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PUBLIC PARTICIPATION IN IRRIGATION AND DRAINAGE PROGRAMMES

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I. Introduction

Irrigation and drainage programmes are for the general benefit of the public. In the eyes of many, the people running the systems day to day are seen as the major beneficiaries but the water is a common good belonging to the people and in many locations is limited. Therefore, all citizens have an important interest in the efficient use of a resource which all share. Often water resources organizations are accused of thinking in terms of the best engineering solution without adequate attention to social and environmental goals or objectives.

Public participation is needed at the planning, project concept, design, implementation and operation stages. This paper examines the subject from first the standpoint of planning and then managing irrigation and drainage systems. It then discusses the FAO International Action Programme - Water and Sustainable Agricultural Development (IAP-WASAD) which is intended to assist the countries in preparing their programme for addressing these important issues.

II. FAO'S Plan of Action for People's Participation

Over the past few decades many governments, development agencies and non-government organizations have recognized that the "top-down" approach characteristic

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of traditional development strategies has largely failed to reach and benefit the poor. In their search for alternative approaches, they all have come to recognize the importance of people's participation as a principal mechanism for promoting rural development.

FAO's experience has shown that through participatory programmes and activities it is possible to mobilize local knowledge and resources for self-reliant development and, in the process reduce the cost to governments of providing development assistance. People's participation is also recognized as an essential element in strategies for sustainable agriculture, since the rural environment can only be protected with the active collaboration of local population.

In 1989, following requests from Member Governments, the FAO's Committee on Agriculture (COAG) and the Council examined the issue of people's participation and its activities in rural development. They recommended that the concept of participatory development be integrated into all development policies and programmes of FAO and also suggested that FAO develop a Plan of Action for People's Participation.

Accordingly, FAO developed a Plan (FAO, 1991 a) which was adopted by the 25th Session of the FAO Conference in 1991. The overall aim of the Plan is to ensure active participation of people in the achievement of sustainable rural development. While it is recognized that other factors relating to social, economic/financial and technical aspects do play an important role in achieving this objective, the active participation of voluntary, self-reliant organizations of their own choice is equally important.

The Plan, while fully recognizing and respecting the sovereignty of Member Governments, proposes that action be taken in the following seven areas:

* Promotion of greater public awareness of the role of people's participation and peoples's organizations in agricultural and rural development;

* Creation of favourable legal and policy framework for people's participation;

* Strengthening internal capacities of the rural people's organizations at local and national levels;

* Decentralization of government decision-making;

* Promotion of increased dialogue and technical collaboration between governments, development agencies and people's organizations;

* Introduction of appropriate operational procedures and methods to facilitate wider participation;

* Monitoring and evaluation of people's participation.

It must be recognized that the objective of active participation by the people in the development process can be achieved only through consistent and concerted efforts over a long period. The implementation of the Plan of Action will therefore call for the commitment by Member Governments to both long-term policies and adequate resources. FAO can, and will need to play an important role in the implementation of the Plan and to provide technical and financial support to interested countries in this task at their request. The Plan envisages FAO acting as a catalyst and an advocate to encourage and assist governments and people's organizations in promoting participatory activities.

III. What is Public Participation?

Public participation means different things to people. The dictionary defines public - "Of, concerning, or affecting the community or the people: the public good. Connected with or acting on behalf of the people, community, or government, rather than private matters or interests." It defines participation - "Taking part or sharing, joining with others." Thus public participation means the involvement of the people, even those not farming, in decisions related to irrigation and drainage.

For purposes of this discussion public participation includes being informed about the activity before the decision is made regarding the project; being given an opportunity to be heard; having an influence on the decision; and agreeing to the decision. Of course not all will likely agree to the final decision and that is not always essential (Creighton 1986). At

the planning or project identification stage the "players" are often different than at the operational stage.

The tendency is to think in terms of farmer participation but to ignore the public at large. Serious consideration is being given in many countries to the transfer of the operation and maintenance of water delivery systems to farmers groups. An FAO sponsored expert consultation held in Indonesia in 1984 which examined Participatory Experiences in Irrigation Water Management went further, even encouraging farmer involvement in the planning, design and construction of the system as well (FAO, 1984).

IV.Public Participation in Planning Irrigation and Drainage Systems

The environmental movement in developed countries has caused increased attention to public participation in major projects. In some countries public hearings are required at various stages of project planning to insure an aware public which is being given a voice in how public money is being spent.

An aware public is important at all stages of projects. Community participation will significantly contribute to enforcement during implementation but the process begins during the planning stage. There are many examples of polluters doing a better cleaning up the environment when it was made known where the dangerous emissions were originating and who was causing the problem which was endangering the public.

In a recent World Bank report it was pointed out that for large water investments, governments must encourage stakeholder participation and work toward getting a national consensus. The people with environmental concerns and also secondary economic impacts should be heard. Of course, this will cause some delays during the approval process but will likely prevent costly delays later.

Although the importance of farmer involvement at all stages of irrigation project formulation and development is known, the government organization does not always take the time to insure that it is done. The FAO Consultation on Irrigation in Africa (FAO, 1986), concluded "farmers' involvement in all stages of irrigation development and management, and devolution of management responsibilities to farmer-water users' associations are indispensable to achieve successful development."

Through the implementation of pilot swamp development schemes in Benin, FAO has developed and tested a participatory methodology, in which local communities are considered as full partners and make the major decisions in a negotiation process with local authorities (FAO, 1986). The communities, organized into associations, are responsible for scheme planning, operation and even marketing of products. The project prepares several alternatives for consideration of the association which makes the decision. The inputs to be provided by various partners are negotiated and a development contract is signed. Monitoring and evaluation of the process is provided by members of the association to insure that there is two way communication to improve the techniques of working with people.

In Burkina Faso FAO uses a similar approach to rural development (FAO, 1987). The project team works with villagers to assess the situation and identify development problems. Priorities are defined together and alternative courses of action considered. The choice of development activities which will be performed is the basis of a contract between the village and the project. After completion of the project activity an assessment of results is carried out by the team and villagers.

Bagadion (1986) reported that lack of participation of the farmers during project planning and construction usually results in location of canals and structures which do not correspond with their perceived needs and thus non use those facilities. Problems which often occur when participation is lacking include inequitable distribution of water, wastage of water at the farm level, and poor maintenance of the system. He further reported that government irrigation agencies tend to resist the idea of farmer participation because of anticipated delays. Projects in the Philippines indicate that properly planned and implemented farmers' participation, while difficult at first, facilitates many aspects of implementation and does not need to delay the project. It is often necessary to provide training and reorientation for the government people working with farmer groups.

In the Philippines, an Irrigation Community Organizer (ICO) was introduced into the village to assist the farmers. The ICO helped the community to identify their problems and seek solutions to resolve them. This grass-roots approach was well received as the planning and implementing of solutions was that which the villagers saw as their solution for which they felt ownership and responsibility for its success. The farmers would

participate in all phases of development and rehabilitation. A formal Irrigation Association (IA) would be created to continue operation and maintenance after the National Irrigation Administration (NIA) withdrew. A formal contract is involved between NIA and the IA. The key to the program is the involvement and gaining confidence of the leaders of the village and the people.

Non-governmental Organizations (NGO's) are another group which strongly support participation on the part of the rural community. NGOs encourage self reliance in rural communities. This grass-roots approach has been well received by those they attempt to serve. The FAO reports a number of examples of cooperation among members of the community in various countries and types of projects (FAO, 1989).

Although there are many success stories of participation, problems have been encountered. In Africa, for example there have been problems in moving from popular participation to a workable arrangement for project implementation. In practice, social organization and custom may discourage participation; government staff may be antagonistic or a ruling elite may see it as seditious; and contractual relationships, land tenure or gender roles may divide the community.

The tendency is to go with pilot exercises to refine the process prior to a large investment. A rural sociologist has often been essential to determine appropriate arrangements for participation.

V.PUBLIC PARTICIPATION IN MANAGING IRRIGATION SYSTEMS

While public participation in a general sense is particularly important at the planning stage since at that time the public opinion can change the course of the project but once the project is operational its role becomes less important and the participation of the direct beneficiaries, namely the farmers, emerges as a key to the success of the project.

The history of irrigation development testifies to the fact that most of the ancient systems were developed by group of farmers anxious to use a valuable resource: water. Farmers participation in the management of the system, once completed was a natural consequence. However, at some stage of this process, the magnitude of the effort to store and distribute the resource was beyond the capacity of the private groups and the

governments started to take up the responsibility of building the systems. Here the dilemma of farmers participation starts. Several options are open to the governments : (1) for government officials continue to manage the systems after their completion; (2) to turn system over to the farmers to manage the system; and (3) to manage the system jointly, meaning that some part of the physical system (generally the larger canals) are managed by the civil servants while the smaller ones are the farmers responsibility.

Most governments have favoured the first option, particularly in the developing world, but this is precisely the one that is less conducive to the participation of the beneficiaries. The literature on management of irrigation systems is full of cases where the performance of such systems have been much below expectations and recurrent reason for it is the scarce level of involvement of the beneficiaries. This is often evidenced by the low financial contributions to meet the expenditures of the system which lead to a chain of negative consequences : poor maintenance, unreliable water distribution, lack of confidence in the project staff, etc..

On the other hand if one analyses the systems that were developed by the farmers and are managed by them the picture turns very positive and there is quite a number of success stories related to them. Examples of such systems are reported in South Korea Taiwan (China), Nepal, India, Indonesia, Spain, Italy, USA, Argentina and many others.

The conclusion that emerges from the above is that there is high correlation between farmers participation in the management of irrigation systems and their sustainability. Consequently many countries have embarked in recent years in programmes that tend to reduce the government role in the management of irrigation systems and expand that of the farmers by transferring part, or the whole, responsibility for managing the physical systems. Unfortunately, this is a recent phenomenon and there is little documentation about the processes and the results obtained (Vermillion, 1991).

Programmes of transferring the responsibility of management to the farmers are often introduced to reduce government expenditures as part of major reforms to the economy. There is the expectation that most of the costs related to the operation and maintenance of the systems will be borne by the beneficiaries and therefore considerable savings will be made as a result of these changes, for example savings, from the salaries of the officials that worked in the institutions responsible for operation and maintenance. There is also the

assumption that a more direct involvement of the beneficiaries will result in greater accountability of those directly responsible for the day to day management task. There is the hope that better services will be provided and that this will lead to increased crop productivity and sustainability of the systems.

Governments have followed two different strategies to hand over irrigation systems to farmers. Some have favoured a rather quick establishment of water user's associations (WUA) and a rapid transfer of responsibilities to them. This approach has been followed in some few countries but with little success. Most of the countries are in favour of a phased handing over accompanied with training programmes for the leaders of the water users organizations. Both approaches have their pros and cons but the general believe is that a phased programme has better chances for success and provides more opportunities to change course if required.

Although these transfer programmes have mostly been initiated in recent years, already some lessons are being learned and there some issues that need to be tackled from the beginning in a decisive way:

- A transfer programme needs a very strong political support at the highest political level of the country. The public institutions that are responsible for the management of irrigation systems are likely to resist to these changes and only decisions at high political level can overcome such resistance. Furthermore changes to the water laws are often required and there should be political will for such changes.

- Farmers must understand what the transfer programme means: their roles and responsibilities, how to organize, clear rules and regulations for the operation of the system, financial implications etc.. To convey all this information to large number of farmers is not a simple task. A major effort in communication is required that needs careful planning and resources allocation.

- Transfer programmes imply that one or several government institutions will see its staff drastically reduced or will have to assume different responsibilities. In either case a plan is required and important financial resources may be needed for

the payment of indemnizations and accrued benefits. Consultations with the concerned staff are of great importance in these situations.

- Farmers are not likely to accept the transfer of irrigation systems that have been poorly maintained and are in need of major rehabilitation. Therefore it is wise to undertake the rehabilitation works prior to the transfer programme. In such cases farmers must commit themselves to keep the system as received and this may imply substantial financial contributions through the water fees.

- Training of the farmers and the technical staff that will have the responsibility for the management of the system is also an important consideration. Government must take some initiative in this mater and bear some of the costs. Without this support farmers will experiment considerable difficulties in managing the systems during the initial years.

- The ownership of the physical systems is an area of conflict. Government take different stands in this mater. Some prefer to remain the owners of the systems and pass them to the farmers in a sort of indefinite lease and therefore the investment cost are not recovered. Others favour the transfer of the ownership and would require the payback of the investment costs or a part of them. Also if there are problems with the land ownership (like when some of the farmers land is public) they must be solved prior to the transfer since such problems are likely to affect the cohesion of the WUA.

- WUA must be legalized and their rights, obligations and attributions must be clearly spelled out and integrated in the water codes or regulations of the country.

- While many governments are favouring the transfer of irrigation systems there are high reservations about transferring the dams or the structures that store the water. The concern is that in many instances water is used for several purposes and only governments - as representatives of the general public - can manage the resource for the benefit of all possible users. There are however exceptions, and some

countries (USA, Spain) have transferred even for main structures to the WUAs or to the private sector and they are being properly managed.

The above observations illustrate that the transfer of irrigation systems is not a simple affair and a number of aspects have to be well thought and planned carefully. This is why many governments are approaching the problem in a step by step manner and transferring only the minor canals (tertiary and below) and depending on the results obtained the responsibility for managing larger canals will be added.

Some countries have a definitive policy that irrigation systems must be managed by the farmers and there are some good examples of this policy in the Mediterranean basin. In such cases, it is of utmost importance that farmers are involved since the planing stage of the irrigation system in all aspects that may have consequences in its future management. During the construction phase efforts should be made to promote the establishment of the WUAs and help them to understand the technical aspects of the management of the system and take an increased responsibility in it. This tutoring period may be short (one or two years) or require longer period if farmers have less experience in irrigation and the associations have little cohesion.

Interactions between the irrigation systems and the surrounding environment

Irrigation systems generate intensive agriculture and tend to become social and physical environment with different characteristics than the surrounding rainfed areas. Often the irrigation areas attract people from the nearby as well as remote areas on expectation of finding work and a better livelihood which unfortunately only becomes true for some few. This is often the result of faulty information publicized through the media and generating expectations that cannot be fulfilled. The general public must be informed of what is happening in their area but overoptimistic statements about the potential that can be generated may create more problems than expected.

Another important aspect is that irrigation systems are mostly developed where a rural habitat already exist and rarely the needs of these villagers are taken into consideration. A small part of the irrigation water can be used to improve the quality of life

of the concerned people and generate positive effects. For instance, with proper water treatment the water supplies of the villages can be improved, or some recreational areas established, or the drainage of the village facilitated. On the other hand the interaction of those villages and towns with the irrigation systems sometimes cause pollution problems in canals resulting in serious problems in their maintenance or to the crops grown. There is certainly the need for a dialogue between the beneficiaries of the irrigation systems and the rural environment that is influenced by them. Information about each other needs is the first requirement but also institutional mechanisms are required to operationalize the solutions.

VI.IAP-WASAD

The role of the public in promoting sustainable development is widely accepted. The FAO's strategy document on Sustainable Agriculture and Rural Development (SARD, 1991) emphasizes the active involvement of rural communities, collectively and individually, in all phases of rural development. Promotion of a "bottom-up" approach by developing more decision-making authority and responsibility down to the local level, providing incentives and enhancing the status and management capacity of local communities, including that of women were stressed in the FAO's SARD strategy. A conceptual framework of the FAO's SARD strategy is illustrated in Figure 1.

One of the four basic principles for sustainable water management adopted by the International Conference on Water and the Environment (ICWE, 1992) was on public participation. This principle states that water development and management should be based on a participatory approach involving users, planners and policy-makers at all levels. The conference recommended that decisions will need to be taken at the lowest appropriate level, with full public consultation and involvement of the users in the planning and implementation of water projects.

The importance of public participation for sustainable development is amply reflected in the FAO's International Action Programme on Water and Sustainable Agricultural Development (IAP-WASAD), FAO (1990). The objective of the IAP-WASAD is to assist developing countries in planning, developing and managing water resources on an integrated basis to meet the present and future needs for agricultural production.

IAP-WASAD emphasizes the importance of involvement of the farming community and the private sector for sustainable water use in agriculture. The following recommendations of the IAP-WASAD are relevant in this regard:

* ensure participatory approaches in water programmes by involving all members of the community, farming as well as non-farming members of the community;

* enhance the capability of farmers in the implementation, operation and maintenance of water programmes; and

* increase local capability for integrated water resources planning and management, with special emphasis on linking public technical agencies to rural development institutions and local community organizations.

VII.Lessons from IAP-WASAD Country Missions

FAO in collaboration with relevant UN Organizations and bilateral donor governments carried out six country and lake-basin missions (Egypt, Indonesia, Lake Chad Basin, Mexico, Tanzania and Turkey) under the framework of the IAP-WASAD. The objectives of these missions were to identify issues relating to water management for sustainable agricultural development and formulate costed and targeted national or basin action programmes.

The following could be deduced with regard to public participation (FAO 1991 b, c, d, e and FAO 1992) in irrigation policies, planning, development and management from these missions:

(a) In all countries, national irrigation planning is a "top-down" exercise, with little public participation in the decision making process. National agricultural and irrigation development policies are developed by the relevant government ministries in accord-

ance with social and economic development goals. If public participated in shaping such policies, it has only been indirect; ie through the political process, as the government constitutes elected members, who are representatives of the people.

(b) In water management at project level, the participation of beneficiaries is evident in all countries, but in varying degrees. Management of water beyond the tertiary level is often left to farmers, who may manage water collectively through water users' groups or may function individually.

In Egypt, in the Sakia area and gravity fed areas of Fayoum, informal water users' groups were managing water at the farm level for hundreds of years. While other areas have had little or no experience with formal or informal water users' groups. Egypt has now formulated legal framework for the establishment of WUA's under the Egyptian Irrigation and Drainage Law which states:

" the mesqa (tertiary canals) hydrological unit is private by virtue of being located on private property. The WUA is legally a private organization. As private formal associations, WUAs will be involved in planning, operating, maintaining and monitoring their own mesqa."

In Mexico, the government is actively pursuing the transfer of 2.0 million ha of irrigation districts to WUAs. In the first phase, hydraulic structures up to secondary canals are transferred and it will be followed by a total transfer of the system.

In Indonesia, village irrigation systems covering an area of about 850 000 ha are managed by farmers. There is a move to hand over the responsibility of operating and managing tertiary systems of large and formal irrigation projects to the farmers, but creation of formal WUAs or similar farmer groups is still in experimental stage.

In Turkey, WUAs are functional in a few selected irrigation schemes. The government encourages the formation of such groups in all irrigation projects and proposes to establish legislation for the creation of WUAs and provide incentives for them.

It has become evident from the country missions that peoples' participation is more evident in soil and water conservation and watershed management activities as compared to irrigation and drainage activities. In fact, many governments promote community and peoples participation in such activities as the latter have not been successful when operated by government agencies.

In Turkey, a World Bank funded watershed rehabilitation project is being planned for implementation. There was broad agreement with participatory approach, whereby the local population and the government agencies will work together to identify problems and plan and implement solutions through integrated activities on a micro-catchment basis. The following two initial activities amply demonstrate the participatory approaches to be adopted by the project:

- An initial contact and confirmation of local interest in soil and water conservation activities;

- Using a "farmer centered-problem census, problem solving" approach sessions with local population to elicit the real and perceived problems of individual households; and

- Evaluation and implementation of the community's proposed solutions to the problems.

The IAP-WASAD has included in its national action programmes technical assistance to promote peoples' participation in all possible water management activities:

In Egypt, Indonesia, Mexico and Turkey, assistance is proposed to: strengthen legislation for WUAs; provide direct assistance to the creation and functioning of WUA's ; and train participating farmers on organizational and management skills.

In Mexico, a technical assistance programme is proposed to support the transfer of operation and maintenance activities to irrigation districts and modernize irrigation infrastructure and operation and maintenance techniques.

In Indonesia, direct support to farmer groups is proposed for operation and maintenance of irrigation systems beyond tertiary level, crop diversification, and soil and water conservation in rainfed agricultural areas.

In Tanzania, the need to promote the role of women in irrigation and agricultural activities is emphasized. The Action Programme states the following in this regard: "women's productivity needs to be improved, both in the production of food as well as in her other household chores. For agriculture, this requires improved technologies that increase output and the productivity of labour through for example, better land preparation, irrigation and weed control techniques "

VIII.Conclusion and Recommendations

Public participation and involvement in decisions which impact their lives is considered essential by many governments today. Water resources are used by all people but many governments distribute responsibility for planning and managing its use among many bodies of organization. In the United States, at present, there are at least 13 congressional committees, eight cabinet level departments, six independent agencies, and two White House offices with responsibilities related to water resources issues. Similar situations exist in other national governments. Coordination is often very difficult under the circumstances which exist. Sometimes the same water is being assigned or programmed for different uses by a "responsible" organization. Conflicts exist and the public should be given a voice in resolution of the conflict.

Recent changes in governments and increased concern about the environment have caused the public to express greater interest in having their views heard by decision makers. The June United Nations Conference on the Environment and Development held in Rio has

focused considerable attention to the need for a sharing of responsibility for the wise use of limited resources.

FAO has developed a Plan of Action for People's Participation, which could serve as a framework for public participation in all rural activities including those related to Irrigation and Drainage programme.

FAO's experience has shown that farmers involvement in all stages of irrigation development and management and devolution of management responsibilities to farmer water users' associations are indispensable to achieve sustainable development. A number of national government and non-government organizations have taken bold steps to induce public participation in irrigation and drainage programmes and may have plans to follow.

Country and lake-basin programming missions carried out under the framework of FAO's International Action Programme on Water and Sustainable Agricultural Development indicate that, the concept of transferring the responsibility of managing tertiary units of irrigation and drainage systems to farmer groups is accepted by the governments in principle. Transfer of responsibility will have to be well planned and executed. A phased programme that will enable the establishment of required policy and legislative changes; the training of farmers and strengthening of farmer organizations; and transferring operation and administration oriented government agencies to perform advisory and monitoring functions needs time and requires resources.

Public participation is the key to sustainable development. As we march towards the 21st Century, public participation is likely to grow. It is incumbent for all of us to promote this change into a dynamic and constructive process in which people take initiatives and take action stimulated by their own thinking and deliberation.

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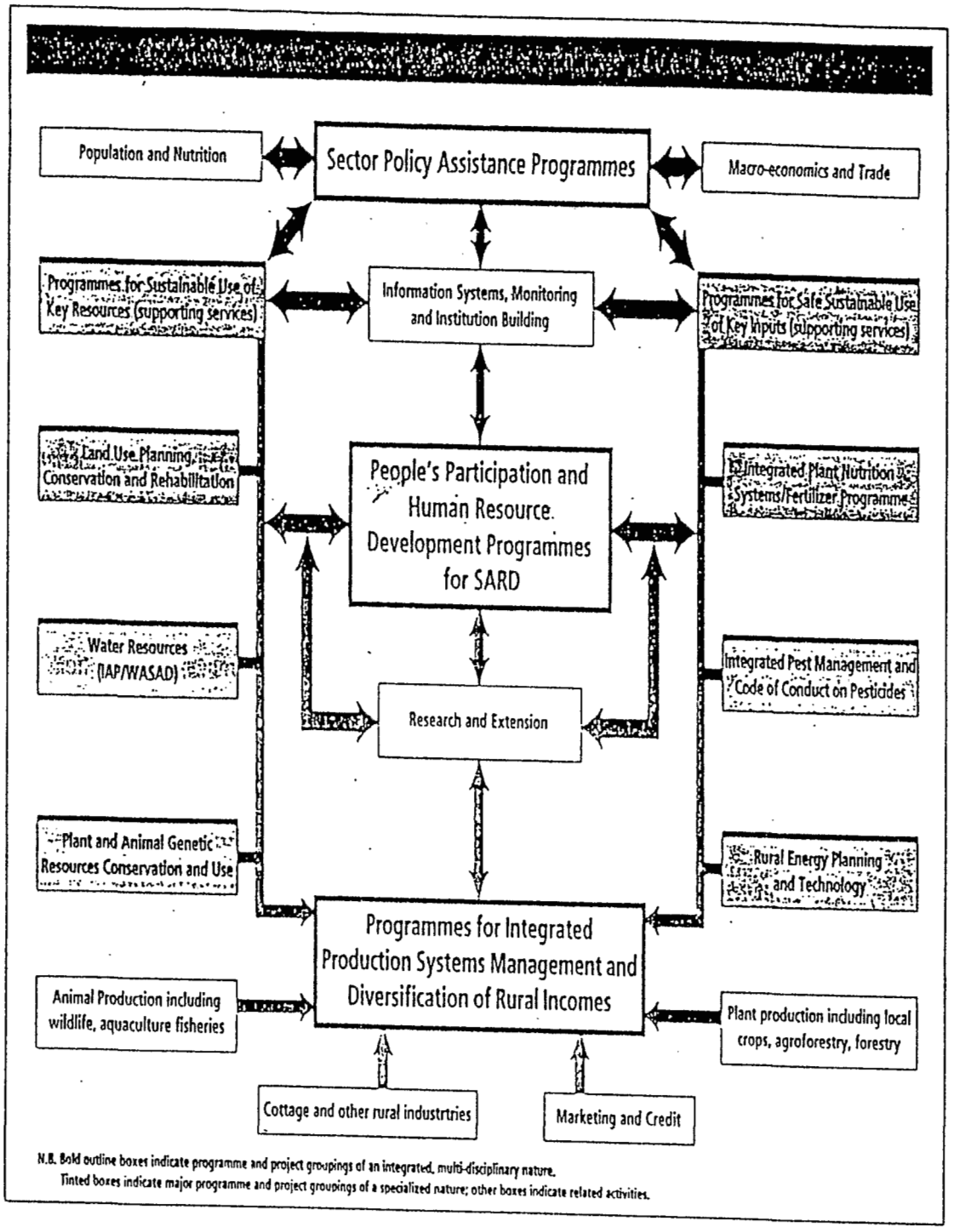
Population and Nutrition
Sector Policy Assistance Programmes
Macro-economics and Trade
Programmes for Sustainable Use of Key Resources (supporting services)
Information Systems, Monitoring and Institution Building
Programmes for Safe Sustainable Use of Key Inputs (supporting services)
Land Use Planning, Conservation and Rehabilitation
People's Participation and Human Resource Development Programmes for SARD
Integrated Plant Nutrition Systems/Fertilizer Programme
Water Resources (IAP/WASAD)
Research and Extension
Integrated Pest Management and Code of Conduct on Pesticides
Plant and Animal Genetic Resources Conservation and Use
Rural Energy Planning and Technology
Programmes for Integrated Production Systems Management and Diversification of Rural Incomes
Animal Production including wildlife, aquaculture fisheries
Plant production including local crops, agroforestry, forestry
Cottage and other rural industrtries
Marketing and Credit
N.B. Bold outline boxes indicate programme and project groupings of an integrated, multi-disciplinary nature.
Tinted boxes indicate major programme and project groupings of a specialized nature; other boxes indicate related activities.

Figure 1.