

TOWARD A REGIONAL AGRO-INDUSTRIAL INFORMATION SYSTEM IN MINDANAO

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The vital role of agroindustries in the regional economic development of Mindanao is well understood primarily among the agricultural, industrial, business and government sectors. The government has taken the role of promoting the development of agriculture and small-and-medium scale agroindustries, emphasizing the fact that its functions have a very high priority in its infrastructure program. Government agents have assumed the responsibility of programming and administering agricultural and industrial development. As one aspect of activity in this development process, the continuous flow of agroindustrial information is the entry point. It is essential for researchers, practitioners and planners who are deeply involved in the planning and programming process.

The fact is that the information needs of a developing economy such as in Mindanao are varied and numerous, particularly in the area of agroindustries. Promoting and developing agriculture, small-and-medium scale industries mean the input of market information, information on agricultural and industrial equipment, raw materials, semi-finished goods, infrastructure information, agricultural and industrial environment, information on new technologies, processes, and agricultural and industrial management tools for decision-making.

The Role of Information

As information is knowledge which can be used, transferred or communicated, its basic qualities are existence, availability and meaning. There should be a vehicle to actively acquire, process, transfer or communicate this knowledge not only to the

researchers, planners, and decision-makers but also to the lowest level of practitioners such as farmers, manufacturers, and entrepreneurs, whose role is as important as those responsible for the planning of the infrastructure program for the economic development of the country.

At this point, we should realize that there is practically no field of organized human activity, whether it is government, business, agriculture, industry, the academic or scientific research and development sector, in which information is not a component. The effectiveness of performance of both organizations and individuals largely depends on the information that they have to support the various aspects of problem solving. The more complex the organization, the more information is needed to ensure that information needs of the management sector of the organization are met effectively and efficiently. Likewise, the more complex the technology, whether agricultural or industrial, the more information is needed to ensure that information needs of individual farmers and small-scale manufacturers are met effectively.

A basic approach to agricultural, small-and-medium scale industrial information dissemination process at the regional level, as in Mindanao, is to enrich the information resources and maximize their utilization by all those who need to use the information.

With a developing agroindustrial economy and an almost unique government structure, agricultural, small-and-medium industrial and technological activities are widely dispersed on the island of Mindanao. In addition to this situation, there exists a variety of libraries, documentation and information centers, with various functions, scopes and levels of efficiency in different institutions, ministries, agencies, industries, business firms and so on in the region. These repositories of information have been organized individually to meet the individual institution's needs, without a link between and among them, without coordination and cooperation, although their limited function is towards supporting the socio-economic objectives of the region.

The need for information networking in Mindanao, therefore, is now felt as a result of the economic and time pressure which will encourage organizations to share rather than duplicate information resources. A form of overall organization is needed to direct and coordinate the activities of many separate efforts in the area of agriculture, and small-and-medium scale industries. The system which would best serve the needs of the people here is the establishment of a coordinating center at the regional level which is the regional agroindustrial information system (RAIS) with an institute such as MSU-IIT as the central network node. It will set up internal networks formed among (about eight) documentation centers and libraries existing in Mindanao. Each of the four regions will, in turn, be interconnected within their regional, network as well as linked with other larger nodes of other regions, but will be strongly linked to the central node.

Objectives

The objectives of the regional agroindustrial information system are:

1. To build up coordination among participating centers in the system working together to form a coherently articulated network;
2. To provide a regional information service system relevant to the current agroindustrial needs and to meet the future needs of all the sectors of the network, namely, agroindustrial technology generators, processors, disseminators of information as well as researchers, planners and practitioners;
3. To maximize utilization of existing information services and the development of new ones;
4. To promote regional, national and international cooperation among agroindustrial entities and serve as a liaison for exchange of such information;
5. To support and encourage the development of facilities for

education and training in information science, technology and communication in order to provide qualified manpower for the implementation of the regional agroindustrial information policy.

6. To support and actively participate in research, development and innovation in information science, technology, communication, efficiency of information services and improvement of the quality of information provided by these services.

While coordination is a major objective of the network it will in no sense mean the same as control. What is conceived is not a rigid hierarchical structure but rather a flexible grouping, with members working together to form a coherent network.

The libraries, information centers, research institutions including the academes making up the constituent units of the network will act like the telephone exchange by plugging the user's line into any one of the many nodes in the network.

The four elements conceived in this information network are:

1. A number of nodes in the four regions which will recognize a common information purpose and agree to participate and coordinate with the central node
2. utilizing existing resources in order to maximize an effective communication system among the network nodes (e.g., radiotelegraphs, local telephones);
3. facilitating each participating center to have its own information resources such as expertise and equipment; and
4. a method or a system to be adapted to enable each coordinating agency to identify quickly the node most likely to satisfy a particular request.

It is clearly emphasized that participation of an information unit in the network does not imply any surrender of control of the parent body, whether government or private. Administrative con-

trol of participating organizations will be left untouched. It would also be a grave mistake to see the network as a means to reduce the purchase of materials of individual libraries. On the other hand, its function will be to enlarge each library's access to materials by coordination and cooperation.

The Central Network Node

Mindanao State University—Iligan Institute of Technology is considered to be the most suitable center of a network node for agroindustrial information in Mindanao. The experience of the Institute in small and medium scale industry development in the region from 1968, its capability of administering a system of information networking on the regional level of both local and international sources of information and of implementing an effective transfer of information to small and medium-scale industry users is on record.

The resources and capabilities of the Institute as an agency dedicated towards the development of small and medium scale industries is sufficient basis for it to take the role as the center of a regional information network for agriculture, small and medium scale industries in the Philippines.

This effort of developing a regional agroindustrial information network center at MSU-IIT, from the system approach, will make the Institute a beehive of activities in Mindanao and a subject of more national attention. The RAIS, despite its limited resources, believes that a regional agroindustrial information network for Mindanao can be achieved not only to serve its users but also to provide an input to bigger organizations.

Regional Information Policy

In order to achieve the goals of a regional information system, a general information policy to which all organizations participating in these activities can subscribe should be well formulated. A regional information policy is important if we are to pro-

vide access to information for research workers, scientists, engineers, technicians, managers and others who have some part to play in agriculture and industry and the scientific field in a most economical way.

In formulating a regional information policy for developing a regional information system, the following aspects should be considered :

1. Allocating responsibilities to participating organizations for building a strong collection in special subject fields and ensuring that there is in Mindanao at least one accessible copy of every worthwhile publication on agriculture, small and medium scale industry and/or relevant subjects for use;
2. Developing facilities for providing information services to agriculture, small and medium scale industries and promoting the use of microforms of documents;
3. Creating information consciousness among the users and undertaking periodic surveys for assessing information needs and users in the country;
4. Supporting and participating in the preparation of a national union catalog of holdings of libraries and other projects in documentation, information science, communication, computer science, reprography and translation;
5. Building up translation facilities and adequate reprographic facilities in the central node,
6. Developing expertise in the information field; and
7. Collaborating with regional, national and international organizations engaged in information service.

Organizational Aspects

The regional agroindustrial information system will be based on the existing information facilities and will be developed as an integrated regional system by utilizing the information potential

of Mindanao, by coordinating the activities and by seeking the cooperation of individual information centers, according to well-defined guidelines and delineation of responsibilities. The Center would work towards the evolution of the regional information policy, as earlier presented in this paper. Major organizations directly or indirectly engaged in small- and medium-scale industries are constituents of the system. A council or a committee representing administrators, agroindustrial scientists, information scientists, industrialists, farmers, engineers, businessmen, manufacturers and inventors drawn from organizations, institutions and associations, both government and private, will be constituted to formulate short and long range programs in order to ensure necessary inputs of men and materials, to assign priorities and to evaluate performance.

Structure of RAIS

The RAIS will function on several strata. The present major organizations and institutions with developed documentation centers, libraries and information services in the areas of agriculture, small-and-medium scale industries and other relevant subject areas in the major cities of Mindanao will constitute the top level of the organization. Two leading institutions in each of the four regions of Mindanao with a developed and/or developing collection will constitute the second level. And those existing extension work forces will serve as the outlets for information dissemination to the bottom level of farmers and entrepreneurs. This will constitute the third level of the organization.

The RAIS is conceived to be a flexible system with its components operating under a variety of ownerships and jurisdictions but collaborating together under the guidance of the coordinating center. The maintenance of these nodes would be the responsibility of the agencies or institutions to which the information centers belong. As the central network RAIS, besides its present

functions, will put emphasis on the development and maintenance of the following general areas :

1. A regional agroindustrial information policy on small-and-medium scale level;
2. Technological and agro information facilities for management and decision-making;
3. A documentaton of information services in new areas, capable of supporting economic and social development and providing translation services in the vernacular;
4. A coordinated policy for the information system of all sectors;
5. A regional network of mission-oriented centers of information;
6. An information service at all levels, international, national, regional and branch;
7. Organizing training facilities in information handling for the RAIS personnel.

Information centers under the RAIS will have the following responsibilities :

1. Developing and maintaining their present document collections and promoting cooperative acquisitions of local and foreign literatures;
2. Maintaining a catalog of collections available in their sector and a data bank containing data relevant to the activities and development of the sector;
3. Providing current awareness service in their area of specialization from selected foreign literature of special interest to their users and users of the RAIS;
4. Providing reprographic facilities for copying documents and distribution of information;
5. Organizing information dissemination services, including data retrieval based on their holdings and providing advisory services; and
6. Providing input of current information on researches and

forthcoming researches for the major current awareness service of the RAIS.

The different regional centers will help to their fullest in utilizing the literature resources available in various parts of Mindanao; the center node will effectively exploit literature resources scattered all over Mindanao and effectively disseminate them.

The objectives to support the existence of centers in the four regions of Mindanao will be as follows :

1. To survey the information sources of the region and to organize them in order to meet the demands of the region and the RAIS as a whole;
2. To establish, maintain and possibly publish a catalog of literature resources of the region;
3. To establish a strong reprographic unit to serve the region and to provide copies of information sources; and
4. To acquire, and maintain documents within and/or outside the region.

Branch Information Centers will serve as channels for disseminating information from the center node and different regional centers to their end-users in the area and supply the same with current information activities in their area.

At the initial stage, about ten to fifteen libraries and documentation centers attached to various institutions and organizations will be invited to join the network. Selection will be made through a questionnaire survey that will identify the capability of the respondent to be a node in the network. Criteria for the selection of the member nodes will be the following :

1. Extent of activity of the institutions/organization in the area of agriculture, small-and-medium scale industries;
2. Existence of a library and documentation center with a maximum collection of basic books in the subject area and with a card catalog and index of its collection;
3. Employment of professional librarians and/or document-

alists;

4. Availability of space and equipment facilities. RAIS is the coordinating and processing center of the network in terms of identifying the various sources of information, acquiring what is needed in processing and disseminating them through the various media as enumerated in the diagram to its target users, which are enumerated as well. The RAIS, therefore, is the nerve center of the activities of the total network system.

Figure 2 illustrates the organizational setup designed for an effective RAIS. An Advisory Council will be composed of selected heads of the various organizations composing the network.

Personnel

Attending to the professional and non-professional personnel requirements with the requisite skills and responsibilities should be the Center node's responsibility. The success of the RAIS will depend on the competence and dynamism of its staff. To make the agroindustrial information system an instrument of real use to agriculture and industry, it is vital that the staff understands the problems and objectives of agriculture, and small-and-medium scale industries. Therefore, the background and experience of the technical staff should be agricultural and industrial in nature.

The organization should consist of two groups. First are the field personnel whose job is to initiate and maintain direct contact with the users of information. Second, the staff working at the Center whose task is to acquire and process information materials, evaluate incoming inquiries, make literature searches, analyze and synthesize information and prepare and maintain current awareness services.

The field staff should preferably be agriculture majors and engineers with extensive experience in farm, small-and-medium scale industry operations and a good understanding of farm and business administration. The Center staff should consist of a mixture of agriculturists, engineers, librarians and trained information specialists who are experts in documentation.

The Head of the RAIS in the center node should be a person who exercises judgement and control in planning, implement-

ation and adjustment of the activities required to achieve the desired goals. Regarding operations and services, the head should be concerned with the following tasks :

1. Developing feasible goals, policies, plans and standards consistent with the system's overall objectives;
2. Establishing effective operations, procedures and equipment resources to implement the objectives, policies, plans and standards;
3. Establishing professional and non-professional personnel requirements, recruiting and training people to perform and maintain operations and services;
4. Providing a continuing a review and evaluation of the program in order to identify and analyze problem areas and to compile records and statistics of operations;
5. Revising operations and services to improve effectiveness and to meet changes in objectives and requirements;
6. Developing a promotional and user-relation program to enhance the usefulness and viability of the operation.

The head should have had formal training in the field of information and, though he need not have had formal education in technology, agriculture or engineering, he should be capable of understanding the main technical points involved in the production process.

The agricultural and industrial information officers assigned in the field should act as intermediaries between the center node and cooperating nodes, other sources and ultimately the end-users of information. They should be the key to the process of communicating knowledge for the productive application in the farm and industry. Their qualifications and status should be such that they can carry on discussions with authorities on the issues at stake and help them make decisions.

Top management of the Information Center should be aware of the current thinking and problems of those it serves. They should be able to promote meaningful exchange between the sources of information and the users.

The center node of the RAIS should have a staff which should consist the following :

Head (a generalist rather than a specialist in one subject field);

Senior Information Specialist (a generalist who will assist the head in the implementation of plans, policies and standards);

Senior Technical Subject Specialist (an agriculturist and an engineer who is knowledgeable in farm and small-scale industry operations and has a background in business administration);

Technical Subject Specialists (agriculture, engineers and business administration graduates);

Librarian (expert in documentation);

• Audiovisual Documentalist (Mass Communication or development communication graduate and familiar with farm and industry operations);

Secretary;

Clerk Typist;

Driver/Messenger; and

Duplicating Machine Operator.

The different regional information centers should have the following :

Senior Information Specialist (a generalist who is capable of implementing the plans, policies and standards of the RAIS. He should be able to coordinate all the sub-nodes in the region and should be resourceful in generating inputs to further develop the activities/programs of the RAIS);

Senior Technical Subject Specialists (agriculturists and engineers who are knowledgeable in farm and medium-and-

SUMMARY OF BUDGET PLANNING

ITEM	INITIAL COST	ANNUAL OPERATING BUDGET	FUTURE NEEDS
Facilities	Existing facilities of each center will be utilized	Renovation is needed	Extension
Equipment Furnishing	Purchase utilize existing	Repairs, replace and additions as needed	New or improved equipment
Salaries	Additional and partly utilize existing staff.	Professional; non-professional and clerical increase in wages	Periodic increase and expansion
Collection of documents; Book purchase & Periodical Subscriptions	Purchase of basic documents and books; journal subscriptions	Annual subscriptions, additional documents	Extension and development of collection in new fields
Materials and supplies	Existing materials and supplies to be utilized	Yearly expendables	Contingency and new procedures
Current awareness Services	Utilize existing budget	Additional publication of other forms of CAS	Contingency and new activities
Miscellaneous	Consultancy and travel during planning and implementation	Travel, training services, evaluation of activities	Contingency research and evaluation

small scale industry operations and have sufficient background in business administration);

Senior Librarian (expert in documentation especially in the area of current awareness and technical inquiry service);

Secretary.

Clerk Typist; and
Messenger.

Branch Information Centers should consist of the following;

Extension Officers (Bachelor's degree graduates in Economics, Business Administration, Agriculture and Industrial Engineering, who have had training in extension service);

Librarian (library Science graduates with sufficient knowledge in information dissemination and utilization and technical inquiries);

Clerk Typist; and
Messenger.

The staff enumerated is ideal when the RAIS becomes fully operational. Meanwhile, for the pilot project three or four qualified staff for the center node and one each from the sub-nodes will suffice as long as a team of specialists in the various disciplines covering agriculture small-and-medium scale industries are employed by the RAIS on part-time basis in order to serve as a back-up support in its operations.

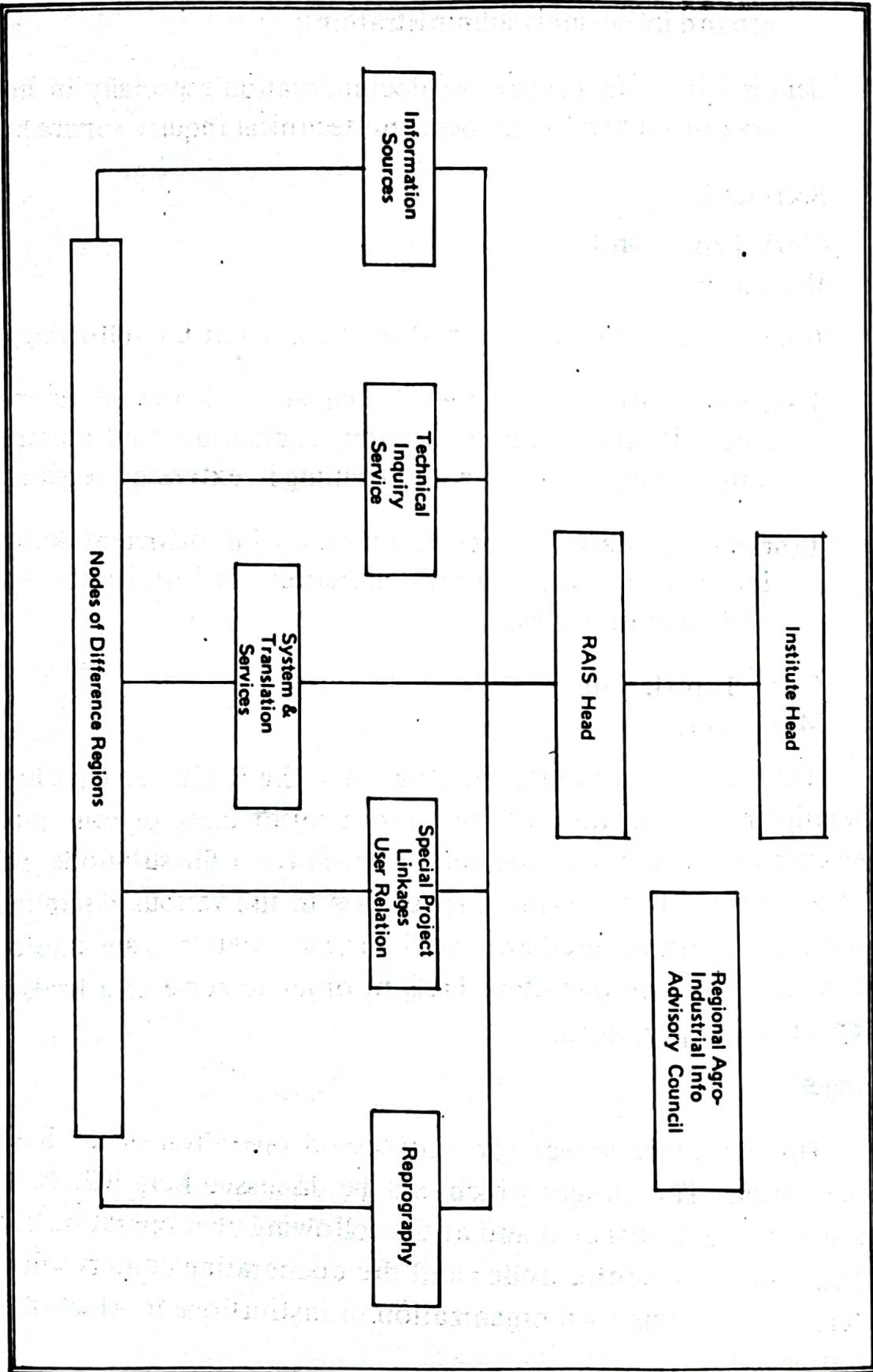
Budget

The monetary aspect for a successful operation of the RAIS is very vital. The budget which will be discussed here will be applicable to the initial cost and at the following year operation considering that the center node and the cooperating centers will be subsidized by their own organization or institutions to which they are attached.

Annual Operation Cost will depend upon the future needs of the RAIS which is assumed to be higher than the operating cost for the second year.

Figure 2

The Organizational set-up of Rais



Regional Agro-Industrial Information System (RAIS) For Mindanao

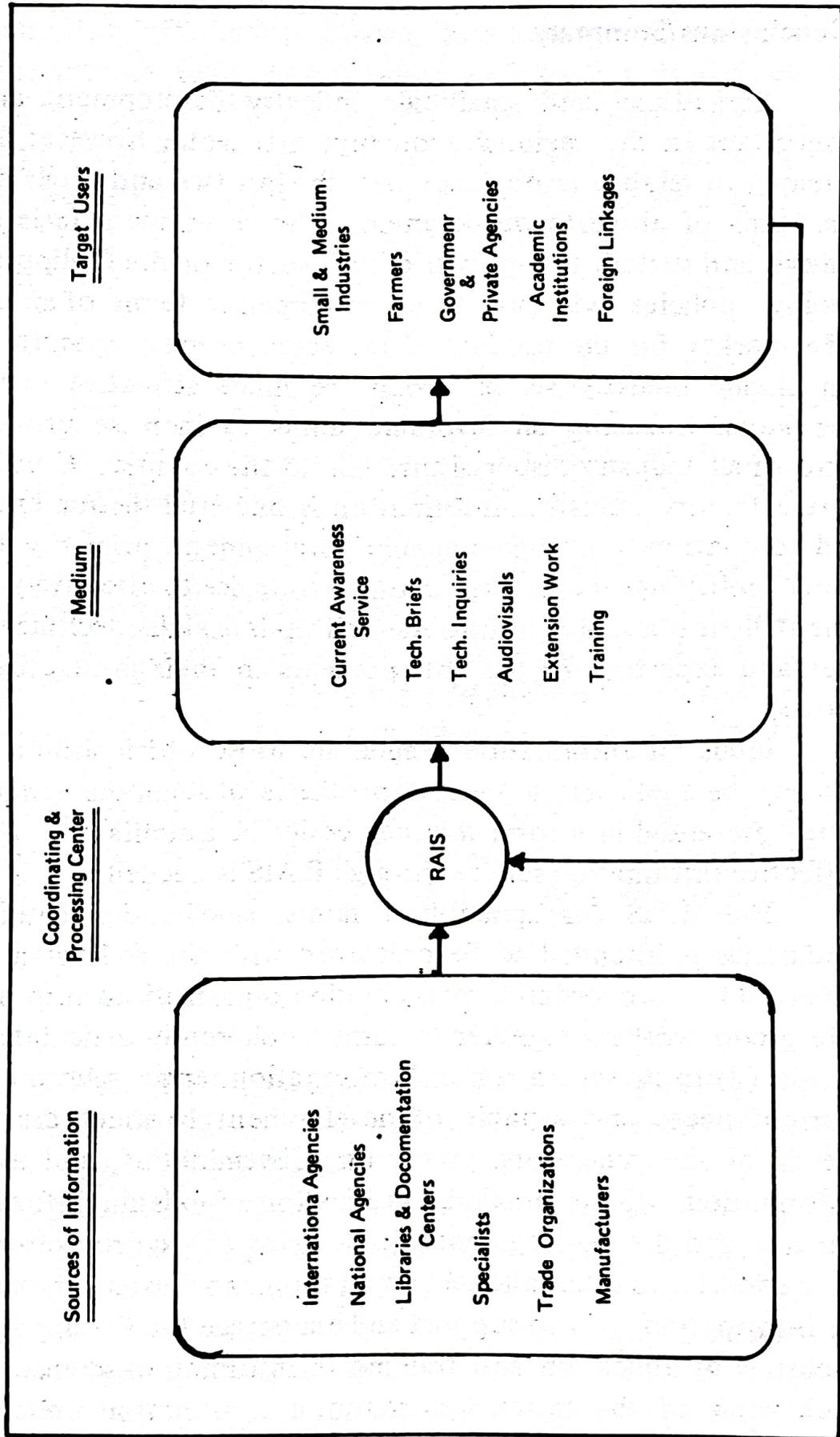


Figure 1

Conclusions/Summary

Agriculture and smallscale industry development are very important in the regional economy; this sector however, has decreased in relative importance over the last two and a half decades in terms of absolute employment.* The government feels that to revive and sustain the growth of this sector of the Philippine economy policies will have to be developed in terms of an accessible market for the producers' increased output; agriculture and smallscale industry sector should be made attractive to foreign investors; financing on favorable terms to increase production; and small industry dispersal throughout the country. Considering these factors, industrial information is one vital instrument needed to contribute to the economic development, primarily to support policymakers in formulating strategies to effectively implement their plans and to upgrade and update skills, technical services and expertise for the entrepreneurs in their production activities.

Industrial information needed are those which should immediately be applicable to current problems of small scale industries and presented in a form that can easily be assimilated. Thus an effective information service through RAIS is needed.

The RAIS for agricultural farms, small-and-medium scale industries is intended to be organized with the following objectives : (1) To coordinate participating organizations into a flexible group working together to form a coherently articulated network; (2) to provide a regional information service relevant to the current needs and capable of development to meet the future needs of the generators, processors, disseminators, and users of information; (3) to maximize utilization of existing information services and the development of new ones; (4) to promote regional, national and international cooperation and liaison for exchange of information; (5) to support and encourage the development of facilities of education and training in information science implementation of the regional agricultural information policy; and (6) to support and actively participate in research, development

and innovation in information science, technology, and communication, to embrace both the efficiency to information services and improve the quality of information provided by these services.

MSU-IIT is deemed to be the most suitable center node of the RAIS considering its resources and capabilities and its accessibility to all parties concerned. Furthermore, it is capable of supplying input to a bigger information system, both local and foreign.

The structure of the RAIS will be at four levels: first, the center node which will be at MSU-IIT; second, the Regional Centers; and third, the Branch Centers. Its activities will include: (1) management services, and (2) internal operations and external operations.

It is anticipated that if and when the RAIS will be operational, the communication gap which has been existing between the sources of information and the users and prospective users will be bridged; thus, a major part of the constraints in developing Mindanao's agricultural farms and small-scale industries will be minimized, if not totally removed.

In conclusion, therefore, a regional agricultural information system should be established in Mindanao so that information utilization and socioeconomic uplift of this region will be facilitated.

Implications

The Philippine Development Plan (1983-87) emphasizes that sustained growth requires a development strategy that provides balance among sectors and among regions that are mutually reinforcing. The national company will develop through symbiotic activities in agriculture, industry and services. Likewise, greater efficiency of investments, resource use and higher productivity will be promoted to ensure a diversified, competitive, export-oriented and high labor-absorbing economy. Regional development strategies, on the other hand, include the development opportunities in every region to exploit fully existing development

potentials. This will involve coordinated programs among regions, a more focused allocation of investments following a system of priorities, in order that income and social amenities in the Mindanao regions may adequately expand and strengthen capacity for generating and utilizing resources effectively.

Re-orientation. A review early in 1983 of the performance of the national economy, however, has evoked a new national directive for all regions to reorient regional planning, more specifically, towards a balanced agro-industrial development. The new re-orientation is consequent to a synthesis that, based on current trends, the regions, except for a few, have not indicated optimal levels of productivity, in spite of an overall positive growth rate in the total national product. If these trends continue, family incomes will not significantly rise beyond subsistence levels, especially for the large agricultural or rural sector, and reciprocally, productive industrialization would be difficult to sustain; hence, the need for the reassessment and redirection of current policies, development strategies and programs for effectively achieving optimal socio-economic balance and productivity.

Balanced Agroindustrial Development Concept. An alternative strategy for achieving balance in agroindustrial development may be pursued through a progressive symbiotic interaction between agriculture and industry based on reciprocal outputs. Specifically, development activities will be aimed towards accelerating the rise of agricultural incomes above subsistence levels so as to stimulate greater demand for the output of manufacturing industries; the expansion of incomes in the industrial sector will expectantly expand agricultural production brought about by increasing demand for food and agro-based industrial inputs.

Balanced development will not necessarily mean investments in both sectors nor exclusive concentration on either. The optimal flow of intersectoral investment allocations will depend on each region's comparative advantages and relative status of development in correlation with national objectives. But it has been observed that in the long run, it is reciprocal interaction between

agriculture and the other sectors, involving increases in the productivity and output of each, that permits rapid growth in the national product and in opportunities for productive employment throughout the economy.

"NOTE"

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