(1)

DEFINITIONS OF EXTENSION CONCEPTS AND PRINCIPLES EXTENSION AND EDUCATION ADULTS BEHAVIOUR

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Interpretations of Agricultural Extension

1. What is agricultural extension?

There are as many definitions of extension and of agricultural extension as there are authors who write about it. Consider the following statements.

John Russell: "Agricultural extension can be defined as the provision of knowledge and skills necessary for farmers to be able to adopt and apply more efficient crop and animal production methods to improve their productivity and living standards."
(page 159 in G.E Jones (ed), 1986)1

B.E Swanson and J B Claar:

"Agricultural extension is an educational process, which has as its goal the communication of useful information to people, then helping them to learn how to use it to build a better life for themselves, their families and their communities."
(page 1 in B E Swanson (ed), 1984)

P Qakley and C Garforth:

Agricultural extension "offers technical advice on agriculture to farmers and also supplies them with the necessary inputs and services to support their agricultural production. It provides information to farmers and passes to the farmers new ideas developed by agricultural research stations."
(Oakley and Garforth, 1985, page 20)

A W van den Ban and H S Hawkins:

"Extension - a form of conscious social influence. The conscious communication of information to help people form sound opinions and made good decisions."
(van den Ban and Hawkins, 1988, page 312)

These definitions all suggest that agricultural extension involves the provision of something; and that the activity of extension begins with that provision (of advice, of ideas, of information, of knowledge, of sills). Does this adequately define the term? If the essence of extension is the provision of something, how do we know what farmers will find "useful", or "necessary", or "new"? and how do we know when people's decisions are "good" or their opinions are "sound"? Consider also the intended

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results of extension which are expressed in these definitions. How would you define the intended results of extension?

Other definitions suggest that agricultural extension begins with the farmer and the farm, rather than with a piece of technology or advice. A draft glossary from Wageningen (International Agricultural Center) defines it as:

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1. References cited are listed in the reading list for the Core Studies of the MSc course in Agricultural Extension assistance to farmers to help them identify and analyze their production problems and to become aware of the opportunities for improvement.

This definition deliberately omits any reference to the nature of the assistance; it does not mention advice, or imputes, or education. How the extension officer provides the assistance will depend on circumstances. However, some people will find the emphasis on farmers' "problems" misplaced. For Professor Niels Roling, the essence of (rural) extension is the objective of stimulating changes in people's behavior: the means by which this is done is within limits, not an essential part of his definition:

> a professional communication intervention deployed by an institution to induce change in voluntary behaviors with a presumed public or collective utility.
> (page 49 in Niels Roling, 1988)

Some argue that agricultural extension includes the provision of inputs and services. Others, such as Benor and other advocates of the Training and Visit system, argue that extension is limited to less tangible inputs such as advice, information and training. Some draw a distinction between the provision of information and advice, and longer term educational processes which are the concern of the formal educational system and farmer training institutions; while others say that without an educational element, farmers will not be able to make most effective use of the information and advice provided by extension officers.

There are at least three sources of confusion we face when discussing, reading or writing about agricultural extension:

1. the term is used to refer both to an activity, and to an agency or organization which carries out that activity.

2. the role of extension activity, or the function an extension agency is expected to fulfill, can be seen in very different ways.

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3. we do not have an agreed set of terms and definitions for concepts such as extension approaces, strategies, moels and systems.

We now consider these three difficulties in turn.

2. Extension as activity and as agency

Consider a simple model of extension:

Research <----------> Extension <-------> Farmers

The model could be seen as representing three sets of people, or three activities. In other words, the model can be seen either as:

Research -------> Extension -------> Farm
Institutes <------ Services <------- Families
Research -------> Extension -------> Farming
Activity <------- Activity <----------

Also, the arrows connecting the elements of the model can be seen in very different ways. Do they represent the transfer of information? or of inputs? or a sequence of activities?

There is a danger of seeing the activity of extension as something that is only done only by extension organizations. The question "how can we make agricultural extension more effective?" is often interpreted as "how can we make the Department of Agriculture more effective?" But most of the things we associate with the activity of extension are also done by research agencies and (even more so) by farmers. If you ask farmers where they first heard a particular piece of information, or saw a new variety, or saw crops sown in Lines, the answer will most of the time be "from another farmer" or "at a neighbor's farm". Similarly with "research" : extension agencies are increasingly becoming involved in adaptive research and in one-farm trials. Farmers also conduct experiments, make observations and develop or adapt technology. So when discussing extension, we should make it clear whether we are talking about extension activities, or an extension agency. We should also make it clear whether we are talking about extension as it should be, or extension as it is carried out (in a particular place or in general).

3. The role of Agricultural Extension

A second source of confusion is that the role of extension activity, or the function lit is supposed to fulfill within the agricultural economy, can be seen in very different ways. If you ask field level extension workers to define their jobs, you may get a variety of replies. For example:

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. the transfer of new technology. To quote Benor (in Rivera and Schramm 1987, page 145): "The basic function of an extension service is to promote useful and remunerative technological change among farmers, and to keep agricultural research and other rural services well informed of farmers' conditions and needs."

. This transfer is usually seen as a "top-down" process; a transfer of new technology from researchers, through extension workers, to farmers. But it can also be seen as horizontal -the transfer, or sharing, of new ideas and technology between farmers. Many new wheat and rice varieties have been developed by farmers, who have taken varieties from research stations and bred into them characteristics they find desirable (Brammer, in Ceres 13(2), 1980,pp.24-28). Paul Richards (1985) argues persuasively that extension services should spend more effort on promoting "horizontal extension" - i.e. finding out what the most successful farmers are doing and helping other farmers to learn from their experience and expertise;

. Provision of information, so that farmers are in a better position to make good decisions. Information can be seen as a resource or input, and the role of the extension worker as being to make that resource available to farmers. This view emphasizes that each farm is different and that what might be appropriate for one farmer would perhaps be inappropriate for another. It is up to the farmer to decide what to do on the farm: it is the extension worker's task to make sure the farmer has enough information to make good decisions;

. Problem-solving: i.e. starting with problem that is faced either by the individual farmer, or by many farmers wishing a certain area, and helping them find a solution to that problem. This view suggests that the "agenda" for the extension worker is set by the farmers in the locality, and not by the decisions of senior management and subject matter specialists in the extension agency;

. Education: helping farmers acquire a more "scientific" understanding of agriculture so that they can make more "rational" decisions about their use of resources and reach more informed judgments about knew technology and practices (for example, about the importance of balanced use of fertilizers, or recommended pruning regimes);

. Training: teaching farmers specific skills, both cognitive and manual, to enable them to use new technology-and to use existing technology more efficiently;

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- Strengthening the organizational base of farmers so that they are better able to take advantage of new possibilities, and to stand up against the power (political and/or economic) of landlords, traders, money lenders and other powerful groups. This can be seen as creating countervailing power; or as developing an acquisitions system rather than a delivery system rather than a delivery system (Axinn, in Rivera and Schramm 1987). The relevance of this view of extension was highlighted in the World Conference on Agrarian Reform and Rural Development (WCARRD) and the programme initiatives that came from it (especially the Small Farmers Development Programme and, more recently, the People's Participation Programme, sponsored by FAO). Some people argue that this is part of rural extension, but not agricultural extension;

- Coordinating the supply of inputs, advice and credit;

- Providing technical services such as plant protection, tractor here and artificial insemination.

The common thread running through these descriptions is the desire to influence agricultural change, to be an agent of change. The precise way one defines the role of extension depends on how one thinks that change can be stimulated. This in turn depends on one's own theory of change; What factors lead to agricultural change, and what are the factors that prevent change taking place? (see Garforth, "What's in a theory?", AERDC Bulletin, 22, December 1987, pp.3-8). Consider the following question:

"Why are farmers not using new technology?"

Answers could include;

a) They do not know about the new technology.

b) They know about it, but don't know how to use it properly.

c) They can't afford it.

d) As share crop tenants, most of the increase in their farm output will go to their landlords so they see no point in investing in new technology.

e) It will not benefit the individual farmer unless all farmers in the area agree to use it.

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The roles described above are not mutually exclusive. Within a single extension service, each of them may be seen as relevant. For example, in the province of Baluchistan in Pakistan, the extension programme of the Directorate of Agriculture includes the following elements;

new technology	e.g.	dwarf rootstock for temperate fruit.
information	e.g.	fertilizer types, plant protection chemicals.
general advice	e.g.	pruning regimes
farm-specific advice "		layout of a new orchard
problem solving	e.g.	loss of irrigation water
education	e.g.	soil nutrients
training	e.g.	pruning techniques
organizing	e.g.	contact farmer groups

The role of extension services, and of extension activity, may be seen quite differently by the different people involved in it. A farmer may see the job of the extension worker as to provide plant protection chemicals when necessary; while senior management may see the task as persuading farmers to adopt specific innovations. Similarly, the objectives of extension activity can be seen in different ways at different levels within the system. The field level worker will have specific objectives in mind for each extension visit or activity; the objective of a method demonstration, for example, may be to train farmers in a village in a particular operation. To the directors of a commercial firm (e.g. a tobacco company) which provides extension support to the farmers who supply raw materials for its factories, the main objectives might be to achieve specified production targets and ensure acceptable quality. To the senior management of a government extension service, the objective may be to increase food production, or to save foreign exchange by producing raw materials for industry. The farmer's objective in getting involved in extension activities may be to increase the family's income.

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"Models", systems", "approaches" and "strategies"

A third source of confusion is that people who write about extension do not have an agreed set of terms and definitions. Phrases like "extension approach " , "extension strategies" and "extension systems" are used differently by different authors. The confusion can be illustrated from a glossary which attempts to establish an agreed terminology. The glossary defines and extension approach as; "an organized and coherent combination of strategies and methods designed to make rural extension effective in a certain area"; while strategy is "the approaches and methods chosen or developed to reach a particular set of goals" Is a strategy a collection of approaches, or is an approach a collection of strategies?

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This lack of agreement about the meaning of words and phrases is seen in the different classification systems that authors use when writing about agricultural extension. Haverkort and Rolling (1984) identify six extension approaches;

1. Scheme approach (such as irrigation schemes, plantations)
2. Commodity approach;
3. Technical change approach
4. Target category approach
5. functional group approach
6. Farmers' organization approach

Peter Oakley has suggested five different extension strategies;

1. Provision of inputs/services
2. Technical advice
3. Education
4. Organization
5. Conscientization.

Swanson and Claar (chapter 1 in Swanson, ed, 1984) equate approach with models and describe six different models of extension;

1. Conventional agricultural extension approach.
2. Training and visit system.
3. Agricultural extension organized by universities.
4. Commodity Development and production system.
5. integrated agricultural development programmes.
6. Integrated rural development programmes;

and they describe each in terms of its distinctive objectives, clientele, organization and scope, approach and role of extension personnel.

Axinn (chapter 7 in Rivera and Schramm, 1987) speaks of systems of "agricultural extension education" and distinguishes between acquisition systems (where farmers determine what they are to be given by extension agencies) and delivery systems (where the extension service decides what farmers will get).

At the risk of adding to the confusion, I prefer to use the terms as follows;

1. a model is a representation, in word and/or diagrams, of an institution or process or situation (cf. a physical model of an object). Models highlight the key features of the things they represent and cut out complexities and details which do not seem so important. A model is always a simplification of reality. Models can be descriptive (describing the structure of something, or describing how some

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activity is carried out); or normative (or prescriptive- suggesting how things should be done);

Extension Functions

The meaning one gives to the above terms may vary according to the level within an extension service under consideration. "Approach" can be used of the overall orientation of a national extension service; and also of the general way in which an individual extension officer goes about his or her work. An extension service will have a strategy for increasing food production, while individual officers will have strategies for achieving their own local and short term objectives.

This introduces another area of confusion - over the terms "aims", "goals", "objectives" and "targets". Generally, aims and goals are thought of as desired states towards which actions are directed; they suggest a general direction in which situation is expected to more - for example, "a fairer distribution of rural income", or "higher levels of agricultural production". Objectives are more specific, often expressed in quantitative terms and set within a time scale - for example, "a ten percent increase in average rice yields within two years". Targets are usually seen as related to inputs, or means of achieving objectives, rather than end states. We might set a target of "two result demonstration to be held by each extension worker on rice varieties during the next season" as on of the means of achieving the objective of a ten percent increase in rice yields. However, usage of these terms varies; and an "objective" at one level in the system may be seen as a "target" at another.

Extension services are not completely free to decide on their approach. Individual extension workers are even less free. Extension activity takes place within certain parameters, which can be seen as constraints on the freedom of manoeuvre that change agents have in working with farming communities. These parameters include:

. The policy context - economic, agricultural, social, educational and other areas of national (and/or state or provincial) government policy.

. Infrastructure - both physical (reads, railways, telephone facilities) and institutional (banks, cooperatives)

. Social structure - for example, the relationships between landlord and tenant will influence both how extension is done and the outcomes of extension activity.

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5. Categories or dimensions?

Most attempts to distinguish between different approaches, models and strategies are unsatisfactory because the categories they put forward are not mutually exclusive. An "organization" strategy may include educational activities. A commodity approach may involve the setting up and support of functional groups. It may be difficult, therefore, to say that a particular extension service falls into one category rather than another. It may be difficult, therefore, to say that a particular extension service falls into one category rather than another. It may be more useful to identify a number of dimensions along which extension systems and services vary in their overall approach. These dimensions might include;

1. Commodity specific -------> general agriculture
2. Crops or livestock only-----> whole farm system
3. Target groups --------> all farmers
4. Farming only --------> household economy
5. enforcement ---> persuasion ---> advice ----> information -----> education and training (i.e. the basis for behavior change)
6. Individual orientation ------> group orientation
7. Technology transfer ------> organization

5.1 Commodity Specific or General Agriculture?

Examples of commodity specific extension services include the Kenya Tea Development Authority (KTDA) and the Philippine Cotton Corporation (PCC). These are government or parastatal agencies. Commercial companies with commodity interests often have similar approaches - e.g. BAT in Malawi, Thailand and elsewhere. These agencies usually focus on the provision of agronomic advice to individual farmers; commercial information and support; information on administrative and logistical arrangements for credit, grading criteria, collect and payment. Input supplies are often made available alongside advice and information. The extension officers may also be responsible for seeing that contractual obligations of the farmer are carried out.

Commodity extension is generally only effective where there is a high economic return to extension - which usually means a high value cash crop, where quality of the final product is an important factor in being able to compete on the world market. Advantages of commodity based extension include:

. having specialist extension staff at field level.

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. high level of contact.

Disadvantages include:

. farmers may be faced with several extension workers, with competing advice or demands.

. needs and potential of the whole farm may not be considered (although PCC is now promoting corn-cotton and rice-cotton farming systems rather than cotton alone).

. their narrow focus means that environmental factors may be ignored (e.g. loss of trees cut down for tobacco curing) .

. extension objectives are determined by agency needs and priorities, not those of farmers.

. only a minority of farmers (with particular types of soil, proximity to processing plants, above average land holdings, or by some other criteria) may be potential beneficiaries.

Some countries are now reducing their former emphasis on commodity based extension. In Bangladesh, for example, the sugar and jute extension services have now been incorporated into the general extension service (although there remains a separate service for cotton under the Cotton Development Board). With a general agriculture orientation, extension workers can look at the whole farm: however, they cannot be experts in everything and therefore specialist back up is vital (hence the SMS within the Training and Visit system). For more discussion on commodity based extension, see Schulz, in Sociological Ruralis, 17(1/2) 1977, pp. 87-106.

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5.2 Farmers or Target Groups?

(See Roling, 1988, chapters 4 and 5) The argument for targeting extension activities is based on the fact that farmers differ in important characteristics, such as:

. Scale of farming
. level of education
. range of existing enterprises
. level of existing technology
. resources available-labour, equipment, money, access to credit, quality of land.

and that they will therefore differ in

. the sort of technology that is appropriate for them.
. their priorities (e.g. market versus subsistence)
. readiness to take risk

If this is so, it may seen sensible to work in different ways with different types of farmer. In Baluchistan, for example, within a Training and Visit system, it has been recognized that the needs of the large-scale fruit growers differ from those of small scale owner-operators and from those of tenants. It has been decided that senior extension officers, district adaptive research staff and the SMS will be the main points of contact for large scale growers and contact with them will be by individual contact; while the other categories of farmer will require more active promotion of new ideas, through contract farmers, demonstrations and farmer training.

A policy of working with all farmers on an equal basis usually leaves some types of farmer out (see Garforth, 1982). Extension workers end up spending most of their time and effort on contacts with a minority of farmers. This has sometimes been deliberate policy, as in Botswaqna's Pupil Farmer Scheme in the 1960s and early 1970s, on the assumption that by speeding up the adoption of innovations by the more progressive farmers, one can automatically speed up the rate at which innovations will spread through the rest of the social system.

Target orientation can be effective. In an experimental extension and training programme in the Tetu Division of Western Province, Kenya, a large number of previously "non-innovative" farmers achieved a 100% adoption of a new maize variety and associated agronomic innovations. These were farmers who had little or no prior contact with extension agents, in an area where the more progressive farmers showed a high level of adoption of technical innovations. (See Roling, 1988, ch. 6).

Similarly, in the U.K., in an upland area of Northumberland, 100% contact with farmers was achieved by an extension officer where previously only 29% of farmers were in regular contact with extension. In both this and the Kenyan example, the key factors in achieving success were:

- defining and then identifying a target group.
- selecting appropriate content. In the UK case, this was through a survey of farmers' needs, followed up by discussion.
- use of an appropriate method (which required an analysis of why conventional methods were not reaching the target group)

5.3 What basis for behavior change?

In trying to achieve behavior change among farmers, extension agencies sometimes rely on enforcement, others emphasis the provision of advice, or of information, or of education in the expectation that better informed or better educated farmers will make rational decisions in favour of new ideas and technology.

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Enforcement may seem to be against all principles of extension, but it is sometimes used in an emergency - when in the interests of a large number of people something must be done quickly and there is not time to proceed by other means. Outbreaks of infectious animal diseases are often controlled through enforced restrictions on movement of stock, or (in the UK) compulsory slaughter of stock on affected farms. Examples of non-emergency resort to enforcement include;

- soil conservation laws in Malawi before independence.
- compulsory burning of cotton stalks in the Gezira Scheme, Sudan.

Perhaps enforcement seems a convenient short cut to agricultural change. However it may be counter-productive in the long run. In the forestry sector, there has been a move away from enforcement in favour of education and community forestry - towards encouraging and supporting individual and group action for planting of trees instead of simply enforcing restrictions on the use of existing forests.

Persuasion involves "pushing" specific innovations, stressing the advantages of the innovation and playing down any negative aspects or alternatives. This implies an attitude on the part of extension workers that "we are convinced that this is a good things for you - we are in a better position than you to decide what is in the interests of your farm and your family".

Advice, i.e. farm-specific advice, which responds to the particular circumstances, resources and priorities of the individual farm and farm family, is the basis of extension approaches in the UK, both by the government-run service (ADAS) and by commercial companies. In the UK, this advice covers non-agricultural activities -even advice on how to leave farming.

Information: this approach recognizes the farmer as a decision-maker, who must decide how best to use the farm's resources in order to meet the family's needs and priorities. The role of extension here is to give farmers objective information on the basis of which they can make better informed decisions.

Education: an emphasis on education of farmers suggests that improvements in farming will come from a better understanding of the biological and environmental processes on which agriculture depends. Some countries put more emphasis than others on the general and agricultural education, and agricultural training, of farmers and farm workers (e.g. UK County Agricultural Colleges, Malawi's Rural Training

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Centers) - and the division of responsibility between extension agencies and educational institutions also varies.

5.4 Groups or individuals?

There are three common arguments for focussing extension support on groups rather than individuals:

- coverage and efficiency; an extension worker can be in contact with more farmers if she or he meets them in groups rather than on their individual farms.

- learning and motivational environment: a group setting provides reinforcement and encouragement to the individual farmer.

- focus for action; a decision to take some positive action is often easier to reach if there are others around you who are contemplating the same course of action. There are also many situations where action is only sensible or possible if many people act together.

A focus on the individual farm and farm family, however, allows extension advice and other support to be fitted to the farm's specific needs and circumstances.

5.5 Technology Transfer or Organization?

(See Roling, 1988, chapter 7) There are two very different bases for the argument that extension should spend time and energy on helping farmers create their own organizations. One is that technology transfer will only happen on a large scale if such organizations come into being; the other is that we should not be looking for technology transfer as a priority but for the release of the mass of rural people from political, economic and social forces which prevent their development. Once that is achieved, they will be in a position to decide in what direction their agriculture should develop.

6. Conclusion

In any country, extension service or project, the extension approach i.e. the position of agricultural extension along each of the above dimensions - will be influenced by a number of factors:

- analysis of the current situation: including structure of the agricultural sector, physical and economic potential for agricultural development, existing knowledge and practices of farmers, degree of heterogeneity among farmers.

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- understanding of how change takes place, both on individual farms and within the agricultural economy as a whole.

- political, economic and ideological factors - e.g. foreign exchange requirements, food price policy, rural development policy, ideological commitment to equity in land distribution.

- Planners and politicians' perception of the farming population. Are they seen as followers of advice? as tradition-bound people who need to be forced or persuaded to change? or as people who have already acquired a wealth of knowledge about their environment and farming system and are active seekers of new ideas and information in their efforts to improve the lives of their families?

Discussion Questions

1. Which of the definitions of agricultural extension on page 1 if any, fits your understanding and experience of agricultural extension? If none of them are satisfactory, what definition would you suggest?

2. Consider the question posed on page 4 and the five alternative answers (a) to (e). What are the implications for extension services of each of the answers?

3. Seven "dimensions" of extension approaches are suggested on page 8. Are there others that should be added - i.e. any other important ways in which extension approaches differ?

4. Describe to one another the extension approach of a country, or project, or organization that you are familiar wth. Where does it lie on each of the seven dimensions?

5. What factors have led to the approach you have described?

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BEHAVIOR

A. **Definition:** Behavior is any activity performed by an individual or a group of people which can be observed by others.

Example: The farmer cultivating maize or cotton must to through the action of sowing, which latter may be conducted in one of the following ways:

- at random
- in bulk
- in lines
- in quincunxes
- on mounds
- in bundles
- by hand
- by a seed-drill

In other words, in order to transact this single operations, the farmer will choose one or another sowing method.

By tradition, habit, identification with his environment and for other reasons, the farmer will choose one or another sowing method.

The extensionist should, first of all, determine the most suitable behavior, i.e. the sowing method which will yield the best results, by taking into account ecologic, economic and human conditions. Afterwards he should bring about the farmer's acceptance of the desirable behavior.

It is only once the farmer practices the innovation as suggested by the instructor, that the latter has achieved his objective. Then the farmer has modified his behavior.

If, for instance the extensionist has come to the conclusion that conditions - the most efficient sowing method is that of the "Planet" seed-drill, then the aim of the extensionist will be: "the farmer must sow with the "planet" seed-drill". To this end the farmer will have to possess"

a. the means (seed, seed-drill, surveying staff, etc.)

b. the required operational skill (knowledge)

c. a positive attitude: i.e. the farmer must realize the need for and desirability of a modification of behavior.

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B. COMPONENTS

From the above-mentioned example, lit becomes clear that a mode of behavior is the interacting factors:

1. Means

Each mode of behavior requires well-defined means which are an essential condition, without which the behavior could not occur correctly.

Initially when planning the modification of behavior, the extensionist must determine:

a. a detailed inventory of the means required:
b. the cost of the means;
c. the availability of necessary finance (own financing, loans, grants...)
d. the additional profit as a result of the adoption of modified behavior (see course of economy).

On the basis of these considerations, the extensionist will decide whether this is sufficient reason to attempt the introduction of the innovations.

2. Knowledge

The adoption of any innovation or change by the farmer requires him to have theoretical and practical knowledge.

The methods of teaching theoretical knowledge differ from those of teaching practical skill.

3. Attitude

A favorable attitude towards the new behavior may be assumed when there is a manifest desire and realization of the need for a change (motivation) land the conviction that the proposed innovation is good and applicable.

Further, this attitude shows dissatisfaction with the present behavior or the results abstained by this behavior and encourages the search for a different solution, and so prepares the way for an acceptance of the mode of behavior, recommended by the extensionist.

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III. ATTITUDES

A. DEFINITION

Attitude is the tendency to accept or to reject a given behavior. When there is the tendency to accept the desirable behavior (innovation), lit will be called "positive Attitude", its alternative: "Negative Attitude". the aim of extension is always to being the farmer to adopt the desirable behavior: the extensionist should change the farmer's attitude in order to attain the desired adjective.

Notes: "Opinion" is the oral expression of the attitude, behavior is its practical expression in action.

B. COMPONENTS OF ATTITUDES

1. Irrationally Acquired Knowledge

Irrationally acquired knowledge includes folk traditions, beliefs, prejudices, customs, superstitions, habits, etc.

A very large number of our attitudes reset on one of the above mentioned factors.

Very often we have accepted them uncritically because of our confidence in the person who instilled them in us (source of positive references).

This acquisition may also take place by identifying with a group, which we admire (see "Reference groups and persons").

Note: Knowledge which in itself is rational, may have been irrationally obtained.

2. Rationally Acquired Knowledge

This is knowledge which has been acquired either by experience or logical deduction. In this case rational reasoning is the basis for the formation of the attitude.

3. Feelings

We certainly have positive or negative attitudes which are based on feelings.

Examples

- The adoption of commercial crops at the expense of traditional food crops may well be a question of feelings.

- The problem of slaughtering cattle suffering from as endemic disease is well-known.

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The fear of failure very often hinders the farmers to adopt the innovations recommended by the extensionist.

However, feelings may also be influenced and changed. The more the extensionist enjoy the farmers' confidence, the more he acts with the necessary tact, the greater the chances of influencing the farmers' feelings.

We may thus say, that each attitude comprises these three components: irrationally acquired knowledge, knowledge based upon experience and logical deduction and emotionally determined value judgments.

Each of those three aspects contributes to the specific attitudes in varying degree.

In one case, feelings may have the prime influence, in another knowledge. There are also these who are generally more sentimental, and others more rational.

In every case, each individual will have to be analyses separately.

C. RELATION BETWEEN ATTITUDE AND BEHAVIOR

1. Psychological Equilibrium

Psychological balance is a vital seed and is an important as the physiological one.

A person does not feel satisfied or happy until this balance has been achieved. The greater the effort needed to attain this balance, the greater will be the satisfaction, when it has been reached (feeling of achievement).

In practice, the conflict may originate in a lack of positive correlation between our attitudes and our behavior: or may also be due to a relative dissatisfaction with the results we have obtained. Both are indicative of a partial or complete failure to meet with felt needs. Our primary and secondary needs are often classified as follows: survival, security, gregarious needs, rank and personal achievement. We all feel subject to those aspects in differing degrees of intensity. They are differently experienced by each person, class, and ethical group. This requires the extensionist will very often help the farmer entering conflict with his actual achievements and results.

The kinds of needs felt and the extent to which they are satisfied, determine the standard of living of a person or group (e.g. bike, transistor, roof of corrugated iron, car school attendance, saving, manner of dressing, membership in one club or another).

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The farmer's degree of motivation towards the proposed innovation will depend on the following considerations.

a. the extent of lack of fulfillment of one or several needs;

b. the farmer's attitude towards the proposed innovation,

c. the probable success quotient which the farmer expects in carrying out the proposed innovation.

For example, the farmer is at present sowing maize in bulk (B) (the traditional method), and obtains a certain result (R) of which he is satisfied. His positive attitude towards the traditional method is reinforced (A+1) and, from year to year, he goes on employing the same method (habit).

The extensionist will, above all, have to convince the farmer to consider his result (R1) unsatisfactory. The farmer will then find himself in a state of psychological failure, or else, in a state of conflict, which will cause him to develop a negative attitude toward B1.

As each individual seeks to attain psychological balance - as outlined above - the farmer will look for another solution which will bring his a satisfactorily result (R2).

Only if end when the farmer has been canvassed, that sowing in line with the "planet" seed-drill, is the bettor method of sowing maize (A+2).

In order to do this, he will be motivated to learn how (K2). Once be has learned the method (K), applied it (B2) and obtained good results (R2), his positive attitude (A+2) will be reinforced and he will apply (B2) the same sowing method again if the instructor will, during the trial period, help the farmer until the latter has reached the point of no return.

We could thus conclude that:

a. As long as the farmer is satisfied with the results he obtain, and is not in conflict, he will continuously reinforce his traditional attitudes and repeat the same behavior (habit, routine,...).

b. the farmer only considers a change in attitude, if he is not satisfied with the results obtained, at present:

c. the farmer is only interested in learning the new behavior, if his attitude towards this behavior has previously been positively (conviction) conditioned.

d. the farmer is also in conflict, if for one reason or another, his behavior is not in positive correlation with his attitude.

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Note:

The person himself will judge, if the results are satisfactory, since we are all lenient judges towards ourselves, we have difficult entering into a conflict. That is why we must usually be "helped" by circumstances or by people. This is one of the extensionist's most difficult tasks.

2. **Solving of conflicts**

a. **Helping relationship**

This is the most important relationship which the extensionist must create and maintain. It depends as much on the extensionist as ont the farmer. Although it is the extensionist's role to help the farmer improve his standard of living, he cannot do this without the farmer accepting this help (confidence).

We all know that a person will not ask for help, unless he finds himself in distress (conflict or state of psychological failure).

That is why the extensionist attempts to bring the farmer to discover unsatisfied needs or to be displeased with the results he obtains. The farmer will then try to improve his results in order to satisfy his desires. If he does not find the solution by himself, he may appeal to the extensionist. It is then and only then that the extensionist may propose the innovation, convincing the farmer that it will solve his problems and teaching him the knew behavior. An alternative method would be to let the farmer discover the solution himself. Once result of the behavior is satisfactory, the conflict is about to be resolved.

b. **Antagonistic Relationship**

This relationship can be created at two different levels:

- When the conflict is orated,
- when the conflict is to be solved.

(1) **When the conflict is created:**

If the extensionist approaches the farmer too directly or in a provocative manner, treating his results as unsatisfactory or pitiful, the farmer will very often react with hostility. He will not only not enter into a conflict, with his own achievements or results but generally with...the extensionist..)

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2. **When the conflict is to be solved:**

If, for one reason or another, the farmer is already in conflict, he will try to solve it. In case the farmer does not approve of the solution suggested by the extensionist, and the extensionist chooses to "convince" him "at any cost", he will oppose it.

The more arguments the extensionist brings forward in order to convince the farmer of the proposed solution, the more marked will be the hostility between the two, and their personal relations will deteriorate. That is why the method of helping the farmer discover - by himself - the solution is so desirable.

In conclusion as soon as the extensionist feels that a hostile relation is being created between himself and the farmers, he should abandon the subject temporarily. Later he will involve the farmer more deeply in his conflict, and approaching him less directly, will thus create a helping relationship.

c. **Defence Mechanism**

This mechanism consists in most cases of twisting reality to scape one's responsibilities.

Example:

The farmer, having obtained a low yield because he did not sow on the right date, will tell us that this is due to lack of rain, even through his neighbor, having sown correctly, has obtained a far higher yield. We should not that the farmer is aware of his low yield. However, he is not ready to draw the logical conclusions which would force him to change his behavior. In this case, the aim of the defence mechanism is to put the responsibility for the low yield on the lack of rain. In other words, the farmer is "extra punitive". To accept the fact that the poor results were due to an improper method of saving would require the farmer to enter a conflict for which he does not know a solution or the solution of which is not agreeable to him.

The use of defence mechanism is particularly widespread in the type of conflict called "repulse-repulse", in which both alternatives do not please.

They can be used to:

a. minimize the occurrence of failures and reduce the importance of dissatisfaction felt;

b. reject the solutions proposed by the extensionist.

There are various forms of defence mechanisms. They all answer a certain incisions felt by the farmer, taking the form of excuses of "evasions" which enable him to escape his responsibilities.

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The fact that the farmer uses a defence mechanism proves that he is aware of the problem, but he will either not consciously acknowledge it or solve it in accordance with the extensionist's advice.

The extensionist will have to discover the reasons which are underlying the farmer's behavior.

It is only in the light of these reasons that the extensionist can decide what can be done in order to reduce the farmer's uneasiness and bring him to face his problems within a helping relationship.

3. **Modification of Attitude**

Until now, we have acted in accordance with the fact that attitude gives rise to a corresponding behavior in order to maintain the psychological balance.

It might, however, also be possible for the farmer, under the influence of external pressure, to adopt a certain behavior. If the result obtained is satisfactory, the farmer will develop the corresponding positive. The two possibilities can be formulate as follows:

Example:

- The farmer, laving been convinced by the extensionist that sowing in lines increases him yields. learns to sow in lines, and is now applying the new method:

- The farmer has applied for a loan. To obtain it he must sow cotton in lines. No learns to do so, applies the now method, and obtains good yields. Hence he is convinced that slowing cotton in lines is a good idea.

In the first example, the approach used is a democratic approach, since the farmer has first been convinced to sow in lines, and only afterwards did he do so.

In the second example, the approach is an authoritarian one, since it was only under the pleasure of the condition for obtaining the loan & that the farmer sowed in lines. Only, subsequently, having obtained good results. Was the farmer convinced that such behavior is in his interest. The pressure used in this case is that of obtaining a loan, although many other pressures might be employed, Instruction, regulations, law, group decision, sales conditions, etc. The authoritative approach tends to pouch the individual or the group to accept the innovation, while the democratic approach tends to diminish the resistance against the innovation. The question for the extensionist is to know which of the two approaches will yield the better result under well defined conditions.

One of the factors to be taken into consideration is the personality of the

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extensionist as well as that of the farmers. Numerous researches tend to prove that an extensionist with an authoritative personality would be more efficient with a group of farmers whose personality is also authoritarian; on the other hand, an extensionist who is egalitarian has less chances of succeeding with such groups, but will succeed with farmers preferring the democratic approach (confidence - compatibility).

Note:

1. A person or a group may very well prefer the democratic approach in certain spheres of life, and the authoritarian approach in others.
2. It seems that the authoritarian approach to a large extent stifles both the spirit of initiative and the cease of responsibility, whereas the democratic approach develops then,
3. If a person has freely chosen an attitude or behavior, he generally defends them more readily than when they have been dictated.
4. What attracts certain extensionists to choose the authoritarian approach is the fact that lit enables them to remain neutral (not involved) with regard to the farmer's problem or problems; it is usually also much easier, quicker and less expensive.
5. Whenever there is opposition, however, the extensionist should choose the democratic approach.
6. Certain persons confuse expressions which are not synonyms, such as; democratic approach and politeness authoritarian approach and lack of tact.

IV. APPROACH TO CHANGE OF BEHAVIOUR

There are large number of approaches and systems aimed at making adults adopt innovations.

From among these we shall now propose one, which corresponds to the principles mentioned previously.

This approach takes into account the various stages which the extensionist will have to follow with the farmers, if he wants to introduce as innovation > For each of the stages, the extensionist may choose one or several extension methods by which it is possible to attain the aim of the stage under consideration.

The extensionist must takes care to evaluate the extent to which the aim of the stage has been reached before proceeding to the next.

Several stages may be combined into one activity, while it may happen that several activities are required for one stage only.

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After having determined the aim of the change and thus having clearly defined the behaviour or behaviours the farmers will have to adopt, the extensionist will then proceed to fix the means required by the farmers to put this behaviour into practice and check their availability.

The more information about the farmers the extensionist has compiled, the more exact will be the planning of the change.

In summary, we may define this process as follows:

- The aim defines the final behaviour (B_f) which the farmers should adept, whereas the present situation (P) is the result of the farmers' present behaviour (B_p).

Aim = B_f

Present situation = B_p

$$B_f = M_f + A_f + K_f$$

$$B_p = M_p + A_p + K_p$$

It is now up to the extensionsit to determine the differences between Mf and Mp, Af and Ap, and Kf and Kp. He will then know in which sphere he has to act as well as the extent of his intervention in cach of the areas.

1st stage

The objective of this stage is to put the farmer into conflict with himself, i.e. to make his unsatisfied with the results he currently obtains from the crop in which the exensionist wants to introduce the change. In order to do this, the extensionist may also help him discover unsatisfied needs, which are not necessarily linked directly to the farmer's present results, but which may induce him to adept the planned innovation.

This aim any be attained by informing him of the innovation.

If the information transferred has not attained the anticipated aim, it could be reached through opinion leaders, as well as methods such as interviews, discussions, excursions... in order to create the desired conflict.

This will have very well happen that the farmer discovers problems. Unsatisfied needs, defects in his working methods, etc. without entering into conflict, because he believes that "it is not important" "with others it is still works, etc. The aim of the stage has, however, been attained because the farmer has discovered the elements which ought to put him into conflict although he has not yet given them their proper significance.

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2nd stage

The extensionist tries to involve the farmer in the conflict created in the previous stage up to the moment at which he will be convinced that he must change his behaviour.

In this case the farmers can be shown the better results achieved by other farmers (visits), or use can be made of the influence of opinion himself (or the extensionist): "What must be done to improve the situating the farmer to want to chage.

3rd stage

It is now the proper moment to introduce the innovation: Two approaches may be used:

a. the extensionist introduces the innovation;
b. the extensionist leads the farmer to discover the innovation.

We know that the farmers have been informed of numerous innovations for a long time, although they have not applied them.

The fact that the farmer is ready to change does not mean that he is ready to ascept the advised innovation. He is, however, sometimes able to discover it by himself. If he discovers the solution (innovation) himself, it is much more probable that he will be convinced that it is a good one and will want to try it.

If the extensionist believes that he must introduce the innovation himself he will teach only the theoretical side at this stage.

4th stage

If the farmer is not concinced that the innovation is timely, the extensionist should persuade him. We advise the following procedure:

1. Ask the farmer what his reasons are for rejecting the innovation;
2. Accept real reasons frankly (empathy, helping relationship);
3. Noation and stress the advantages of the innovation.

5th stage

It may be that the farmer is not yet convinced and thus not ready for change.

The extensionist would then:

1. Ask the reasons for opposition;
2. Acknowledge real reasons;
3. Diminish the influence of rejection factors.

Example "Experiment on a small scale", "I shall help you succeed", "In case of failure, the damage will be made good", etc.

In short, the last three stages are persuasion stages or stages of attitude-

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changes (acecptance) toward the proposed innovation.

the attitude will be sufficiently positive as soon as the farmer is ready to try the innovation.

6th stage

As soon as the farmer is ready to try the innovation (this may happen at the first stage), the extensionist will teach him the practical knowledge required for implementation. This teaching will be individual.

7th stage

During this stage, the extensionist should make certain that the farmer's trials will be successful in order to reinforce his positive attitude, and, by means of thin, bring him to a definite change of behaviour. Here the farmer will reach an optimum command of the implementation of the innovation through repeated exercises. The extensionist will repeat those until he has gained the impression that the point of no return has been attained by the farmer.

V. DIFFUSION OF INNOVATION

Numerous studies have been carried out in various professional disciplines in order to determine the sequence of stages for spreading an innovation. Each of these stages refers to an area of behaviour which, in turn, is related to one category of extension methods.

A. PROCESS

1. Awareness

At the stage of awareness the farmer becomes acquainted with the existence of the innovation for the first time, either by seeing it or hearing about it.

This information is superficial, and the extensionist will use suitable methods to teach the theoretical knowledge which may be imported by mass media. The farmer is of the opinion that the innovation may be of use to him, the extensionist will proceed to the next stage.

2. Interest

The farmer will become interested in the innovation as soon as he sees that it answers a problem or a need he is conscious of. This is the motivating stage. Mass media are not very efficient in this case, whereas friends, neighbours, and opinion leaders have a great influence (positive reference groups and reference images). The extensionist will use them to interest the farmers in the innovation (group methods).

3. Evaluation

It is at this stage that the farmer will decide to what extent the innovation is likely to solve one or the other of his problems and improve his situation. Thus, he will form his attitude toward the innovation. This

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evaluation is strongly influenced by friends, neighbours and opinion leaders (group methods).

4. trial

If the attitude is sufficiently positive, the farmer will be ready to try out the innovation. For this, he must know how to apply it and has to learn the "know-how" of the innovation (practical knowledge).

Individual methods are most suitable for this learning.

5. Adoption

If the experiments have been satisfactory, the farmer will definitely adopt the innovation. He will thus have changed his behaviour.

B. 1. Two forms of Extension

The extensionist must spend much time and effort in order to succeed in making the farmers of only one village adopt a single innovation. Yet, the farmers' situation may require the introduction of a large number of innovations. "to have many irons in the fire" A courier plusieure

The extensionist's success depends to a large extent on how he organises his work and divides his time. In this sense, we consider two extension types: Current extension and planned extension.

By 'current extension' we understand the answers and solutions the extensionist gives to current problems which bother the farmer.

The crops interesting the farmer may be of a totally secondary importance from the point of view of the development policy followed by the Ministry of Agriculture (food crops and commercial crops). They may also be of no value within the framework of improving his conditions. In this case, the extensionist, although having to answer the questions asked by the farmer, will nevertheless, have to devote a very large part of his time to attain the objectives fixed by the agricultural policy, initially.

Since the implementation of these aims and objectives depends, first of all, on an exact and rational planning of extension activities, it is call planned extension.

The extensionist can compute beforehand the number of days he will spend visiting the farmers in the course of the year. It is up to him or his superiours to decide what percentage of his time will be spent on planned extension.

The estimated number of activities required to introduce any innovation in a village, determines the number of innovations he can introduce during the next year, as well as the number of villages he can handle, while considering the agreed upon time for current extension during the current year.

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The more difficult it is to introduce an innovation, the more activities its adoption will require. It is, on the other hand, important to give the farmers the feeling of speedy progress. The extensionist must know which innovations would be adopted most easily, and which ones the farmers will most strongly oppose. This will enable him to establish an order of priorities among the many innovations to be introduced. There criteria we are presenting here, of course, be adapted to the particular environmental conditions.

2. Classification Criteria

a. Cost

The higher the cost of the innovation, the greater will be the opposition to its adoption (fertilizers, pest control products, selective harvest, etc.)

b. profit

The higher the profit due to the innovation, the easier its adoption will (saving of time, efforts money, etc.)

c. complexity

The more complex the innovation's implementation is in the farmers' eye- the more difficult will be its acceptance (sowing in lines, irrigation, grafting, layering, etc.)

d. Visibility

The more visible positive results are, the easier adoption of the innovation will be (spraying, use of selective herbicides, pruning, etc.).

e. Divisibility

The more the adoption of the innovation can be sub-divided or detailed, the quicker it will be accepted (mechanisation, seed disinfection, selective harvesting, etc;).

f. Compatibility

If the innovation resembles a behaviour to which the farmer is accustomed, he will accept it more easily.

Example:

- The farmer raising pure-bred chickens will accept the use of selected seeds more readily than the one who is not used to working on the principle of selection.
- The farmer selling his produce co-operatively will tend to

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accept the principle of co-operative cultivation more readily than one who does not participate in any co-operavtive form whatsoever.

g. Group decision

If the adoption of the innovation requires a group decision, it will be more difficult to introduce it than if its adoption depends on the decision of each farmer individually (acquisition of a sprayer, a tractor and attachments, pruaing, sowing in lines, etc.).

3. Table of Priorities

Even within the framework of planned extension, the extensionist is advised to introduce a large number of innovations. It is thus important to fix an order of priorities among the innovations to be introduced, on the basis of the previously mentioned criteria, and in accordance with the different groups of farmers considered.

Each innovation is set down (weighted) according to a scale of values chosen by the extensionist (from 1 to 3, from 1 to 10, etc.).

Assuming the innovations to be introduced are the following:

- Sowing fice in lines, pruning coffee, use of fertilizers in the cultivation of cotton, selective cotton-picking, weeding at the required dates and with maximum frequency, co-operative marketing of coffee, disinfection of groundnut seeds, and selective coffee picking.

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1. *COMMUNICATION*

1.1 Introduction

The work communication can be used to signify many different things, ranging from personal interaction, to satellite technology or even a means of transport.
The aim of this chapter is to look at communication as a process taking place between people.

1.2 Perception

All human life begins in the very same way: the dark pleasant warm shelter is exchanged for a flabbergasting flood of light, sound, smell and touch. The human being is perceiving as never before.

A cry of protest is usually the first reaction to the overdose of impressions and the next thing the newborn does is to close himself down for most of these signals and impulses. He cannot assimilate it all at once.

In the beginning this deliberate isolation consists of sleep. The baby does not see and hear too many things and people leave him alone for most of the time. The eyes can see only light and dark. The ability to distinguish shapes, colors and distances comes later.

The adult is able to perceive more things at a time, but still cannot requester all signals that come to him: both his organs of sense and his brains are too limited. He inevitably must select.
This selection is done by ignoring information: in the beginning very literally by sleeping; later on the individual learns to select mentally. Many things that are said to him will not be heard.

During our lifetime each of us develops a logical system for selecting information from the chaotic mass of signals surrounding us. As a child we learn that certain signals usually go together and we combine them to form a whole. We build up a framework of shapes and structures and we try to recognize new signal as part of one of the structures we know already. This logical system or "frame of reference" as sociologists call it, saves much time and energy. It is not necessary to await all information we could possibly get before we are able to predict what it is all about. In fact we only perceive small elements which can be recognized by our frame of reference and by combination and prediction we construct an image of reality ourselves. So: much of what we think we have seen is actually a product of our own mind. This is an absolute necessity for survival, but at the same time, it is clear that a lot of valid information is lost during the process of selective perception.

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We tend to sort out and reject the things that do not fit well into our frame of reference. But it goes further than that: we are more sensitive to some signals than we are to others. One could say that we have an aerial that is oriented in a certain way:

- we are more sensitive to information we can understand;
- we are more sensitive to what we expect to perceive (we select those signals that confirm what we were expecting and we fill in the rest ourselves);
- we are more sensitive to information we are looking for (i.e. which fits our interest or which fills up the gaps in our understanding).

On the other hand we tend to ignore information that is threatening:

a director who is not popular in his office tends to ignore signals from his subordinates showing their disapproval. If he would, he probably would feel more uncomfortable than he does now.

an extremist tends to be blind to evidence which forces him to give up his extreme point of view.

Information that calls in question the construction of reality of someone is usually very threatening. A person's set of explanations of reality is never complete, nor perfectly logical: there are always gaps. Too many gaps create uncertainty and make someone to stick to his viewpoint in spite of everything: only confermative information is accepted and information with the potential to widen the gaps is ignored.

Yet we cannot say that people exclusively seek confirmation of what they have in mind. A certain amount of tension is healthy: there is the element of the game, of curiosity, the risk someone is prepared to take to find out something new, the challenge.

It is evident that understanding the logical system of selecting and processing information or, "frame of reference" is of great importance for extensionists. It must be realized that "knowledge transfer" literally is impossible. Not all information that is supposed to be transferred to the target group is acceptable. Information has to fit a person's frame of reference or in other words: new knowledge should be linked to the level and type of knowledge, to the expectations and to the interests of those who are to make use of it.
Further discussion of the consequences of this statement will follow in chapter 5.

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1.3 Communication: definition

People not only perceive signals, they also emit signals to others. As soon as individuals are aware of each others presence, there is and exchange of information: there is communication taking place.

Limiting ourselves to communication between people, we define communication as: the exchange of symbolic information that takes place between individuals, who are aware of each others direct or mediated presence.*)

In the paragraphs that follow we shall explore various elements of this definition.

1.4 Symbolic information

Meanings and thoughts cannot be transferred as such. We have to codify them into symbols, such as words, gestures, etc. The people we are communicating with will have to decode them to form meanings and thoughts which more or less resemble what we had in mind. The greater the resemblance, the more we can call the communication effective.

The capacity for coding and decoding originates in the frame of reference. The frame of reference every individual builds up during his lifetime is unique: there are no two individuals who have grown up under exactly the same circumstances and have reacted to these with the

*)Definition by Oomkes

same character. Nevertheless, people of the same culture share many things, such as language, but also a number of norms, values and explanations of the world surrounding them. This enables them to understand each others symbols, to cooperate and to profit from each others knowledge and experience by communication.

> *The better people know each other, the more easy it is to communicate: a single word or even a smile can make clear what the other wants to say.*

1.4.1 Verbal and non-verbal communication

The most developed set of symbols is language. Language allows people to share ideas and experiences, to have thoughts and make abstractions. Mankind started to be "human" from the moment it became possible to speak (HUXLEY, 1980).

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Very often the context in which symbolic information is given determines its meaning. Events in the past, the relation between people, things they expect to happen, the setting in which the communication takes place; these are all factors influencing the meaning of what is being communicated. In some cases it is even more important to notice what someone does not say, in order to understand him.

> *A young female agricultural engineer has been nominated as head of a district extension office. She is the first woman to hold such a post in the area. As she asks for clarification of an organizational matter, a senior extension officer answers: 'I' ll explain you everything again, lady". Maybe he is honestly showing his good intentions. But it might well be meant in a very cynical way, giving expression to his disgust at being subordinated to a women.*

We perceive verbal and non-verbal signals, we place them into the context and we give meaning to the whole. If someone is emitting contradictory information through the different channels, it provokes uncertainty and suspicion in the ones he is communicating with. It is not uncommon for non-verbal expressions to give more valid information about the real meaning of someone than the words he is speaking.

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1.4.2 The level of contents and the level of relations

Apart from the different wavelengths at which we are emitting information, we are transferring different kinds of messages at the same time, be it that we usually are not aware of this fact. Two main levels of message can be distinguished:

- the level of contents: the factual information, i.e. arguments, experiences, ideas, demands and commands, usually expressed in words;

- the level of relations: expressions of
  * the emotional state of mind (the way someone is feeling)
  * the way someone looks at himself
  * the way he regards the others
  * the things he would like the other to do.

This information is often expressed in non-verbal signs, or by the text is presented its content. Sometimes we can read it between the lines. Communication at this level is also called "metacommunication".

> *a young African extension worker is trying to explain to a farmer how he should change his practice of sowing maize at random. "Your way of sowing is old fashioned and inefficient. You*

should sow in lines, to make weeding possible. The seeds should be planted at a distance of 15 cm to get the optimal use of nutrients and sunlight". As he is saying this in a haughty tone, he does not look the farmer in the eyes but he is looking at the field. At the level of content he explains what the farmer should do and justifies it and in this case, the message is presumably "correct. Meanwhile, the extension worker is communicating at the level of relations:

-" I don't feel quite at ease, telling an older man what do do"

-"I have had a modern education, where I have learnt better practices. I have something to say".

-"You are old fashioned and stubborn: this is not the first time this advice has been given to you and still you continue in the same old way".

-"You should do as I say, this time".

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Although maybe not consciously the farmer does register the information at the relational level, and he will react to this. possibly he will nod politely, shake his head after the extension worker has gone and continue his old practice.

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The various messages that are emitted at the same time, the different wavelengths at which this happens and the context in which it is communicated: everything is registered as a whole and as we react, we are reacting to the whole package. This process takes place partially consciously and for a considerable part in an unconscious way. Most of us have learnt to pay attention to the level of contents mainly. This is also the level that we have best under control. The signals which are communicated unconsciously can give the feeling of trust or suspicion which is often difficult to understand at once.

This explains the remark made earlier, that non-verbal communication often gives more valid information about the real meaning than the verbal behavior does: for most people it is difficult not to show their feeling in non-verbal behavior, just because they are hardly aware of this behavior.

1.5 Exchange

If not only words, but also the way words are spoken, non-verbal signs, physical position to one and other and even things that are not said, are part of communication, where does communication begin?
The starting point is the awareness of each others presence. As from that moment it is impossible not to communicate.

A man singing in the bathroom is not communicating as long as he thinks he is alone in the house.

But as soon as he knows someone is there, who might hear him sing, he does communicate. Maybe he tries to show his musical talents to impress the other of maybe it is an expression of the feeling "I don't mind what you're thinking of me, I sing as I want to".

Everything is communication. People in the waiting room who stare out of the window are communicating: "I don't feel like having contact with you" or "i would not know what to say". The lonely signboard at the side of the road inviting travelers to stop and have a good meal: as soon as someone needs it there is communication.

As from that moment of awareness of each others presence, the communicating individuals are influencing each other continuously. As A is talking to B, what he says is not only the product of his own thoughts, but also a reaction in response to his impression of what B is thinking, derived from what B has said, from the way B is looking etc. B has a big influence on what A is saying, even if B does not say anything at all.

Fortunately, he has. Intuitively we adapt to what we think the reaction of the other will be in order to be more effective in our communication. This might be clear as two people are communicating to one and other, but the same is true for intermediate communication. The producer of a radio programme, or the designer of a pamphlet takes into account what he thinks to know about those who are supposed to pick up his message. However, what we suppose we know about the other is never completely adequate: partially it will be based on observations, but for the other part we have completed it by our own fantasy. The less we really know, the more we fill in ourselves.

Obviously, as the distance gets bigger, it becomes more difficult to get valid information about the people for whom the messages are meant, and thus it becomes more likely that mistakes will be made adapting messages to either knowledge, expectations and interest.

For A the most direct source of valid information about B is the reaction of the latter to what A is doing. This information is called feedback. In communication feedback can be defined as the effect of one's behavior on others.
In the case of intermediate communication such as mass-media it takes sophisticated research methods to obtain feedback. In group sessions much can be observed in verbal and non-verbal reactions - especially when we are sensitive to such signs -, and in individual discussion the feedback is still more direct. Nevertheless, even in individual communication it is often useful to verify if our interpretation of the reaction of the other is really correct.

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1.5.1 Transaction

It takes energy to communicate. The communicating partners will invest in communication as far as they hope to benefit from it. Listening is difficult. As soon as the subject does not seem interesting anymore, we stop troubling ourselves understanding what is being said.

Trying to understand the other without being understood yourself, leaves one open to the possibility of being criticized: in social relations these are risks that have to be compensated for by benefits such as understanding in the long run, social acceptance, confirmation of self-confidence, etc.

An extension service will not make any effort to disseminate messages if there is no hope of any benefit, be it economic profit, recognition by the target group or justification of its activities by its finances. On the other hand, the individual will not let the message reach his mind if at first glance he does not believe there is some profit for him in it.
Communication is a process of give and take: a process of transaction.

1.6 Inter cultural Communication

As we are communicating we observe a selection of signals; we fill in the missing pats and we predict what is going to follow. While doing so, we suppose that the others use the same symbols and keep themselves to the same rules to express their meanings as we do. As long as we are communicating within the same cultural group we won't make too many mistakes this way, even though we are not aware of most of the rules and their underlying norms and values.

In inter cultural contacts however, it can lead to misunderstanding and irritation. It is obvious that people have to learn one common language before they can understand each other, that is, at the level of contents. At the level of relations, however the problem is more complicated, because people usually do not realize they are disseminating messages at that level as well, and they are even less conscious of the - sometimes very subtle - ways they are doing so. And these can be quite different in various cultures.

> *on the second day of an international seminar a Japanese and a West-African participant get involved in an animated discussion. As they leave the meeting room the African puts his hand on the shoulder of the Japanese while they continue their discussion. During the days that follow the African wonders why this friendly Japanese suddenly seems to avoid his contact.*

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Someone who leaves his culture (e.g. who goes abroad for work or study) will be confronted with many things that are different from what he - unconsciously - had taken for granted.

The first time, especially, this can be a shocking experience. The phenomenon is known as "culture shock". fellings of curiosity are often followed by anger at so many violations of the rules, i.e. the implicit rules of another culture.

> *on a field trip some IAC students watched a Dutch "sports fisherman" practicing his hobby. When he had caught a nice fat fish, he took the hook form its mouth and threw the fish back into the water. The students were deeply shocked: "how can you waste time and energy, how can you torture a fish, without intending to eat it?"*

An individual's image of reality needs to be constantly confirmed by observation. If too many observations are contradictory to the image, and he does not secede in avoiding all this information. the result can be that his self-confidence is damaged. Doubts at his competence to make himself clear to others, doubts about norms and values which he had always taken for granted, doubts about his set of explanations of reality, which seems to loose its value in new surroundings: these are all problems which in some degree affect almost everyone who is immersed in another culture, for the first time.

In this manual we limit ourselves to interpersonal communication. People who are to work in an inter cultural setting must be aware of the fact that misinterpretations and irritations resulting from different customs, and underlying norms and values, are likely to occur. Especially in this kind of setting, it is important to check whether we have understood what the other really meant to say, and to ask for feedback. In inter cultural groups it can be useful to discuss rules and noms and if necessary and possible, to agree to new rules to facilitate cooperation within the group.

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1.7 Conclusions

- We are forced to be very selective in our perception. What we think we think we have seen is partly based on real observation and for the other part we complete the image of reality ourselves.
- Communication is a two way process of exchanging symbolic information. It is impossible not to communicate, nor is it possible to be only a receiver or only a sender: as soon as individuals are aware of each others presence, there is interaction.

  Communication takes place through different channels at the same time there are always messages of different levels communicate, although we are only partly aware of this.

  Communication is also transaction: people invest in communication to the extent they believe they might benefit from it.

  Communication can be called effective as far as the communicating parties have the same idea of what is being communicated. The chance of being effective gets bigger if knowledge, interests and expectations of both parties are better adjusted to each other.

  In the case where considerable differences exist between communicating parties, as is true for people with different cultural backgrounds, it takes extra effort to communicate in an effective way.

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2. COMMUNICATION IN GROUPS

2.1 Introduction

In the previous chapter we have shown, that in communication between individuals much more is sent and received than only what people literally are saying. If we want to improve the efficacy of our communication, it might be helpful to be more sensitive to what is happening in communication. As we have chosen the group as the focus for this manual, we shall take the processes which usually occur in groups as a starting point for exploration.

2.2 Variety in types of groups

In sociological terms a group is a number of at least 2 people who recognize each other as belonging to that group.
Example: passengers in a train do not form a group. But when a number of these passengers travel every day on the same line and they start to greet each other, it is already possible to speak of a group.

In daily life every individual takes part in many groups at the same time: the family, the colleagues at work, groups of friends, associations, committees, sport clubs, etc.

Groups can differ enormously in size and duration. Another important characteristic of a group is the "aspect volume", i.e. the number and importance of aspects in which the group contributes to the needs of its members. This can vary from one single task to complete togetherness - such as a temporary commission or working group -, to a great number of biological, social and economic functions such as is the case in a family.

Groups can also be categorized by its goals. In some groups the social aspect is dominant (e.g. groups of friends) and in other groups the task prevails (e.g. work-teams, committees, study groups etc.) In this manual we shall limit ourselves to groups that are supposed to complete a task.

2.3 Interests and needs in a group

In sociological literature the distinction often has been made informal groups where the social contacts within the group are important and formal groups, which have a goal beyond the group itself. However, a strict distinction is impossible to make: in every group has implicit for explicit goals.

In fact, we can distinguish three main interests every group member has:

I the common task
There is something which should be reached together: the completion of a task, knowledge to be shared, and/or a "common target" resulting from shared interests of the group members. For a task-oriented group this is its reason for existing.

II individual interests
Not all individual interests can be covered by the common task or target. Nevertheless, these interests play and important role in the motivation of each member to invest time and energy in the work of the group.

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III social needs

Every group member has social needs, such as the need fro

contact, acknowledgment and influence, which play an important tool in the communication process in a group.

the Cooperation in a group offers the opportunity for sharing knowledge, experience and creativity of each member in a way which makes the group more than the sum of its members. In healthy cooperation one plus one makes more than two.

2.4 Speaking opportunities

Two people have more ideas then one, and together they can be creative. A third person can add something to the couple again and a fourth one maybe has still other ideas and experiences which might be useful. However, the productivity does not increase endlessly with a growing group size: it appears to be subject to the law of diminishing returns.
In large groups the opportunity for each member to speak out his mind decreases, misunderstandings and conflicts develop more easily, and there is more need for rules and procedures. If we wish to profit in an optimal way from each other's creativity, the optimum group size appears to be 5 - 7 persons.

Creative working groups should not number more than 7 members; a group discussion is difficult in groups over 15 people, while there are hardly any limitations in group size for information meetings.
knowing this, there are of course many intelligent ways of combining and splitting up groups for different types of work, in order to obtain the desired effect of larger group meetings.

A remarkable effect which gets stronger in larger groups is the division between people who speak more - and those who intervenes. Many people tend to think that personal characteristics determine whether someone is of a dominating type or always belongs to the silent majority. But recent research findings point in another direction. It is true that a low level of contribution by someone is related to a certain lack of confidence in the value of his intervention. But this lack of confidence can be due to many factors, of which his personality is only one. Starting from this point, he is likely to be trapped in a vicious circle from which it is hard to escape.

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let us try to follow what goes on in the mind of someone who is attending a meeting, where everyone is supposed to give his or her point of view.

"I don't much about this subject. I suppose other participants are much better informed. If they hear my opinion, what will they think of me?"
"They just asked me for a reaction. I could not even put into words properly what I had in mind. I was looking at my papers then. But I guess the others will have noticed my tension".
"They don't look at me anymore. That's of course because they are afraid of making me nervous. Are they seeing me as a wretch?"
"They are saying interesting things, though. I'm glad our baby-stiller was free this evening. I would not have been able to come here otherwise".
"Now what does he say. I don't understand. But maybe it has already been explained while I wasn't listening. If I were to give my opinion now, they surely would think I'm stupid".
"I'd better listen. Why would I repeat what someone else has said. She has represented my opinion in a much better way then I could formulate it. Not everyone can open his mouth in a meeting. You've got to have listeners too. By the way, some of these guys are so dominating, that I don't feel like fighting with them for a little attention at all. And listening is also very important in communication. How would the baby be at this moment.....?"

If asked for reasons for their silence, participants usually come up with arguments similar to those last line of our example: very reasonable and socially incontestable arguments. But what actually happens is that a silent person tends to reinforce his initial uncertainty. Lacking valid information from feedback he completes the image of his reality by what he expects the others to think of him, which is likely to be more negative than reality itself.
The tension results in a sub optimal performance and thus he fulfills his own prophecy: the others will get a negative image of him. Being less involved his attention will slip away, he misses things which are being said and this makes it more risky again to come back into the discussion.

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On the other hand people who get involved in the discussion are investing in it and are willing to go on to get their returns. Furthermore, from the reactions of the others they get the confirmation that their remarks are worth thinking over or fighting against.

The marginal effect of high and low involvement of participants is stronger in large groups. This is logical: the battle for the available time is more heavy; there are less feedback opportunities and the supposed risk of saying something is bigger.

What can be done about it?

a) From the individuals point of view it should be realized that frear of speaking is a normal feature in larger groups and it is not necessarily due to personal characteristics. The initial uncertainty is also related to knowledge about the subject, the degree to which the members of the group know each other, the interests which are involved, etc. Someone who is silent in one group can act quite differently in another.

b) Knowing that he is bound to perceive reality worse than it is, it can be helpful to increase efforts to observe reactions from other members more precisely. Probably he is not the only one with this kind of problem, and maybe the others do not see him as negatively he thinks they do.

c) A discussion leader can try to regulate the involvement of the members. If he structures the discussion in a way that every member has had the opportunity to speak, in the first phase of the discussion, there is more chance members remain involved. In addition, it provides the opportunity for others to make links to what someone has said in order to get him back into the discussion again. Another strong intervention at the procedural level is the summary. A summary to chief points of what has been said provides a new starting point for those who had lost track. Procedures for discussion will be dealt with more extensively in chapter 4.

2.5 Levels in group communication

Observing group discussions we can pay attention to different levels in the communication process:

I The level of contents: What is the subject? How are people thinking about it? How do opinions develop?

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II The level of procedures: How is the subject being discussed? Are people keeping track? How are contributions of members regulated? What is the procedure for decision making?

III The level of socio-emotional climate: How is the atmosphere in the group? How are mutual relations between the members developing?

The first level can be recognized in arguments, information, opinions, experiences and questions related to the subject itself. If the group is to complete a task, this is what the discussion is actually about.

The second level can be more or less explicit. There is always a procedure being followed, even if the members do not agree on any. Especially in larger groups there is a need for procedures that are clear for everybody, in order to except from chaos. However, an agreed procedure is no guarantee that it will be followed. As people get more involved in the subject they tend to forget about procedures.

Expressions of ease (such as jokes) or tension, of approval or disapproval, efforts to stimulate others to contribute or remarks on the mutual relations in the group: these types of interventions belong to the level of socio-emotional climate. Usually direct remarks in this category are relatively scarce, especially in task-solving groups, which does not mean at all that there is less communication at this level. Referring to what has been stated in chapter I, every communication contains messages at the relational level as well. Most of the messages of this kind are hidden in arguments, proposals and questions at the task-oriented levels. It is not unusual that this charge turns out to be more important than the arguments themselves, and in such a case there might be more effective ways then continuing a fight at the level of contents.

The "yes, but" discussion is an example. On every argument the other responds "yes,but...." and he continues defending his own point of view. At the socio-emotional level these two people are both communicating "you first have to admit that I am not telling nonsense before I am prepared to listen to you". The "yes,but" circle can only be broken if one of the two is prepared to step away from his viewpoint for a while, to pay attention to the other.

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2.6 Group development

An important determinant of communication at the socio-emotiona level is the stage of group development. At the moment the members of a group meet for the first time, a process is started in which a network of relations develops. This group development process has a heavy impact on the problem-solving capacity of the group.

SCHUIZ (. . . .) divides this process into three stages:

I The stage of inclusion

In a starting group an individual asks himself: "what do I want in this group? Is it worthwhile to invest time and energy in It? His feelings can be characterized as "IN-OUT". He tries to get a first impression of the other members in order to know what his own performance should be. Usually people are very friendly and careful at this stage. If one could speak of conflicts, these are mainly within the mind of individuals, struggling with the question what their position in the group should be.

II The stage of control

When people have chosen their positions and have an idea the intentions of the others, usually a battle begins to change positions in relation to each other. Some people try to get influence by making proposals, or by setting the trend for discussion, while others will try to tackle these efforts in order to prevent these people from becoming too dominant. At this stage one proposal stumbles over the other, without producing result and "trench warfare" over arguments are not unusual.
Leaders and initial procedure agreements are likely to be under pressure. In these confrontation-type of conflicts the content is less important: the aim is to obtain legimation for the position individuals want to have in the group. At the socio-emotional level HIGH-LOW feelings prevail.

III The stage of affection

If a group reaches a point in which the members accept the position of themselves and the others, it enters the stage of affection, in which the attention can shift from conflicts of competence towards the subject or task itself. While it was difficult to pay attention to each others point of view in the

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control stage, this is more easy now. Conflicting viewpoints have no other background than the subject itself. This is usually the most productive stage of the group process, but we must recognize that not every group member reaches this level of cooperation. Thus relative harmony can have different levels of intensity, depending on how far the members are prepared to go in taking risks and investing energy. In other words, what distance they wish to keep.
In terms of dominant we could translate it in "NEAR-FAR".

Stage	Dominant feelings	Type of conflicts
inclusion control affection	in-out high-low near-far	intra personal confrontation substantial

Figure 4 some characteristics of stages in group development

The affection stage does not last forever. In-out feelings and high-low competition can come back. If some members develop a need for a more intensive kind of cooperation, this may call for a reshuffling of positions, which brings the group back into another inclusion and control stage. Group development is not a linear process, but looks rather like a spiral

We cannot say, however, that cooperation becomes always more intensive. Unsettled conflicts or events from outside may result in an attitude of keeping more distance between the members.

The way a group develops is one of the determinants of its capacity of task-achievement, but it is not the only one. Group size, the type of task or target, interests and not at least the expectations the group members initially have from this group cooperation are other factors playing an important role as well. Yet, it can be useful to be sensitive to the features of the development process. It may help to see misunderstandings and conflicts in its real perspective. They are inevitable in some stages. Unfortunately we cannot pass over the stage of control and recognizing the socio-emotional charge may be helpful to overcome these problems without too many scratches.

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2.7 Norms in groups

Rules simplify life. They determine what people may expect from each other and this paves the way for a more efficient kind of communication (see 1.6), provided that all people act conform the rules. In groups some of these rules are explicit, such as procedures which have been accepted by the members. Norms are another type of rules, which remain implicit, as silent agreements between the members.

Every group member brings in his own set of norms and many of these are shared by the others, if they belong to the same sub-culture. If this is the case, there is no need to submit the norms to any discussion in the group: most people are not even aware they have these norms at all.

Apart from these norms each group develops a set of norms of its own, which make communication within the group more efficient again. Not every member has an equal influence on the development of these norms. The attitudes towards the norms in a group reflect the stage of group development: leading questions a member will ask himself through the various stages are: stage of affection: "what are the norms? Do I fit in this regime? Stage of control: "do these norms fit me? Who is setting the rules in this group?" Stage of affection: "are our norms functional for the performance of our task?

For every individual who is not satisfied with a certain rule in the group, there are basically two alternatives: he can try to accept the rules and make the best of it, or he can try to modify the rules. His chance to succeed in the latter depends largely on his position in the group. This is what a newcomer experiences when he enters an already established group. Probably he will be confronted with a number of rules which seem strange to him. Nevertheless, he must show first that he is able to act according the rules of the game, before he is allowed to call the value of a certain rule into question.

2.8 Role expectations

Some rules and norms, in particular, do not regard all group members in an equal way. They are specific to certain formal positions in the group. Some examples of role-specific norms could be: the chairman who must keep order in the meeting; the secretary who must take notes for a report; or the youngest member who is supposed to go and get refreshments.

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Apart from formal roles every member has his own position in the group. The settlement of these positions is one of the key elements in the stages of group development. Every member plays a role belonging to that position, thus creating expectations for his future behavior by others. In this way roles develop like the informal leader, the stimulator, criticizer, the silent listener, the knower-all etc.
The role of the leader will be the subject of the next chapter. Here we limit ourselves to the conclusion that in a group a complex of expectations of each others behavior exists and develop in time.

2.9 Inter cultural differences

Norms and role-expectations are for a great deal determined by culture. This means that the group development process as we described here, can take different shapes in other cultures. Essential is the need for clarity in what to expect from each other.

An important norm in the Anglo-American culture is equality: every member should have an equal say. This principle can be retraced in our description of the effectivity of groups and speaking opportunities. In reality the contributions are never equally distributed and this may be a reason why western scolars have paid much attention to the stage of control. If in another culture roles are more fixed, the control phase will probably be less obvious. Which does not mean that it is absent: the power-struggle will only have other features.

In any case: as long as group members do not accept each others role performance, an important part of the attention will go to the settlement of mutual relations, at the cost of the task-achievement capacity of the group as a whole.

In inter cultural cooperation diverging norms and role expectations can lead to difficulties. Especially the leader might do well in the eyes of some members, while others experience his performance as unsatisfactory. Inter cultural groups should therefore be aware of these differences and be prepared to develop new norms and role prescriptions which possibly differ from what individual members see as normal. Sometimes it requires from individuals to become aware of norms they utilise unconsciously,

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2.10 Conclusions

A common task or target, individual interests and social needs are three different factors which always influence the communication process in groups, although the weight of each factor may be different for any particular group.

In the observation of groups it can be useful to distinguish three levels of communication: contents, procedures and socio-emotional climate. In task-orient groups messages of the third level are often disguised as arguments or proposals at one of the first two levels.

Understanding of the features of group development can be helpful to estimate the socio-emotional charge of interventions and of conflicts in the group.

Essential in group development is the struggle for clarity in what behavior to expect from each other: which positions do the members allow each other to take and which norms should be respected in the group?

Going through the stages of group development according to Schulz we could say that in the

- stage of inclusion: members try to get an image of the situation and decide on what position they would like to occupy;
- stage of affection: members accept the situation as it has grown. This stage could best be seen as cease-fire, which at any moment can turn into another cycle of inclusion and control again, possibly resulting in an other degree of cooperation intensity.

Communication in groups is to a great extent regulated by norms and expectations, which are influenced by culture, although people are usually hardly aware of all norms and expectations they have. In inter cultural cooperation many problems can be prevented by making expectations and norms explicit and - if necessary and possible by developing new ones specifically for this group.

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3. *LEADERSHIP*

3.1 Introduction

A special role in a task group is the one of the leader. This role can be played in many ways. This chapter deals with the functions of leadership that have to be performed and the effectively of different styles of leadership under various circumstances.

3.2 The leadership role

What is a leader? Choosing a very general definition we could say that a leader is someone who gives direction to the work of a group. He performs a number of functions necessary to make the group achieve its task.

First of all it needs to become clear to the members what the targets of the group are and how they could be reached. This is the Task Oriented Function of Leadership.

This is a heavy duty for one single person. Fortunately, it is not necessary that he does all this work on his own. Other members can make proposals for procedures too, or make efforts to establish a good social climate in the group. By doing so, these members take over parts of the leadership function. The important thing is that these functions must be performed to make a group operate. How and by whom is less essential: there are many ways to do it, ranging from all responsibilities by one single leader, to equal responsibility by all members. In the latter case, there is no special role for a leader.

In case there is a formal leader, it means that there exists a dynamic equilibrium between him and the group concerning the initiative to take leadership functions. We come back to this point later on in this chapter.

3.3 Characteristics of "good leaders"

For a long time researchers have looked for specific characteristics in personality of good leaders. But in contrast to those who believe that good leaders are born as such, evidence shows that:

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a) it is very well possible to improve leadership skills by training;
b) leadership behavior is linked with the situation: someone who feels relatively confident in a group is to take up leadership functions: this does not guarantee however, that he will do the same in another group where he feels less at ease;
c) a leader who is effective under certain circumstances is not necessarily effective when these circumstances have changed.

If the question for determinants in personal characteristics of good leaders does not lead to an answer, the next question is: what is the best way to perform the role of the leader?
Or, in other words: what is the best leadership style?

3.4 Leadership styles

In classical theories leadership styles could range from:

a) autocratic: exclusively task-oriented, with strict roles, task prescriptions and control, leaving minimal alternatives for group members behavior;
b) democratic: exclusively relation-oriented, only concerned with the socio-emotional climate in which group members feel motivated to structure the task and to solve their problems together making optimal use of their capacities and creativity

Sometimes a third style is distinguished: the style of laissez-faire, which mains, doing nothing special and leaving the group alone.

Apart from the western biased normative context in which this theory often is used, the single dimension model appears to be too simple. A leader who intervenes firmly on the task performance is not necessarily someone who does not care about the social climate and human relations.

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HERSEY and BLANCHARD (1974) propose a two-dimensional model in which task-orientation and relation-orientation can be observed simultaneously. If a leader is very active in setting goals and providing structure and sees to it that the group does its work, his style is called High Task-oriented (HT). If he leaves the task functions to the group he is following a Low Task-oriented style (LT). Likewise his style can be High Relation-oriented (HR), doing everything he can to motivate the members and to stimulate cooperation; or Low Relation-oriented (LR), letting the group solve its own relational problems.

The important notion the authors make, is that there is no single all-purpose leadership style. Each of these combinations can be the most appropriate one under certain circumstances.

What are these circumstances? A determining factor is what is called the maturity of the group, according to the "Life Cycle Theory of Leadership". In this theory there exists a relationship between leadership style and maturity of the group. Maturity is defined as the level of willingness and ability to take up responsibility for the achievement of the group task.

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An immature group is not able to bear his responsibility, and needs structuring by a leader with a HT style.
In this phase it is suggested not to be too empathic and permissive.

While the position of the leader still needs to be established, a too relation-oriented attitude may be abused by the members to prevent him from getting the position he needs. An additional explanation is given by Burke (1972). As long as the power structure is not yet legitimated by the members, task-oriented leadership will cause a certain degree of tension. This tension must be taken away by another person than the one who is causing it, by relation-oriented leadership. In such a group the best style seems to be a HT/LR combination.

As soon as clarity has been created and things begin to work, the leader can start trying to stimulate members to take up responsibilities themselves and to establish a socio-emotional climate in which the members discover the use of things to be done and their ability of doing it together. The relation-oriented involvement should increase as the group gets more mature.

When these efforts start to pay off by an increasing motivation and self confidence of the members, the task function can gradually be transferred to the group members. Meanwhile the leader should see to it that motivation maintains its level. An average mature group initially calls for a HT/HR style, which gradually can shift to LT/HR.

The ideal task group, which rises above the average is able to generate sufficient ideas on what should be done and how, and it from a leader. In a group reaching this level of maturity the leader can decrease his socio-emotional support as well and he can stay at the background. This style is indicated as LT/LR.

At first sight the notion of increasing maturity in the Life Cycle theory looks similar to the stages in group development by Schulz (2.4) However, they are not the same. An increasing maturity may ask for a reshuffling of positions in the group, pulling it back to another affection and control phase. Trying to link the models together we could say that going down in the spiral of intensity through more than one cycle of inclusion, control and affection, the group is likely to grow to higher degree of maturity.

In 2.4 we said groups do not always grow to an ever increasing degree of intensity. Likewise, the group does not always get more mature. Several circumstances can cause a drawback in maturity, demanding a reversal change in leadership style.

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3.5 Leadership in group discussions

In the previous section leadership has been discussed in a general way and it should be noted that the Life Cycle Theory has been developed for groups in organisations, e.g. groups which exist during a substantial period in a functional setting.

If we change the focus to single group discussions some parallels are worth mentioning. The same dynamic equilibrium exists between the discussion leader and the members regarding the initiative to take up leadership functions at the task- and relational level. Here too, participants need to have insight in what needs to happen and have confidence in their ability to contribute to this, before they voluntarily take up one of the leadership functions.

This leads us to two remarks:

a) as people really get involved in a subject they tend to loose overview, especially when communication is getting complex, like in larger groups. In such cases, it is useful to have a discussion leader who concentrates more than the others on the leadership functions; the one regarding the procedure in particular;

b) meanwhile, the notion of a dynamic equilibrium means that he should not bear all responsibility on his own. A basic assumption we made in these chapters is that group members are more creative if they feel responsible for the process of task-achievement. The discussion leaders must try to estimate how much initiative from his side is needed: his initiatives should prevent chaos, but too many initiatives risk to provoke resistance or passivity of the participants.

3.6 Environmental factors and leadership style

The theories as described above concentrate on what is seen as desirable to make optimal use of human resources. Yet, the environment sets its limits to what is possible. Leadership must be legitimated, e.g. if a leader behaves completely different from what the group members expect him to do, his leadership won't be accepted. These role-expectations differ from culture to culture, from sub-culture to sub-culture, from organisation to organisation and even from office to office.

Furthermore, a leader must not only obtain legitimation for his behavior from his group members but also from his superiors. A leadership style influences the way people work, react and take

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responsibility. This output must be compatible with goals and interests in the organisation.

Example: a new teacher in an institute for professional training devoted much time and energy to set-up a new style of training. Instead of giving theoretical lectures which should be learned by heart - which was the common practice at discuss the subjects and to gather materials and information from outside if these were needed to complete the task he gave them.
Initially, the students were reluctant: learning by heart was an easier way to get good notes. After some time the students began to appreciate the new style, as being a more appropriate way to prepare themselves for their future profession. But then the problems came from the other side. Other teachers became afraid that students would claim similar teaching programmes from them too, which would be very demanding, if they were capable of organising something alike at all. The teacher did not obtain the necessary collaboration from the staff of the institute to realise his planned excursions and the students were not allowed to leave the institute for collecting the desired information. And thus, the experiment ended up infrustration of the teacher and his students.

Another important environmental factor can be that the work style of the group, closely related to the style of the leader, must be congruent with the way the members are supposed to operate outside the group. If for example officers are to take responsibility for their work and need to be creative to tackle the many problems which could not be foreseen, this should be reflected in the way their chief leads the team: he cannot expect responsibility by his workers in the field, if he does not allow them to take any responsibility at the office.

For some cases these notions may lead to the conclusion that the limitations set by the organisational structure and prevailing norms are in conflict with a leadership style necessary to give good results. With this type of problems we leave the scope of this manual and enter the field of organisational change. Issues of this field may be dealt with in workshop 4 on management of extension.

If we are to draw conclusions for leadership in intercultrual groups, we must repeat what has been stated in 2.8: role

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expectations should be made explicit and be adjusted and where possible, new ways should be created to meet the diverging needs of the group members.

3.7 Conclusions

In a group several functions are to be performed. We distinguished:

- the task-oriented function of leadership;
- the socio-emotional function of leadership.

The functions are not necessarily the exclusive responsibility of a formal leader. Other members can take up parts of these functions as well.

There is no such thing as a born leader with distinguished personal characteristics. A successful leader has a range of behaviour alternatives and has the skills to choose the right style for a given situation.

The group may call for more or less initiative from a leader in the task-oriented function as well as in the relation-oriented function. The degree in which this involvement is needed is reciprocal to the degree in which group members are prepared to take up responsibility for the achievement of the group tasks. Therefore is needed:

- at the tasks level: that members know what is expected from them and see possibilities to realise it;
- at the socio-emotional level: that members see the use of it and believe they can count on sufficient support from each other to bring the task to a good end.

If these requirements are met, the group does not need the support from a leader. Whenever this is not the case, a leader should fill the gaps.

Culture sets its limits to possible leadership styles:
the leaders behaviour must meet the expectations of both the group members and his superiors in an organisation.
Furthermore, leadership style should be congruent to the way members are supposed to operate outside the group.

Intercultrual groups should be aware of diverging expectations of the role of the leader and should agree on ways that are acceptable to all members.

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4. DISCUSSION METHODS

4.1 Introduction

In the previous chapters a theoretical framework was offered for interpersonal communication, communication in groups and leadership. The present chapter is meant to be more practice-oriented: it provides a number of guidelines to be used in group discussions. The chapter has three parts:

- first we need to point out what we are talking about: some distinction in types of discussion is given and the nature of procedures is discussed. In this part we also pay attention to processes of decision-making to which procedures should be linked;
- detailed guidelines for a discussion procedure are derived from a simple basic discussion model and consequences of different circumstances for procedures are discussed;
- the third part deals with some basic skills which can make contributions to a group discussion more effective. As usual the chapter ends with remarks on intercultural aspects.

4.2 Types of group discussions

Several characteristics can be used to make a typology of group discussions:

a) similar to the typology of groups (2.2). discussions can range from mainly social-oriented to mainly task-oriented. Task-oriented discussions call for more structure than social-oriented ones;

b) a second characteristic can be the aimed result of the discussion. Some possibilities are:

- opinion development: group members share information and ideas, in a way that in the end of the meetings every individual is more capable of forming a well considered opinion on the subject that has been discussed;
- advisory discussion: one or a few members of the group (i.e. leader, commission) is to take decisions and needs to know the opinion of the group;
- group decision: the group must come up with a decision for which the group members feel responsible. Several types of decisions are possible: majority of votes, with or without veto, consensus;

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c) a third characteristic is the degree in which interests of the members coincide. At a continuum we distinguish:

- cooperation: personal interests are subordinate to the common target;
- negotiation: interests are partly conflicting, but mutual collabor is needed to reach any of the goals individuals or subgroups have;
- right: there are no shared interests and reaching own goals goes at the cost of the others. Individuals or subgroups can win or loose.

4.3 The nature of procedures

Obviously, the differences mentioned in 4.2 have their impact on the procedure to follow. What is a procedure?

Keeping in mind that there is a difference between the actual procedure and the procedure people agreed upon (2.5), the latter can be seen as a formalised expression of the desired mutural relations and norms in the group.

Procedures can determine if people are allowed to speak if they want to, or only as the chairman gives them the work (near-far). Procedures can prescribe that only experts give their judgment of the situation, or that everyone has an equal say (high-low), etc.

By consequence, procedures do not solve all problems. If there is a common base of understanding, procedures can help to prevent chaos. But if there is no such base, procedures will be subject to misunderstandings and conflicts and real and agreed procedures are likely to diverge.

At the end of the Vietnam war it took several months of negotiations to obtain agreement on the shape of the table of the real negotiation talks. The equivalence of the negotiating parties had to be expressed in the positions of the delegates at the negotiating table.

4.4 The problem solving process

Purposely chosen procedures - this is what we shall talk about in the following section - aim to prevent chaos in group discussions. Procedures must stimulate people to be simultaneously concerned with the same step in the problem solving process at any moment of the discussion.

Theoretically, the rational problem solving process can be devided

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in a number of steps:

step 1: awareness of the problem: people should be aware that there is a problem and that trying to solve it is worth the trouble;

step 2: analysis of the problem: the real nature of the problem must be explored: what are its causes? Usually there are more fundamental problems basic to the problem initially thought to be solved. This step should be completed by a reformulation of the problem;

step 3: search for criteria: what are the demands to nood solutions?;

step 4: search for alternative solutions: possible solutions must be found and tested for feasibility, the way they meet the demands and possible consequences;

step 5: choice: the costs and benefits of feasible alternatives are weighed and the best solution is chosen;

step 6: action: the solution is brought into practice, in order to tackle the problem;

step 6: evaluation: the effects of the action are evaluated: if the problem is really solved, the process stops here. If not, we are back in step 1, where it is realised that there is a problem. If it is still considered worthwhile to do something about it, the problem solving process proceeds through another cycle.

It depends on the objectives of the discussion which steps should be taken by the group in this meeting. A satisfactory result might be if the discussion leads to a decision for action (step 5), taken by the group. If the aim is opinion development, the discussion terminates in step 4, leaving decisions to the individual members. A discussion following an application phase begins in step 7 and might continue in step 1.

However, reality is always more complicated than models and it is hard to follow the proposed steps in a strict manner. Searching for solutions one can find information which brings new light on the analysis of the problem, and it can even lead to a point that the problem is not urgent enough anymore (or too difficult), to do efforts for solving it. In other words, during the process it can appear necessary to step back, instead of forwards.

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BOS (1972) gives another theory for decision making in groups. For decision making we need to have knowledge and we need to make choices. At the axis of knowledge, we should have information about facts and we must know how to interprete these facts. At the axis of choices, we have to set our goals and we must choose methods and means to reach them. Group discussions shift constantly between these four elements and it is not possible to separate them. We need knowledge to make choices and choices create the need for new knowledge.

The important thing is that all elements get sufficient attention. How it should be done is less important: there are many ways to do it.

4.5 A basic discussion model

The two theories as described above can be incorporated in a simple basic model for group discussions. The core of the discussion can be roughly devided into two parts:

- a first one in which the participants should come to a shared image of the problem. If people keep talking about different problems, it is impossible to reach any agreement on solutions. The accent in this phase should be on sharing information in order to make a sound analysis of the problem. This is the phase of orientation;
- in the second phase participants must make their judgment of this situation, choose criteria for solutions, find alternatives and make a choice.

It should be repeated however, that the separation is not too strict: it must remain possible to adjust the shared image of the problem with new viewpoints that come up later.

The discussion of the subject must be preceded by a phase in which clarity is created about what should be expected from it. Clarity should exist about the delimitation of the subject, its importance for the participants, the kind of results which is aimed for and the procedure to follow.

When a result has been reached by a decision, a summary of opinions etc., the discussion usually is not yet finished. It may be necessary to make arrangements about a follow up, or a division of tasks for the execution of the decision and it can be useful to evaluate whether the expectations are met, in order to learn from this process for next discussions. This work is done in the completion phase.

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Phase	Target
I Introduction	Create clarity about what to expect/interest and procedure
II Orientation	Develop a shared image of the problem
III Opinion development	Develop a judgment of the situation and what should be done about it
IV Completion	Make arrangements following the results of the discussion; reflection in order to learn for next time

Figure 10, A basic model for group discussion

Schematically, the basic model is shown in figure 10. From this model detailed procedures can be derived, according to the demands of the situation. In the following sections some possibilities will be discuses.

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Figure 11, A detailed procedure for group discussions

Phase	Possible elements for a procedure	leadership functions: task-oriented	leadership functions: relation-oriented
I INTRODUCTION	1. getting acquainted 2. objectives of the discussion 3. procedure	- clarify what kind of result is aimed for - get an agreement on a procedure to follow	- clarify who is who - assess the importance of the subject for each member - invite individuals to express their expectations of this discussion
II ORIENTATION	4. formulation of the problem/ delimitation of the subject 5. inventory of information 7. reformulation of the problem 6. analysis of the problem	- formulate the problem and adjust it whenever it appears necessary - collect relevant information - prevent stray-off's - marshal viewpoints - summarize common views on problem analysis factors - reformulate the problem	- stimulate participants to bring in information and experiences - ask for clarification if necessary - give room for diverging viewpoints, but look for common
III OPINION DEVELOPMENT	8. inventory of opinions 9. criteria for sulutions 10. search for possible solutions 11. comparison of pro's and con's 12. decision	- marshal viewpoints on how to judge the situation - prevent stray-off's - develop criteria to test solutions - stimulate development of solutions - summarize alternatives with their advantages and disadvantages - take decisions, following procedure as agreed on in phase I	- stimulate participants to give their opinion - ask for clarification if necessary - test criteria and alternative solutions with expectations and interests of participants
IV COMPLETION	13. arrangements for execution and monitoring 14. arrangements for follow-up 15. evaluation of the discussion	- summarize consequences of the decision - make arrangements for execution and monitoring (who is going to do what, where, when and how?) - make arrangement for new meetings (when where, with whom and about what - evaluate the discussion - summarize what can be learned from this discussion, to do it better next time	- check if the results meet the expectations of the participants

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4.6 A detailed procedure

In figure 11 detailed description is given of a discussion procedure. It is no meant to be used as a strict prescription, but rather as a set of reminders which can be more or less useful in a given situation.

The basic phases in the discussion are split up in "possible steps", which means that an appropriate selection of theses steps may serve as a procedure to discuss the subject.

For complicated subjects, or different subjects to be discussed in one meeting, an agenda should be composed. The discussion on each issue could follow the four phases of discussion.

In the last two columns it is indicated which leadership functions (task-oriented and relation-oriented) are important in particular for each phase. It will not be surprising that these functions partly can be traced back in possible steps to take.
(note: see for the performance of leadership functions in group discussion:3.5)

4.7 Cooperation, negociation, fight

Procedures should be adapted to the circumstances. An important factor is the degree in which interest of the members go together. We distinguish conditions of cooperation, negociation and fight. Now, what are the adaptations to be made?

4.7.1 Cooperation

If individual interests in a certain matter are subordinated to the objectives of the group, (real cooperation is possible) e.g. all information and ideas can come to the surface without any danger for any of the members. Under these circumstances there is mutual confidence that even risky information or immature ideas will not be used against one of the members, but, on the contrary, can possibly contribute to better result for the group.

If this is the case, special precautions are not necessary. A procedure only serves to keep things clear.

4.7.2 Negociation

Obviously, the conditions for cooperation are not always met. Individuals or subgroups can have interests that are conflicting in a way that what on party wins another party has to give in. In this case the fear is justified that, if one party exposes certain

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information, the other may abuse it to strengthen its own position. If, nevertheless, the parties know that they need each others' collaboration to realise their own objectives, they find themselves in a situation of negociation. None of the parties can get all it wants. A compromise has to be found whereby every party has to make concessions to its own interests. The concessions depends largely on two factors:

- the position of negociation: the degree in which the parties need each other and the means of power a party has to force the others to concessions;
- the skills of the negociators: the way they manage to present their case; to make use of the weak spots in the arguments of the other and to put the other parties under psychological pressure.

The information parties give is likely to be subjective. Yet, mutually respected norms form the rules of the game and not adhering to the rules can be penalized by the other parties. These rules differ from culture to culture. Especially the way people can exert psychological pressure can be very different.

A last feature, but not less important, is the limited room for manoeuvre of the different parties. Sometimes giving in means loosing face, which can be socially unacceptable. In other cases they re given only limited mandate from the ones they are representing.

No free exchange of information, the importance of power and dependency and the limited room for manoeuvre of the members these are three important features of negociation which must have consequences for a procedure. The following adaptations could be made:

a) it can be very useful to win information about viewpoints and room for manoeuvre of others before the discussion starts. It helps for the determination of your starting position, but it should also help to prevent parties from taking positions which cannot be left without loss of face, while they virtually block the road to solutions;

b) the phase of introduction agreement must be reached on the legitimation of interests and desires. The starting positions for the negociation are made clear;

c) in the phase of orientation agreement must be reached on the legitimation of interests of the parties and the interests they have in common must be formulated. This can be a laborious part of

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the negociation. Because people tend to give subjective information it is hard to get a realistic picture of the problem. Furthermore, admitting the justified interests of the other party may weaken your own position. Yet, agreement on this point is indispensable: it is not possible to find solutions for a problem that does not exist according to one of the parties;

d) the phase of opinion development criteria must be found based on legitimate interests and a solution must be found in the form of a compromise for which each party has to give in from its initial desires.

4.7.3 Fight

If participants do not believe they need each others collaboration they are in a situation of win or loose. Exchange of valid information even less likely here and all there is left are the positions of power of the parties and their ability to handle the rules. Because rules there are, even in this situation. Usually a fight is not fought in isolation and if the other violates the rules, it is possible to call help from outside.

0	Preparation	- exploration of positions - prevention of too limited room for manoeuvre - preparation of own starting position (formulation of desires)
I	Introduction	- agreement on procedures - exposure of desires and interests
II	Orientation	- discussion on problem analysis - acknowledgment of mutual interests
III	Opinion development	- agreement on criteria for solutions - search for compromise
IV	Completion	- consequences, arrangements, evaluation

Two quarreling chiefs can ask for arbitration by their boss and political groupings can mobilize the public opinion.

Fight becomes grim if parties do not respect each others rules anymore. In terms of procedures there is nothing much definite to be said: procedures themselves are likely to make part of the fight.

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4.7.4 Final remarks

The differences between the three described conditions are gradual. People feel more free to cooperate in an open way if they trust each other, but also if they have less personal interest in the matter.

Of course, cooperation is the most productive way of human contact. But to cope with life means that on has to be prepared for less ideal situations too. If you do not accept that the other wants to fight, you are bound to loose.

4.8 Brainstorming

As a supplemental procedure brainstorming is shown. It is a rapid method to generate many ideas and it illustrates clearly the problem-solving modes basic to the previous procedures.

The main characteristic of brainstorming is its strict separation of steps to be taken. In the phase of image development it is only allowed to ask questions and to give information. Nobody may throw doubt on the relevancy of any question or validity of given information. This phase must be concluded by a clear and concrete reformulation of the problem. This is essential, because value and general problems lead to vague and unappreciable solutions.

In the phase of opinion development any idea is welcome, no matter how crazy it sounds: strange ideas may bring others to more realistic ones. Discussion on the feasibility of ideas that are put forward is prohibited. All ideas are listed and finally a choice has to be made. This procedure prevents that in an early stage the discussion takes direction in a certain way, while many other ideas are cut off. Not allowing any discussion has the effect that people use more of their creativity and intuition, not being hindered by an overdose of rationality.

The other side of the coin is that well considered decisions cannot be made this way, because the necessary exchange between knowledge-elements and choice-elements of decision making is blocked(4.5).

This sets limits to the applicability of the brainstorm. Two applications could be the following:

a) the generation of ideas to be worked out later by the group. The group can choose a selection of the most promising ideas;

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b) advice to a person. This person should give all information people ask for in step 2; reformulate the problem in an exact manner and indicate which suggestions seem useful to him step 4.

step	remarks
Step1:problem definition:	As precise as possible. The usefulness of the ideas generated later on is largely dependent on the way the problem was formulated
Step 2: information round:	Only information may be asked for or given. No discussion on the validity of given information
Step 3: reformulation of the problem:	Often the real problem is disguised in more superficial one. At this point it should be possible to formulate the problem more accurately
Step 4: generation of ideas:	Everyone is invited to give solutions, no matter how irrealistic they seem. No discussion on feasibility of any suggestion is allowed. All suggestions are noted
Step 5: choice	- The group selects a few numbers of suggestions to work out more thoroughly, or: - The one who was given advice indicates which suggestions are useful for him and why
Step 6: completion:	Arrangements, etc.

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4.9 Skills

Three elements are needed to be effective in group discussions:

a) insight in processes to communication in groups and decision making;
b) methods which can be applied;
c) skills to bring it into practice.

Although skills must be learned in practice, this last section of what the other says is selective (1.2): we tend to hear only the things that fit into the way we are thinking and we partly fill in

ourselves what the other probably wants to say. Furthermore, we have to divide our attention between listening to the other and preparing our own answer.

The way someone is listening is shown by his reaction. Various types of reactions are possible. A may react by:

a)	Showing attention	(non-verbal; by looking, saying "hm" etc.)
b)	Summarizing	A puts in own words the essential part of what B has said
c)	Confronting the others	A compares what B says with what A has said before
d)	Question within line of thought	question of A is in line of what B wants to express
e)	Question outside line to thought	question of A follows his own mind
f)	Taking over	A takes over the initiative by giving information or arguments

Communication is interaction. The way A reacts to B influences the way B expresses himself. If A really wants to know what B has on his mind, he helps himself to listen well, by concentrating on reactions of the a, b, c and d type. These reactions will stimulate B to continue speaking.

4.9.2 Summarizing

Giving a summary is a good way to check if you really have listened well. In group discussions the summary can have several important functions:

a) a summary makes it possible to check if the essential arguments and information are well understood. If this is not the case, protest will follow automatically;

b) a summary can bring to surface which contradictory viewpoints and unsolved problems are left to discuss;

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c) a summary provides a new starting point for those participants who lost track (2.4).

A good summary:

- is short;
- gives only the essential elements of the discussion;
- has an open ended character (inviting participants to react if the summary is not completely correct):
- focusses on what people see as most important: often this is the feeling someone is trying to express.

What is the best moment to give a summary?
- in any case when the discussion must turn over to another phase;
- if participants tend to loose trace.

4.10 Intercultural aspects of discussion methods

As procedures are formalised expressions of desired human relationships, culture will have an important impact on the procedure people agree upon. The procedures as proposed in this chapter are based on the principle that shared knowledge experience and creativity of all group members lead to the best results for the group as a whole. The free exchange of information , emerging from this principle, is not common in all cultures. At least two cultural factors contribute to a reluctance of people to share information:

a) knowledge means power, especially under circumstances where people have only limited access to relevant information. If sharing knowledge means a weakened position of power, special attention should be given to how this openness will pay off in the long run. This situation is comparable to the one we described as "negotiation";

b) cultural norms may prescribe that subordinates never spontaneously give information or opinions in presence of their superiors. These norms are based on the conviction that the older, wiser and more experienced one is supposed to know better. It is hard to find compromises between this principle and the one we stated above.

It could be an interesting issue for discussion, whether a procedure for decision-making, based on rational model and emerging free exchange of information is the most effective one under all cultural circumstances.

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EXTENSION APPROACH

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Summary

PATTERN OF EXTENSION DEVELOPMENT

1920-40S - DECREES, INSTRUCTIONS, SANCTIONS

1950-60S - EDUCATE, ENCOURAGE DEVELOPMENT

1960-70S - FIELD EXTENSION STAFF DEVELOPMENT

1970S - T&V (STAFFED, FUNDED)

1970S-1990S - ADVISORY, PARTICIPATORY,

FARMER CONTROLLED

COMMERCIALLY BASE

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The function of agricultural extension is to enhance learning among those who till the soil and tend the livestock of the world - learning of those things they need to know in order to feed themselves and others.

It is often the non-formal agricultural education interface between rural people and government agricultural organizations.

Sometimes the main function is to communicate agricultural research findings and recommendations to farm people. Sometimes it functions to bring farm people into contact with sources of practical and useful information through organized group action. Agricultural extension is commonly identified with activity whereby agricultural extension workers interact with and teach farmers improved farming practices, new techniques, and more productive or more efficient technologies or packages of technologies. Large numbers of these agricultural extension workers are organized into an agricultural extension system which provides them with a constant supply of useful extension messages, technical and administrative supervision, and logistical support.

Each agricultural extension organization is a reflection of a particular purpose in its own setting. There are many adifferent types of agricultural extension systems.

For purposes of this discussion agricultural extension is broadly defined to include any non-formal education system whose clientele are rural people, and whose content is primarily agricultural (including crop and livestock production and marketing, as well as fisheries, forestry, and rural development).

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As A.H. Maunder defined it in the FAO reference manual, "Agricultural Extension" (1973), it is "a service or system which assists farm people, through educational procedures, in improving farming methods and techniques, increasing production efficiency and income, bettering their levels of living, and lifting the social and educational standards of rural life".

Rural people live in family groups, and the work of agriculture tends to be shared among men, women, and children. Therefore, the word "farmer" is used in this Document to refer to women farmers, to young farmers, and men farmers.

The approaches are the different styles of action, and are described, compared, and discussed in detail in this Document. Although each approach may be used by various extension systems for their own purposes, some approaches have been demonstrated by experience to be more appropriate to meet particular needs.

Some systems of agricultural extension are centrally directed and controlled; other agricultural extension systems are locally directed and controlled. some employ a basic strategy of technology delivery, while others have a rural development strategy. But all agricultural extension systems follow certain kinds of approaches in their extension work.

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The approaches are the different styles of action, and are described, compared, and discussed in detail in this Document.

But whether these systems are centralized or decentralized, whether their strategy is technology transfer of enhancement of rural life, there are several approaches which have been used. Over the years, practice has demonstrated that certain approaches are more effective than others under particular circumstances.

ALTERNATIVE EXTENSION APPROACHES

The different approaches to extension are found in many types of organizations, using a variety of strategies and a large array of methods and techniques.

Each approach can be characterized by the following seven dimensions:

1. The dominant identified problems to which the approach is to be applied as a strategic solution, referred to here as the basic assumptions made by those who establish it;
2. The purposes it is designed to achieve;
3. The way in which the control of programme Planning is carried on, and the relation of those who control programme planning to those who are the main target audience for the programme;
4. The nature of the field personnel including such aspects as their density in relation to clientele

   (ratio of field staff to clientele), levels of training, reward system, origin, gender, and transfers;
5. The resources required, and various cost factors;
6. The typical implementation techniques used; and
7. How it measures its success.

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Each approach is demonstrated through the ways in which an extension system uses these methods, the types of objectives or targets it sets, and the means by which it seeks to implement larger national strategies. It can also be seen in the ways in which it selects, trains, and rewards the staff, the number of staff required, and the types of relationships between the staff and the farm people.

Since all are merely different approaches to the same agricultural extension phenomenon, there are commonalities among all. For example:

- all employ non-formal education procedures.
- all have content related to agriculture.
- all seek to improve the standard of living of rural people.

MAJOR APPROACHES

Many extension approaches may be observed around the world. Some of these have limited practical utility, while others are being adopted in several countries. Effort has been made by FAO to identify the major extension approaches for the benefit of agricultural development decision makers. As part of this opening chapter, they are briefly introduced as follows:

1. The general agricultural extension approach

The basic assumption with this approach is that technology and information are available which are not being used by farmers, and if knowledge of these could be communicated to farmers, farm practices would be improved. The purpose is to help farmers increase their production. Programme planning is controlled by Government and changes in priority, from time to time, are usually made on a national basis,

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with some freedom for local adaptation. Field personnel tend to be large in number and high in cost, with density varying from country to country. Resources required are also high, with central governments bearing most costs.

Implementation is through a large field staff assigned according to governmental structure throughout the country, managed by the centre, who constitute the field arm of their ministry. Success is measured in terms of rate of adoption of important recommendations and increases in national production.

2. The commodity specialized approach

The assumption here is that the way to increase productivity and production of a particular commodity is to group all functions relating to it under one administration, including extension along with research, input supply, output marketing, and often prices. Extension programme planning is controlled by a commodity organization, and implementation is through field staff of that organization.

Resources tend to be provided by the commodity organization, for which agricultural extension is considered a sound investment. While it may use many of the same methods and techniques as the approach mentioned above, the measure of success is usually the total production of the particular crop.

3. The training and visit approach

The basic assumptions of this approach are that, under the Ministry of Agriculture extension services, the extension workers are poorly trained, lacking supervision and logistic support, and they do not visit and have contact with farmers. Further, it is assumed that subject matter specialists are poorly trained and not providing a link with research and training functions. The purpose is to induce farmers to increase production of specified crops. Programme planning is centrally controlled, and

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reflects interaction between research and extension personnel. Field personnel tend to be large in number, relatively densely deployed with strict discipline of daily and fortnightly activities. With funds from international sources, total staff size is increased greatly. Success is measured in terms of production increases of the particular crops covered by the programme.

4. The agricultural extension participatory approach

Here the assumption is that farming people have much wisdom regarding production of food from their land, but their levels of living could be improved by learning more of what is known outside.

It further assumes that effective extension cannot be achieved without the active participation of the farmers themselves, as well as of research and related services; that there is a reinforcing effect in group learning and group action; and that extension efficiency is gained by focusing on important points based on expressed needs of farmers and by reaching more small farmers through their groups/organizations instead of through individualized approaches. The purpose is to increase production and consumption and enhance the quality of life of rural people. Programme planning is controlled locally, often by such groups as farmers' associations. Where farmers' associations do not exist, the extension staff assist to form them. Priorities vary greatly from place to place and from time to time within a country. Field personnel tend to be local, lower cost, and in densities and with training and background appropriate to local needs. Resources required tend to be less than with other approaches, and a high proportion may be provided locally. Implementation is through group meetings, demonstrations, individual and group travel, and local sharing of appropriate technologies. Success is measured through the numbers of farmers actively participating and benefiting, as well as continuity of local extension organizations.

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5. The project approach

This approach assumes that a rapid agricultural and rural development is necessary and that the large government bureaucracy in the regular Ministry of Agriculture Extension Service is not likely to have a significant impact upon either agricultural production or rural people within an appropriate time frame, and that better results can be achieved by taking a project approach in a particular location, during a specified time period, with large infusions of outside resources. The purpose is often to demonstrate what can be done in a few years. Central government controls programme planning, often with considerable input from an international development agency.

Implementation typically includes project allowances for field staff, better transportation, facilities, equipment, and housing rather than regular government programmes, and foreign advisors for local staff. Short run change is the measure of success.

6. The farming systems development approach

The assumption with this approach is that technology which fits the needs of farmers, particularly small farmers, is not available, and needs to be generated locally. The purpose is to provide extension personnel (and through them farm people), with research results tailored to meet the needs and interests of local farming system conditions. Programme plans evolve slowly during the process, and may be different for each agro-climatic farm eco-system type since they include a holistic approach to the plants, the animals, and the

people in a particular location. Field personnel tend to be highly specialized, relatively expensive, and from outside the area being served. Implementation is through a partnership of research and extension personnel with each other and with local farmers, taking a "systems approach" to the farm, and sometimes

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involving several different scientific disciplines, carrying out analyses and field trails in farmers' fields and homes. The measure of success is the extent to which farm people adopt the technologies developed by the programme, and continue to use them over time.

7. The cost sharing approach

The assumption here is that the programme is more likely to fit local situations, and personnel are more likely to serve local people's interests if part of the cost of agricultural extension is paid locally. It also assumes that farm people are too poor to pay the whole cost, so central and regional governments typically provide most of it. Helping farm people learn those things they need to know for self-improvement and increased productivity is the purpose. Control of programme planning is shared by the various levels paying the costs, but must be responsive to local interests in order to maintain "cooperative" financial arrangements. Field personnel tend to be recruited locally, cost less, and remain in one location for long periods of time. Because of the nature of this approach, resources required from central governments tend to be less. Success is measured by farm people's willingness and ability to provide some share of the cost individually or through their local government units.

8. The educational institution approach

In this approach, the assumption is that faculties or colleges of agriculture have technical knowledge which is relevant and useful to farm people. The purpose is to help those people learn about scientific agriculture.
Programme planning tends to be controlled by those who determine the curriculum of the education institution.

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Implementation is through non-formal instruction in groups, with individuals, and with other methods and techniques, sometimes conducted by a college or university with agricultural extension personnel of another agency as the main audience.

While considerable resources are required, since they are shared between the classroom programmes of the educational institution and agricultural extension, the approach can be highly cost effective. Success is measured by attendance and the extent of participation by farm people in the school's agricultural extension activities.

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CONSIDERATION REGARDING EXTENSION IN THE 1990s

The term 'extension' has a number of meanings in rural development. It varies from the activities of just changing attitudes to a complete system which includes a supply of inputs ad services.

R.C. Mishar in his review of IFAD Research and Extension Projects defines extension:

> Agricultural Extension is primarily concerned with the information and teaching functions of technology with the information and teaching functions of technology transfer. In addition, agricultural extension provides the communication links between users of agricultural technology and the people involved in initiation of directing its development (e.g. policy makers, planners and researchers).

Historical

Extension has moved in most countries through a similar pattern of development. Starting in the 1920-40s from a system based on decreas, instructions and sanctions, it has generally moved to systems to educate and encourage development such as the development projects in the 50s. During the 60s, many Ministries of Agriculture developed their Extension Services with Field Workers supported by Subject Matter Specialists working wtih farmers and groups of farmers. These services were usually understaffed and under-funded.

The 70s saw the large-scale introduction of the World Bank T&V projects which were rapidly set up in many countries. The schemes were welcomed as a source of funds, offices and transport by senior government officials. In some countries in the 70-90s, extension has moved to an advisory system, or farmer controlled extension or to commercially based extension.

T&V Extension System

Much has been written about the T&V projects especially as they have absorbed the bulk of the finance available for agricultural extension over the last years. In spite of this, little attempt appears to have been made to evaluate these projects.

Broadly speaking, the T&V projects have been successful in:

- providing a formal system of visits and activities;
- providing housing and transport for staff;
- providing a system of staff discipline; and
- providing a system to evaluate activities.

The system, however, has certain problems:

- it is primarily a system concerned with staff activities rather than farmer activities. It is thus system orientated not people orientated, and has a top down approach;

- because of it's high degree of planning, it inhibits staff, farmer and local government initiative and self-reliance;

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- it makes little allowance for the under-privileged groups. The T&V system favours the well-off farmers as it meets the contact farmers only, thus has and an almost nil effect on women; and the landless and youth.

On the operation side, T&V makes the assumptions that; contact farmers will tell other farmers the information provided; communities and traditional social organisations need not be involved in development work; and that external planning and supervision of projects is acceptable.

The effect of all this is that some T&V projects have not been fully implemented; that departments of Agriculture may revert to their original systems once projects come to an end; or that a vacuum is afterwards created and Government officials do not know what to do.

Extension Success

What extension projects and T&V projects have achieved over the last thirty years in almost all countries, is that farmers are:

- aware of development possibilities;
- want to undertake improvements;
- want a better standard of living;
- are interested in co-operating together;
- a high proportion are knowledgeable about basic farming techniques;
- following improved cultivation techniques and obtaining increases in crop production.

> "The development of the modifications need to be based on a through study of local conditions and an awareness of the wide range of variables which exist under the heading of 'extension'".

Development Inputs Required

One of the mistakes when planning a development programme, is that planners often start with the Extension service. Possible staff/farmer ratios are then considered and all the support logistics. However, an extension service is merely one of the possible inputs which may or may not be required for development.

If it can be determined that an extension service is required, then the service should be designed around the need; not the need to employ people, or the need to follow some pre-determined extension system.

The primary need for development projects is to have technically viable and economic innovations. Without this, there can be no programme. Many projects fail, not because of lack of effort, but simply because their packages are not good enough or not deemed by the target audience to be economic, technically correct and suitable for the existing farming system.

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A good innovation in fact on it's own, in a highly motivated and aware community, may be enough. There are many examples of good ideas rapidly catching on without extension activity.

In a development situation, only some of the following development aids may be required:

- farm inputs, e.g. send, fertiliser, machinery;
- credit;
- an attractive price for products;
- marketing/transport/storage;
- infrastructure development (roads, bridges, electricity, etc.);
- land reform/fair tenancy agreements;
- water control and fair allocation;
- motivation of people (visits, meetings, media);
- technical information for farmers;
- media information services;
- farmer training;
- farmer representation in decision making and planning;
- local political support;
- research activities.

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Extension in the 90s

Where there is a need for Extension activities, we should carefully consider the possible options.

We no longer need to have armies of junior staff preaching basic technology. Present day projects require a different type of extension worker. Most will require less staff, but a higher calibre. What is needed are competent, motivated and well trained persons. As E.R.H. Gecolea says.

> "The more credible the source of proponent of change, the greater the attitude/opinion change.

Basically then, such persons who have the farmer's confidence can achieve far more than less well-trained and less credible persons.

Farmers and groups now are very willing to seek out information about new innovations, which are deemed to be useful. Therefore, the whole basis of extension must now change to one of client demand and eventually client control. Extension should be responsive to requests and concentrate on groups, communities and farmers who are interested.

It is suggested that there are a number of strategies which can be considered depending on the farmer needs. These different strategies not being exclusive.

a) **Commercial Strategy**

In some countries, such as Thailand and UK, the commercial sector plays the most prominent part in providing information and giving demonstrations. In spite

of misgivings by officials, advice given is usually sound and the organisations highly active and motivated. Often farmers themselves may combine into commercial organisations.

b) **Media Strategy**

Some farmers receive their information only via the media, particularly radio and magazines. Even in less developed countries, radio may reach far more people than by any other communications channel.

One of the initial assumptions of the T&V system was that the only way of disseminating information was through the DAs to the contact farmers. There is ample evidence to show that the more channels used by extension, the more likely the message will both be heard and believed.

Other channels which can be utilised include:

- school teachers;
- shopkeepers;
- market place/beer halls;
- clinics;
- radio/newspapers/magazines;
- church organisations;
- men & women clubs and groups;
- local political organisations.

c) **Advisory Strategy**

Once most farmers are developed minded and are seeking out information, then an advisory type service can be introduced. This is highly cost-effective and farmers will soon know where to find information. This strategy does not greatly assist the poorer sections of the community however, any more than do other conventional extension systems.

d) **Client Demand Strategy**

We can utilise a system, which after stimulating interest, can be based on client demand. We can encourage groups, associations and communities to seek assistance. Activities can be undertaken which will give assistance to all the members of the community and indeed this can be a condition of help.

i. **Planning Considerations**

The following points therefore should be considered when planning a Client Demand strategy:

- many local leaders and village committees are willing to plan on a community basis, and thus help all the community.
- people in most countries are actively forming themselves into groups and associations.

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- staffing, funds and transport are nearly always strictly limit, and therefore a high coverage of extension is not possible, even if desirable.

- the planning and implementation activities should be undertaken by the members of the groups and village committees, working in conjunction with extension staff.

- the strategy should ensure that under privileged groups within the community receive a fair share of the benefits, if only in terms of fair wages for activities stimulated by the project.

- there are a number of non-Governmental organisations who have a significant potential role in development. These organisations, both external and internal, should be involved in the project information and development activities.

- persons/organisations who can most usefully be utilised as information carriers are religious groups, school teachers/schools, shop keepers, beer halls clinics, clubs, groups and local politicians.

- some governments are in process of decentralising control of agricultural activities, to district level. provided local groups and associations can be included in district planning procedures, this decentralisation can lead to extension services becoming more responsive to local needs. The strategy should take advantage of the energy and enthusiasm which can be generated by local participation in planning involvement.

ii. **Proposed Extension Approach**

The Client Demand system is first based on sound innovations which are potentially attractive to the farm families and the community.

Secondly, the innovations and benefits are widely described through the radio, press, meetings with local leaders and village committees and farmer associations. Demonstrations and visits are arranged for farmers to places where some/all of the activities are already taking place.

Thirdly, villages or communities who request/demand help are given priority by the project staff whose efforts are mainly concentrated in those areas. Special efforts are made working through the traditional community; and efforts are made to include the rural poor as beneficiaries of the approach.

Planning of the activities should be done by the village committees supported by SMSs and Area Supervisors. Group representatives in those villages are then elected and trained to assist with implementation.

Staff with non-extension duties, notably animal health staff and foresters are not normally included when determining extension staff deployment and duties. In addition, home economics and nutrition staff are also not included as their specialised training does not allow for their close inclusion in a unified service.

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iii. **Client Controlled Extension**

In the T&V system specific limited information is selected by Government Committees and by Research Departments and disseminated on a fortnightly basis. The field staff, however, are not trained or expected to give broader based or more technical advice.

As farmers become more knowledgeable, the likelihood of the message being relevant to their individual needs become more remote. It is thus becoming increasingly important that Extension Agents are able to respond to farmer information needs rather than merely inform them of the latest message from the Ministry.

Village committees should be able to request that extension staff be removed from their area. They should also be able to recommend staff for training courses, study tours and promotion. They should also be able to recommend staff for bonuses for good work.

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The Characteristics of animators

The animator is a conscious element with a certain social perspective rather that being committed to a pre- conceived ideology (Parameters). Self reliance and participation are the fundamental human urges that lie at the center of this perspective.

There has to be a mutual commitment by the animator and the people to realize change with such a perspective.

An animator would be fundamentally different from the conventional extension agent , the different lies in his commitment to the people. He always promotes what the people work or need.

Stimulation of people to undertake self analysis of their situations as a basis for initiating change and facilitation of action to change based on the reality there is the basic duty of an animator.

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An animator doesn't necessarily possess a specific technical skill, or perfectness in all maters, what matters rather is the possession of a combination of social acceptability and readiness to behavioral change including:-

a. Knowledge and skill in Agriculture and social and Environmental facts
b. Continuos learning willing full to learn every time, share experience
   from other; open to genuine dialogue.
c. Informative nature - open for feed back
d. Ability to coup with tension and conflict situation. What ever social problem or natural hazard occurs he has to be creative to adopt to the situation.

Recruitment

Recruitment is the process by which potential animators already shaped by social processes can be brought to work.

Once recruited a process of initial training and learning through process converts the potential animators in to organic elements who ca integrate with the neighbor farmers using a certain interaction mode.

There is always a need for fairly long and involved intervention between recruiting personnel and potential candidates rather than the use of traditional methods of written test or interviews.

In practice two methods have been commonly adopted to identify and select candidates

1 hand pick persons through personal contacts and knowledge or recommendations after trial period in the field and

2. identification of persons through a public notice.

In most country experiences it was the first method that has been most commonly used since personal knowledge and contact at field provides more reliable bases to make judgments.

How can we go about It?

The need for animators arises due to three important reasons.

1. Limitation of Extension staff particularly, at the grass root level becoming extremely serious and threatening Extension activities

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2. The fact that farmers would like to learn more from other farmers,
rather than from governmental employees.

3. The conducive condition which has been now created to promote extension advise in a more tangible concrete way necessarily since the introduction SG 2000 project encourages the extension system to adopt the utilization of animators in order to increase coverage.

Who can be an animator?

In SG 2000 operation areas potential animators are those farmers who have been involved in the project who have benefited in increasing their yield and who volunteer for further improve their own farm and assist their are willing to neighbors in adopting the new technology.

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COOPERATIVE AND CREDIT

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The Co-operative Principles

The Cooperative principles origin go back to the Rechdale Pioneers and their original cooperative attempt started in 1844. The Rochadale Cooperative of 1844 was essentially a consumer cooperative and the set principles were in favour of the consumer cooperatives. The development of cooperatives there after were/are not limited to the consumer sector of the economy.

The International Cooperative Alliance (ICA) adopted at its 23rd congress in Vienna in 1966 the following cooperative Principles.

1. **Open Membership,**

   which on the one hand encourages free but not automatic entry into and exist from membership of the cooperative by individuals, and on the other hand disapproves of arbitrary unjustifiable restrictions or discrimination against.

   a. membership by persons who need and can benefit from the services of the cooperative and meet the necessary basic conditions of entry into and continued membership in the cooperative and

   b. members who may freely wish to terminate their membership or have to terminate their membership or have to terminate their membership because they no loger meet the conditions for continued membership.

2. **Democratic management and control,**

   Which requires that members of the cooperative be independent, participative and supreme in decision making regarding their cooperative; that in the process of such decision making open; democratic and objective procedures (voting) are adopted and as far as possible, voting rights are equally allocated; and the members should directly and/or indirectly control and supervise the affairs of their cooperative.

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3. **Limited Returns (interest) on share capital**

Which limits the level of the returns on the normal share capital paid by members to rates which if so to be paid at all, are considered reasonable, as high as but generally not above the average or current market rate and thus not the maximum possible. The limit is thus placed on the maximum payable and not on the minimum which can be kept at Zero if desired.

4. Payment of Patronage refunds to members in proportion to their individual turnovers which implies that instead of surpluses being only distributed to the share holders, they should also distributed to members in proportion to the patronage/turnover of the individual member with the cooperative.

The surpluses could be distributed by the decision of the members as follows.

a. by provision for development of the business of the cooperative.
b. by provision of common services;
c. by distribution among the members in proportion to their transactions with the society.

5. Continuous education of members, officers and employees, which helps equip the members and the staff with the skills, knowledge, and confidence to enable them use, participate in and control the cooperative more effectively and generally to become both better cooperators and citizens.

6. Cooperation among cooperatives which extends and intensifies the basic cooperative idea of people working together in any given cooperative society to the relationship between the cooperatives of the same and different organizational levels and within one country and/or internationally.

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Topic: Government policies for Cooperative Development in Ethiopia.

Objective:

To enable trainees to understand and appreciate the role of the government in the development of cooperative sector.

The development of cooperatives in Ethiopia goes back to some 30 years of experience.

1. **The first cooperative societies proclamation** was proclamation No. 241/1966

The objectives were:-

1. reducing the cost of credit
2. reducing the cost of goods and services for production and consumption.
3. minimizing and reducing the individual impact of risks and uncertainties.
4. spreading knowledge of practical, technical improvements or
5. may other wise contribute to achieve the above mentioned purposes and objectives.

Based on the above purposes and objectives there were about 158 different types of cooperatives like multipurpose, consumers, handicrafts, and others established during that time.

2. **The second cooperative societies**

Proclamation was proclamation no. 138/1978 of the Provisional Military Administration Council. The main objective of proclamation 138/1978 were

1. To develop self-reliance and to promote the interest of their members.
2. To put the means of production under the control of cooperatives and to transform them gradually to collective property as may be necessary.
3. To increase production.
4. To expand industries.
5. To conduct political agitation.
6. To eliminate reactionary culture and customs:

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7. To participate in the building up of a socialist economy.
8. To accumulate capital and to mobilize human resources to sustain economic development.

From their objectives specially stated on No. 2; 5; No. 6 and No.7 shows that cooperative societies were organized to implement government objectives.

3. **The third cooperative societies**

Proclamation is Proclamation No. 85/1994 of this year, proclaimed by Transitional government of Ethiopia.

The objectives of the societies are:

1. To improve the living condition of members by increasing production and productivity.
2. To promote self-reliance among members.
3. To solve problems collectively which farmers (peasants) can not personally achieve.
4. To make members obtain modern technologies products which are capable to increase agricultural production and materials necessary for their livelihood easily and at fair price.
5. To satisfy the needs of a community and increase the income of a farmer by processing agricultural product to industrial products; and
6. To promote the cultures of the members by teaching and training.

Some of basic differences between the previous cooperative societies proclamations and the present one and the main highlights of proclamation No. 85/1994 are explained as follows.

1. Internationally accepted guiding principles of cooperative societies are clearly stated in the proclamation No. 85/1994: (Article 4)
2. Government has committed itself not to interfere in cooperative societies affairs.

Sub-article 4 of Article 4.

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It reads:

The society shall stand non-aligned and free from any political influence.

3. Individual farmer (peasant) join cooperative societies on voluntary basis.

4. The number of members in a primary society shall not be less than ten.

5. Apart from Primary, Secondary and Tertiary cooperative societies may be established.

6. Cooperative Societies coul be
   a) multipurpose,
   b) single purposes
   c) productive or services and/or
   d) any kind.

7. Registration
   - A primary society or secondary society within one regional government is registered by Agricultural bureau, and by Ministry of Agriculture if the matter to be entertained by it relates to members of society found in more than one national/regional self-governments.

8. Co-operative societies could be amalgamated or divided up through a special resolution as stated in Article 12.

9. Requirements necessary for membership of:
   a) Primary societies (individual)
      age - more than fourteen
      - work regular work must be agriculture
      capable to pay share capital, and
      registration fee.
      Residence must be within the working area of the society.

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b. **Secondary societies**

. Two or more primary societies.

10. Rights and duties of members

. Rights and duties of the members are clearly stated. Read Article 14 of required.

11. Payment of shares

. All members need to buy shares in accordance of the decision of the general assembly.

. Individual member can by up to one fifth of total paid up share capital.

12. Transfer of share or Benefit.

Proclamation. Transferring share or benefit is possible based on Article 19 of the

13. Management bodies of cooperative societies.

A. General meeting or general assembly:

. Special General meeting or

. General assembly

. Management Committee

. Controlling Committee and other subcommittees.

B. Powers and duties of all the above committees are stated in articles 21,22,23,24, 25 and 26.

14. Article 28, 29, 30 and 31.

Cooperative societies have got special privileges of

. Any debt owed to the society by a member in respect of such membership, shall take precedence over all other debts of such person, except debt owed to the government.

. The share or benefit or a member in the capital of a society shall not be liable to attachment or sale.

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. The federal government and the national/Regional self governments shall render the necessary assistance for the promotion land consolidation of the societies.

15. Funds of societies not to be divided

. Except the not surplus determined to be allocated to members of the society, funds of the society shall not paid as bonus, dividend or in any other form.

16. The net surplus of the society obtained could be used for:

a) reserve,

b) expansion of the work

c) social services

d) interest on share if any and

e) patronage refunds to members in proportion to their individual turnovers.

17. Dissolution and winding up of societies.

If societies are dissolved procedures taken to winding up are stated in article 37, 38, 39 and 40 and 41.

Read if necessary

Miscellaneous Provisions

18. Provisions like the address of the society; Bylaws being open to inspection, employment of workers, inapplicable laws, Transitional provisions, and power to issue directictive are stated in articles 42, 43 44, 45 46 and 47.

. The most important provision to observe properly is article 46 sub article 1+2+3 which says:

1. Agricultural producers cooperative societies and agricultural service cooperative societies which have been established in accordance with the cooperative societies proclamation No. 138/1978 and 138/1978 and still which are operating shall be reorganized under this proclamation.

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2. The societies shall continue their operations holding their previous juridical personalities until they are reorganized and registered by the appropriate authority.

3. The appropriate authority shall facilitate all the condition necessary for the reorganization of the socity.

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Credit in Agricultural Development

Will integrated rural credit service availability to provide the poor small holds including women farmers and access to such services is a central element of enabling environment in which agricultural technology can play its proper rotc for stimulating agricultural dcvclopmcnt. Shc availability of such rural credit services in rural Ethiopia are currently in adequate. Some of the factors that hinder efficient rural credit services development and the emerging new perspective for credit services development are discussed briefly in this paper.

1. Factors Hindering Rural credit Services Development in Ethiopia

All Societies, households individuals s save and borrow money for development programmes.

Specially peasants in rural Ethiopia require credit for their agricultural development to buy draught oxen; farm equipment, agricultural inputs like chemical fertilizers, seed and other equipment like grain mills, coffee pulpery and other facilities.

A number of factors that have held back rural credit services development in our country can be identified as follows.

- Institutional weakness:- Rural Credit servicing institutions existing in rural areas are in adequate.

  The Development Bank of Ethiopia (DBE) which is the sole in giving credit to peasants through the preferred intermediaries, i.e. agricultural service co-operatives has only 13 branches and 17 sub branch offices throughout the country to serve the farmers . The bank has so far distributed credit worth about few hundred million Birr obtained from various international lending agencies such as the World Bank, IFAD OPEC, ADF and EEC. Commercial Bank of Ethiopia (CBE) is just starting to render credit services only for short term periods. Both Banks have low density of rural credit services which has prevented small holders from having access to financial services including credit and saving.

- Political interference. The approach of "giving and forgiving" credit for political purposes has undermined trust in such systems as well as community by borrowers and resulted in high rates of delinquency.

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- Limited financial resources:- Agricultural credit can be one of the most effective ways using finance for development. Presently, the resources being made available agricultural credit are both insufficient and in efficiently used. The institutions formal involved in credit servicing are only DBE, and CBE. Out of the credit the two banks the large bulk goes to non agricultural uses.

- Lack of technology: Deficiencies in agricultural technology delivery system such as seeds, fertilizer, and machinery have reduced incentives for rural financial credit system development.

- Lack of rural infrastructure:- Deficiencies in the rural infrastructure coverage have also lead to high transaction costs in input, produce, and credit services and weak linkages between these three markets.

- Weakness of rural institutions:- Deficiencies of the preferred intermediaries in agricultural services and producers co-operatives in handling credit services. Producers co-operatives totally dismantled during the previous Government announcement of Mixed Economy Policy. The existing agricultural service co-operatives are weak and inefficient in management; unable to provide the credit need by their members and riddled with corruption.

Lack of recognition of innovations:- Peasants are not well ware of that production can effectively increase by innovations. New agricultural technologies are not well adapted to local conditions. Extension services have not been able to reach and indoctrinate farmers. With the practical advantage of the new technology which peasants do not know.

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2. **Revolving Loan Funds**

Apart from conventional credit services system, revolving loan funds (RLF) could be used as source of credit for those who are engaged in production of agricultural outputs. Such a source of credit for those who are engaged in production of agricultural outputs. Such a source of fund could be given as a grant for the community or groups in which the revolving loan funds is given to the participants. Such funds on the repayment could be used for farther lending to finale others for production rather than being return to the donor agency or the government (as in the case of conventional loans).

Revolving loan fund grants are normally given to projects which are experiencing difficulty to obtain access to institutional credit.

Managing Revolving loan funds could be difficult and useless if proper caution in handling, repayment; proper usage, and well integrated procedures are not designed.

3. **Major issues to be seen in credit and revolving loan funds programmes**

Agricultural credit programmes can only be successful it they are part of an "integrated approach" to rural development problems.

This means that price incentives; marketing, farm input supply; extension services and credit must be handled together. In addition to this it is wide to design the credit programmes by a multidisciplinary team, and such a team should look at the credit programme from different points of views which ultimately help to improve the income and living standard of peasants. Credit provision should be for those activities that are likely to give a high return.

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4. Some Recommendations

4.1 Deposit mobilization

Credit provision must be handled side by side with the promotion of saving and credit mobilization among beneficiaries or the existing agricultural service co-operatives. The agricultural service co-operatives should therefore aim to provide a full service package that include both saving and credit.

4.2 Customer Orientation

Both the credit services and revolving loan funds provision must be based on customer demand. A known major weakness of rural credit institutions is credit based on a quota system and with no regard for service oriented to effective demand. Credit or Revolving loan funds should not be extended simply because the service co-operatives individual borrowers a group or a community is entitled it. Demand oriented credit or revolving loan fund services should reconcile cost and risk considerations of the concerned institutions with customer preferences.

4.3 Building management capacity

The managing capacity of both Agricultural Service Co-operatives, community group to handle credit services need to be efficient in loan supervision, loan enforcement, monitoring and reporting requirements made by individuals provision of training and support in management through all means are required. Such training must be related in a realistic manner to the capacity of agricultural co-operatives, groups and communities.

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POPULATION AND DEVELOPMENT

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1. INTRODUCTION

1.1 The present situation in many developing countries is that of a viscous circle phenomenon in which poverty and rapid population growth reinforce each other. What is more, the demographic trends projected for the coming decades suggest a further unprecedented imbalance between population size and the carrying capacity of natural resources putting into question the realization of sustainable development in these countries. To arrest and possibly reverse such a trend toward a bleak future, steps are being taken now toward the integration of the population dimension into all aspects and levels of rural development endeavours.

1.2 Considering population growth and the demand for food alone available date indicate that if present population growth rates continue unchecked, the situation in many developing countries will be such that meeting food needs through increased agricultural production domestically or through importation will be strenuous, if at all possible without irreversible damage to the natural resources of these countries. Survey data from Africa, for example, indicate that at a population growth rate of 2.9 percent, a fairly large proportion of 51 countries studied will be critical in the year 2000 (countries that could not

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feed their population from their own lands) even if they were to achieve an intermediate agricultural input level (agricultural growth rate) scenario.

Table 1 Proportion of Critical Countries in Africa for years 1975 and 2000

Input level	Percent of Critical countries in year:		Population of Critical Countries (% of African total) in year:	
	1975	2000	1975	2000
Low	43.1	56.9	33.7	59.7
Intermediate	13.7	23.5	6.7	14.1
High	3.9	7.8	2.7	1.4

Source: Compiled from FAO, 1984.

There appears limited scope for these countries to meet their food requirement merely through technical possibilities of increased agricultural production. Fertiliser use and average crop yields achieved are two ways of assessing input levels. Working on the basis that the use of 80 kg of nutrient per hectare corresponds to the attainment of intermediate input level and considering the fact that the developing market economies in Africa were using only 9.7 kg of nutrients per hectare in 1980, it seems reasonable to believe that by the year 2000 most of the critical countries might have progressed some way toward the intermediate input level but would not reach it. Similarly, on the basis of realistic crop yield

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estimates, it is unlikely that most of the critical countries have attained the intermediate input level in the year 2000. On the whole, therefore, increased efforts in agriculture are very likely to be outstripped by the more than corresponding rates of population growth. All critical countries could thus benefit from reduced population growth rates in minimising food deficits in particular and combating poverty in general.

2. Population Policies and Programmes in Ethiopia

2.1 Leaving aside the debate over whether rapid population growth in the developing countries is the reason for poverty or merely a consequence of it, interventions to promote voluntary restriction of fertility are not only important but also an area of high priority in rural development agenda.

Increased recognition of the fact that deteriorating socio-economic situation of the developing countries is to be explained, at least in part, by the rapid growth of their population has given rise to intensified global interest in, and support to the proper conceptualisation, formulation, and implementation of population policies and programmes. For example, until the middle of the 1970s, the formulation of population policy was known only to 3 countries in Africa. In a matter of a decade, many

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African countries, including Ethiopia, had established units at higher levels of their government structures for the purpose of population policy formulation and implementation (UNFPA, 1992; Arowolo, 1989). Central to the process of population policy formulation and to effective implementation has been the need for making institutional arrangements to meet the requirements of an integrated population and development planning.

The inception and development of population policy is a relatively recent phenomena. A draft population policy was issued in the last quarter of 1988 (D.Haile, 1989). However, this remained little more than a half-hearted public intervention as demonstrated by the fact that population activities continued to be conducted in a fragmented manner. It was in 1993 when the TGE issued a comprehensive population policy to provide an integrative framework for population and development planning concerns. Among the general objectives of the policy are closing the gap between high population growth and low economic productivity and improvements in the economic and social status of disadvantaged social groups such as women and youth.

2.2 The last few years have seen the initiation and development of population/family life education (POPFLE) prospects in Ethiopia to reach target groups both in the formal and non-formal sector. The

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integration of POPFLE contents into school curricula has gained heavy support to reach the youth with population and related information. The inadequacy of such a strategy, however, is that the in-school youth, though a captive audience, is too small in size to provide for capturing the over whelming majority of the rural people who are either school dropouts or who have never gone to formal schools at all. This challenge has made the design of POPFLE programmes for the non-formal sector a vital dimension of overall development efforts. The remaining part of this paper highlights the problems and constraints in incorporating POPFLE into the concept and practice of rural development. This is illustrated by experience gained from project activities toward introducing POPFLE into the curricula of agricultural and forestry college in Ethiopia.

2.3 Arising from a growing awareness of the adverse consequences of rapid population growth on socio-economic development, the 1980s have seen intensified activities toward the incorporation of population and family education (POP/FLE) into the school and college curricula in many African countries, including Ethiopia. The underlying basis for such an intensified educational activity was an increased recognition of the strategic role of education and training in arresting the unprecedented growth of population in these countries.

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2.4 Learning from international experience that POP/FLE can and should be extended beyond the formal school system, the Government of Ethiopia assisted by the United Nations (FAO) initiated, in 1988, a pilot project entitled 'POP/FLE in the non-formal sector'. The overwhelming majority of Ethiopia's population is rural deriving its livelihood almost exclusively from subsistence agricultural production which is constrained by several factors. Obviously, therefore, the success of efforts directed at achieving sustainable development depends on a clear identification of the mix of determinants of rural development, of which the population factor is an important, perhaps the most important, determining variable. Put in other words, there is a need for broadened concept and practice of rural development that deals not only with the provision of information and advise on the technical possibilities to increase agricultural production but also with the micro and macro aspects of population which is both the means and beneficiary of rural development.

2.5 The general objective of POP/FLE in the non-formal sector in Ethiopia drives from such a need for integrating population considerations into the principles and practices of agricultural extension. The project seeks to extend to the rural population of

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the country an awareness and understanding of the causes of population growth and its consequences on patterns of agricultural production and family welfare. Agricultural/rural development agents, including those under training and those already in the field are the strategic stepping stones to reach the rural population with the necessary knowledge and skills pertaining to population and family life issues.

Accordingly, the major thrust of the Project activities is the incorporation of POP/FLE into existing curricula of higher agricultural education institutions. Ambo College of Agriculture was selected as the Center of initial project activities and provisions were made to replicate these activities, as appropriate, in the other agricultural colleges. This workshop is a step toward such an integration process.

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3. CONTENTS AND METHODS OF POP/FLE

3.1 In the present context, POP/FLE in the non-formal sector involves a prescribed course of study of trends, and implications of population at the global, national and local levels. The course is offered by institutions of higher agricultural learning as an integral part of their pre-service and in-service training programmes. The course aims at equipping prospective agricultural/rural development workers

with the necessary knowledge and skills that enable them advise rural people to make informed and rational decisions regarding family size as it affects, and is affected by other factors of production. As such, the course draws upon several disciplines and its multidisciplinary nature makes a clear specification of its content and structure difficult. The lack of academic tradition in the organization and management of population education in Ethiopia makes the delineation of its substantive domain even more difficult.

At a more general level, however, a useful professional experience has been gained from progress made so far in corporating POP/FLE into the curricula of the Agricultural Colleges at Ambo and Jimma. Formal and informal feedbacks from students, staff, and from an external evaluation mission are in general agreement on the contents and structure of POP/FLE as it appears in the curricula of the two Colleges. Building on this consensus, it is recommended here that in general terms, the course of POP/FLE to be replicated at other colleges of agriculture and forestry should consist of 45-48 hours of theory and practical/laboratory sessions. The course should aim at imparting knowledge and skills in the principles and analysis and inter-relationships of demographic and sustainable development variables in the context

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of the main stream training programmes of the Colleges. Thus, topics on micro-components of POP/FLE at a forestry college or faculty should focus on the population/family -agricultural resources dimension of sustainable rural development. On the other hand, topics on micro components of POP/FLE at a college or faculty of agriculture should obviously put emphasis on issues pertaining to population/family and farm organization and management relationships.

As a general guide, however, learning activities in both Colleges must attempt to cover analyses and/or inter-relationships between population variables and variables/processes concerning:

- Agricultural Production
- Nutrition and Health
- Employment and Income
- Environment Protection and Development
- Women in Development
- Socio-cultural Environments

It should be noted that analyses and inter-relationships are to be considered both at micro and macro-levels, i.e., at world, country, community and family levels.

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3.2 Having decided on the objectives and essential substantive elements of the course, the next major task involves a consideration of the method of integrating the course into the curricula of the two Colleges. To be more specific this means that the concept of sustainable rural development must be introduced into the curricula of the colleges. Introducing new content into the teaching and research programme of any academic institution can be met with great difficulties. The lack of awareness, the inertia of tradition, lack of teaching materials, after already overloaded curricula, difficulty in findings and/or training capable teachers are among the major obstacles in the process. Needless to say, international and national experiences will have to be considered to guide the selection of the method or a combination of methods of integration.

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The methodological issues of integrating POP/FLE into school and college curricula has been elaborated at length elsewhere. Gorecki (1989), for example, has outlined four methods which may be used to integrate population education into existing curricula. In terms of their input requirements, these methods range from one extreme which provides for population education to be taught as an independent course. On the other extreme, provision is made for training and materials on population concerns to all teachers in a training

institution leaving the infusion of population education components into individual courses to the teachers concerned as they feel appropriate. In between these two extreme options are methods which involve either the addition of specific population units of study to relevant courses or the infusion of appropriate population concepts and issues relating to individual courses as relevant.

Such various methods of integration offer an opportunity for a wide range of choices, and are equally appropriate. For various reasons, however, teaching population/family life education as an independent course or through the addition of its components to relevant carrier subjects appear better methods of its integration into the overall curricula of higher agricultural education institutions in Ethiopia. This seems to be a preferred approach until such time that the thinking and practice of the academic in these institutions sufficiently recognises the population concern as central to rural development.

POP/FLE may be introduced as an independent course with distinctly visible contents and structure. This method was adopted to introduce POP/FLE into the curricula of Ambo and Jimma Colleges of Agriculture.

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Alternatively, the contents of POP/FLE may be added to other relevant courses, of the school or college curricula. The choice between the two methods depends on the particular characterstics of the school or college being considered in terms of programme objective and human resources capacity. For example, the introduction of POP/FLE as an independent course provides for a clear responsibility of an individual teacher and makes the planning of the course relatively easy. However, the adoption of this method may be made difficult or impossible in a situation of an already conjested curricula whereby the addition of a new independent course is often met with heavy resistance against overloading the curricula or against withdrawing other traditional courses from the curricula. Under such circumstances the 'addition' method may be the preferred option because it also has the added advantage of ensuring the multidisciplinary nature of POP/FLE. The problem with this method is that spreading the contents of POP/FLE into several other courses requires a corresponding number of teachers who are professionally motivated to integrate these contents into their subject-master specialisms. Moreover, such teachers would certainly require training in the contents and methods of POP/FLE. On the basis of the comparative advantages of the two methods, the Project Eth/88/P05 has incorporated POP/FLE into the curricula of Ambo and Jimma Colleges

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of Agriculture as an independent course. This is not surprising in view of the fact during the initial phase of the Project, there were only one international expert and a project assistant responsible for all of its formative activities, including the teaching of POP/FLE at Ambo and soon after, at Jimma College of Agriculture. Given such inadequacy of staff, there was no other option except introducing POP/FLE as an independent course. Taking into account developments over the last five to six years, however, the use of alternative methods needs to be explored. This us illustrated in a preliminary study undertaken to prepare the ground for the incorporation of population/family life education into the training programmes of Awassa College of Agriculture and Wondo Genet College of Forestry.

4. METHODS OF INTEGRATING POP/FLE INTO THE CURRICULA OF WONDO GENET COLLEGE OF FORESTRY AND AWASSA COLLEGE OF AGRICULTURE

Condition now are such that more than one alternative method can be considered for incorporating POP/FLE into the curricula of Awassa College of Agriculture and Wondo Genet College of Forestry. Since 1989, useful professional experience has accumulated from the Project activities to the extent that there is a critical minimum number of staff at the Colleges in Ambo, Jimma, Awassa and Wondo Genet who have participated in in-country training workshops and international study tours on population and rural development.

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Unlike the training programmes of Ambo and Jimma Colleges of Agriculture which is a two-year post-secondary diploma in general agriculture, Awassa and Wondo Genet Colleges provide training programmes leading to specialisms. Awassa College of Agriculture offers specialism training programme in the different disciplines of agriculture including home economics, both at diploma and undergraduate degree levels. Wondo Genet College of Forestry runs a two-year post-secondary training programme in general forestry organized under the departments of Basic Sciences, Silviculture and Extension and Forest Management and utilization (see table 1).

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Table 1. Training and Research Programmes at Awassa College of Agriculture and Wondo Genet College of Forestry by Level and Department (1992/93 Academic year)

PROGRAMMES

Institution	Diploma	Degree
1. Awassa College of Agriculture	1. Basic Sciences Department (BSD)	1. Basic Sciences Dept. (BSD)
	2. Animal Science & Technology (PST)	2. Animal Production & Rangelands Mgt. (APRM)
	3. Plant Science & Technology (PST)	3. Plant Production & Dryland Farming (PPDF)
	4. Home Science & Technology (HST)	4. Ag. Resource Economics & Mgt. (AREM)*
	5. Ag. Engineering & Technology (AET)	5. Family Environment Sc. Mgt. (FESM)*
		6. Ag. Engineering & Mechanization (AgEM)
2. Wondo Genet College of Forestry	1. Basic Sciences	
	2. Silviculture & Extension	
	3. Forest Management & Utilization	

Note: * Final approval being awaited to start programmes.

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The selection of the method for incorporating POP/FLE into the training programme of the two Colleges started with a consideration of the scope of their existing curricula in terms of credit hours requirements for graduation. This is shown in Table 2 together with the credit hour requirements recommended for graduation by the Higher Education Main Department.

Table 2. Actual and Recommended Credit Hours Required for Graduation by Level of Programmes at Awassa and Wondo Genet (1992/93 Academic Year)

Credit Hours	Awassa		Wondo Genet	
	Diploma (2 Years)	Degree (4 Years)	Diploma (2 Years)	Degree
Actual	76	174	76	-
Recommended	65-70	133-144	65-70	-

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The gap between the actual and recommended credit hour requirements is indicative of an already over-loaded curricula in both Colleges. In fact, a more critical review of the teaching learning situation in the Colleges reveals that class schedules are too crowded with theory and practical sessions to allow students time for and independent study and extra-curricular activities.

Such a curricular setting led to the conclusion that an attempt to introduce POP/FLE as an independent course would undoubtedly be unacceptable to the management, the teaching staff, and students of the Colleges. Rather, integration of

POP/FLE issues into existing relevant courses appeared to offer a far better opportunity. Taking this method as a point of departure, the relevant departments and the relevant courses within these departments. At this stage, inputs from as many management and teaching staff of the colleges had to be solicited particularly from those who have had the experience in POP/FLE activities through training workshops in the country and through study tours to schools and colleges of agriculture elsewhere. The consensus - building process aimed at the identification of relevant departments and courses in each of the two colleges.

4.1 In order to graduate with a diploma in Forestry, students at Wondo Genet College of Forestry are required to take all courses offered by the three departments. Therefore, the question of specialism at a department level is not relevant for the College. This is an advantage for the present purpose since it means that all students will be reached with POP/FLE components added into any number of courses. To identify the most relevant courses however, a crude content analysis was made of each of the 29 courses offered at the College. Course descriptions were used to determine the extent to which the subject matter of each course relates to population-environment - sustainable development nexus. The analysis showed that the topics subsumed under the course Introduction

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to Ethiopian Geography Geo 101) of the Basic Sciences Department, by and large, deal with the nature and interrelationships of population dynamics and ecosystems at the aggregate level. Thus, this course was identified as a carrier subject for the macro-level components of POP/FLE. On the basis of a similar analysis, the course contents of Community Forestry (Silv 284) are in many respects almost inseparable from the population issues at the community level. This justified the course to be identified as a carrier subject for micro-level POP/FLE units. The structure and contents of these two courses with POP/FLE units is proposed as presented in Annex I.

4.2 Introduction to Geography of Ethiopia (Geog 101) is also a required common course for all students at Awassa College of Agriculture. Thus, course can be a carrier subject for the macro components of POP/FLE at this College as well. Beyond this however, the identification of carrier subject(s) for the microcomponents of POP/FLE is not as straightforward as is the case with Wondo Genet College of Forestry, since the training programme at Awassa College of Agriculture is organized along departmental specialisms, both at diploma and degree levels. In the latter case, the course(s) into which micro components of POP/FLE are to be integrated must be such that it is/ they are:

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(a) required interdepartmental course(s) so that all or a vast majority of students are reached with POP/FLE messages irrespective of their field of specialization and,

(b) directly linked, in terms of contents, to population/family life issues.

To identify such course(s), a cross-tabulation is made of required interdepartmental courses by departments as shown in Table 3. Since 1988, Awassa College of Agriculture has been vigoursly working to develop degree-level training programmes and to gradually phase out diploma programmes. Taking this developmental trend into consideration, degree-level training programmes of the college provide a wider scope for the integration of POP/FLE than its diploma level programmes which have already been, or will gradually be phased out. The degree level training programmes are organized under five departments: Agricultural Engineering and Mechanization (AgEM), Animal Production and Dryland Farming (PPDF), Agricultural Resources Economics and Management (AREM) and Home Science and Technology (HoST). The College has already started running the training programme in the first two departments and is waiting for final approval to start the training programme in the other three departments.

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Looking at Table 3, there are seven required interdepartmental courses common to all students irrespective of specialisms. As such, these courses can be considered as potential carrier subjects for POP/FLE since they provide the five departments. However, a critical review of their contents reveals that the subject matter of five courses is confined to technical knowledge in the natural sciences (Biology, Chemistry) or in agricultural (Agricultural Practicals, Extension Programming and Planning). Thus, having failed to meet the relevance criterion noted in 'a' above, there appears to be very little ground to consider these courses as carrier subjects for POP/FLE.

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Table 3. Required Interdepartmental Courses Classified by Departments for Degree Programmes at Awassa College of Agriculture

Required Interdepartmental Courses	Department				
	AGEM	APRM	PPDF	AREM	HOST
1. Agri. Practicals I (Agri 101)	*	*	*	*	*
2. Agri. Practicals I (Agri 102)	*	*	*	*	*
3. General Biology (Biol 100)	*	*	*	*	*
4. General Chemistry (Chem 100)	*	*	*	*	*
5. Programme Planning in Extension (AgEc 407)	*	*	*	*	*
6. Farm Management (AgEcon 408)	*	*	*		
7. Farming Systems in Eth. (AREM 306)	*	*	*	*	*
8. Intro. to Soils (PPDF)	*		*	*	
9. Genetics (BIOL 112)		*	*		
10. Vegetable Production & Mgt. (PPDF 223)	*	*	*		
11. Organic Chemistry (Chem 102)		*	*		
12. Introduction to Sociology (SOSA 201)				*	*
13. Introduction to Ecology	*	*	*	*	*
14. Introduction to Human Nutrition (HOST 203)				*	*

* Required interdepartmental Courses

On the other hand, this inadequacy is offset by the other two interdepartmental common courses: Farming Systems in Ethiopia (AREM 306), and Introduction to Ecology (Biol 212). The titles of these two courses suggest that they have much in common with population and family life considerations at national, community and family levels. In depth analyses, of their course contents do in fact confirm

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such commonalities. AREM 306 covers topics on local patterns of food production, components of farming systems, and farm management. Topics such as components of environments; ecology and man; human population growth, human food and energy; and man's impacts on environments are covered in Biol 212. The selection of these two courses as carrier subjects for micro components of POP/FLE at Awassa College of Agriculture is, therefore, justified on the basis that they are required courses for all degree students, and by virtue of their contents being highly interrelated with population issues. POP/FLE components to be infused into these courses is shown in Annex II.

5. SUMMARY AND RECOMMENDATIONS

5.1 Threatened by an unprecedented population growth rate on the one hand, and a deteriorating quality of life of their peoples on the other, many developing countries have shown increased interest in population and family life education (POP/FLE/s since the 1980s. In Ethiopia, POP/FLE activities were initiated toward the close of the 80s involving both formal and non-formal approaches. Project ETH/88/P05 uses the latter approach and aims mainly at the integration of POP/FLE into the existing curricula of agricultural training institutions. Ambo College of Agriculture was selected as a centre for initial activities of the Project which were soon after, replicated at Jimma College of Agriculture.

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Recent replication activities of the Project focused on the integration of POP/FLE into the curricula of Wondo Genet College of Forestry (WGCF) and Awassa College of Agriculture (AWCA). Towards this end, a study was commissioned by FAO of the UN to assist in curriculum development component of the replication activities. Based on a review of national and international experience, and deliberations with teaching and management staff on Wondo Genet College of Forestry and Awassa College of Agriculture that they were made in the course of the proposals are made with regard to the content and method to POP/FLE to be introduced into the training programmes of the Colleges. It is proposed that 45-48 hours of theoretical and practical training in POP/FLE be integrated into the existing programmes of the Colleges. An attempt should be made to cover the analyses of population variables and their interrelationships with variables of sustained rural development. With regard to methods of integration, it is proposed that POP/FLE in the two colleges be added into relevant carrier subjects rather than be taught as an independent course, as in Ambo and Jimma Colleges of Agriculture. Accordingly, two courses from Wondo Genet College of Forestry curriculum and three courses from Awassa College of Agriculture are identified as carrier subjects. Additionally, POP/FLE

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topics added into the relevant carrier subjects are shown in Annexes I and II.

5.2 To the extent that the proposals made with regard to the contents of POP/FLE and the method of its integration into the curricula of the two Colleges are based on experience of national and international institutions with similar programmes, they can be assumed to be generally valid. Beyond this however, it should be noted that the time available for the study was too short to permit detailed and thoughtful curricular considerations which could have provided a far better situation for restructuring and/or revising course contents, particularly those selected as carrier subjects. This, in turn, would have made it possible for POP/FLE to be more coherently integrated into the curricula of the two Colleges. It is therefore recommended that:

(a) a further reinfinement of the proposed contents and methods of POP/FLE be made in the context of detailed curricular and pedagogical considerations, and

(b) adequate supply of the necessary materials and equipments (e.g. audiovisual materials and equipments) for laboratory and/or practical activities be in place before POP/FLE is formally launched in the Colleges.

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Annex I

Proposed POP/FLE Contents to be Integrated into the Curriculum of Wondo Genet College of Forestry

A. Macro-Level Contents.

1. Carrier Subjects — Introduction of Ethiopian Geography (Geog 101). 48 Hrs. Theory

2. Major Topic/Chapter...Human Resources

3. Contents

	HOURS	
	Theory	Lab/practicals
3.1 Demographic Concepts, process, and measures	2	-
3.2 Source of Demographic data	1	-
3.3 Population Size, composition, and changes	2	-
3.4 Population, Vegetation, climate soils	1	-
3.5 Economic and Social characterstics of the Ethiopian Population	3	-
3.6 Population growth, population policy and socio-economic development in Ethiopia	1	-
	10	-

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Annex I Cont'd

B. Micro-level Contents.

1. Carrier Subject ... COMMUNITY FORESTRY (Silv. 284)
51 hrs. Theory 45 hrs. Practicals

2. Major Topic/Chapter... AGROFORESTRY

3. Contents	Hours	
	Theory	Lab/practicals
3.7 Ecosystems	2	4
3.8 Manifestations and effects of population pressure on Lands	2	4
3.9 Sustainable agricultural Production	2	-
3.10 Tree-crop-human relationship	4	8
3.11 Family size, production and consumption of food, fooder and fuel	4	6
3.12 Community participation in Land use Planning	3	-
	16	22

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Annex II

Proposed POP/FLE Contents to be integrated into the Curriculum of Awassa College of Agriculture

A. Macro-level Contents

1. Carrier Subject ... INTRODUCTION OF ETHIOPIAN GEOGRAPHY (Geog 101). 40 hrs. Theory

2. Major Topics (Chapter) HUMAN RESOURCES

3. Contents	Hours	
	Theory	Lab/Practicals
3.1 Demographic Concepts, processes, and measures	2	-
3.2 Sources of demographic data	1	-
3.3 Size, consumption and change of Population	2	-
3.4 Population, vegetation, climate, and soils	1	-
3.5 Economic and Social characterstics of the Ethiopian Population	3	-
3.6 Population growth, population policy and socio-economic development in Ethiopia	1	-
	10	-

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Annex II Cont'd

B. Micro-level Contents

1. Carrier Subject ... INTRODUCTION OF ECOLOGY (Biol. 212) 47 hrs. Theory

2. Major Topic/Chapter POPULATION-ENVIRONMENT RELATIONS

3. Contents	Hours	
	Theory	Lab/practicals
3.7 Ecosystems	2	-
3.8 Impact of human activity on the environment	3	-
3.9 Population and land carrying capacity	2	-
	7	-

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Annex II Cont'd

C. Micro-level Contents

1. Carrier Subject ... FARMING SYSTEMS IN ETHIOPIA (AREM 306) 32 hrs. Theory 48 hrs. Practicals

2. Major Topic/Chapter ... MANAGEMENT OF TRADITIONAL AGRICULTURE

3. Contents	Hours	
	Theory	Lab/practicals
3.10 Population, income and demand for food	1	-
3.11 Components of farming system	3	-
3.12 Local patterns of food production and consumption	2	6
3.13 Factors of production in traditional agriculture	2	-
3.14 Farm family, its priorities and resources	2	4
3.15 Farm household size, composition and economic activity	2	4
3.16 Intervention strategies enhancing farm labour productivity	2	-
	14	14

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SASAKAWA-GLOBAL 2000
ETHIOPIA

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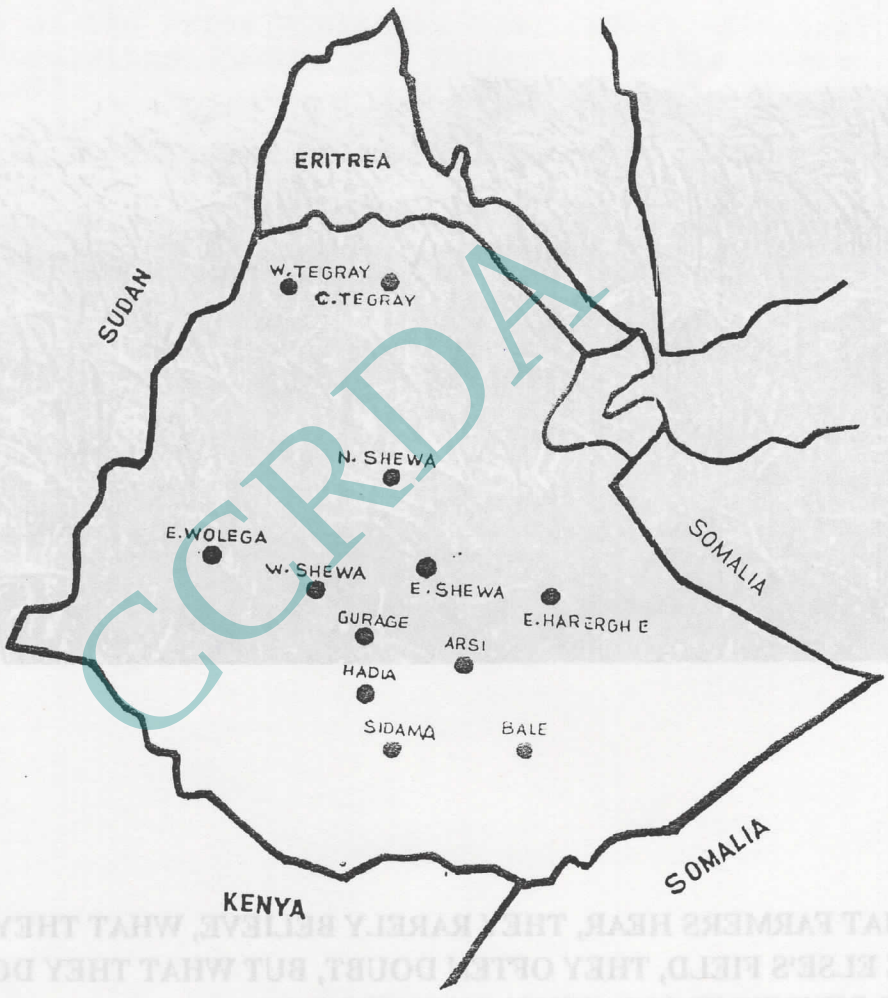


" WHAT FARMERS HEAR, THEY RARELY BELIEVE, WHAT THEY SEE ON SOME ONE ELSE'S FIELD, THEY OFTEN DOUBT, BUT WHAT THEY DO THEMSELVES (AND BENEFIT FROM) THEY CANNOT DENY"

SG2000/MOA 1994

ANNUAL REPORT 1993/94

SASAKAWA GLOBAL 2000 ETHIOPIA



SG 2000 Project Zones

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ACRONYMS

ADPPD	Agricultural Development and Plant Protection Department
AECPD	Agricultural Extension and Cooperative Promotion Depa
DA	Development Agent
EMTP	Extension Management Training Plot
IAR	Institute of Agricultural Research
MoA	Ministry of Agriculture
NFIU	National Fertilizer Input Unit
SAA	Sasakawa Africa Association
SG 2000	Sasakawa Global 2000
TGE	Transitional Government of Ethiopia

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Forward

SG 2000 Ethiopia started its operation in April 1993 as the result of the request by the Transitional Government of Ethiopia (TGE) to the Sasakawa Africa Association (SAA) and the subsequent signing of a project document. During its one and a half years of existence the project has provided a significant support to the efforts of the Ethiopian National Extension system of the Ministry of Agriculture (MoA) by establishing half-hectare Extension Management Training Plots (EMTPs) to demonstrate to small-scale farmers the benefits of using improved agricultural practices.

The SG 2000 mandate is to assist small-scale farmers in Ethiopia to increase the productivity of staple food crops in order to sustain food self-sufficiency and food security.

SG 2000 facilitates the establishment of half hectare on-farm demonstration plots the overall objective of which is to show to Ethiopian small-scale farmers that they can significantly increase their productivity and thereby improve their family income if they wish to change their traditional low-output farming practices to modern ways of crop production.

In order to meet this objective SG 2000 works hand-in-hand with the agricultural extension system of the MoA and provides hands-on practical training to grass-roots level extension workers, extension supervisors and agronomists in project areas. The project also provides pedal bicycles, motor bicycles and pick-up 4 wheel drive vehicles to facilitate the work of Development Agents (DAS), extension supervisors, zonal and regional project coordinators, respectively.

SG 2000 is a joint organization of two non-profit private foundations; Sasakawa Africa Association and Global 2000 Inc.

Sasakawa Africa Association (SAA) is a private, non profit, autonomous organization chartered under Swiss law to promote agricultural and rural development in African countries. The association is founded by a Japanese International Philanthropist Mr. Ryoichi Sasakawa. The 1970 Nobel Prize Laureate Dr. Norman E. Borlaug is the president of the Association.

Global 2000 Inc. is also a private non profit, autonomous organization founded by President Jimmy Carter and Chartered under U.S. Law to enhance food security in low-income, food deficit countries in Sub-Saharan Africa.

In cooperation with the agricultural extension services of the MoA, SG 2000 started establishing large scale (1/2 ha) demonstration plots in mid 1993. The Sidama Zone of Southern Region, Eastern Shewa, Western Shewa, Arsi, Bale and Eastern Wolega Zones of the Oromia Region were

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identified as 1st year project areas. In 1994 SG 2000 has expanded to more woredas within the first year project zones and has also expanded its operations to other zones within the two regions. Two more zones from Region 3 and Tigray Region have also been included.

The SG 2000 project, whose centerpiece of technology transfer strategy is the large-scale demonstration plot, in which crop management training is given by extension workers to participating farmers, is a 6 years project with a possible second phase for another five years.

This Annual Report covers the activities of SG 2000-Ethiopia from April,1993 - June,1994.

Dr. Marco Quinones

Country Director, SG 2000 Ethiopia



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1. Highlights

In May 1992 the Transitional Government of Ethiopia submitted an official request to the Sasakawa Africa Association to start a new Sasakawa Global 2000 project in Ethiopia.

A Sasakawa-Global 2000 Agriculture Mission led by Dr. Nornam E. Borlaug, the 1970 Nobel Laureate and President of the Sasakawa Africa Association made an exploratory visit to Ethiopia from July 27 - July 31, 1992.

In October 1992 the Board meeting of the Sasakawa Africa Association approved the request to fund a new Sasakawa Global 2000 project in Ethiopia, beginning in 1993.

A memorandum of understanding, intended to cover projects in Ethiopia supported by Sasakawa Africa Association and Global 2000 Inc., was signed between the Government of Ethiopia and Sasakawa Africa Association and Global 2000 Inc. in June, 1993.

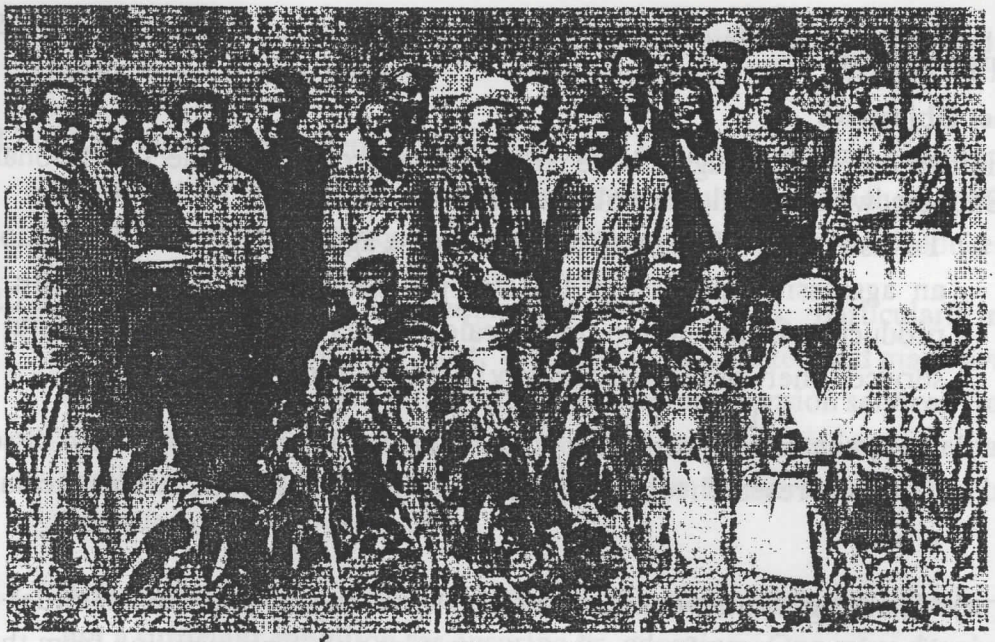
High level government officials including the Minister of Agriculture, His Excellency Dr.



The Acting Minister of Agriculture Dr. Teketel Forsido & other high ranking officials of the TGE attending a field day at Bako, Western Shoa.

Teketel Forsido, The vice Minister of Agriculture His Excellency Dr. Awotahagne Alemayehu, the Vice Minister of the Ministry of Planning and Economic Development, His Excellency Ato Mekonen Manyazewal and Dr. Tadese G/Medhin, General Manager of the Institute of Agricultural Research (IAR) visited the Extension Management Training Plots of SG 2000 and attended field days at Oromiya and Southern Regions in August and September, 1993.

A Supervisory Mission from SAA led by Dr. Norman E. Borlaug visited SG 2000 field programs from 21-25 May, 1994.



Dr. Norman E. Bolaug during his supervision mission in May, 1994

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2. THE PROJECT

2.1 Project Objectives

SG-2000 initiated in 1993 an agriculture collaborative project with the Transitional Government of Ethiopia, with the following objectives:-

a) To assist the TGE in its efforts to increase agricultural food production through an aggressive technology transfer program that will disseminate improved production techniques to small- scale farmers through the agricultural extension service network of the Ministry of Agriculture.

b) To strengthen the capacity of the extension services for expedient dissemination of proven research technologies to the small-scale producers, particularly in food crops.

c) To strengthen the linkages between research and extension in order to streamline the process of technology generation and dissemination from the research institutions to the extension services and to the end users; with appropriate feed-back mechanisms to research for technological interventions when necessary.

d) To extend to small-scale producers through the extension services, improved post-harvest grain storage and preservation technologies.

e) To identify socio-economic and other constraints to agricultural development and to evaluate alternative means of alleviating these constraints through technological and institutional changes.

f) To offer to the Government of Ethiopia the capacity of the Carter Center in fostering sound agricultural policies that can assist in sustaining agricultural development in the country.

2.2 Rationale

2.2.1 Ethiopia's agricultural sector accounts for over 40% of the GDP and employs 80-85% of the population.

2.2.2 Small-scale farmers are the back-bone of the sector and the economy. They are responsible for 96% of the total cultivated area and produce 90-95% of all cereals, pulses and oil seeds. They also grow 98% of the Coffee.

2.2.3 Most Ethiopian farmers rely on traditional, low yielding technologies which have been unable to increase production to keep pace with population growth.

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2.2.4 For as long as population growth rate remains high, increasing food production becomes imperative.

2.2.5 Lagging food production, worsening rural poverty and rapid environmental degradation under traditional farming systems underscore the urgency of increasing the productivity of food crops amongst small-scale producers.

2.2.6 Much of the research data required to increase yields, particularly in the cereal grain crops already exist; but need to be collated and made available in an easily assimilable form to the agricultural extension services for further dissemination to the farmers. With the appropriate implementation of available science-based technology, Ethiopian farmers can double, triple and even quadruple crop yields.

2.2.7 The generation of appropriate technology by research is a a necessary but not a sufficient condition for ensuring its adoption. One must develop a system of technology transfer that accesses farmers with the inputs and information they need in order to enhance productivity.

2.3 Project Area Identification

In May 1993 a meeting of agricultural extension and agricultural development professionals from MoA, agricultural researchers from the IAR and the Country Director of SG 2000 Ethiopia identified maize and wheat crops as important food crops in Ethiopia, with which the Sasakawa Global 2000 Project may start its interventions.

As the result, the Awasa Zuria Woreda of the Sidama Zone in Southern Region, Shashemene Woreda of East Shewa Zone, Bako Tibe and Dendi Woredas of West Shewa Zone, Digelu & Tijo and Hitossa woredas of the Arsi zone, Dodola and Adaba Woredas of the Bale Zone and Gobu Seye and Sibu Sire Woredas of the Eastern Wolega Zone, all in Oromiya Region, were identified as SG 2000 project areas.

2.4 Technology Definition

The maize and wheat technology packages appropriate for adoption by participating farmers in the 1/2 hectare EMTPs were identified and approved in the meeting mentioned above. The extension package for maize EMTPs included fertilizer type and rates as recommended by the National Fertilizer Input Unit (NFIU) of the Agricultural Development and Plant Protection Department (ADPPD) of MoA, high yielding varieties, seed treatment, row planting, use of optimum population and timely weeding, while the wheat technology package, in addition to the above, included the use of herbicides.

2.5 Field Staff and Farmer Training

Concerning staff and farmer training the strategy adopted by SG 2000 is to involve both field level extension staff and participating farmers in hands-on practical training. This is usually supplemented with a prior half to one day theoretical lecture to field level extension staff. Agronomists at all sub-national levels, extension experts, extension program coordinators, supervisors and grass-roots level development agents practice all the techniques that par-

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A training session for extention staff of MOA

ticipating farmers need to implement. By developing their own skills in the use of the improved agricultural practices, extension staff develop the confidence necessary to practi-



Practical hands-on training for extention staff and farmers

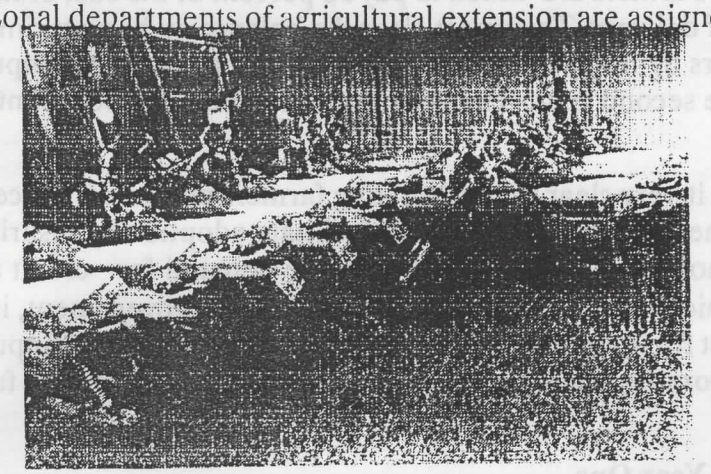
cally demonstrate to participating farmers. Several training sessions of this nature take place every year in all of the project areas just prior to the start of annual field operations.

2.6 Support to the National Extension Service

SG 2000 Ethiopia does not employ its own technical staff, rather it relies fully on the services of the staff of the naional extension system. It's philosophy is not to replace the national extension system nor to start an independent extension service but to "oil and grease" the existing system and fill existing gaps so that farmers are more efficiently served.

To achieve this goal SG 2000 does all it can to ensure that farmers in project areas are provided with timely and the right advice by knowledgeable, skilled, willing and dedicated extension staff. The project collaborates with woreda, zone, regional and Central extension services by providing technical, material and financial support.

Extension workers in project areas are provided with pedal bicycles, if appropriate, and lunch allowances during pick- seasons. Extension supervisors ride motor cycles and receive fixed lunch allowance. Zonal departments of agricultural extension are assigned one 4WD pick-up

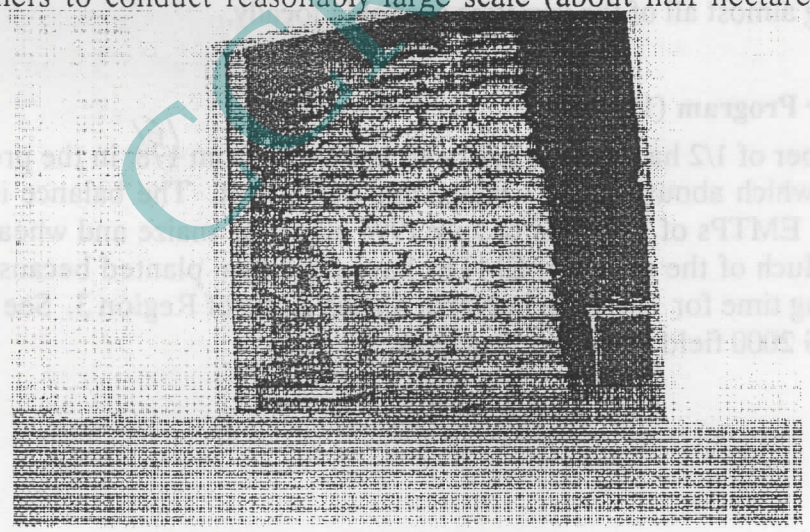


Motor bicycles ready for distribution for use by supervisors

vehicle to coordinate extension programmes in project woredas. At the central level the project supports the Extension Division of the Agricultural Extension and Cooperative Promotion Department (AECPD) by assigning it with field vehicles to facilitate its support to regional extension programs. SG 2000 covers the running and maintenance costs of all the vehicles assigned by the project.

2.7 Support to Participating Farmers

The basic element of the Sasakawa Global 2000 Project technology transfer model is assisting small-scale farmers to conduct reasonably large scale (about half hectare) modern plots.



Farmers need fertilizers and good variety seeds

A size of economically large modern plot leaves no doubt in the minds of participating farmers about the profitability of the science-based technology being recommended to them by the extension service. The considerably large increase in yield from the demonstration plots also provides participating farmers with reasonably high economic return enabling them to start building a resource base for sustained use of the new technology in the future.

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To achieve the goal stated above, SG 2000 provides agricultural inputs and credit services to participating farmers. Farmers are asked to pay 50 percent of the cost of the inputs as down-payment at the time of delivery. They must clear the balance at harvest time. Credit support to participating farmers by the project is given only for the first year. Input supply on cash basis will extend to the second year. Thenafter only technical support continues.

SG 2000 often makes it very clear to participating farmers and to all concerned that it is not a credit program, rather, inputs are loaned to facilitate adoption by insuring the availabiiity of the necessary technology packages. Of course, the demand for credit and availability of agricultural inputs, which must be addressed by the national government, is much enhanced. By becoming a catalyst for increased demands by farmers for credit and input supply, SG 2000 hopes to influence favorable agricultural policy geared towards meeting farmer's demand.

2.8 Progress Report: Year One

Year one was essentially a period of learning about production constraints and about the availability of production technologies in Ethiopia. It was also a period of training of field level extension workers.

Yield levels attained at maize EMTPs in 1993 were compared with both national average and local production levels. The average maize yield from half-hectare EMTPs increased by three to four times (Appendix 1). While the minimum value cost ratio calculated from the base line local productivity level was 4, the highest was above 16 (Appendix 2).

Results from 63 half hectare wheat EMTPs in Arsi and Bale zones of the Oromiya Region averaged 27.6q/ha. This is despite the fact that there was a heavy outbreak of stem rust disease attacking almost all of the varieties available locally.

2.9 Second Year Program (1994)

In 1994 the number of 1/2 ha. EMTPs has been increased from ~~178~~ 161 in the previous year to a total of 1600 of which about 990 87 is maize and 610 wheat. The balance is 80 EMTPs of sorghum and 20 EMTPs of Teff. As of July 1994 all of the maize and wheat EMTPs have been planted. Much of the sorghum EMTPs have not been planted because of the lack of rainfall at planting time for sorghum in North Shewa Zone of Region 3. See Appendix 4 for the complete SG 2000 field programs for 1994.

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APPENDICES

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Appendix 1

Actual and Estimated Yield Records of Maize EMPTs by Woreda

Region	Woreda	Yield (qt/ha)			Remarks
		Maximum	Average	Minimum	
Southern	Awassa	82	49	28	estimate
Oromia	Shashemene	78	54	30	estimate
	Backo Tibe	79	54	34	actual
	Gobu Seyo	52	43	26	actual
	Sibu Sire	94	53	25	estimate
Weighted average			51		

The weighted average (51 qt/ha) compared with the national average productivity (16 qt/ha) is 3 times higher. The average of the maximum productivity of EMPTs is five times higher than the national average.

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Appendix 2

Value Cost Ratio calculated from base lin e productivity level (24 qt/ha) for Maize

Woreda	0	1	2	3	4	5	6	7	8.0
Awassa	Max.	24	82	58	100	5800	351	5449	16.5
	Av.	24	49	25	100	2500	351	2149	7.0
Shashemene	Max.	24	78	54	100	5400	351	5049	15.0
	Av.	24	54	30	100	3000	351	2649	8.5
Backo	Max.	24	79	55	100	5500	351	5149	15.0
	Av.	24	52	28	100	3000	351	2649	8.0
Gobu Seyo	Max.	24	52	28	100	2800	351	2449	7.0
	Av.	24	43	19	100	1900	351	1549	4.0
Sibu Sire	Max.	24	94	70	100	7000	351	6649	19.0
	Av.	24	53	29	100	2900	351	2549	7.0

1 = Baseline productivity prior to the project involvement
2 = Maximum and average productivity of EMTPs
3 = Additional yield gain per hectare (2-1)
4 = Current farm gate price Birr/q
5 = Additional income Birr/h
6 = Cost of input (fertilizer + seed)
7 = Net income Birr/ha (5-6)
8 = Value Cost Ratio (VCR)

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Appendix 3

Value Cost Ratio for Maize EMTPs calculated from National Average Productivity.

Woreda	0	1	2	3	4	5	6	7	8
Awassa	Max.	16	82	66	100	6600	351	5249	18
	Av.	16	49	33	100	3300	351	2949	8
Shashemene	Max.	16	78	62	100	6200	351	5849	17
	Av.	16	54	38	100	3800	351	3449	10
Racko	Max.	16	79	63	100	6300	351	5949	17
	Av.	16	54	58	100	5800	351	5449	16
Gobu Seyo	Max.	16	52	36	100	3600	351	3249	9
	Av.	16	43	27	100	2700	351	2349	7
Sibu Sire	Max.	16	94	78	100	7800	351	7449	21
	Av.	16	53	37	100	3700	351	3349	10

1 Baseline productivity prior to the project involvement
2 Maximum and average productivity of EMTPs
3 Additional yield gain per hectare (2-1)
4 Current farm gate price Birr/q
5 Additional income Birr/h
6 Cost of input (fertilizer + seed)
7 Net income Birr/ha (5-6)
8 Value Cost Ratio (VCR)

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Appendix 4

SG 2000 Ethiopia Field Program 1994

Total EMTPs budgeted 1600

Maize = 890
Wheat = 610
Sorghum = 80
Teff = 20

1. Maize Program:-

Region	Zone	Woreda/DC	No. of EMPTPs		
			1993	1994	Total
Oromia (560)	E. Wellega (210)	**1. Sibu Sira (80)**			
		1.1 Sire Gradina	5	20	25
		1.2 Adugna Chali	5	20	25
		1.3 Ehud Gebeya		10	10
		1.4 Burka Gudina		10	10
		1.5 Woli Gelta		10	10
		2. Gobu Seyo (70)			
		2.1 Bekenisa Gambela	10	20	30
		2.2 Hara Mamo		15	15
		2.3 Gode Hara		15	15
		2.4 Nano Seyo		10	10
		3. Weyu Tuka (20)			
		3.1 Geyo Fite		10	10
		3.2 Boneya		10	10
		4. Diga (20)			
		4.1 Jirrena		10	10
		4.2 Feyisa		10	10
		5. Leka Dulecha (20)			
		5.1 Kewisa		10	10
		5.2 Bandira		10	10

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Region	Zone	Woreda/DC	No. of EMTPs		
			1993	1994	Total
Oromia (560)	W. Shoa (160)	**1. Bako (100)**			
		1.1 Tibe	10	40	50
		1.2 Sheboka		10	10
		1.3 Bako		10	10
		1.4 Asgori		10	10
		1.5 Gajo		10	10
		1.6 Bore		10	10
		2. Chelia (30)			
		2.1 Kiltu Illalo		10	10
		2.2 Jatto Dirki		10	10
		2.3 Racho Dirki		10	10
		3. Ambo (20)			
		3.1 Butulu		10	10
		3.2 Toke		10	10
		4.Dindi (10)			
		4.1 Okote Awash		10	10
	E. Harerghe (10)	**1. Alemaya (10)**		10	10
	E. Shoa (180)	**1. Shashemene (140)**			
		1.1 Krara 1	13	37	50
		1.2 Krara 2	7	33	40
		1.3 Medja	10	10	20
		1.4 Abecha		10	10
		1.5 Kuyera 1		10	10
		1.6 Harabati 1		10	10
		2. Arsi Negele (20)			
		2.1 Ashale		20	20
		3. Siraro (20)			
		3.1 Adja		10	10
		3.2 Awara		10	10

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Region	Zone	Woreda/DC	No. of EMTPs		
Southern Region (310)	Sidama (230)	**1. Awassa (230)**			
		1.1 Dato dahe	10	40	50
		1.2 Dore Bafeno	18	82	100
		1.3 Gara Rikta	10	40	50
		1.4 Gameto		10	10
		1.5 Wosha		10	10
		1.6 Tula		10	10
	Hadiya (20)	**1. Sike (20)**			
		1.1 Amburse Angulo		10	10
		1.2 Weyra Lalo		10	10
	Guraghe (60)	**1. Meskan & Mareko (30)**			
		1.1 Wita		10	10
		1.2 Jale		10	10
		1.3 Getema		10	10
		2. Goro (30)			
		2.1 Edget Behebret		10	10
		2.2 Fite Tedele		10	10
		2.3 Tedele Gidona Tawla		10	10
Tigrai (20)	Western	**1.Adi Daero**			
		1.1 Endamariam		10	10
		1.2 Kutur		10	10

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2. Wheat Program

Region	Zone	Woreda / DC	No. of EMTPs		
			1993	1994	Total
Oromia (440)	Arsi (140)	**1. Digelu & Tijo (50)**			
		1.1 Lole Hofi	13	17	30
		1.2 LOle Bulchana	10	10	20
		2. Tiyo (20)			
		2.1 Gonde		10	10
		2.2 Golja		10	10
		3. Huruta (30)			
		3.1 N. Huruta		10	10
		3.2 Harandeina		10	10
		4. Hitosa (50)			
		4.1 Tedo Shorima	10	10	20
		4.2 Boru Jawi	10	-	10
		4.3 Sero Badossa	-	10	10
		4.4 Habe Chore	-	10	10
	W. Bale (100)	**1. Dodola (30)**			
		1.1 Kechama	5	5	10
		1.2 Denba	-	10	10
		1.3 Tulu Aluwassa	-	10	10
		2. Adaba (30)			
		2.1 Furuna	5	15	20
		2.2 Merebo	-	10	10
		3. Agarfa (20)			
		3.1 Ali	-	10	10
		3.2 Elagi	-	10	10
		4. Sinana (20)			
		4.1 Haro Boka	-	10	10
		4.2 Robe Zuria	-	10	10

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Region	Zone	Woreda /DC	No. of EMTPs		
			1993	1994	Total
	Wellega (60)	**1. Horo (20)**			
		1.1 Agbe Keraro		10	10
		1.2 Ago Geber		10	10
		2. Gimma Genete (20)			
		2.1 Lelisa	-	10	10
		3.2 Tolera	-	10	10
		3. Jimma Arjo (20)			
		3.1 Lelisa	-	10	10
		3.2 Tolera	-	10	10
	W. Shoa (80)	**1. Dendi (40)**			
		1.1 Wolenkomi	10	10	20
		1.2 Boredo	-	10	10
		1.3 Ehud Gebeya	-	10	10
		2.Becho (20)			
		2.1 Awash Bune	-	10	10
		2.2 Soyoma	-	10	10
		3. Illu (20)			
		3.1 Asgori	-	10	10
		3.2 Billi Gebriel	-	10	10
		1. Arsi Negele (20)			
		1.1 Terebana Aware	-	20	20
		2 Ada (20)			
		2.1 Dire	-	10	10
		2.2 Oude	-	10	10
		3. Lume (20)			
		3.1 Adjere1	-	10	10
		3.2 Dibandiba2	-	10	10
		4. Shashemene	-	20	20

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Region	Zone	Woreda/DC	No. of EMTPs		
			1993	1994	Total
Southern (40)	Hadiya (40)	**1. Konteb (20)**			
		1.1 Shekbira	-	10	10
		1.2 Norsito	-	10	10
		2. Limu (20)			
		2.1 Shecha	-	10	10
		2.2 Ambicho Gode	-	10	10
Tigrai (10)	Central (10)	**1. Tahitai Mychew (10)**			
		1.1 Akaba -sa-at	-	10	10
Region 3 (120)	N. Shoa (124)	**1. Moretena Jiru (60)**		60	60
		1.1 Jiru	-	20	20
		1.2 Weyra Aubo	-	15	15
		1.3 Gerba	-	13	13
		1.4 Mangudo	-	12	12
		2. Saadeberna Wayu (64)		60	60
		2.1 Walle Deneba	-	14	14
		2.2 Gotete Dega	-	10	10
		2.3 Abaya	-	10	10
		2.4 Siy Deber	-	10	10
		3. Minjar			
		3.1 Arerti Zuria	-	20	20

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3. Sorghum Program

Region	Zone	Woreda /DC	No. of EMTPs		
			1993	1994	Total
Region 3 (60)	N. Shoa (60)	**1. Kewot (20)**	-	20	20
		2. Ifratna Jile (20)	-	20	20
		3. Minjar (20)	-	20	20
Oromia (20)	E. Hararghe	**4. Alemaya (20)**	-	20	20

4. Teff Program

Region	Zone	Woreda /DC	No. of EMTPs		
			1993	1994	Total
Oromia (20)	E. Shoa (20)	**1. Ada (10)**	-		
		1.1 Denkaka	-	10	10
		2. Lume (10)	-		
		2.1 Dibandiba1	-	10	10

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