'top-down' planning may sometimes result from an arrogant attitude that the planner knows all the answers, and this attitude is disturbingly common when expatriate planners are in evidence. A more common reason for top-

down planning would arise from setting a project within budgetary limits that require choices among alternatives to be made mostly on grounds of cost. It seems invariably to be the case, too, that if budget cuts have to be imposed on the Ministry of Agriculture, the axe falls first and heavily on extension activities. Another reason may well be the lack of farm records, input-output relationships, costs and prices on any continuing and consistent basis from smallholder agriculture, so that planners have to fall back on estimates. This can be a self-defeating exercise. Thus, Bollard discusses an example from Atiu where planners' estimates of a net return of \$310 from a plot of 45 orange trees was not even approached by the best grower who netted \$115, mainly due to much higher costs than expected and a yield barely 70 per cent of that forecast. The effect of such examples on farmers requires little imagination.

Development projects involving extension can fail in many ways. Where urgency has led to a 'crash' approach, answers may not be known for unforeseen problems, so that resources have to be diverted to solving these. Or a model may be seen as cheaper than a mass campaign, but if excessive resources have to be used to make the model work, its imitation will be uneconomic for adoption by farmers. Again, too much effort may be put into seeking early, maximum returns by concentrating on innovators and largely disregarding other farmers. Or there may be bureaucratic resistance to winding-up an unsatisfactory project, so that resources are moved into 'training' or to testing modifications despite meager gains.

One area which planning sometimes ignores relates to the marketing of produce:

'The production of a foodstuff or raw material on a farm is sometimes seen (by agricultural administrators) as the completion of the production process. The physical accumulation of the commodity at harvest, however, is not the end-point of this process, even though it may be the end of farmer involvement. It is not until the foodstuff or raw material reaches a market in the form, place and time demanded by consumers, and in there disposed of, that the production process can be said to be complete' (Allo and

Schwass p.61).

Markets for both fresh produce and processing impose strict requirements upon farmers. Reliable supply schedules, and consistent quality good enough to satisfy grading or other quality specifications, Both require a certain degree of specialization and scale of production. The bulky and perishable nature of much agricultural produce further compounds the supply problems. It is difficult for scattered and only partly commercialized smallholders to meet these requirements, especially where labor is based on reciprocity, and obligations to others must be honored. Only a sufficient area of a crop handled with good husbandry by competent and trained labor (implying wages) can produce the volume needed for regularity of supply and for quality controls. These matters must weigh heavily in all project planning.

Administrators fulfil other controlling roles than planning. Firstly, they are managers. A common criticism is that managers of extension services are often too urban-based and insensitive, out of direct touch with the realities of field work and rigidly using the Rule Book. Every manager should possess the ability and self-discipline to define his group's objectives, place these in priority order, and remember what this order is during his day-to-day operations. Secondly, they are coordinators of diverse activities, ensuring that each part is working effectively and harmoniously in the interests of the whole. However, the word 'co-ordination' can be used to avoid facing a complex issue by glossing over awkward unknowns, or used as an euphemism for authority and power – in the hands of the coordinators. Thirdly, they will be monitors, continually evaluating activities, measuring progress, and initiating remedial activity wherever and whenever it is needed. In this role, administrators could well remember two sayings: (a) if anything can go wrong, it will go wrong; and (b) if it seems that everything is going right, then you are probably unaware of all that is happening.

FIELD OFFICERS

The third group of people concerning us in agricultural extension and development are the field officers or agents in actual contact with the farming communities. These people must

have certain primary skills. They must be able to talk with farmers on a basis of mutual equality and respect, and to stimulate the formation of farmers' groups. They must be able to pass on simple technical information, and to demonstrate its use personally (but this does not mean a direct and responsible part in the production process like spraying or fertilizing a whole crop). They must be able to identify difficulties, which is not the same thing as solving these. They must know all the available sources of help and technical advice, and they must be capable of preparing clear reports. Energy, tact and patience as well as simple technical knowledge become the stock-in-trade of the field officer. How he applies these with his farmer clients will depend on such things as cultural and socio-political constraints, aversion to economic risks and uncertainties, the extent of modernizing change already within the community, and the confidence of both parties in interpersonal contacts.

Comments on the structuring and operational procedures of extension services have been published recently by FFTC, and repetition is not called for in this paper. However, three matters require specific mention in the context of the South Pacific countries because they are sources of many difficulties faced by extension programmes in the region.

Firstly, extension staff generally have not been well trained for the job. The low status accorded to agriculture as an occupation is reflected in the low status of many services (including extension) designed for its support. Extension is therefore rarely seen as a desirable career, and often it is the weaker students at tertiary-level educational institutions who become employed in this field. They are not likely to be satisfied with the salary and working conditions given to them, and this clearly shows in a rapid turnover of junior extension personnel. In the same vein, the courses taken by these students are heavily weighted on the technical side, often with emphasis on science subjects and little attempt to apply concepts and materials to the farming situation. Some economics is taught, but not enough knowledge of input-output relationships, prices and budget analysis techniques to put individual farm knowledge of input-output relationships, prices and budget analysis techniques to put individual farm

advice on a firmer base than simple guesswork. Farm management in its modern sense is, or should be, an essential part of an advisor's skills.

The emphasis on social and cultural imperatives earlier in this paper, arising from the all-important roles of people, is barely recognized in course work. While students who will be taking up careers in research or specialized subject areas need a sound training in the sciences, those students who will become extension staff must acquire a deep understanding of social values and social transformation processes. This is not the place to argue mechanisms for teaching these values and processes; it will suffice here to repeat that the effectiveness of any extension service will correlate closely with the staff's understanding of the whole field of human relationships, and their respect in applying this knowledge during their daily activities.

Secondly, the place of women in agricultural extension work requires to be more widely recognized. It has been written that 'in societies where the production of food is primarily the responsibility of women, a male extension service working to men from a male-dominated Ministry of Agriculture may have no effect at all on food output. In such societies, the service is bound to require women extension agents. In the Pacific, women in the countries of Melanesia do at least half of the agricultural work including the husbandry operations of crop growing; and in some of these societies, village women are proscribed from any form of contact with men from outside their immediate family or community. Since it is socially unacceptable for a male extension officer to approach a women farmer with help and advice, the need for female field staff is obvious. In the last few years, an attempt has been made in Vanuatu to recruit and train such staff. However, in Melanesia sex roles will take a long time to change, and for the changes to become accepted norms. It can only be hoped that the contribution which women agents will make is quickly recognized for the benefits their employment will bring.

Thirdly, it is essential that field staff should have access to new knowledge, and adequate opportunities for in-service training. These are aspects of the service which are usually neglected in the island countries, though the use of radio in both the Cook

Islands and Tonga has recently attempted to supplement the information and news that is broadcast into the villages. On the more technical side, agents must have access to information as they need it; notes and manuals these days only too quickly become out of date. It is here, of course, that FFTC has its primary function of generating and disseminating information. As part of its secondary role of fostering and improving the standards of extension activities in its region of operation, the Center should also be deeply concerned with ways of getting up-to-date information into the hands of the primary users – the extension officers in the field.

REFERENCES

- Allo, A.V. & Schwass, R.H. 1982: *The Farm Advisor: A Discussion of Agricultural Extension for Developing Countries*. Book Series No. 23, FFTC, Taipei, Taiwan, ROC.
- Bollard, A. 1979. *Agricultural Project Design and Evaluation in an Island Community*. Monograph No. 15, Development Studies Centre, Australian National University.
- Bunting, A.H. (ed.): 1970. *Change in Agriculture*. Gerald Duckworth.
- Foster, G.M. 1973. *Traditional Societies and Technological Change*. Second edition. Harper and Row.
- Hunter, G. (ed.): 1978. *Agricultural Development and the Rural Poor*. U.K. Overseas Development Institute.
- Lewis, I.M. 1976. *Social Anthropology in Perspective*. Penguin Books.
- Rogers, Everett M. 1983. *Diffusion of Innovations*, Third edition. The Free Press.
- Shand, R.T. (ed.): 1980. *The Island States of the Pacific and Indian Oceans*. Monograph No. 23, Development Studies Centre, Australian National University.
- Ward, R. G.: Protor, A.S. 1980. *South Pacific Agriculture: Choices and Constraints*. Asian Development Bank and Australian National University Press.

PACIFIC AND INDIAN OCEAN ISLAND STATES:

Criteria	Category		Population	Area	Economic Size: GDP
	Small	Very Small			
			> 250,000 25,000 - 250,000 < 25,000	10,000 - 30,000 km ² 500 - 10,000 < 500	> \$A 100m \$A 25m - 100m < \$A 25m
Figures: Population, '000/Land Area, km ² /Population Density, people km ⁻² /GDP at factory cost, \$A ¹⁰⁰ /GDP per capita, \$A					
Economic Size: (GDP measures as at mid-1970s)					
Population	Area		Small	Very Small	Micro
Small	Small	Fiji 592/18272/32/483/816	
	Very Small	Mauritius 875/2096/417/497/568	
Very Small	Small	New Caledonia 136/19103/7/502/3691		Solomon Islands 206/28530/7/44/214 Vanuatu 100/11880/8/66/660	...
	Very Small	French Polynesia 137/3265/42/441/3219 Guam 87/541/161/203/2333		Kiribati 54/684/79/36/667 Tonga 90/699/129/28/311 Trust Territory of the Pacific Islands 129/1832/70/98/760 Western Samoa 152/2935/52/38/250	...
	Micro	American Samoa 31/197/157/116/3742		Seychelles 62/404/153/39/629 Nauru 7/21/333/n.a./n.a.	Maldives 143/298/480/8/56 Cook Islands 19/240/79/12/632 Niue 4/259/15/1/250 Tokelau Islands 2/10/200/n.a./n.a. Tuvalu 8/26/308/n.a./n.a. Wallis and Futuna 10/255/39/n.a./n.a.
Micro	Micro		...		
Source: Shand (8)					