

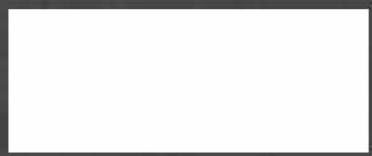
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Institutions, Management and Agricultural Development

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Introduction

This Occasional Paper contains five papers, some of which have since been substantially revised, which were originally prepared for a one-day meeting held in September 1978 at the Overseas Development Institute (ODI) in London. The purpose of the meeting, which was attended by about twenty-five people drawn from academic, government, and business circles, was to explore the possibilities of developing methods of assessing organisational and management factors which could be incorporated into the regular appraisal and evaluation of agricultural projects and programmes in less developed countries (ldcs). The use of management techniques in the course of project or programme implementation was also discussed, with the main emphasis on techniques of monitoring.

It was felt to be a matter of concern that, although most ldc governments and aid agencies have now come to acknowledge the crucial importance of administrative and institutional factors in the design of agricultural development programmes with objectives of redistribution as well as growth, they have not changed their methods of appraising or evaluating such projects or programmes, continuing to rely on techniques which focus on their technical, financial, and economic aspects alone. Questions of organisation, management, and local institutions are sometimes given careful consideration but this is not done as a matter of course, and on the great majority of projects there is insufficient attention to such questions. Part of the reason for this lack of attention is that there is no methodology (even in the form of guidelines or checklists) available to those agencies responsible for appraisal and evaluation; as a result those entrusted with the tasks of assessment in the field (most of whom have had no specialist training or experience in management on local institutional matters) may feel little obligation to go into these questions in any depth.

This absence of analytical techniques can in turn be largely explained by the distinctive nature of agricultural management, especially in ldcs, which rules out the possibility of any wholesale transfer of concepts and methods from the existing body of organisation and management theory. The contexts of small-farm agriculture in developing countries differ in several fundamental respects from the predominantly western industrial and bureaucratic contexts from which most of this body of theory has been derived. In particular the production process is

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carried out in an environment of much greater variability and uncertainty (climate, pests, diseases, etc). But, furthermore, the ultimate producers — the counterparts of the industrial work force — are a multiplicity of widely dispersed individual farm operators who are (to a greater or lesser degree) independent decision-makers. Managers of agricultural projects or programmes therefore have much less direct control over the production process than managers of industrial enterprises. Their position may often be more closely analogous to that of managers of service enterprises, with the farmers as their clients. Within small-farm agriculture the extent of official management control over farm-level decisions can vary widely, of course. Towards one end of the spectrum are (predominantly cash crop) out-grower or settlement projects where both production and marketing may be subject to close supervision or direction. Towards the other end are programmes in predominantly food-crop or mixed farming areas served by several agencies (for extension, credit, marketing, etc), each exerting relatively indirect influence over farmers' decisions.

Agricultural management in Idcs is also distinct in that the decisions of managers at the project or 'area' level also tend to be significantly circumscribed by policies and procedures laid down by higher-level government authorities. In much management literature the enterprise is relatively autonomous; government policy is an exogenous factor which although important, still allows managers considerable scope to make their own decisions over a wide range of issues (eg pricing and investment, recruitment and discipline). Most agricultural managers, by contrast, depend heavily on their central or state governments for funding, procurement, etc and they are also bound to government financial and personnel procedures.

Apart from these management factors, agricultural development projects are undertaken in cultural, political, and social environments which are uniquely complex, affecting local values and objectives and the nature of relationships within farming communities, within the administration, and between farmers and administrative staff.

Reference is made to some of these points in the papers. They also account for the frequency with which the problem of 'externalities' appears in the papers concerned with the *ex-post* evaluation of project or programme management. The point concerning the environment of management, which underlines the need for all those involved in taking decisions about agricultural development to have a clear understanding of the political and social context of each particular project or

programme, is most explicitly discussed in the paper by Jiggins and Hunter, mainly with reference to the 'permeability' of local farmers' institutions by their surrounding culture. In most countries it is probable that the character of the government administration, especially at its lower levels, will be similarly coloured by the same local culture; and where this encourages behaviour which runs counter to the main objectives of agricultural development, particularly those of redistribution, deficiencies in management performance can be expected to occur. These factors have clearly contributed to many of the management weaknesses referred to in the papers by Carruthers/Clayton and Bottrall.

The distinctiveness of agricultural management in Idcs does not mean that all existing organisation and management theory has to be rejected and that we must start again from scratch. What it does mean is that we need to be careful in our use of existing theory, to modify it where necessary, and — particularly with regard to the assessment of appropriate local institutions — to strengthen it with insights from other disciplines, particularly sociology, social anthropology, and political science. Leonard, in his pioneering study of the organisation of the agricultural extension service in Kenya, has commented that 'our problem . . . is not to accept or reject organisational theory as a whole, but to sort out which of its propositions transcend their western origins'. In his study, which is mainly concerned with the behaviour of certain subordinate groups within the extension organisation hierarchy, he found that many of the prevailing hypotheses of existing theory could be upheld in the Kenyan context and were useful in explaining staff behaviour and its effect on performance; others were of uncertain utility, while a few had to be rejected, largely because they were found to be based on assumptions which were culture-specific*.

To what extent the authors of the papers presented here have succeeded in outlining analytical methods which could have universal application and to what extent they have been led astray by the limitations of their experience in only certain parts of the developing world, the reader may be able to judge. Some of the more obvious inconsistencies between papers are likely to be due to the different assumptions of those who have had predominantly 'African' or 'Asian' contexts in mind; for the former the natural focus tends to be more on the planning and assessment of new projects, in which government may often have a relatively large say

* David E. Leonard, *Reaching the Peasant Farmer: Organisation Theory and Practice in Kenya*, University of Chicago, 1977, pp. 17, 229-233.

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in production decisions (eg Howell, Belshaw); for the latter it tends to be more on the possibilities of improving what already exists, in areas with long histories of settled agriculture, where government has little or no direct control over production decisions (eg Jiggins/Hunter, Bottrall).

Although some of the papers originally presented last September have been revised there has been no attempt at this stage to forestall all possible objections or to make all the authors conform to a single consistent viewpoint. Further work obviously has to be done before we can think in terms of starting to prepare manuals for the appraisal and evaluation of agricultural management and institutions. Nevertheless, the interest which the papers aroused at the September meeting has encouraged us to publish them in their present form, primarily with the purpose of stimulating interest by illustrating our present state of thinking. They are presented here, therefore, as first rather than last words. Three of the papers, those by Bottrall, Howell, and Jiggins/Hunter, were written by members of the Agricultural Administration Unit (AAU) and the remaining two by people who have been closely associated with the AAU's work.

The first paper, by Janice Jiggins and Guy Hunter, stands apart from the others in two ways. Firstly, it is more concerned with how target groups of farmers are organised or organise themselves than it is with the organisation of government services. Secondly, the paper raises more fundamental questions than the others. It asks if organisations in agricultural development are simply vehicles for other change or are themselves a main force for change. The major part of the paper is concerned with the question of whether criteria can be established by which to judge the appropriateness of institutional form.

Running through the second paper, by John Howell, is a concern for how best to organise agricultural activities or programmes which are being undertaken for the first time. He also pays some attention to farmers' organisations and in particular points out the difficulty of predicting how an existing organisation will cope with new functions and new procedures. His main concern, however, is with the organisation of government services. He discusses the extent to which classic principles of management theory are likely to be of help in finding an appropriate organisational form of a particular agricultural programme, but his most significant contribution is in some specific suggestions on how to assess, in advance of a decision about whether to fund a programme, the capacity of the organisations involved to perform their destined roles in implementing agricultural development. Two

appendixes to his paper list the sort of information that should be collected in a pre-investment survey of organisations and management and the issues or questions which should be raised and considered in coming to a final decision on organisation and managerial form.

The remaining three papers are concerned, in one way or another, with the assessment of the management of programmes or projects already in existence either through a regular process of internal monitoring or through periodic evaluation, usually by an external agency. They also share the view that, although it is a hallmark of good management that it should have clearly defined objectives, it cannot be evaluated solely by its success in achieving these objectives since many important factors that determine success may lie quite outside management's control. Additional or alternative criteria therefore have to be found by which the quality of management can be judged. The paper by Ian Carruthers and Eric Clayton provides an analysis of management by functional areas and activities. It emphasises the importance of one of these activities, monitoring by management, both as an aid to management and as an index of the quality of management, and discusses the limited utility for management of existing monitoring procedures.

Deryke Belshaw's paper discusses some of the problems of appraising, monitoring, and evaluating the performance and management of agricultural extension programmes. His concern is with the development of new programmes and he emphasises the need to establish clear objectives and detailed monitoring procedures at the planning stage; the indicators to be used and the data to be collected should be determined in accordance with the needs and capacities of those who will be responsible for management. If these conditions have been met, he sees it as the function of the project managers to identify the causes of any shortcomings in performance which may occur: in this case, the purpose of evaluation might be largely to establish the extent of the programme's financial and economic success.

Anthony Bottrall's paper outlines a proposed methodology for evaluating the organisation and management of large-scale irrigation schemes. His conclusions are based mainly on observations made on schemes in South and South-East Asia, most of them long-established and conspicuously lacking the well-planned procedures and monitoring systems recommended by Belshaw. Hence his emphasis on the importance, in such circumstances at any rate, of external evaluations which will go beyond the measurement of performance and probe deeply into the causes of observed shortcomings. On many irrigation

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schemes these are likely to include fundamental flaws in organisational structure as well as unclear objectives, badly-devised procedures, inadequate training facilities, and poor motivation. Evaluation is here seen as the first step towards the introduction of new structure and management methods on existing schemes and as a guide to pitfalls to be avoided in the planning of new schemes.

Anthony Bottrall
John Howell
Stephen Sandford

1 Institutions and Culture: Problems of Criteria for Rural and Agricultural Development Projects

Janice Jiggins and Guy Hunter

Overseas Development Institute, London

Institutions as Infrastructure

In many development projects the identification of institutions responsible for implementation is seen as a residual decision to be made after the selection of technological and economic innovations has been determined. Further, institutions are often perceived, by extension of engineering and economic concepts, as 'infrastructure', as necessary constructs to provide delivery or supporting facilities and services which the existing social environment does not and, by implication, cannot provide. This assumption has not withstood the lessons of experience. The 'technocratic' approach is associated with the concept of historical processes as a passage through 'stages of growth', an idea popularised by Rostow in his *Stages of Economic Growth*, and taken up by Mosher in *Getting Agriculture Moving* in which he identified five essential preconditions and five 'accelerators' of agricultural modernisation. It was assumed by many, if not by Mosher himself, that the provision of key institutions such as rural banks would themselves initiate processes leading to self-sustaining development.

Similarly, institutions are often seen by planners as relatively autonomous and discrete organisations which can be dropped into any social matrix and be made to function according to their own objectives and internal procedures and values. This assumption is also based on a faulty perception of rural realities and has had to be modified by experience. Institutions are only rarely relatively autonomous organisations and specific institutional forms cannot be made to function in more or less the same way whatever the social context.

Assessing Local Institutions

Many assessments of institutional performance resort to measuring only what can be measured, with reference both to internal and external factors. Judith Tendler has documented and criticised the adverse consequences of what she calls the 'numbers approach' to small farmer organisations by USAID in Honduras and Ecuador. Institutional success is judged on the basis of such indices as membership rolls, dues

intake, etc, that is, on the achievement of institutional goals rather than the achievement of project objectives. It is indeed a common assumption that achievement of quantifiable goals is a sufficient and relevant measure. This is partly because the objectives of project design and operation are often perceived wholly or mainly in production terms, to the neglect of questions of social organisation and distribution of benefits. It is also partly that standards and criteria other than numerical indices have not been agreed upon or accepted among specialists.

In addition to the inadequacies of the 'numbers approach' emphasised by Tendler, the temptation to collect socio-economic facts also bedevils institutional choice and assessment. There have been umpteen baseline socio-economic surveys whose contribution to institutional planning and evaluation has been minimal, and, it is important to stress, not solely because of restrictions on the processing of the information gathered. Nearly all these surveys present a static picture of the society they are supposed to describe, and as such provide a wholly inadequate picture. The work of social anthropologists, such as Jack Goody, on the 'development cycles of the domestic family,' which emphasises the variations in labour availability, family expenditure, household size, consumption patterns and so on over the lifetime of a family group of lineage, has been largely ignored by development specialists. Similarly, the implications of seasonality for the capacity of agricultural families and individuals to participate in development programmes and institutions has scarcely been recognised.

Institutions and their Environment

Wherever an institution is interactive with and responsive to its social environment, it will be permeated by the structures and values of that environment. This applies both to government organisations such as agricultural extension services and to farmers' organisations at the local level. To take only one such institutional form, there is a mass of documentation to illustrate that farmer co-operatives are not impervious to their surrounding social structures and values. Where societies are inegalitarian or hierarchical, co-operatives too will become inegalitarian or hierarchical organisations. The case of the Comilla experiment in Bangladesh is of particular interest here because it has been seen by some as an answer to the design of organisational structures which efficiently serve the small farmer. In the early years strong political leadership was able to counteract pressures forcing the village-level co-operatives towards 'elite bias', but over time both loans and overdues became skewed in the favour of the larger farmers who, according to

Blair, 'appear to be tied into the traditional leadership structure and who stay in power year after year, despite the requirement for yearly election of a manager and model farmer'.

It is instructive that just as in the early years the nascent co-operatives had to seek political support and protection from elite dominance, in the end it was the political leadership itself which helped to corrupt the objectives and divert the benefits of the co-operatives. Beginning by supporting the mass of the smaller farmers against the traditional local elites, the politicians found in the end they could not do without the local elites' political support. It was not in all cases a blatant reversal of interest but, seeking to extend their influence on the rural areas, the politicians were tempted to use the village co-operatives as the instrument of political penetration. This — coupled with the misguided assumption that if some credit was good, more credit must be better, which led to a sudden and large expansion of funds to the co-operatives which the local credit administration could not cope with effectively — signalled that the Comilla experiment was no more successful than others in restructuring inegalitarian communities or ensuring that the benefits of development reached the poorer sections. Blair concludes: 'It was in all probability unavoidable that the Comilla societies would turn into instruments for reinforcing the distributional *status quo* in both the economic and political sense'.

The Problem of Generalisation

Of course, we are all familiar with *ex post* evaluations by social anthropologists or political scientists who berate the project authorities for neglecting to take into account various characteristics of local society, be it respect for age or ranking, magical beliefs, faction, the many and often subtle channels by which economic dominants maintain their grip on their local community. But it is the *ex ante* appraisal (what form of institution to suggest or foster) which is far more difficult and important. Recording failure and the reasons for failure in particular cases is not only a gloomy pursuit but also only very marginally useful unless the reasons can be at least roughly generalised in the form: 'In a society with X¹ Y² . . . characteristics, hesitate to introduce institution Z'. We say 'hesitate' because our present state of knowledge is still unable to construct a reliable typology of village societies, even only in respect of their compatibility with a limited range of possible institutions.

In any case, evaluations which take a very generalised line are not always helpful. For example, Coward's study of irrigation management

in a Philippine case suggests that conflicts between local cultural expectations of 'ideal' institutional performance and the actual way in which the institution works is at the root of the difficulties. But this is only to state the problem of cultural expectations *versus* institutional form and management in a different wording.

It is also, on the face of it, improbable that single-factor theories will be adequate. There is plenty of evidence that to pick up traditional institutional forms and try to use them for modernising activities is more likely than not to fail, mainly because the form of institution or group is often indissolubly linked to the form of traditional activity. Even this is not an invariable rule and there are cases (eg savings groups, credit societies) where the modern and traditional activity largely coincide. Dramatic economic gain as a successful incentive for launching institutions (pricing policy or common use of a highly rewarding facility) has perhaps more general success. But even here, access to the means of gain, or degree of risk to be taken, will have to be taken into account.

Moreover, some incentives may be highly attractive to individuals but not necessarily for group-formation. Roger King, writing on the factors governing farmers' choices between individual and group action, suggests that the arrangements for decision-making on resource use, benefit distribution, and resource disposal are critical; and that institutions should 'respond to unrealised economic opportunities and avoid non-essential adjustment to social values and norms'. Yet it seems unlikely that this fairly limited advice will be, by itself, a reliable guide to cover a wide range of situations and motivation.

Possible Directions

Granted that institutions are almost certain to be permeated by local cultural and even structural and political values, (and that evaluation by merely quantitative measures of performance is not enough), what is the developer to do?

In terms of our concern with choices of institutional action and the nature of management, it may seem that three questions may be particularly useful, *assuming that the main objective of a project has been defined*. (If for example, the project was designed primarily to assist the poor, it could not be evaluated as successful if it was very well managed and produced great benefits only to the rich). All three questions have both an *ex-ante* and an *ex-post* dimension.

- (1) How far is it necessary to take into account ascertainable social norms; and did the project design take such account, as far as possible?

- (2) How far is it possible to rely on self-managed participatory groups; and did the project design and operation rightly measure local possibilities in this respect?
- (3) What degree of external management is likely to be needed; and was this efficiently provided?

These three questions are, of course, too sharply distinguished. In most cases there is a complementarity between external and internal management. But for conceptual purposes the distinction can be made and we need to ask by what criteria should *each* of these questions be answered.

Social Norms

As to Question (1), the practical issue is how much time and expertise would be needed to uncover the most relevant elements in a local social situation; and a condition is that the time and expertise should be within limits consistent with regular and widespread use. This in itself precludes a comprehensive social survey. Moreover, surveys usually describe a static, present situation. They do not answer the key question, 'How much resistance to what kind of change would the society, or elements in it, offer?' — a question which social anthropologists are themselves very often unwilling to tackle. A more practical method may be, (1) to limit the enquiry to just the particular change which the project or programme envisages, and (2) to get as much information as possible from selected local people themselves. Such information will not have the coverage, nor the apparent objectivity, nor the statistical base of numbers of respondents, correlations, etc. But it will uncover attitudes; and in any case the formal survey may not be as objective as it looks, seeing that it rests ultimately on asking questions of local people. Selective questioning is probably best done by someone who already knows the area and people concerned, and it may be that local field staff, with some help, can carry out a great deal of it. There are questions of technique, personnel, and training here.

Once the information is gained, such as it may be, the developer may make his own decision as to what institutional method to suggest or write into the project. But there is an alternative — to ask people themselves to suggest it, or even better, to form a nucleus of organisation and contact themselves. This leads on to Question (2).

Self-Management

There are strong arguments for forming a responsive group which can play a part in the project. This method was in fact used in the 'Markaz' programme (N.W.F.P. Pakistan) organised by the Pakistan Rural

Academy, led by Akhtar Hamid Khan and Shoaib Sultan Khan. In effect, villages were offered certain investments and services from government on condition that they formed a committee, started weekly savings, and agreed to a training programme. While co-operatives are clearly a form of self-management, they are both an already structured package of forms and rules, and they are usually induced or even imposed as part of a governmental programme. Perhaps 'self-management' is only real if the participants hammer out, in internal discussion and compromise, the structure and rules which they are prepared to work. There is evidence (eg in small irrigation societies, savings clubs, cattle management schemes) that these self-organised structures can be successful for limited purposes.

There are obvious limitations on self-management: it does not, for example, lend itself easily to totally new technology or activities. Perhaps even more important, it can be an open invitation to the dominant individuals in the society to both start up and control the new activity. In the face of this danger, India — through the Small Farmers' Development Agency — established a section of the field services solely concerned with small and marginal farmers, and a form of mixed co-operative (the Farmer Service Societies) in which management was shared by small farmers and some officials sitting at the same committee table.

This raises a question whether programmes should be aimed at an area (eg a village or group of villages) or at a special constituency of people within an area. That constituency can be defined either by status (the poor, etc) or by function (all those farmers joining in a milk collection scheme). The status definition raises both political and social issues. Politically, can a government discriminate against an elite? Socially, is it possible to organise horizontally, by class or status, in a strongly hierarchical social milieu? The functional definition may have more chance of avoiding such problems.

External Management

Commodity production schemes, with outgrowers and a central professional management, covering grading, processing and marketing, often with specialised research and extension thrown in, are frequently quoted as the most efficient institutional solution to the combination of small-scale peasant production with expert technical, commercial, and managerial control. While such schemes usually depend upon monopsony of the crop and on high value of the product on which to carry management overheads, they clearly emphasise the advantage of unified organisation and management, making an unhappy contrast

with the tangle of government extension, bank credit, co-operative farmer-groups, and technical services from several different bureaucracies (Engineers, Water, Roads, Power) in which the bulk of agricultural development — including (alas) 'Integrated Rural Development' — is ensnared. The governmental system of vertical departmental hierarchies is not considered as an 'institution' in this Paper. But it certainly seems ill-adapted to provide integrated local management, and is almost always evaluated negatively.

The foregoing paragraphs may go some way to illustrate the nature of different approaches to institutional issues, but they do not go far to guide appraisal (*ex-ante*) or evaluation (*ex-post*) of institutional variants and their performance. It seems clear that to get any further in that direction these over-generalised 'types' of situation and action must be broken down into far more detail.

Reaching the Poorest

The cases where the socio-cultural situation is so strongly hierarchic that access to the poor is almost blocked off, are both politically the most urgent and sensitive and the most difficult, not least because they seem to clash with an instinctive feeling that institutions *ought* to be designed for compatibility with culture. It is worth cataloguing the main manoeuvres which have been suggested or used.

- (1) To create a special institution for the poor only, eg a 'Small Farmers' Development Agency'.
- (2) To create small groups round a narrowly defined function or facility — thus avoiding total village leadership. Facilities which the poor *must* share, while the rich have enough land to possess their own, may be especially suitable.
- (3) To deliver direct to the poor small-scale technology for individual ownership, thus avoiding dependence (eg the hand-operated shallow tubewell).
- (4) To alter research design, so that the risk-aversion of the poor is reduced by minimising financial inputs, and by 'weather and water-proofing' crop varieties.
- (5) To find a technology or innovation so decisively profitable that it overrides cultural habits — it must also be accessible to the poor, if that is an objective — 'old customs bow to great gains'.
- (6) To organise the poor politically to revolt against the hierarchy.
- (7) To accept the 'trickle-down' philosophy, hoping that the poor will benefit from the added prosperity of the rich in due course.

If we ask by what criteria is choice between these alternatives to be made, then the answers will presumably come from the particularity of each situation; from the information about the social/cultural structure which is gathered; from what is (slowly) being discovered about the capacity of small groups (particular immediate tasks?) and large groups (maintenance and expansion into organisations?); from the actual forms of social dominance, and from the detailed nature of the proposed change or technology. Appraisal will be based on these particularities; evaluation will show whether the appraisal was sound and the performance reasonably efficient.

Self-Management and External Management

Much the same applies to questions of Self-Management and External Management. The particular *technical* demands of an innovation may well decide whether a high degree of self-management has a chance of success; and the cultural situation (from primitive to highly commercialised and sophisticated) may give strong indication whether 'self-management' would be even acceptable, at one end of the scale, or virtually essential, at the other. Moreover, management is not an indivisible whole. It is possible to decide what elements of an activity are best self-managed and what require the planning and expertise of external services from a superior level. Some judgments about the capacity for self-management may be drawn from the history of the society in question; and there should, perhaps, be a bias in favour of experiment in this field, simply to counterbalance the usual presumption by the educated developer that illiterate farmers are incapable of running their own affairs.

It is perhaps worth mentioning that, if we were considering a free market situation and a highly developed economy with accessible shops and no shortage of key supplies, self-management would be much easier, with a range of choices. It is shortages, rationing, lack of purchasing power, lack of local stocks and distribution points, and subsidies which impose such a complex bureaucratic management system for credit and other inputs. The automatism of the economic system is not working, at least for the poor.

Some Points of Emphasis

(1) The fact, stressed in the Introduction, that far less attention has been paid to these subjects, in the field of action, than to scientific appraisal (soil, water, plants, etc) and to economic appraisal is a reason for hope. There *is* a large body of knowledge about human behaviour

and indeed about behaviour in developing agricultural communities. There is, indeed, a considerable job to be done in ordering this research into a body of usable principles and in research to fill gaps or resolve inconsistencies. More attention will accelerate this.

(2) One lesson of these pages seems to be that, at this stage, less broad theory and generalisation, more disaggregation and attention to specific single factors, and their interaction with each other, and more theory and thus criteria about these detailed factors is needed. There is even perhaps a hint that a single, specific innovation, with a clear economic gain to a target constituency, and a limited institutional arrangement suited to it, negotiated rather than imposed, may be a helpful philosophy and an aid to appraisal and evaluation.

(3) The example of managed commodity schemes, though probably not directly applicable to staple food production, may nevertheless have more implications than are realised for the structural organisation and management of governmental/parastatal services at field level; this is a field wide open for research.

(4) We are dealing with social and economic change, a process rather than an event. In history, even where there is no self-conscious change agency, the process of social change may be started by a new technique (even barbed wire), a new road, a new institution (the limited liability company); and this novelty may spread into multiple social and economic modifications and initiatives. It may well be that the projects and programmes seek to anticipate results which need time and are sometimes unforeseeable. This has a relevance to appraisal and to evaluation. For what starts as a small group may become a large one; what starts as self-management may later need external help or regulation. Thus 'solutions' are time-bound, not final; and perhaps continuous field experimentation, monitoring and adjustment may be more effective than one-shot evaluation.

(5) The search for criteria has to continue, though it will never be complete and will certainly be less than 100 per cent reliable. But at least some consolidation of ground already won (for example, the extensive work on the social and economic functioning of co-operatives in different situations), and some new work on the many gaps is surely worthwhile. The most difficult area is still likely to be the search for criteria by which to judge how far it is necessary to adjust proposed institutions to social norms (which are likely to differ between sections of the same local society anyway).

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2 Assessing Management and Organisations for Agricultural Development Projects

John Howell

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Introduction

The difficulties of managing agricultural projects and of finding 'appropriate' implementation structures have received increased attention within the development profession — especially over the past few years — and there seems little doubt that a number of general lessons have been assimilated by governments, donor agencies, and consultancy firms. Most of those involved in the planning and implementation of new projects would now accept, at least in theory, the necessity to accommodate, or develop, farmer organisations; the need for project authorities to work in harness with existing governmental structures; the need for a careful assessment of staff resources and motivation; the importance of central political commitment, etc.

There has also been increasing attention paid to the specific management problems associated with different agricultural environments and with different agricultural services. It is possible to hold a conference anywhere on any aspect of agricultural development and find any number of perceptive scholars, planners, and implementers, giving each other valuable information and finding wide areas of agreement on what ought to be done. But visit an agricultural development project, and — more often than not — the picture is one of widespread cynicism and frustration.

This is usually put down to a number of factors: among the more common are lack of staff funds, poor price incentives, and different forms of unethical behaviour. 'Poor management and organisation' is another factor, with more specific diagnoses including departments given tasks beyond their capacity, inability to get information from, or to, farmers, an uncertainty about who is in charge of what, delays in reaching decisions, etc. Solutions to these sorts of problems are obviously the stock-in-trade of management and organisation specialists. So why — despite the *generally* higher level of understanding of management and agricultural organisations — has the *specific* contribution from management studies been so unremarkable?

The specialists themselves would suggest that it is because their skills are insufficiently recognised by practitioners. Practitioners, I suspect,

would reply on two grounds:

- (1) agricultural development covers such a wide range of situations that it is both impossible, and undesirable, to adopt any common prescriptions on how to plan and implement a management or organisation strategy;
- (2) concepts derived from the literature of Organisation Development (OD) and techniques drawn from the management of enterprises (such as Management by Objectives or network analysis) sometimes provide interesting insights and useful tools, but on the whole, agricultural projects have little to gain from experience elsewhere. Agricultural projects are considered such a minefield of uncertainty that in practice it is impossible to prefabricate any detailed organisational structure as there has to be a constant process of adaptation and extemporisation. The only useful management prescription, therefore, is likely to be 'find a good manager'.

To claim that there is a significant 'gap' between management theorists on the one hand and project practitioners on the other is something of an exaggeration: there are not a great many people giving sustained thought to the problems of agricultural management anyway. There is however another gap which is observed rather more often, particularly at the project level. This is the gap between the general lessons and prescriptions which have emerged from studies of agricultural development projects (and which are largely accepted by project managers) and the nature of the problems which arise in project management. Practitioners are likely to agree in theory on some notionally desirable organisation and management strategy but will claim that their particular problems are 'unique' and are not susceptible to rational analysis. Thus for example a senior livestock planner responsible for a large rangeland project may say: 'I know it is ridiculous to set up group ranches without any form of consultation but unless we do it we shall lose the entire project'. And a head of an appraisal mission for a resettlement scheme may claim: 'Of course there will be duplication of functions and problems of eventual transfer of responsibilities if we have an autonomous project authority but this will be nothing to the chaos and conflict that will result if we try to work through the existing Ministries of Irrigation and Agriculture'.

A major issue for students of agriculture project management is, therefore, whether any of the general guidelines on organisation and management can be of any practical utility to those concerned with identifying, planning, appraising, managing, or evaluating projects. In particular there is a need to examine the form and the timing of questions about management and organisation in relation to the project

cycle. In the latter part of this paper I examine the particular problem of assessing the capacity of institutions to implement project proposals and my suggestions are particularly related to large-scale area development projects involving the co-ordination of a number of inputs from several agencies and the development of a number of new functions and procedures possibly involving the creation of new agencies. But before considering assessment and project management, I shall discuss some of the more intractable areas of agricultural management generally and I shall briefly examine the relevance of management and organisation studies to agricultural development.

Agricultural Management

The term 'management' is used in various ways. In their paper, Clayton and Carruthers categorise management by the different 'functions' of policy-making, resource organisation, and executive control. I find 'levels' of management a rather more useful categorisation although it rests upon a similar framework. At one level, management is concerned with planning the use of resources. For example, we would normally regard 'the management of rangelands' as how we might best develop the physical and animal resources of a particular region. This could be termed '*strategic* management'. At another level, we talk of managing a specific task such as keeping a number of pump stations in operation or organising an itinerary for cattle-buyers. This could be termed '*executive* management'.

Throughout this paper I use the term 'management' somewhere in-between strategic and executive management: it is the *organisation of resources* to implement a number of activities in a project, which has already been formulated, to meet certain objectives. (The problem of defining 'objectives' is considered below).

The 'organisation of resources' presents a particular problem for *agricultural* management, and thus for project managers. An agricultural manager is responsible for the provision of services to the farmer and for projects designed to improve livelihoods from the land. However, the *use* of resources — such as land and water, labour, technology, capital — is determined not by the manager but by the individual producers. Of course the agricultural manager has *some* resources under his direct control: his staff, a budget, vehicles, etc. Yet as far as the most important resources are concerned the agricultural manager can only attempt to induce change in the behaviour of those who are outside his control.

A *farm* manager is, of course, in a different position. Like a farmer, he has the capacity to control directly the organisation of resources —

at least, within the limits of nature. On large plantations and some closely-directed settlement schemes the manager is effectively a farm manager and he is unlikely to face the range of difficulties that beset the 'agricultural' manager. I would suggest that on large schemes of this sort there are far fewer management and organisation problems and this is reflected in the low demand for research into the organisation of, for example, rubber and sugar estates.

The agricultural manager depends for his success in meeting project objectives upon the willingness of the producer to commit his resources to a particular activity within the project. The manager, however, very rarely has more than partial control over the inducements that he is able to offer. At the strategy level, decisions on, for example, price structure and the cost of inputs are likely to be determined by the central government. Furthermore the manager is also dependent upon the collaboration of other agencies which do not have any particular incentive to provide the level of support which the manager requires. A credit agency for example may be more concerned with improving repayment rates on existing loans than upon extending its loans to a further group of potential borrowers.

It is because of this difficulty of 'reaching' the farmer, and of reaching the farmer in a co-ordinated way, that so much attention has to be paid to 'integrated' projects whereby services are concentrated in a particular area and co-ordinated in a project involving several sectors. It is in such projects that the most difficult organisation and management problems are found; yet because such projects involve so little management control over the use of resources there are relatively few lessons to be learnt from other areas of management where control over resources is the basis for developing procedures of management and forms of organisation.

A further problem for agricultural project management is the difficulty of assessing the capacity, and willingness, of communities to manage some of their own affairs. The term 'participation' is now more widely used than 'community development', although as Uphoff and Cohen (1977) point out, the term is used variously as (1) sharing in benefits; (2) sharing in decision-making; and (3) sharing in implementation. *Local* participation can also be confusing: does it mean *all* local people — including women, landless etc? or local farmers? or local leaders? or local officials? Assuming, however, that these definitions have been resolved, what are the sorts of issues that need to be examined from a management perspective?

Firstly, there is the issue of the functions of existing institutions. It is quite possible that a good deal of information can be found on ways in which communities are organised to support agricultural production,

from co-operative marketing arrangements to the adjudication of ownership of gum trees. The problem lies in predicting how such institutional arrangements are likely to accommodate new functions which become necessary for the implementation of particular project activities. In particular the planner needs to have information which will enable him to assess whether existing institutions — and leaders — are likely to obstruct or adapt to new functions, what sort of inducements are likely to work, what new institutions are likely to survive, etc.

Secondly, there is the issue of decision-making within institutions. The demands for participation often involve the establishment of decision-making procedures, such as regularity of meetings, recording of decisions, delegation of responsibility, and reporting requirements. An assessment of how far such innovations are likely to work must obviously be based upon an examination of how decisions are taken within existing organisational arrangements.

It may be an unfair comment, but I suspect that while many sociologists working on development projects are offering a great deal towards better *strategic* management decisions (or policy generally), their work is not sufficiently geared towards specific *management* questions; and this makes the planning of implementation particularly difficult as there is often little informed prediction on how community organisations are likely to work.

Unlike 'community management', the problem of 'personnel management' in agricultural projects may seem to be one of the more straightforward management problems. In project planning it is generally conceded that existing staff are poorly trained and therefore it is normally accepted that a training component is required in a project. Staff are also frequently seen as 'poorly motivated' so projects are often designed to provide incentives in the form of additional allowances, improved promotion prospects etc.

Project managers themselves (at least, most project managers that I have met) tend to see the personnel problem differently from project planners. For them, staff are poorly disciplined and what is often required is more control over staff through autonomy from public service regulations. These often protect project staff from prompt disciplinary action and impose conditions of service (relating to secondment and transfer for example) which greatly reduce the discretionary authority of the manager and thereby inhibit project success.

In planning a project, personnel resources and staff structures are not always assessed carefully although this is a relatively straightforward task. There is, however, a need to go beyond such matters as staff levels, training, salaries, and condition of service. There are also very difficult questions of organisational loyalties and values. The

importance of such questions arises particularly where new functions are envisaged or where new administrative procedures or agencies are introduced. In these circumstances it is necessary to know how particular officers regard their work and the work of other departments and to anticipate how particular groups are likely to respond to being given new functions or to being incorporated into a new agency. For example, in a major traditional sector livestock project it is likely to be necessary to know how range management officers see the functions of their department, how far they are willing to enforce measures of stock control or, in case of specific project proposals, how they would respond to temporary secondment to a new Rangeland Development Authority.

An assessment of the way people are likely to behave *within* project organisations is as important as an assessment of the likely response of producers outside the organisation. However, such an assessment is likely to be difficult. The only realistic way that it could be made is through examining the structure and resources of particular organisations, the internal decision-making process and the links with other organisations. It is in this area — assessing formal organisations — that organisation theory would appear to offer most to an understanding of the management of agricultural projects.

Organisation Theory

There are certain 'principles' of management which provide some markers for assessing organisations, especially, for example, where there appear to be too many tasks for the resources or powers available to a department, or a constant conflict over responsibilities between agencies, or a failure to respond to demands generated by the actions of a different agency. Critics of this 'structural' approach to management would suggest that it puts too much emphasis upon the need for lines of responsibility, co-ordination, control, clear job description, etc, at the expense of the intended *purpose* of the organisation. Thus, it is argued, the creation of a rational organisation structure becomes an end in itself with a harmful imperative towards hierarchy and functional specialisation.

A different approach — attractive to the management profession but not very often adopted in agricultural projects — is one in which the organisation is built upon the technological and social environment in which the project operates. For example, in a small farmer development project the organisation of services would be designed not according to particular input functions considered desirable by planners, but according to location (ie where people live) and to the phases of farm activities (ie pre-planting services, post-harvest services etc). In

theory therefore, it is the objectives of the producers themselves which determines the form of organisation.

This is hardly a major theoretical breakthrough and what is sometimes termed the 'open' approach is as much a criticism of existing organisations and projects as a prescription for alternative project organisation. Nonetheless it provides a useful perspective on agricultural development in that it argues that the symptoms of organisational weakness, such as overlapping control, failure to act, decisions taken in ignorance etc are the result of the *structures* of a project being 'dysfunctional' with the *objectives* of the project.

For practical purposes this would suggest that management experts in project planning ought to be looking not so much at how existing organisations work but more at the detailed definition of objectives and implementation tasks at various levels as a prelude to suggesting organisational arrangements which will meet those objectives.

The importance of defining 'objectives' is basic to most contemporary management writing; and a definition of 'goals' and 'purposes' is central to the logical framework matrix now adopted as a tool of project management by both AID and CIDA. However the difficulty of defining objectives is particularly marked in agricultural projects and this difficulty limits the practical utility of setting management objectives at a number of different levels within the project. It is clearly useful for a project organisation as a whole to remind itself continually that its primary overall objective is, say, to achieve sustainable increases in the production of specified cash crops by all farmers in a particular district. But within the project this objective has to be broken down into a large number of sub-objectives which can provide an operational guide to individual units which make up the organisation of the project.

This is where difficulties arise. Let us say that one of the project's units is concerned with extension services to tobacco growers: its objective may be to increase hectareage under tobacco by 300% in two years and increase per ha. yield by 25% in the same period. In practice realisation of these objectives is outside the control of the extension staff. The objective is simply a *target*, but the failure to achieve this target will not necessarily mean that the particular unit has been mismanaged. The objectives of the unit may be put differently of course. For example, the objective may be to visit 150 farm families at least twice in the course of the pre-planting season. But here the objective is simply a *task*, unrelated to the purpose of the visit and unable to provide a measure of output. The problem with setting management objectives is that the only realisable objectives with a known duration and demand upon resources are likely to involve routine matters rather than those involving adaptability and initiative.

It should be noted however that on long-established projects — involving irrigated agriculture for example — it is the failure to undertake routine tasks which often presents the sharpest challenge to management.

It is easy, of course, to criticise organisation theory as bearing little relation to the 'real', or informal, decision-making process and of being incapable of recognising the importance of individual ambitions and rivalries determining the course of development programmes. Yet the difficulty of applying behavioural studies to project planning of organisations is that (1) they are most credible when analysing *past* performance and (2) organisation behaviour studies require a fairly sustained and sensitive input from a social scientist with considerable local experience.

Schmid and Fas have suggested one possible use of behavioural studies in testing alternative institutional strategies. Using bargaining concepts (in which agencies are seen as possessing separate interests and tradeable 'resources' which they are prepared to withhold or offer in return for support for their own interests) they suggest a way of assessing different outcomes. If a planner is aware of the balance of bargaining power then he can look at alternative strategies (from dispersed functions to an entirely new Authority), see how different agency interests are likely to be affected by each, and thereby suggest the agency structure most likely to prove supportive of project objectives. In practice, project planners are unlikely to have this sort of information or the manipulative power to put it to use anyway; but nonetheless it is useful to attempt to anticipate sources of support and obstruction especially in large foreign-aid rural development area projects where the tendency has been towards getting as much distance from existing government agencies as possible.

Duncan — in compiling 'An Experimental Guidebook in Scholar-Practitioner Communication' for AID — suggests that we can understand the way organisations work — or are expected to work — in terms of a number of internal variables and external linkages. The internal variables are: leadership doctrine (or values), programme, resources, and structure. This framework can be used at various 'stages' of institution-building in a project and Duncan suggests that these are: innovation, consolidation, maturity, and rejuvenation. At each stage the framework helps to analyse defects and point to necessary changes. The terminology may not easily recommend itself to project planners and managers but the notion that these are questions about organisations that *invariably* need to be asked is likely to be acceptable to those who feel they are confronted with a quite unmanageable maze of bureaucratic obstruction and inter-agency conflict. The problem is to

find a way of putting to use the concepts of organisation theory which is both comprehensible to the project planner and also of operational utility. This is not simply a matter of asking the right questions. There is firstly the issue of at what *stage* in a project the questions should be put; and secondly the issue of *who* should ask such questions.

The Project Cycle

In a typical project cycle of an agency such as IBRD — identification: planning: formulation: design: appraisal: implementation: evaluation — the *organisation* problem is likely to be seen as part of the 'design' stage and the *management* problem seen as part of 'implementation'. However in terms of an input into project planning, management and organisation studies are needed earlier in the cycle.

It is during the pre-investment *planning* stage that resources to be used in the organisation of a project need to be examined. These include governmental resources (history, structure, effectiveness etc) as well as farmer organisations and any private commercial organisations. This information — a form of organisational survey — allows an examination of alternative organisational strategies during the stage of project *formulation* and these strategies can be weighed against not only project objectives but also against the subordinate organisational objectives (such as replicability, gradual lessening of government input, development of local authority). By the project *design* stage there should be sufficient information and clarity of purpose to frame a detailed management structure, with defined organisational tasks and links with external institutions. For the *appraisal* stage, the necessary input concerned with organisation and management is probably best dealt with as a check-list of the sort recommended by ODM for economic appraisal (ODM, 1977).

This means there are, ideally, *four* stages at which management and organisations are examined even before implementation and evaluation: organisation survey (planning), examination of alternatives for implementation (formulation), project organisation design (design), implementation check-list (appraisal). This clearly represents an inordinate amount of time and energy for a process which is already long and sometimes over-sophisticated. In practice however, the only major inputs come, or should come, in the planning stages.

As far as any generally applicable methodology is concerned, I would suggest that there is unlikely to be anything useful to be gained from suggesting a framework for the *design* stage unless this is confined to particular types of agricultural project with similar technical, and environmental characteristics. In such cases there is also a strong case

for systematizing lessons from experience. Similarly, decisions at the *formulation* stage are likely to be considerably improved where it is possible to draw upon the experience of similar projects, but a common methodology is likely to prove elusive.

This is however a case to be made for a more systematic approach to organisation surveys in *planning* and to the use of organisation and management check-lists in *appraisal* for all types of new agricultural projects, and I return to the mechanics of this below. But first, there is a case to be *answered* against three objections to this emphasis upon organisation and management in agricultural project planning.

The Case for Organisation and Management Studies

Firstly some might argue that this represents far too much time and energy for a reward which is unlikely to be more than an informed guess anyway. I would reply as follows: (1) as Sandford points out (1975), the long project cycle represents brief fits of work interspersed by long periods of waiting for something to happen. Additional attention to organisation studies need not therefore extend the project cycle; (2) in practice, much of the work on assessing institutions and working out who is responsible for what takes place only after a project has formally 'started' with subsequent delays and sometimes crippling costs to morale and project credibility.

Secondly, some might ask if a 'systematic' approach is *always* necessary? Obviously where there is a large area development plan involving settlement, new technology, and land use, and a major input of services, there is a strong case for careful assessment of organisational resources and capacity. But what of a modest project centred around a particular department or sub-sector: take, for example, a project designed to introduce motorised boats to lake fishermen. On the face of it, this is straightforward, but nonetheless there are likely to be problems of organising loans, maintenance, marketing for increased catches, etc. Organisation studies may be simpler than in a large integrated project, but they still serve a useful purpose and the outline of a survey is likely to ask many of the questions which are put in larger projects.

Thirdly, some may ask why it is necessary to go to this trouble when planning projects for poor farmers in Idcs while even more ambitious projects in rich countries are seemingly organised perfectly well without recourse to organisational feasibility studies and the rest? The responsibility for the creation of a number of new settlements in Britain after 1945 was, it seems, effortlessly taken up by a newly-created New Towns Commission with each settlement under the supervision of a Develop-

ment Corporation working alongside, and eventually handing over to, an existing local Council. In 'projects' such as these, is anyone given responsibility for assessing organisational capacity and setting out alternative designs? Perhaps not, but it seems likely that considerable attention is paid to functions, structure of decision-making, organisational linkages etc even if this language of management theory is not adopted.

The case for systematising this process in the case of agricultural development projects is that there is so much more uncertainty about what is likely to work and so few in-built checks against taking a wrong decision. In many developing countries, the seemingly cavalier creation of new authorities and local organisations and sudden transfers of functions is a reflection, at least in part, of the lack of information on institutions and their capacity to perform functions assigned to them.

Information Needs and Staffing Requirements

I suggested above that there are two stages in a project cycle where it might be possible to design a specific management and organisation input which could be applicable across a wide range of agricultural projects. The purpose of such inputs would be to assess the capacity of institutions to implement the objectives of the project concerned.

In the planning stage, this input would be a survey of the resources of existing organisations, and in the appraisal stage, the input would be a check-list of management questions.

In practice, of course, appraisal missions may have to start from scratch in assessing how a programme can be implemented. Alternatively, they may have only uneven information: say, a good grasp of how relevant government agencies work, a clear idea how some parts of the farming community are organised, but little information on how private commercial organisations operate. My main argument, therefore, is not so much for 'staging' organisation and management studies inputs but for ensuring that at some stage certain information should be available and certain questions should be asked, and the Appendixes are addressed to this aspect.

To suggest a management 'input' is not necessarily to suggest a management 'expert'. There are three considerations:

- (1) *availability*: Because management and organisation aspects of development planning have not received a great deal of attention, there are not many staff working within aid agencies or consultancy firms who have sufficient experience (or interest) to undertake surveys of organisations;

- (2) *demarcation*: much of the information required in an organisation survey is likely to be available in a different form. A sociologist (or human geographer or whatever) will be finding out about the organisation of farmer groups; an economist (probably) will be looking at marketing and credit organisations;
- (3) *time*: an understanding of how government organisations, local councils etc work needs familiarity over some time (Green suggests twelve months). For this reason the task of looking at organisations may best be given to someone who is (a) in regular contact with different agencies and (b) is doing something else at the same time.

Unless there is a demand for a separate input from someone with management and organisation expertise (as, for example, where a major regional development authority is being considered), the task of surveying organisations is probably best left to a team leader drawing upon contributions from staff designated 'sociologist' or 'economist'. As there is little specialist knowledge required, there is no reason why, in theory, a person normally remote from organisation studies — say, a hydro-geologist — should not undertake the survey, as long as there is a 'model' to follow, sufficient access to the information required, and a sensitivity and analytical capability in this difficult area. In practice, this may be asking rather a lot.

An organisation survey cannot be done simply as an isolated exercise in information-gathering; whoever undertakes the task needs to keep in mind the rationale for such a survey which is to contribute towards an answer to a number of basic questions:

- (1) Is there likely to be sufficient capacity within existing organisations to undertake new or extended functions?
- (2) How are any changes likely to affect the interests of existing organisations and how are they likely to respond?
- (3) What are likely to be the critical areas in implementation in terms of the response and effectiveness of existing or projected organisations?

Appendix 1 — an 'Outline Survey' is in two parts: the first (1-4) looks at 'who does what?', the second (5) is concerned with links between organisations, or 'who decides what?' There is no formal attempt to assess the political, social, or economic forces which determine answers to both these questions. This assessment is partly implicit to the information of course, but anyway questions of interests — 'who benefits from what?' — are best handled in the appraisal where I suggest — in Appendix 2 — a check-list of questions. This allows the survey to remain a relatively straightforward — and uncontentious —

exercise; with the more difficult areas of judgment held over for the later stage. In theory at least, part of the 'answers' to appraisal questions should be found in the initial survey; and as a corollary, the survey itself should contain as little redundant information as possible.

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Appendix I — Outline for a Survey of Organisations and Management in Agricultural and Rural Development Projects

(1) Community Organisations

Three types of organisations, which are defined according to their functions, should be examined. These are:

- (a) *Resource Management/Allocation* (these should include such things as local tenure arrangements as well as any groups or individual leaders who by common consent control the use of wells or enforce grazing controls).
- (b) *Production Support* (these might include group marketing schemes, local arrangements for fertiliser distribution, etc).
- (c) *Community Welfare* (eg traditional courts, benevolent societies).

For each type of organization note:

- (i) history (or duration);
- (ii) structure — including membership, where relevant, and leadership;
- (iii) internal decision-making (regularity of meetings, etc);
- (iv) powers and effectiveness.*

(2) Government-Community Organisations

(These are organisations which are communally-based but which have been either instigated or supported by government. Again, history, structure etc should be examined.)

- (a) *Agricultural Services and Production* (from, eg, marketing co-operatives to farmer clubs and including arrangements for group tractor-hire etc).
- (b) *Community Development* (eg 'self-help' groups, village development committees).
- (c) *Representative/Political* (eg local councils, party branches).
- (d) *Past Experience*: note if there are any organisations or arrangements which have lapsed in recent years and suggest reasons for lack of success.

(3) Private Commercial Organisations

(ie neither controlled by community groups or government). As an

* The term 'effectiveness' means the extent to which organisations achieve their particular purposes. It is a particularly useful question to ask as it focuses attention on the 'objectives' of organisations, which may not always be clear.

example these could be divided into:

- (a) *Credit*
- (b) *Agricultural Supplies*
- (c) *Marketing*

For each discuss (i) the history and composition of each group (eg small merchants, bigger farmers, national wholesale company, etc); (ii) present effectiveness; (iii) future capacity to meet demand.

(4) Government Organisations

- (a) *Central Ministries and Ministry Departments* (only Agriculture in detail; Planning, Finance etc only in so far as they affect Agriculture). Note: (i) broad responsibilities; (ii) any recent history of change; (iii) share of recurrent and capital budget; (iv) staff position for Agriculture; (v) any personnel information (eg on transfers, secondment, professional identity).
- (b) *Parastatals and Special Agencies*. Note: (i) functions; (ii) effectiveness; (iii) recent history; (iv) possible future: eg constraints to expansion.
- (c) *Provincial and/or District Administration* (where relevant). This refers to countries where there is a degree of autonomy delegated to an area. Autonomy can be gauged on the budgetary process or personnel control (ie consult estimates and establishment register). Note: (i) functions; (ii) effectiveness; (iii) any future plans for extending authority.
- (d) *Field Administration Agencies* (ie of Central Agricultural Ministries, parastatals, and special agencies). Note: (i) links to centre; (ii) internal chain of authority; (iii) functions; (iv) effectiveness — including access provided to different groups in the community; (v) staffing levels and morale; (vi) funds committed.

Also note any agencies which have not operated in the plan area previously or have been withdrawn.

(5) Decision-Making

(This is concerned with the location of decisions and the links between organisations). Depending upon the national political and administrative structure, these are likely to be the key areas:

- (a) *Central Government and Parastatals*
 - (i) *Agriculture in Central Government* (note relationship of Agriculture Ministries in relation to national planning, foreign aid administration, expenditure controls, manpower development).

- (ii) *Ministries and Parastatals* (note relationship between agricultural parastatals, special agencies, and ministries, including recruitment and staffing positions).
- (b) *Provincial Administration and Field Agencies*
 - (i) *Links with Central Government* (note where there is strong central control over eg staff, spending and where local decisions can influence the centre eg on minor investment).
 - (ii) *Provincial (or District) Links* (note mechanisms for co-ordination between field agencies and province — or control by latter. If (eg) a single provincial development budget, note how budget submissions are actually made).
- (c) *Community Organisations and Field Agencies*
 - (i) *Services Co-ordination* (Examine procedures by which different agencies — government, parastatal, and government supported community organisations — collaborate on the provision of services to farmers. Note also role of private commercial organisations and their links to agencies. Examine any recent attempts to improve or extend services).
 - (ii) *Resource Management* (Delineate areas firstly, of government control or sanctions and note record of collaboration of community organisation, and secondly of local community control and its impact on work of government agencies).
 - (iii) *Community-Agency Links* (Examine those circumstances in which community organisations need to communicate their demands or provide information to government agencies; and assess existing channels of communication; where there appear to be no 'community organisations' examine ways in which agencies receive information from farm communities. Also note ways by which agencies seek to influence farm behaviour and any lessons from recent attempts at inducement. Attempt, if possible, an assessment of local attitudes to government at field level).

Appendix II — Check-List on Information for Appraisal of Agricultural and Rural Development Projects

(1) Responsibility

(a) *Centre*

- (i) Which central government agencies are involved in the project? Are their respective functions and responsibilities clear?
- (ii) Is there a clear relationship between the agency responsible for execution and other central agencies on questions such as release of funds, appointment of staff, extent of authority?
- (iii) Is there any machinery for collaboration? Is it likely to be effective?

(b) *Project Level*

- (i) Which local agencies are affected by the project? Are their respective implementation roles clear?
- (ii) Have the functions of the agency responsible been clearly defined? Do they contradict the functions and authority of existing agencies?
- (iii) Are there sufficient channels for information and collaboration between the executing agency and other organisations?

(2) Capacity

(If there is a new organisation to be set up outside existing government structure).

- (a) Does the project depend upon a new degree of co-ordination at the field level with other agencies? If so, have new procedures been suggested and are they likely to work?
- (b) Does the new agency have sufficient authority to execute the project? Does it offer sufficient inducements to gain the collaboration of other organisations?
- (c) Are there sufficient staff of the required calibre to sustain the agency? What are the likely costs to other departments of staff recruitment to the agency?

(If within any existing ministry)

- (d) Does the agency have sufficient authority within the ministry to sustain the level of output necessary to execute the project? Is it likely to receive the required resources, in terms of staff and equipment?

(3) Support

- (a) Is there any reason to believe that any existing agencies will be unwilling to co-operate fully in the execution of the project? What would be the impact of such lack of co-operation?
- (b) Is project success conditioned on the support of either private commercial or community organisations? If so, what are the inducements for support and what is their likely impact?
- (c) Does the project's success depend upon the creation of new farmer organisations or arrangements by which farmers will contribute to achieving the project objectives? If so:
 - (i) are these organisations or arrangements feasible?
 - (ii) are they likely to be opposed by existing groups?
 - (iii) are field staffs able to offer sufficient support to sustain these new organisations and arrangements?

(4) Past Experience

- (a) Have there been any similar projects in the past? How have they been organised?
- (b) In recent projects is it possible to isolate factors of:
 - (i) responsibility;
 - (ii) capacity;
 - (iii) support;from other factors such as location, market assessment? If so, assess the risk of unsatisfactory answers in Sections (1)-(3) on eventual project success.

3 Monitoring Management Performance in Agricultural Projects

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This paper discusses the concept of management performance and raises some issues in the role of monitoring in management performance.

Management Performance

The most obvious indicator of management performance might be considered to be productivity of the project measured as a rate of return (providing the resource base is maintained) or as revealed by partial measures such as level of cropping intensity, yield levels, and other technical indicators. Use of this obvious indicator, however, leads to a confusion of management performance with the results of a project. It has often led to simplistic diagnosis, by economists in particular, that 'the real problem of rural development is poor management'.

Agricultural production is often only one component of a rural development project. Now that rural projects have numerous, although not always mutually consistent objectives, the task of selecting one, or even a few, indicators of management performance is greatly complicated. It is seldom possible to state unequivocally that a particular agricultural project is a success or a failure.

Management performance is not necessarily linked to a project performance because, in a low-income country, exogenous factors impinge in numerous ways upon productivity. Some of these will be outside the control of the country (eg world inflation, shortages of materials, slow delivery of orders). Many domestically generated problems are also outside the control of management. These relate to major matters such as the failure of other agencies to deliver electricity on time or complete a road, to distortions in pricing policies and other market defects; or to relative minor matters such as late delivery of fertilisers, failure of buses to deliver workers on time or the imperfect functioning of telephones. The joint effect of such features is to excuse management in a genuine way from responsibility for achieving potential productivity levels. It makes the task of assessing management performance an extremely difficult one.

If agricultural project management cannot be fairly judged by performance this raises the question of whether alternative means exist of knowing the potential of a given management team and the administrative system.

Management functions are generally agreed to include *policy making and planning* to achieve objectives, *organising resources* into controllable structures or sub-systems directed toward achieving these objectives, and *controlling* processes for assessment of performance and response. In an early attempt at a general theory of administration Litchfield saw these functions as 'policy', 'resources', and 'execution'. He suggested that within these linked management functions there was an internal cycle of activities for each function. This cycle consisted of decision-making, programming, communicating, controlling, and reappraising and was similar for each management function. This suggests the following criteria to be applied to the functions of policy, resources, and execution.

- (1) Were decisions (in the field of (a) policy; (b) resources; (c) execution) based upon a clear definition of issues, analysis, consideration of alternatives and proper deliberation?
- (2) Were decisions (for each function) translated into programmes?
- (3) Was the programme effectively communicated to all for whom action was required?
- (4) Were norms or standards of performance set and enforced?
- (5) Was reappraisal made in the light of imperfections in original decision, new facts, new strategies?

Such a conceptual framework could greatly assist management assessment.

Monitoring and Management

For the purpose of this discussion we wish to dwell upon (4) above, that is the monitoring and control systems used for maintaining and assessing project performance. It is contended that a study of the operation of these systems will help agencies assess management potential as well as performance.

Monitoring is the recording of scheduled tasks and certain critical indicators of performance. Design of the monitoring system is a central activity in executing the 'organising of resources' function. Recording of routine operations provides the data and information that is the basis for the management 'control' function. The act of recording provides the basis not only for adaptation to the short-term exigencies but also the indicators of the need for new policies and new or modified longer

term plans. It should be clear from this that monitoring is a principal management activity designed, operated, and interpreted by management. In practice, however, monitoring in agricultural projects does not serve a useful management function.

(1) Our observations indicate that all too often there are crucial defects on agricultural projects in the execution of routine day-to-day tasks which should be performed almost automatically. In many projects detailed job specification and scheduling is neglected. It is rare for a detailed operation manual to be prepared for an agricultural project. The Huntings/MacDonald Manual for the Khairpur Tubewell Project in Pakistan is an exceptional case. The Manual and Supplement, which recorded the lessons of two years' field experience, were the product of more than ten man-years' study. This document is regrettably not freely available as is often the case with the more valuable consultants' material.

(2) A revision of management information services is often called for. Few monthly or annual reporting systems nowadays meet the minimum requirements for management control. Yet management is typically overloaded with repetitive reports, demands for information for outside agencies, excessive detail in some reports, poorly designed forms, delays in communicating information, missing data, and in some instances wrong or doctored data. (See Terry for a Bangladesh case study.) It also seems that for various reasons, even where routine records are prepared, adequate analysis is rare. Therefore anomalies are not noticed and in time the quality of record keeping falls and eventually the quality of the task execution itself falls.

(3) Management control requires routine task execution and, given the importance of exogenous influences in agriculture, *adaptation* to new problems and priorities. In setting up a monitoring system verifiable control indicators require specification. These concentrate upon short-term activities and will have a permissible range of performance. They will be project-specific. Recording outside the range will indicate the need for *adaptation* to the new situation. Whilst a study of routine monitoring control will reveal management potential, a more crucial test is its adaptability to change. Rapid improvisation is necessary when electric power fails, when disease strikes crops or product prices slump. Assessing the response to such events cannot be made into a mechanistic process.

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4 The Appraisal, Monitoring, and Evaluation of Agricultural Extension Programmes

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The main focus of this paper is on the procedures which may be useful for the monitoring and (*ex post*) evaluation of agricultural extension programmes in less developed countries. These programmes typically consist of advice and training for small farmers and are usually accompanied by credit and/or subsidised prices for a package of inputs for one or more innovations relating to crop or livestock production activities.

Before turning to the monitoring and *ex post* issues, however, some discussion is required about the problems of applying formal Cost: Benefit Analysis (CBA) procedures to the *ex ante* appraisal of this type of development project. The literature to date on CBA applied to agricultural projects (eg Gittinger, Scott *et al*, Carruthers and Clayton) has not satisfactorily discussed agricultural extension. An understanding of the relevant problems will help illuminate two circumstances encountered in *ex post* evaluation of agricultural extension. The one is where a deliberate decision had been taken not to employ CBA when the project was being appraised; the other is where standard CBA *had* been applied but its value in providing a framework for subsequent monitoring and evaluation is found to be distinctly limited (if not positively misleading).

Appraisal

There are two major problems in applying CBA procedures to the *ex ante* appraisal of agricultural extension programmes.

(1) Although it is a critical input, agricultural extension is rarely sufficient by itself to raise agricultural productivity. Research and development activities, input supply, credit, infrastructure in the form of farm roads, irrigation works, domestic water supply, etc are also necessary components of the overall project and strong externalities operate between the various components. If appraisal is to be done accurately, these externalities must be internalised within a larger, more complex project of the single commodity, the multi-sectoral rural development or the area-based project types.

(2) Estimation of the future benefits side is particularly difficult with agricultural extension to small farmers, due to the uncertainty surrounding the response by the target group of farmers to the innovation. This uncertainty arises in four respects:

- (a) the rate of adoption across the farm population;
- (b) the level of adoption within the adopting farm;
- (c) the rates at which adopting farmers will master the techniques (their learning curves);
- (d) the uncertainty surrounding the performance of the innovation under local conditions.

For these reasons any financial or economic internal rates of return for the extension programme as a whole are usually of very dubious value.

The following procedures appear to be worthy of attention for field testing with a view to making recommendations about their wider adoption by agricultural and rural development planners.

(1) Treating agricultural extension as a component within a larger, area-based, or rural development project. The agricultural extension component will not be formally appraised in this case, although questions about the likely effectiveness of alternative designs of extension programme should be addressed.

(2) Concentration on the analysis of the private financial return to the potential adopter (the incentive to innovate). This can be incorporated within the approach in (1) above and would come to an early stage in the appraisal.

(3) Using formal CBA only to calculate the *minimum* physical target coefficient required to achieve a satisfactory or comparable economic/internal rate of return for the project. (This can be supplemented by other objectives such as poverty alleviation (impact on specified target groups), employment creation, etc). For example, to achieve a minimum rate of 12 per cent, output growth at x per cent p.a. is required; this can be achieved if, for example, n farms p.a. adopt innovations A and B and achieve output increases up to y per cent over t years (or by different calculations of these variables).

(4) Focusing attention on the choice between alternative agricultural extension programmes which are competing for the same scarce high-level agricultural expertise. Without attempting a fully quantified CBA, indicators of extension staff productivity (farmers advised/trained p.a.,

loans issued p.a., etc) would encourage an economising approach in the use of this usually scarce resource. The management systems approach to rural planning (see eg Chambers) may be useful in this respect.

These approaches, singly or together, would provide a monitorable set of partial indicators of an extension programme's economic viability. Performance which fails to meet the *ex ante* criteria would then precipitate an examination of the reasons for that situation arising.

Monitoring

I now turn to the set of activities required once an extension programme is being implemented. Although measurement precedes monitoring and evaluation chronologically, a more productive discussion of it probably follows a review of the objectives and methodology of the two later activities. This is because only the managers, administrators, and planners, as the users of data, can accurately indicate the quantity, form and timing of the data which should reach them. Unless the data needed for decision-making are specified first, specialist data producers will often choose independently what information is collected, when it is collected, and in what form. Their choices may be over-expensive and/or erroneous, as usually they will have a less clear idea of (1) the need for data in the decision process and (2) the capacity of management at various levels to utilise data in its different forms.

Agricultural extension is usually designed to provide auxiliary inputs of knowledge and skill to farmers in the private sector. Typically, three conditions need to be satisfied before the performance of an extension programme can be regarded as satisfactory. Firstly, the resources allocated to the programme need to be effectively deployed to implement it: ie outputs, in the form of an increased flow of relevant, accurate, and timely information and 'knowhow' need to be produced for and mediated to the farming community. Secondly, these services need to be utilised or adopted by the potential users whom they are intended to help. Thirdly, the utilisation of these services should lead to a significant improvement in the productivity, income levels, employment, or other selected development objectives for the agricultural sector.

By and large, the function of monitoring can be viewed as the selective observation of the day-to-day process of implementing an agricultural extension project, paying particular attention to the achievement of the output goals as specified in its programmed activities. To measure every detail of implementation would be unnecessarily expensive even were it feasible. To enable management to intervene effectively where the project's programmed activities are not

being fulfilled, a *set of measurable indicators* which identify implementation progress need to be specified in advance. A shortfall or delay in attaining the preset indicator level may provide an 'early warning' of a serious implementation problem. Further questions as to the cause(s) of this underfulfilment, and the possible remedies available within the public sector, can then be examined by the project manager.

A number of questions arise about the design and use of current monitoring systems. What formal reporting procedures, if any, are followed? Are indicators of performance set in advance? If so, by whom? Are field staff involved in these decisions? How rapidly does information move up the chain of command? Does the monitoring procedure identify the real source of a problem especially, for example, if it occurs at a high level in the responsible Ministry? How rapidly is corrective action taken to rectify delays or shortfalls? Does the procedure encourage officials to cover up problems or to adopt an open problem-solving approach? Are wider changes necessary in the administrative/management system before the latter state of affairs can be achieved?

Evaluation

Evaluation *ex post* will usually focus on the wider impact of the agricultural extension programme. It will seek as far as possible to identify the net financial and economic benefits derived from an extension programme. The justification of the exercise is that it provides a more accurate basis for decisions about whether to expand, maintain, modify or close down the current programme. A receptive climate for the results of evaluation must prevail at the top decision-making levels — failing this, the evaluation reports will be of merely academic interest. Conversely, evaluation of an adequate, but not exhaustive, quality should be available *at the time that major decisions have to be taken*, eg when formulating the agricultural strategy for a five-year plan or before key negotiations with a major donor agency. Have these external conditions for the effective use of evaluation findings been met? If not, are changes in organisation, procedures, personnel, etc required? Who is responsible for 'planning' the evaluation of agricultural extension and other related activities?

The technical components of the evaluation procedure should relate to the objectives, means, and expected quantified costs and benefits which were identified when the programme was designed and appraised; many problems arise in *ex post* evaluation if the project was not initially well thought-out in these respects. Decisions must also be made on the organisational aspects of evaluation. To what extent can and should the project personnel concerned with implementation be concerned with

evaluation of their own project (on-going evaluation) vis-a-vis (1) the periodic presence of non-project staff from within the same agency (internal evaluation) or (2) periodic or *ad hoc* work by staff from another agency (independent evaluation)? The project staff themselves are often able to acquire at low cost much of the data which will ultimately be required for a full evaluation. On the other hand, certain aspects, such as analysing a situation where there is multiple causation of agricultural change, may require additional work beyond the capacity of project staff or work which has a high opportunity cost because it draws project staff away from their primary task of ensuring effective implementation. In such cases the specialist skills required should be identified some time in advance of when they are actually needed. (A further aspect of project evaluation, which is merely noted here, is the desirability of associating the rural community — and especially the intended beneficiaries of the programme — with the evaluation process. Methods and organisational structures by which this can be achieved will require examination.)

The procedures to be followed in evaluation clearly need to be planned well in advance — preferably from the design stage of the initial project. Also, *priorities for evaluation will need to be established between projects*. The project's relative cost, its potential replicability, or the relative importance of the problems to which the project is addressed, suggest themselves as criteria for allocating scarce evaluation capacity. Questions arise, therefore, about the current arrangements — institutions, procedures, personnel — for evaluation of the more important agricultural extension projects, and whether these arrangements need to be redesigned in a more systematic way.

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5 Evaluating Organisation and Management: A Proposed Methodology for Use on Large Irrigation Projects *

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Introduction

This paper describes a suggested methodology for evaluating the organisation and management of already established large-scale irrigation projects. A similar approach is equally needed in the case of other kinds of agricultural project or programme, and as much in their *ex ante* appraisal as in their *ex post* evaluation. An essential element in the appraisal of new projects should in any case be the evaluation of the past performance and management of existing projects. Without the information provided by such studies planners are bound to find it extremely difficult to propose organisational structures and management methods which would come near to making optimal use of the human resources available — resources which include senior project managers and executives, skilled and unskilled field staff and members of non-governmental service agencies (eg private sector distributors of fertilisers, credit and other inputs, or providers of marketing services), as well as farmers and agricultural labourers.

In practice, comprehensive and systematic evaluations of the organisation and management of agricultural projects or programmes are very rarely undertaken. In certain countries it is common practice for government agencies to carry out regular evaluations of project performance, but these tend to be fairly strictly limited to technical and economic analysis: present performance is measured against past performance or against targeted goals, in terms of input: output and cost: benefit ratios. Such evaluations usually contain some general — largely descriptive — observations on the social characteristics of the farming community and its institutions, and on the organisation of government services, but their central focus is on the *results* of management, not on the management (or decision-making) *process*

* The paper originally presented for discussion at the ODI meeting on 29 September was primarily intended for use at a Commonwealth Workshop on Irrigation Management at Hyderabad, India, October 1978. It has since been published in a Report on the Workshop produced by the Commonwealth Secretariat. This is a substantial revision of the earlier paper.

which has contributed to the achievement of these results. In other words, they record what has happened but provide only limited evidence as to *how* it happened and *why* it happened in that way.

For the past three years I have been engaged on a study, commissioned by the World Bank, with the objective of developing a framework of analysis which could be generally applied to the evaluation of irrigation organisation and management.* Its conclusions are based on evidence collected through an initial desk study of relevant literature from Asia, Africa, and Latin America and four subsequent field studies, all in Asia (N.W. India, Pakistan, Indonesia, and Taiwan). The project areas studied in the field were all dependent on large or largish publicly-operated canal systems, and in two cases these were substantially supplemented by groundwater (deep tubewells, also publicly-operated).

The characteristics of each of the field study areas were very different in many respects and there were consequently significant differences in their management problems and requirements. However, all large predominantly canal-based irrigation schemes have certain fundamental features in common which set them apart from other kinds of agricultural project or programme in terms of the demands they make on management skills. (The problems associated with the management of small surface schemes (run-of-the-river or small reservoirs/tanks) and of groundwater schemes (privately or publicly-operated) are somewhat different, and are not specifically discussed in this paper). The most notable are:

- (1) Their capacity to reduce farmers' uncertainty by removing their dependence on the hazards of rainfall. This permits greater predictability and homogeneity in cropping patterns and in the timing of farming operations. This in turn makes it possible to introduce a greater degree of forward planning and routine into many supporting activities — notably those of the agricultural extension staff, who are under greater pressure to respond imaginatively to diversity in farmers' requirements under rainfed conditions; on the other hand, irrigation requires them to have specialist knowledge on the complex subject of field-level water management.
- (2) Their concern with the distribution of water as an input to agriculture. Since this water is a communal resource and one which is usually scarce and highly-valued, supplies have to be rationed; control and discipline are consequently central to irrigation management. The need to harmonise the patterns

* Views expressed in this paper are entirely the author's, and not necessarily those of the World Bank.

of supply and demand as closely as possible means that there is also a special need for regular two-way communication between management headquarters and farmers, and for specific skills in planning and implementing water allocation schedules.

- (3) Their scale, which makes good communication and discipline more difficult. In contrast to general agricultural projects or programmes, the management units of irrigation schemes are often necessarily large because they are naturally determined by the amount of land commanded by a single dam or headworks.
- (4) Their indivisibility (allied to their scale), which has especially important implications during the initial years of a project's development; once the headworks have been completed, the whole of the commanded area will be supplied with water in a very short space of time, during which a whole new management apparatus will have to be mobilised.
- (5) The special problems which large irrigation schemes present for administrative co-ordination, particularly between agriculturists and engineers. These are complicated by the fact that the boundaries of a command area, which are the natural ones for an irrigation agency to operate within, rarely accord closely with those of the administrative units on which agricultural organisation is customarily based.

A conclusion reached early on in the study was that in the case of agricultural projects it can often be extremely misleading to use performance indicators alone (output levels, cost: benefit ratios) as indicators of the quality of project management. Performance is also likely to be heavily influenced not only by natural hazards but by other external factors beyond the powers of project management to control — eg technical design characteristics and aspects of government policy. The analytical framework must therefore take account of the whole context in which project management is being carried out, so that all the major factors capable of influencing project management can be given due consideration and the degree of influence specifically attributable to project management can be isolated with greater confidence.

The evaluation process

The proposed method of analysis starts from the premise that the immediate objective of any project evaluation should be to find out, with respect to the particular project being evaluated, answers to the

following questions:

- (1) What are the characteristics of the project area and its administrative resources?
- (2) How well has the project performed?
- (3) What factors (including organisation and management) have contributed most significantly to strengths and weaknesses in performance?
- (4) How can the weaknesses best be remedied, in the interests of increasing agricultural production and, in particular, of improving the position of smaller farmers and the rural poor?

At the same time, evaluations should be carried out with the intention of generating results which will be useful in two other important respects. They should be capable of providing lessons for managers of other existing projects and planners of new projects; and, through their addition to the general stock of knowledge about projects and their management, they should aim to contribute to the improvement of the techniques and criteria used in future evaluations.

A detailed checklist has been prepared which specifies the kind of information required for such an analysis in the case of large irrigation schemes. It is not included with this paper, but the scope of its coverage is indicated in the paragraphs that follow.*

Understanding the local context

An essential first step in the evaluation process is that the evaluators should familiarise themselves as fully as possible with the local environment (the context in which management has to be performed) and with the administrative and other resources which the project managers have at their disposal. On an irrigation scheme, the local environment or context can be defined in terms of the physical characteristics of the project area (climate, soils, etc) and the nature of its crops and cropping patterns; the technical characteristics of the irrigation system; the social characteristics of the farming community (population density, social structure, land tenure, agricultural experience, local groupings, etc); and the economic environment (level of economic development, prices, subsidies, taxes, etc). The administrative resources can be defined in terms of organisational structure (with particular reference to inter-agency co-ordination and

* The checklist (attached as Appendix A to the paper presented at the Commonwealth Workshop on Irrigation Management) contains three sections: the characteristics of the resource base (the local environment, representing the context in which management has to be performed; and the financial and administrative resources of project management); indicators of project performance; and the identification of causes of strengths and weaknesses in performance. Copies together with Appendix B, which contains discussions on appropriate organisational structure, may be obtained from the Agricultural Administration Unit, ODI.

the extent of centralised control over farmers' decisions) and the numbers, salaries, qualifications, etc of project staff. Other important resources of management include supporting services (transport, telecommunications) and, of course, finance.

A basic picture of the local environment and its administrative resources can be built up through the collection of essentially descriptive and factual information. Much of it should be available from project reports or files, though certain essential information on the social characteristics of the farming community usually has to be sought elsewhere (eg agricultural censuses, other socio-economic surveys, sociological or ethnographic studies). If a significant proportion of the information proves difficult to obtain from project records, this is in itself likely to be an indicator of management weakness.

This information is important not only for the obvious reason that one must understand what exists before suggesting how it should be improved, but also because it can have valuable contributions to make to later stages of the evaluation. For example:

- (1) It can be very helpful in selecting the focus of subsequent investigation. Eg from an examination of the context, hypotheses can be made about the key activities likely to merit particularly close attention in the analysis of the management process. If the project's water supplies are frequently scarce in relation to demand, water allocation is likely to be one key activity. If water supplies are relatively abundant but the project has been recently completed, with newly-settled farmers who have no previous experience of irrigated agriculture, the most important activity is likely to be agricultural extension. And so on.
- (2) Fairly detailed knowledge of a particular context is also needed to help determine the extent to which inadequacy of financial and administrative resources may be contributing significantly to shortcomings in project performance, since what is 'adequate' will vary from context to context. Eg an area with heavy rainfall, heavy clay soils, extensive weed infestation, numerous canal structures, and a relatively unskilled farming population will have much higher operation and maintenance and staff requirements per ha than another area with opposite characteristics. Through comparative analysis of the resources and performance of a number of diverse projects it should be possible to develop 'norms' for project funding and staffing under different sets of conditions.

Evaluating performance

The next step in the process is the evaluation of project performance. In our study of irrigation management, particular attention has been given to the following as criteria by which performance should be judged:

- productivity (especially of water)
- equity (especially of water distribution)
- environmental stability
- cost
- cost recovery

Other criteria might well be added — notably employment generation — depending on the objectives and priorities of the country concerned. Which techniques of analysis are most appropriate at this stage of the evaluation is a matter for specialists in economic and financial appraisal to consider. It should be emphasised, however, that for the purposes of evaluating management single indicators of performance are of relatively little use. Performance against each criterion needs to be clearly distinguished, so that the possible reasons for observed shortcomings with regard to a particular criterion can be investigated in further detail.

The extent to which reliable information on various aspects of performance is readily obtainable from project records is, once again, itself indicative of the quality of project management. A basic ingredient of good management is a good internal system of data collection and analysis which will enable performance in certain key areas to be regularly monitored. Information on *environmental factors* (extent of waterlogging and salinity, depth and quality of groundwater), and on *cost* and *cost recovery* is generally recorded in some form, though not necessarily one that has been well ordered or analysed. On the other hand, the necessary information on which to base an accurate estimate of *productivity* — particularly productivity of water — is hardly ever available. Actual water losses have rarely been calculated and it is a time-consuming process for the evaluator himself to attempt to do so. A simpler proxy indicator — production — may therefore have to suffice instead; but even then existing information, both on area and yields, is often unreliable. The criterion of equity — which is likely to be of critical importance wherever water supplies are scarce in relation to demand — is very rarely monitored at all. However, it is usually fairly easy for an external evaluator to obtain indicators of equity of water distribution between different parts of a large canal system simply by disaggregating project records. A random selection of watercourses towards the head and the tail of the system can be made and the canal flows, cropping intensities and cropping patterns in the

different areas compared. Visits to the selected watercourses should also be made to obtain farmers' views on the quantity and timing of water deliveries. For information on equity of water distribution at more micro-levels (within watercourses or between larger and smaller farmers), field inspections and interviews with farmers will give some insights, but a well-informed and objective assessment would require a detailed farm survey.

Identifying causes

The next step is to try to identify why the project has performed as it has. Apart from the hazards of climate, the factors likely to contribute most to shortcomings in the performance of an irrigation project can be grouped into three main categories. (The emphasis here is on negative influences and shortcomings because inasmuch as the evaluation is being done for the benefit of the particular project concerned, the main concern of the evaluator is to identify possible ways of improving present deficiencies in performance. However, inasmuch as the evaluation is also intended to improve general understanding of the principles of good planning and management, the evaluator should be as interested in identifying positive influences as negative ones.)

- (1) Deficiencies in technical design, eg,
 - inadequate watercourse layouts,
 - insufficient provision for drainage,
 - absence or shortage of measuring devices,
 - mechanical weaknesses in pump design.
- (2) Policy constraints (financial, economic, legal), eg,
 - insufficient funds for recurrent expenditure (on staff and equipment),
 - low water charges,
 - unfavourable input: output price ratios for farmers,
 - lack of effective legal provision for enforcing irrigation rules,
 - lack of effective legislation for controlling groundwater exploitation,
 - anomalous legislation concerning prior water rights.
- (3) Weaknesses in organisation and management.

The third category in which we are particularly interested, can be further sub-divided as follows:

- (a) weaknesses in the overall framework of project organisation and management, eg,
 - inappropriate organisational structure, with regard to:
 - (i) lateral co-ordination of inter-agency functions;
 - (ii) concentration or devolution of decision-making

- responsibilities within the management-farmer hierarchy;
 - (iii) balance or 'mix' between engineering, agricultural, and other skills.
 - policies on staff recruitment, promotion, and salaries offering limited material incentives;
 - limited staff training facilities;
 - absence of clear or consistent objectives for project management;
 - absence of well-designed project manuals, job descriptions, procedures, information, and monitoring systems.
- (b) weaknesses in the implementation of project management, eg:
- failure to pursue clearly-defined objectives;
 - failure to adhere to well-defined projects, manuals, procedures, monitoring systems, etc;
 - failure to maximise opportunities to motivate and train staff within the limits of externally-imposed constraints.
- (c) weaknesses in farmer organisation and management at the watercourse and field levels:
- absence of local groupings or inappropriateness in their structure;
 - failure to adhere to externally or internally devised rules concerning water allocation and maintenance;
 - limited knowledge of crop-soil water requirements and water application techniques.

Factors falling within categories (1), (2) and (3a) are beyond the capacity of senior project management to control or remedy. Those falling within category (3b) are clearly the responsibility of project management and, since it should be an important function of project management to assist and supervise watercourse and farm-level activities, the same applies to those falling within category (3c). Significant technical deficiencies can usually be identified fairly readily by the evaluator in the course of field inspections; the most serious will in any case almost certainly be pointed out by project management. Most of the items falling within the second category are also quite easy to identify, though a well-based estimate of the adequacy of recurrent funding and staffing might often take some time to prepare. The analysis of organisation and management is, however, more complex.

Let us first consider some of the more straightforward items included in category (3a). Basic information on the policies governing the recruitment, promotion, and salary structures of staff is easily obtainable; their likely impact on staff morale can then be hypothesized and

tested in the course of field investigations into the management process. The same applies to training facilities, the frequency of their use and their likely impact on staff skills. Whether or not project manuals, job descriptions, etc, exist can be quickly established; if they exist, field observation will almost certainly be required to test whether they have been well designed. As for investigations into the clarity and consistency of the objectives set for project management, these will require a study of official documents (National and Sectoral Plans, annual project reports, etc) and interviews with higher-level planners and administrators.

Then there are various aspects of organisational structure to be considered. In the case of irrigation schemes the most commonly discussed question which arises in this connection is whether responsibility for different activities should be divided between several different departments or closely co-ordinated within a single unified agency. Together with other questions of organisation (eg the extent to which responsibilities should be devolved within each department or agency), this is something over which project managers themselves have little or no influence. The organisational structure forms part of the 'given' framework in which the management process is carried out and, if it is inappropriate to the requirements of the project concerned, it can impose serious constraints on the quality of management performance.

In its more extreme manifestations, inappropriateness of organisational structure is not hard to identify (eg where responsibility for the management of canals, groundwater, surface drainage, and agricultural extension is divided between four separate agencies, each with a different territorial jurisdiction). Broad answers to most major questions about organisation can usually be obtained by reference to certain general principles and to the basic characteristics and requirements of the local context, without a great deal of field research. For example, the closeness with which different agencies may need to be co-ordinated at different levels of the administrative hierarchy will depend on the nature of the key activities which have to be performed in pursuit of the project's objectives and the amount of close collaboration between different sets of specialists that these activities entail. The level of decentralised responsibility for decision-making will depend on a number of factors: two of the most important are the extent to which detailed local knowledge is required for achieving quality of decision (the requirement in most agricultural development conditions is high); and on the capabilities of the administrative staff and farmers of the locality concerned. Telling indicators of organisational weakness will often be encountered in the course of more detailed

investigation into the management process. (Further discussion of organisational structure is contained in Appendix B of the earlier paper.)

The management process

Investigations designed to obtain an understanding of the management process are inevitably time-consuming and a large proportion of the total time spent on evaluation in the field will need to be devoted to them. In the proposed method for evaluating irrigation management the emphasis is on assessing the performance of specific activities which a number of agents combine to perform (eg water allocation, system maintenance, agricultural extension, financial management, revenue assessment and collection) and then on identifying possible reasons for shortcomings, many of which can be expected to be explicable in terms of the working conditions, capacities, and attitudes of the agents concerned. An alternative approach would be to go the other way round: starting with a detailed analysis of the conditions and characteristics of the agents belonging to different strata in the administrative hierarchy and the relationships within and between each stratum (eg senior Irrigation officials and field staff; senior Agriculture officials and field staff), and then going on to use the results of this analysis to explain the quality of the performance of various activities. The latter approach, used by Leonard in his study of the organisation of the agricultural extension service in Kenya, provides deeper insights into the social structure of the administration but it also requires more time. In practice, whichever is given the greater initial emphasis, both forms of analysis are obviously complementary and both are needed for a full understanding of management performance.

In an activity-led analysis of the management of irrigation schemes, a comprehensive evaluation would in theory require the management of each agency involved (eg Irrigation, Agriculture, and Co-operative Departments, as well as the farmers themselves) to be assessed with respect to performance in each of its major activities. However, while attempts should be made to obtain some insights into a wide range of activities, it is clearly impractical to carry out detailed analysis on more than a few which are expected to be of key importance. On irrigation projects these would nearly always include water allocation, agricultural extension (with special emphasis on water management extension), and supervision of watercourse management, as well as central activities associated with the operation of any kind of large enterprise, such as financial and personnel management.

In the case of each selected activity, actual performance should be judged, where possible, against the stated, inferrable or hypothesised

objectives of the agency or agencies concerned. And in the analysis of that performance answers should be sought to the questions:

- (1) What basic aids to the performance of the activity exist (eg, operation and maintenance manuals, job descriptions, maps) and what is their quality?
- (2) What are the procedures according to which activity (and its component elements of planning, implementation and monitoring) is supposed to be performed? (Eg in the case of water allocation, what are the procedures for calculating the expected seasonal, monthly, or 10-day patterns of supply and demand on which water scheduling is planned? What are the procedures for implementing or modifying the schedules? What techniques are used to monitor plan implementation?)
- (3) Are these procedures being followed at various different levels in the administrative hierarchy?
- (4) If not, what are the reasons?

Where the answers to the first question are strongly negative (eg if there are no O & M manuals or job descriptions or if procedures are badly designed), it will be immediately apparent that if management performance is found to be deficient, much of the responsibility should be attributed to planning deficiencies in agencies at a higher level than the project. Often, however, the allocation of responsibility for deficiencies in performance will only emerge clearly during more detailed analysis of the management process.

The methods used to collect and analyse information concerning the management process differ substantially from those used in conventional evaluation. The purpose of conducting interviews with staff and consulting their records is only partly to obtain information about facts (eg what are the objectives of Unit A? What are the procedures for Activity X?). Their primary purpose should be to obtain information which may be of no value at all in terms of factual accuracy but which nevertheless provides important insights into attitudes, motives, and technical and administrative capabilities within the project organisation. For example, it may often be very revealing to repeat the question 'what are the procedures for Activity X?' to several different people involved in that activity, even when the interviewer already knows the correct answer. Similarly, records which can be seen to contain errors or falsifications may seem of little value to someone who would like to use them as a means of discovering 'what the facts are', but they can offer valuable evidence of the extent to which procedures are not being followed and of the effectiveness of the project's control and monitoring procedures. Much of the most valuable information about management performance is thus obtained through indirect inference from the

questions asked and the documents inspected.

The need for a tactful, oblique approach to information-gathering becomes particularly obvious when one is wishing to establish the reasons for divergences between precept and practice. For example, in a case where it is found that water is being misallocated, is it simply a consequence of technical deficiencies (insufficient control structures, lack of measuring devices, etc) or lack of resources (too few people required to cover too large an area with too little transport)? Or do the agents concerned lack the necessary skills to perform the activity well? Or is it that for reasons of poor morale (insufficient material or other incentives) they lack the motivation to perform the activity well? In this last case misallocation may be attributable either to negligence of prescribed procedures (because insufficient rewards are being offered from within the managing agency to do what is desired) or to their deliberate contravention (because there are substantial rewards to be obtained from outside the agency — ie from farmers — for not doing what is desired). Probing into this last area can be a delicate matter. On the other hand it is only realistic to expect that people whose function is to ration as scarce and valuable a resource as irrigation water will often be tempted to misallocate it; and no evaluation can be considered satisfactorily completed unless all probable reasons for poor performance are thoroughly investigated, including this one. Otherwise the diagnosis will be wrong, and so will the prescriptions for improvement which are based on it. (A similar point is made by Staub and Green in connection with internal project monitoring. They argue that most deficiencies in management performance can be attributed to shortcomings of three main kinds (in skills, in motivation, in resources) and that project managers require an information system which will enable them to distinguish between the effects of each factor on performance and thereby make it possible to take appropriate remedial action).

Drawing conclusions and making recommendations

Once the various possible reasons for shortcomings in performance have been investigated, conclusions will need to be drawn as to their relative significance. This is a crucial part of the evaluation, calling for careful judgment, since different conclusions will imply very different kinds of action and scales of investment. For example, if the technical deficiencies of a project are judged to be so great that any immediate attempts to improve organisation and management would bring only marginal benefit, the priority would clearly be for major capital investment as soon as possible. It might be found in the case of another project that it was operating well below its technical potential but was

being hampered by an inappropriate organisational structure and an absence of well-designed management procedures; the organisational problem would imply a need for far-reaching policy changes requiring very careful thought and preparation while the answer to the management problem might be to initiate a national or regional research programme designed to develop improved prototype project manuals. In a third case, it might be decided that the main problem was a failure on the part of management to follow well-designed procedures and that the only requirement was for closer external monitoring and supervision, better incentives and/or more in-service training.

There is no question in this type of evaluation of trying to quantify the weights to be assigned to different causal factors by means of some form of multivariate analysis. The complexity of the social issues involved makes it quite inappropriate. The object should be to present to policy-makers a comprehensive review of observed weakness, with detailed evidence to support the evaluators' assessment of their relative significance. It is suggested that wherever there is evidence of substantial weaknesses in organisation and management the evaluators should propose a sequence of action by government which would give priority in time to shorter-term measures requiring relatively little capital outlay; ie (1) improvement of management procedures, incentives, training; (2) major changes in organisational structure; and (3) major capital investment. One of the great merits of the proposed method of evaluation is that it will draw governments' attention to numerous opportunities for improvement through low-cost investment which are at present being largely overlooked.

Resources required for evaluation

Precisely what sort of agency should be responsible for carrying out such evaluations is a matter for decision in the country concerned but it should clearly be one which is capable of assessing project performance and management in an informed and objective manner. The additional people and time required beyond the needs of a conventional project evaluation will depend on the amount of recorded information already available on the project; on the extent of the evaluators' knowledge of the local environment; and the depth of the investigation which is contemplated. On our own field studies (which are not strictly intended as evaluation but rather as means of testing the evaluation system) a team of three people — one social scientist, covering the social, economic and man-management aspects; one technical consultant, covering the engineering, agricultural, and technical management

aspects; and a local research assistant — was usually able to obtain sufficient information to identify major administrative constraints after 2-3 weeks in each project area, plus 1-2 weeks' general orientation, including discussion with senior planners and administrators and brief visits to other projects for purposes of comparison and contrast. However, if detailed recommendations were required on improved organisation and management, further follow-up studies would be required, making substantially heavier demands on time and specialist personnel.

Lessons from the pilot studies

The findings of the four pilot field studies suggest that widespread use of evaluation methods of the type proposed here could have important consequences, both for the design of improvement programmes in the case of existing irrigation projects and for the planning of new projects. Substantial evidence was obtained to show that poor organisation and management had contributed very significantly to poor performance, both in terms of low productivity and of inequitable distribution of water supplies — especially between the head and tail reaches of the canal system. Except in the case of Taiwan, the following manifestations of weakness in organisation and management were commonly encountered:

- (1) Responsibility for irrigated agriculture split between two government departments, Irrigation (headed by civil engineers) and Agriculture, each with different administrative boundaries; and in groundwater areas, responsibilities for canal and tubewell operation split between two agencies within the Irrigation Department.
- (2) Within the Irrigation Department (much the more prestigious and prosperous of the two) a preference among many civil engineers for design and construction work rather than operation and maintenance; and with respect to the latter a tendency to concentrate more on maintenance than operation.
- (3) Within the Agriculture Department extremely inadequate resources of finance and personnel, and no access to specialist expertise in water management extension.
- (4) An absence of up-to-date operation and maintenance manuals; water allocation procedures which, if codified at all, are based on old-established conventions and formulae rather than recent research on crop water requirements; and a generally 'laissez-faire' approach to system operation which places senior irrigation staff under little obligation to monitor

closely the reasons for discrepancies between planned and actual distribution patterns.

- (5) Inadequate funds for operation and maintenance, the funds received from government being generally unrelated to the amount of revenue collected from water charges (the rates for which tend to be very low).
- (6) Junior staff in both departments poorly paid, with very limited promotion prospects, and therefore poorly motivated and, in the case of irrigation staff, susceptible to often powerful pressures from within the farming community to misallocate water.
- (7) Farmers badly informed about likely variations in the pattern of their water supply and with no clearly defined responsibilities for operation and maintenance within the watercourse; group activity, eg for watercourse maintenance, often limited and sporadic, in the absence of support and advice from either Irrigation (with responsibilities traditionally ending at the watercourse level) or Agriculture (with responsibilities limited to the individual farm level).

During the past 5-10 years most Asian governments and external aid agencies have been showing increasing concern about the need to enhance the performance of existing irrigation schemes by means of improvements not only in their physical infrastructure but also in their organisation and management. Most of the strategies they have adopted have certain common features. The most comprehensive package of remedial action of the kind currently followed would probably contain the following elements:

- (1) amalgamation of Irrigation and Agriculture Ministries at national levels;
- (2) formation of a single co-ordinating agency at command area level;
- (3) strengthened agricultural extension;
- (4) larger budget allocations for operation and maintenance;
- (5) higher water charges;
- (6) remodelling/rehabilitation of main canal system;
- (7) technical and institutional changes at the watercourse and farm levels ('on-farm development').

Most governments have adopted only parts of this package so far: India is one of the few countries to have accepted the radical changes implied by (1), (2) and (3), under the new Command Area Development programme; the main emphasis elsewhere has tended to be on (4), (6) and (7).

This new approach has many commendable features. Nevertheless there is one central aspect of irrigation management which has been conspicuously neglected in all cases. This is the planning and implementation of water allocation within the main irrigation system. My own studies confirm the conclusions of several other researchers (Chambers (1977), Harriss, Reidinger, Wade (1976), Valera and Wickham, Ali) that this is one of the areas of greatest weakness on large irrigation schemes in South and South-East Asia. It is clear, not only from the results of controlled field experiments in the Philippines, but also from the observed effects of introducing new water scheduling techniques in Sri Lanka and 'emergency' techniques at a time of extreme drought in Andhra Pradesh, India, that very substantial benefits, both in production and equity terms, can be obtained on many schemes through better water allocation practice alone. (In the Philippines experiment, the introduction of quite modest changes in water distribution procedures was associated with a 97% overall increase in production within a command area of 5700 ha and a 1494% increase in the tail section of the system, over a 2-year period (Valera and Wickham). Improved water distribution on a medium-sized tank in Sri Lanka led to increases in irrigated cropped area of at least 25% (K. Shanmugarajah, in papers obtainable from Irrigation Department, Colombo-7, Sri Lanka). For an account of the Andhra case, see Wade (1978)).

There are two main reasons why water distribution on the main system is often so deficient, and also why it tends to be so frequently overlooked or ignored. The first is that those responsible for the task have rarely received any special training for the purpose: they are usually civil engineers, whose training fits them for design, construction, and maintenance work but not for the complex activity of supplying water as an input to agriculture. They tend to be particularly weak in their understanding of what is required on the demand side (eg crop-soil water requirements; the co-ordinated planning of cropping patterns, cropping calendars and water releases; the adjustment of planned schedules to observed local variations in demand; the maintenance of regular two-way communication between headquarters and farmers). This implies the introduction of special training programmes for canal system operators as well as the development of improved operating procedures; and for the longer term it implies substantial changes in the present pattern of academic teaching, with a view to producing new specialist cadres of irrigation managers in the future.

The second reason is the very powerful pressure under which most water distributors are placed by influential farmers to misallocate water. Resistance to these pressures inevitably entails some unpopularity

as well as the need to forgo opportunities for private gain. On many irrigation projects, however, staff have failed to resist these pressures, with the result that the whole basis on which the rationing system was supposed to operate begins to break down, and in the worst cases, a situation of 'water anarchy' arises. This has several important implications for the way in which the task of water distribution is organised and managed. The first is that a system of reward and sanctions must be developed within the organisation which will make it rational for staff to risk unpopularity by denying water to those who want it; junior staff in particular will need strong support and supervision from their seniors and should be given attractive incentives (particularly the chance of promotion, combined with in-service training) for doing their jobs well. According to Chambers, this in turn implies the need for 'something like a quasi-police or quasi-military organisation'; it also means that the work of the staff within the organisation must receive 'high level and consistent political support'.

A related conclusion from my studies, which strongly supports the arguments of Levine and Wickham, based once again on evidence from the Philippines, is that many of the potential benefits of 'on-farm development' work at the watercourse level (which is a very prominent feature of most current improvement programmes) will be greatly diminished unless simultaneous — or prior — action is taken upstream of the watercourse to strengthen main system management.

So long as such a central aspect of management (and the political and social factors associated with it) continues to be ignored in the planning of irrigation improvement programmes, the balance of proposed investment is bound to be wrong; there will be a continued bias towards bricks-and-mortar and water-course-level solutions as against solutions involving the improved mobilization of administrative resources; and the returns on investment will go on falling below the planners' expectations.

One of the most hopeful ways of trying to ensure that policy-makers are presented with a full range of possible investment options, including investment in improved administration and institutions, would be to make it regular practice to carry out detailed project evaluations of the kind suggested in this paper. There are good reasons for expecting that they would indicate high returns to changes in organisation and management methods, not only in irrigated agriculture but in agricultural development programmes as a whole.

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Agricultural Administration Unit

The Agricultural Administration Unit (AAU) was established at ODI at the beginning of September 1975, with financial support from the Ministry of Overseas Development (ODM).

As its title implies, the Unit is concerned with the study of agricultural administration and institutions in less developed countries, with the emphasis on field implementation — the planning and programming of development, the provision and co-ordination of services, and the support of participatory and self-managing groups.

It aims to widen the state of knowledge of agricultural administration through a programme of policy-oriented research into selected subject areas, the promotion of informed debate, and the exchange of ideas and experience. The Unit also seeks to influence directly the organisation and management of agricultural development through the provision of specialist advice. The scope of the AAU's work is therefore threefold: research, dissemination and advice.

A major objective of the AAU is to provide a bridge between 'thinkers' and 'doers'. Accordingly, each research subject is studied in collaboration with a 'network' of individuals in the UK and overseas who have been directly concerned with the problems of implementation in ldc's. Network members are drawn from a wide range of nationalities, professional backgrounds, and disciplines. The Unit aims to keep itself well-informed on other important aspects of the organisation and management of agricultural development outside its specialist fields and to help, to the extent it can, other organisations and individuals engaged in related work.

The purpose of the AAUs 'Occasional Papers', is to disseminate the findings of this collaborative effort to a wide audience of interested people in an easily accessible format. The first Paper, *Stimulating Local Development*, appeared in 1976, and the second, *Extension, Planning, and the Poor*, in 1977. Both are available from ODI, price £1.00 each.

Further information about the work of the Unit may be obtained from the AAU, Overseas Development Institute, 10-11 Percy Street, London W1P 0JB.

