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# DECISION-MAKING AND AGRICULTURE

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*The Dynamics of Decision-making and Policy Formulation for  
Agricultural Improvement in Low-income Countries*

1. INTRODUCTION

Research and studies in decision-making for agricultural development have been neglected in the past primarily because of the expense and the large number of well-trained personnel from various disciplines required to carry it out. That this neglect persisted for so long, however, in spite of the pivotal role that decision-making plays in economic development generally, and in agricultural improvement in particular, cannot be easily explained. Clearly a thorough knowledge of the decision-making processes helps to remove serious bottlenecks, to reduce persistent production constraints, and to expedite sustained over-all agricultural improvement.

In most countries, contemporary developmental agricultural policies tend to incorporate extension education as a key area, if not the only major instrument for the transfer of "improved" technology to farmers in low-income countries. This apparent emphasis on extension education is based on the assumption that education leads to improved decision-making at the farm level and that this will automatically improve agriculture. This is not without the realization that there are other important constraints, institutional, social, and political, that tend to impede decision-making for agricultural development.

The complicated nature of agricultural improvement in low-income countries stems from the fact that most governments, in an effort to meet the aspirations of their citizens, are compelled to accelerate the pace of agricultural improvements. If left to natural evolutionary processes they would take far too long. But, unfortunately, in trying to help or accelerate the phenomenon of improvement, most planners underrate the major limitations imposed by the human factor: labour, skill, organization, and decision-making. The human factor is by far the most important element in agriculture, but it does not receive the emphasis it deserves; rather it is erroneously assumed as given. In explaining farmers' responses to an innovation, it is

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quite obvious that the most significant factor is the type and nature of decisions being made. In other words, the motivation of agricultural improvement really has to start with improving the nature of decision-making not only on the farm but in all areas affecting the progress of agriculture.

One obvious area of neglect in research and the literature is the theory of decision-making in agriculture. For the purpose of this paper, decision-making is broadly defined to incorporate all conscious thoughts and actions from thought conception to the eventual step of taking action based on the decision made. The essence of the final decision being made is clearly interpreted (or understood) from exhibited behaviour or reports emanating therefrom. In other words, according to Thornton, (1962), decision-making "consists of that chain of mental activity which follows either the reception of stimuli from the outside world or the growth of a desire for change within the individuals".

The improvement of decision-making, however, presupposes clear and thorough understanding of how the different categories of decision-makers arrive at their decisions. Such an understanding helps not only to demarcate the areas of the different levels of decisions but even more to identify which decisions are best taken and by whom. It is useful, for instance, to appreciate the over-riding role of objectives and the dual problems arising from apparent conflicts in them. Obviously these issues have to be carefully analysed and understood before any effective agricultural improvement can be achieved.

In this exposition, agricultural improvements (a more easily defined term) is used in the sense of increased productivity\* that yields the producers increased or improved real income or welfare. This increased productivity can be a higher output per man, or per hectare of land, or per unit of capital or management invested in production, measured in money terms.† Defined this way, the value terms of increased productivity have to be appraised in the light of the economy and changes in the demand and supply variables in each case. In a restrictive (or marginal) sense, agricultural improvement will be easily assessed on the basis of the return per unit of the most limiting resource. In most parts of Africa, agriculture is restricted in the broadest sense by capacity or skill in farm organization, which is also influenced by decisions being made at all stages of the improvement processes.

The next section of this paper examines the classified orders of decision-making. The simple classification need stems from the realization that social institutions *and their antecedent or concomitant constraints set limits to the range of effectiveness of the decisions taken by the individual farmer and other decision maker*. This classification also assumes that the society has the

\* That is, showing significant average and marginal increase simultaneously when the point of agricultural improvement has been attained. In other words, the decisions being analysed in this paper are, for the sake of simplicity, limited to those that result in progress to a better situation than the one that prevailed before, all things considered.

† Measurement of net return on capital can employ the basic budget analysis or the gross return approach, while return to managerial skill can be assessed on the basis of profit level relative to the technology being employed and the type of enterprise.

responsibility on behalf of all its members to regulate, oversee, and reward the use of resources for achieving desirable economic ends.

In the following sections the constituent members involved in decisions and policy-making are discussed. Emphasis is placed on the need for timely and relevant information for better decision-making in low-income countries. A summary of conclusions appears in the final section.

## 2. DYNAMIC ORDERS OF DECISION-MAKING

The exposition of the dynamic orders of decision-making in a sense starts with a categorization of the basis of who and what group of people are making what decisions. Categorization, for the sake of simplicity, is made into first, second, third and the higher orders of decision-making. It is clear that to understand the processes involved in the positive and dynamic essence in decision-making towards increased agricultural improvement, these orders of decision-making have to be fully classified, especially with respect to the limitations encountered by the decision-makers in their efforts to achieve the goals of agricultural improvement. These constraints have to be fully appreciated *ex ante* to suggestions towards the modifications, necessary changes, and improvements that are to be introduced and hopefully be subsequently made operational and sustained as such. In other words, according to Okran (1948), "It is only a matter of re-arrangement". The alternative to a judicious analysis of the situation can only lead to the typical folly of "the man who for reason of slow speed and progress re-arranges his horse and cart; he then places the cart before the horse. All hopes of progress are therefore checked. Pandemonium displaces peace. The cart misunderstands the horse, and the horse misunderstands the cart. The man distrusts them both: but mark you, the horse, the cart and driver are well known and recognised means of progress" (Okran, 1948).

### *First order decisions*

First order decisions are those over which one individual has absolute authority. The effective scope of the decision may, however, have forward and backward linkages beyond the individual. In traditional agriculture, there are very few decisions of this order that affect farm production or the owning, acquisition, and use of farm resources. The disposition of the labour available to the individual farmer, however, falls within this category. This is, in fact, the most important simple (though not easy) decision the farmer has to make: how best to use his labour.

Agricultural extension, for decades, concentrated on convincing the farmer or group of farmers about the merits of a new technology or innovation without due regard to the facets of decision-making processes involved and especially the labour constraints and reward uncertainties (and risks) the farmers have to face in arriving at the decision whether or not to accept and use or adopt the new practice.

Hence, the extension agents' strategy and preoccupation with advising farmers on new technology can be more effective if advisory agents appraise

first and foremost the additional labour requirements of any new practice being recommended. Beyond this, efforts for improvement should concentrate on the farm-family as a unit rather than on the individual farmer, as at present. This is principally because the decisions involved in adopting innovations are often being made at the farm family level. Resources in agriculture that are within the use and absolute control of the farmers are severely limited, and farmers are very reluctant to accept innovations that may call for resources not within their disposal: that is making for decisions beyond the first order category.

#### *The second order decisions*

These sets of decisions are invariably made by a defined small, but homogenous, group (or unit) of people bound together temporarily or otherwise by a common and easily identified objective or relationship. The family or a firm is an example of such a unit. The resulting action from such a decision primarily affects those making the decision even though the long-run impact may have other implications even beyond the unit or group. Examples of such decision are those that are made by the family, a business group, society or a board of directors.

In farming enterprises, the farm family make second order decisions with respect to some aspects of farm operations. Second order decisions can be differentiated from the first order decisions in two main respects: in the second order decisions, there is usually more than one decision-maker and the nature of decisions to be made are such that the members may individually have different or even conflicting views and the impact of such decisions may be different for the different members of the decision-making group. Furthermore, when an individual is empowered by the group and entrusted with the execution of the decisions, there is usually the need for subsequent ratification or reports on progress being made. Conflicting effects on members of the groups of such decisions reflect some inconsistency, and may affect the uniformity and effectiveness or otherwise of the execution of such decisions. Conflicts have to be firmly resolved to improve this order of decision.

In traditional agriculture, this order of decision-making is perhaps one of the most important. Given a set of natural and/or induced situations, the group directly concerned or affected by the availability, ownership, and use of farm resources and products, have to take decisions on the appropriate cause of action. As much as possible, conflicts have to be resolved to the satisfaction of most if not all members of such groups failing which either the decision becomes inconsistent with the group objectives and is subsequently rejected or the group becomes ineffective or moribund. Tardiness and delay in arriving at decisions are typical of this category of decision-making. It is in this particular frame of reference that most government policies aimed at improving agriculture in the past have either not been able to meet with expectation, or, as with some, failed woefully. This has been particularly so when policies fail to take cognizance of how the different types of these second-order decisions are arrived at, and in particular how

they can be improved, and made more internally consistent and effective.

*The third order decisions*

Decisions clearly outside the scope of any one individual or any related homogenous groups can be classed as the third order set of decisions. Decisions on the use of common resources, on land ownership, price of resources and products, to name a few, fall within this category. In this category of decision, the farmer as an executive is still actively engaged in decision-making – participating in influencing decisions. The main difference between the third order decisions and the next category, the higher order decisions, is that, whereas with the third order decisions the participation of the farmer both in formulation and execution of decisions is paramount with the higher order decisions the farmer is only remotely referred to and not actively involved in decision making. In essence, the higher decisions are rather “imposed” on him. Unfortunately, these decisions, unless well thought out may impose constraints and hardship on him and disrupt his sets of first order decision rather than help him to improve his agriculture, and his living standards. Under such circumstances, his being able to influence such decisions in a direction conducive to his welfare should be considered marginal.

Irrespective of the nature of the governmental set up, existing political structures have implicit effect on agricultural improvement. Political and social structures and institutions within the society can sometimes impose serious constraints on the decision-making processes especially those referred to as the second and third order series. Improvement in the economic, social and political structures of the society gives a fair chance for everyone to have a full knowledge of and participate in decision-making. In cases where the farmer’s participation is expected before or after the policy is formulated and executed, his decision to participate can only be of benefit to him when such policies are fully understood and actively supported by him; and, of course, in harmony with the sets of decisions of the first and second order he is likely to face.

*The higher order decisions*

This is the category where policy decisions become appropriate and relevant. The higher order decisions by implication affect everyone within and beyond the agricultural sector. Directly or indirectly, they also influence the other sets, level or orders of decisions. Clearly, here too, the requirements of objectivity and consistency are equally important. Two groups of conflicts are easily observed. First is disharmony resulting from conflicts between the decisions made within the different orders of decisions and policies. Inconsistency or even dissonance between second and first order decisions will certainly give rise to a conflict in the mind of the farmer, or the farm-family, and the effectiveness of either set of decisions will not be assured.

Secondly, policy dissonance may also result from a conflict between one set of policy decisions and another even within the same order. Both sets of conflicts have grave consequences for agricultural improvement. It is therefore necessary for effective improvement of farm operations and productivity that

these conflicts are minimised, if not eliminated. For most farm problems, several alternative solutions are invariably put forward, but according to Heady (1961, p. vi), "progress towards a solution rests on the resolution of conflicts in goals and values". Goals, defined as ends or objectives towards which behavior may be directed, are likely to be achieved only when decisions are made on the "best" way to utilise available means.

### *Policy*

Many people are often not quite clear about what is the nature of policy or who makes policies. Invariably, they assume that only the executive council or Ministers, legislators and administrators formulate policies. This misconception stems from ignorance in assuming that because government decisions being actively made by these group of men tend to have the force of law, they are the only policy-makers. On the contrary, policy in a dynamic sense of the word is, or should be, constantly formulated as the point of consensus of individual decisions and in consistent harmony with other relevant sets of decisions. In other words, the day to day decision of every individual influence and eventually add up to a general policy. Good policies therefore grow out of different sets of decisions and are aggregates of them.

With respect to agriculture, Schickle (1954) asserted that "agricultural policy must be judged in the context of the cultural and social environment of which it is a part" (p. 1). In essence, good agricultural policy is part and parcel of the social milieu. Consequently, any effort to introduce policy, or aggregates of higher and other sets of decisions, aimed at improving any aspect of human endeavours in any society should commence with improving the institutions through which decisions are aggregated and crystallised into policy. This is of particular significance for agriculture where, to the farmer engaged in subsistence farming, emphasis is basically on survival. The implication is obvious since for any effective improvement in the agricultural sector policies have to be evolved with these objectives in mind. In the final analysis the decisions that are crucial are made by the farmer — and his family — that is, they are first and second order decisions. And until these are also improved, the third and higher order decisions and policies will probably only have marginal effects.

Clearly, a poorly formulated farm policy has very little chances of achieving its objective even with the best of executing agency. There is a large body of experiences in most low income countries to emphasise the fact that poorly formulated policies, resulting largely from confused objectives, values, and decisions about means and ends with respect to agricultural improvement, have plagued these countries for decades, if not centuries (John C. de Wilde, 1967). With mounting pressures for agricultural improvement under the more complex economic and political situations we now witness, rapid and lasting improvement in policy making is vital. Necessary improvements can be assured only by creating improved procedures for securing improved policy.



### 3. IMPROVED POLICY FORMULATION

Improved policy formulation is a necessary step towards achieving a consistent and meaningful policy for development. In any society where there are limitations to resources, human and non-human, all efforts and policy guidelines aimed at improving agriculture have to state clearly and in rather convincing and categorical terms what objectives or results are desired, what resources are to be expended and the means (as well as techniques) to be employed in such an exercise. It is only when this is done that one can be in a position to judge whether a good policy is being produced and how far it can be achieved. A good policy when assessed has to be regarded as satisfactory if, firstly, the stated objectives are desirable and consistent with other objectives and other policies of interest to the agricultural sector, the society and the nation as a whole. Secondly, the policy when critically appraised, has to meet the condition of its being harmoniously operational, and the ends to justify the means. Far too often, most agricultural policies in low-income countries have in the past failed to meet these two tests.

Whether a policy will pass the test of consistency and feasibility is largely influenced, if not predetermined, by at least four important facets of policy formation: namely,

- (a) consistency in the objectives of the policy;
- (b) the quality of participants in policy-making;
- (c) amount and quality of information available to decision-makers; and,
- (d) processes by which a consensus of opinion is arrived at.

If policies are to improve in their essence and feasibility these four areas have to be considerably improved. It is in fact unavoidable that without improvement — and improvement simultaneously in all these four facets of policy-making — the quality of decision and policy will be poor and will fail to achieve the desired agricultural improvement in low income countries. If they remain ineffective and confused the aspirations for agricultural improvement will remain as dreams: dreams that may take for ever to come true.

#### *Consistent objectives*

Objectives can be defined simply as what achievement is being aimed at, whether stated or assumed, by carrying out a particular line of action as explicitly stipulated in a decision or policy. Two kinds of objective have to be clearly defined. The *normative* objectives constitute a class of objectives based on value judgement as good and which are broad in scope and of general or universal desirability. On the other hand, the *positive* objectives are the more operational though more limited in scope compared to the former. Furthermore, positive objectives are of specific relevance to policy. Operational objectives form the core of achievements to be aimed at or accomplished, given available resources and time dimension within the policy that is being produced or formulated. Whereas the normative objectives such as increased social product, improved welfare, increased income, greater national wealth, etc., are areas of little or no controversy it is very difficult

to gain full support of political will for the positive objectives such as farm income, vis-à-vis urban income, etc. This difficulty stems from differences in goals and values between individuals, and between different societies and economic sectors of the same society.

Goals and values need not be completely uniform, nevertheless. Agreements and decisions on the desirable ends can be suitable and equitably worked out provided three major areas influencing policy are adequately taken care of. These areas are that:

- (i) public interest overrides or takes precedence over individual interest;
- (ii) educational (not schooling) quality improves so that values are consistently made more efficient; and that;
- (iii) communication between and among the different partners or sections (or factions!) of the society can be assumed to be relatively honest, reliable and in harmony by constantly exchanging views with all concerned.

Finally, the point has to be stressed that without a clear-cut objective in the first place, policy decisions may prove ineffective. In essence, if people cannot agree on a common ground with respect to their desires and anticipated achievements and how these can be attained, then, they do not deserve and should not expect that the mere uniting of any policy will improve their lot.

#### *Quality of participants*

The quality of participants in decision- or policy-making can be improved: (a) in the choice of participants themselves and (b) the methods by which they are selected. With respect to all the different categories of decision-making and policy discussed earlier, quality of participants can be improved along the following four important lines: (i) relevance, (ii) adequacy, (iii) representativeness, and (iv) quality of participants.

(i) *Relevance*. The member participant selected has to be directly or indirectly relevant to the issues being discussed. In low-income countries, this is a difficult issue to resolve, especially as people tend to have a tendency merely to acquire power as a means of ensuring that they are involved in all processes of decision-making, sometimes at the risk of efficiency and their own health, instead of helping to achieve better decisions. Far too often, senior administrators and chief executives have been justifiably accused of failing to delegate authority, or trying to cope with too much. Consequently, decision-making is slow, long winded, and invariably of poor quality.

Relevance is essential in agriculture. In particular, the thrust of improved innovation in agriculture through improved extension services will be more effective if the individual being so educated is the right person to make the decision. In other words, the sets of decisions to be made for effective implementation of the adoption processes being encouraged will be more fruitful if the strategy of extension is made more relevant to the specific decision-maker.

(ii) *Adequacy*. The number of participants is a reflection of size, nature of decision and the optimum number of persons required to make the relevant

decision. "Two heads are better than one", but too large a group is not always easy to work with. Being adequately represented gives credence to the decisions being made as well as ensuring that enough shades of relevant opinions are represented, and discussed, before any final decision is taken.

(iii) *Representativeness* of participants cannot be denied as vital for enhancing the quality of decisions. It is essential to have relevant and adequate representation to ensure that all shades of relevant opinion are represented and that everyone feels a sense of belonging as part of the policy-making machinery, thus creating a sense of commitment to all concerned, and therefore more willing to ensure the success of the decision.

To achieve representativeness for agricultural policy participants, *the* list needs to consist of the *farmers' representative* (selected by or with the approval of the farmers themselves), *administrators* to co-ordinate and carry out the essentials of contact and reporting (Anthonio, 1974); (3) *technicians* of one type or the other essentially to advise on the techno-economic and social aspects and supply other basic intelligence of a technical nature.

(iv) *Quality of participants* Can be defined on the basis of the attributes of personal competence, knowledge of the issue, experience, and the ability to appreciate public need. These qualities have little or no relevance to the more socially dominant factors such as education, religion, wealth, age, and tribal grouping, which unfortunately are some of the attributes that today tend to dominate the selection of participants in agricultural policy making in several low-income countries.

It has to be admitted that defining the quality of participants implies some subjective judgements. Nevertheless, it is clear that as the quality of the participants improves, simultaneously with the other features, the quality of the decision made is bound to be better. Therefore, the selection process for appointing, electing or nominating participants should be such as to ensure that the "best" appropriate criteria for selection processes are evolved in the first instance. This is a fundamental issue. A poor selection of participants is not likely to secure a good decision and bad policies are not only meaningless, but sooner or later lead to more serious problems and greater frustration.

#### *Quality and quantity of information available*

Firstly, subject to the limit of costs, there is no alternative to making sure that all members involved in a decision or in policy-making have the opportunity of access to full available information before the decision or policy is made. Secondly, an infinite array of inaccurate and irrelevant information is meaningless and certainly not as useful as a small but well documented amount of correct, reliable, relevant and timely information. Relevant information is that which helps to improve available knowledge about a particular issue, and likely to improve the decision being made.

The four main factors conducive to the improvement of available information for decision-making are as follows:

- (i) quantity – to be just sufficient

- (ii) quality – reliable and useful;
- (iii) presentation – simple, intelligible and easily transmitted;
- (iv) timeliness – to meet the desired goal or be available to the right person at the right time relative to the decision timescale.

(i) *Quantity* should “be enough for the use” to be made of it. One of the most limiting factors to procuring full information is cost. Gunnar Myrdal (1967) believes that people tend to operate within the frame of rational ignorance because of the cost of securing information. There are different types of information as well as different methods of presentation – in figures, words, graphics, photographs and a host of others. The means of distributing them are just as many and the area of communication is wide, important, and easily abused.

The contention being made here is that, provided particular information is relevant, reliable and correct, then the more of it supplied the better. The supply method should also be appropriate, ensuring the most feasible assimilation by those concerned.

(ii) *Quality* refers to the positive contribution such information will make in improving the quality of the decision or policy being made. Quality of information will vary depending on source, method of collection, care taken in its processing, and method of presentation. The more reliable the information, the more acceptable and the more useful it is to decision-making.

It is true that most low-income countries plan the development programme without adequate facts and sometimes with the wrong ones. This is most unfortunate. Hence if agriculture is to develop, policy making has to be improved. To ensure this, in future there will need to be more data with improved reliability, relevance and acceptance.

(iii) *Presentation* of information, for quick comprehension and without deliberate bias, is absolutely essential. There is no alternative whatsoever to making sure that the presentation of the available and reliable information is such that it meets the purpose of supplying the information. There are quite a number of ways of doing this, but the criterion of selecting the best method is the test of understanding. That is, the presentation of information is such that the different categories of users are given the best opportunity, via the presentation, to quickly grasp, assimilate and be in a position to use the information.

(iv) *Timeliness* of information is important, especially as decisions have to be made within a time limit. In any case it is meaningless to present useful information only after a decision has been made. All relevant and accurate information should be adequately presented well ahead of time for effective use by all concerned as a necessary adjunct to making a good decision. Any other strategy can only generate confusion, distrust, and disharmony in decision-making and these should be avoided at all costs.

Finally, it has to be mentioned that the critical aspect of assessing the quality of a decision lies in both the acceptance of operationality and effectiveness of such conclusions as well as the available alternatives with respect to organizations or institutions for making necessary adjustments, corrections, or even repudiating (with alternatives) the previous decisions. More

especially, when the manifestations of decisions have long gestation period, as in the case of development plans or agricultural investment, it is probably more relevant and important to correct past mistakes.

### *Consensus of opinion*

With the foregoing three facets fully discussed, the area of consensus of opinion remains largely a socio-political question. It is an area where altruism seems to hold that "a country gets the government it deserves". The way and manner in which opinions are exchanged, analysed and a consensus arrived at are influenced by the people themselves, their goals, values, and the means at their disposal. Their expression is translated into their governments and institutions which govern the major part of their lives. In this paper, it will suffice to add that a more representative consensus, as represented by reduced conflicts, is generally a better position to be in.

## 4. SUMMARY

Perhaps the most neglected and yet most crucial area of policy for agricultural development in low-income countries is how decisions are made at all stages and for all categories of decisions. This apparent neglect has arisen purely from a genuine lack of understanding of the inter-relatedness of the political, economic and social interactions of farmers and policy-makers in low-income countries. It is true to say that research studies and analysis of the processes by which decisions are made are far from being strictly economic. Rather, other variables such as power, social status and prestige are as important as income and wealth in the decisions being made. Hence, the processes of decision-making seem rather confusing but very vital and consistently important in understanding participants' objectives. Ideally, therefore, the improvement of decisions will, to a very great extent, be influenced by a number of factors. Some of these factors, discussed previously include the following:

(1) Consonance and consistency in perspective and objective with regard to the sets of decisions to be made and those responsible for making the decisions. Far too often, decisions are made by those not directly involved or affected by the objectives to be achieved.

(2) Nature, selection and relevance of participants in the decision-making structures.

(3) Information available — to be of good quality, timely, relevant, accurate enough and freely available to all.

(4) Improved communication within and between categories of decision-makers to achieve overall harmony.

(5) Decisions to be made must clearly be within the effective competence and scope of the person(s) expected to make such decisions.

(6) An effective organisation or institution for identifying development priorities of the society and the resources requirement to meet the priorities must be identified with a view to working out realistic and operational decisions.

The variables listed above are by no means exhaustive or exclusive and should not be regarded as such. Nevertheless, within the context of the low-income countries, these forces, more than any other, influence both the quality and the speed with which these decisions are taken.

Effective improvement in decision-making is a necessary precursor to any useful operational national agricultural policies which can lead to improved agricultural practices at the farm gate. Furthermore, the fact also has to be accepted that as the level of decision to be made becomes more complicated and more involved, so is the need for a better set of decisions, precisely because of the larger area, scope and greater implications of such decisions. The higher order decisions, for instance, are the more intractable. Furthermore, there is a general weakness in the processes by which decisions are made and until these serious weaknesses are resolved, agricultural improvement in low income countries will for ever remain in files, textbooks and development blue-prints. Whether or not the society is prepared to act is a crucial question: whether the future of agriculture in low income countries will bring the "green" or the "red" revolution will largely depend on how soon these improvements in decision-making are expedited.

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