Use of Management Process as an Analytical Grid in Appraising the Irrigation System

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Organizing research activities of the institute into meaningful themes is an integral part of a strategic exercise. However, when this thematic approach is applied at the institute, country or individual irrigation system level, coordinating, at times overlapping, activities in various themes can be problematic. The specialty or discipline-oriented nature of the themes will tend to encourage the overgrowth of one theme in relation to others. In addition, though themes indicate what general directions one should be going, it is difficult to know what among themes should take precedence or be given priorities in any given setting or a system. There must also be some way of looking at the system and its parts by which its strengths, its weakness, its valued contributions can be identified. Inter-relating themes and setting priorities among them calls for an analytical frame work which will serve as a basis for such a process. It is likely that relating projects among themselves or elaborating them according to certain priorities at the country level could be difficult unless an over-view of country programme or a basis for some logical order of these projects are devised.

Process Analysis in irrigation systems

Themes, as they stand now, can be considered as functional requisites of

the irrigation system. The management of water flow, importance of maintaining existing physical system, management of finance, management of organizations, and establishing and reorganizing or re-innovating institutions are various facets which must be performed in an irrigation system. However, these functions or themes do not constitute a flow or process which can be integrated as a continuous whole or a system. Looking at this thematic analysis as a process may not only complement it but also help coordinate various functions or themes in a meaningful manner. Any systems in an input-output format involves the inflow of inputs, the processing of inputs to finished products, and delivery of products. If these rudimentary mode is extended to any management system, the system will consist of setting objectives, translating and elaborating these objectives into programmes, organizing activities to implement the programmes, training and placing people to take care of the organizational activities, measurement of performance and control of operations, finally leading to reappraisal and return to another process of this cycle. This way of looking at the system treat the management as a process or continuous cycles of activities each inter facing with other forming a complete whole.

Analogously, we can view the irrigation system as consisting of processes such as;

1. information diffusion and setting objectives
2. demands/operations system designs
3. operating decision-making and implementation
4. delivery and usage

5. performance evaluation and control.

Managing any systems will require, first of all, setting objectives, plans and programmes. This is largely a prerogative of management, preceded by the diffusion of information about environment, problems, possibilities and alternatives. Once the management has set out objectives, plans and programmes, the elaborating these into operating systems follows; in the case of irrigation systems. this will be concentrated with predetermining or designing operation systems in accordance with needs and demands of the users. The next will be the actual implementation involving making decisions at various levels of operations. The decision making at this stage will in turn involves two process, allocating decision and conveyance decisions. Allocating decisions will be pre-seasonal wherein the next year demands and supply of water are matched and general flow, directions, priorities are determined. However, when the season actually starts, adjustment and continuous matching between flow and needs will be done. Conveyance decisions on the other hands are operational rules of the water flow which specify different procedures to be followed in differing conditions, that is, if-then decisions for operations at various levels and stages. It may be noted that at this stage, we are concerned with how decision makers at operation levels actually apply these decision rules. It is also foreseen that actual decisions thus made may deviate from the original design of the operations as the decision-making is the function of the capabilities and preparation of decision makers, their perception of decision environments, particularly of pressures, constraints of the environments, and motivators of the systems.

Next, the delivery and usage of the water system will ensue: the way the user's needs are satisfied, the extent of fulfillment of the demands or needs, and end results of the whole process of the supply from another phase of the chain. This will be in turn followed by another or the last phase of the cycle, performance evaluation and control. In any management process, the results of individual operations, as well as the performance of the sub-systems and the system should be compared with the objectives, or standards predetermined at the earlier phase of the cycle. This will provide not only a picture of how well the system and its parts are performing but also a basis for corrections to be made in regard to various operations of the system which may have deviated from its original path. This will give an opportunity to reset the interim or the short run objectives which may need a revision in the light of changing circumstances.

The last item to be mentioned in the process is the problem of interface with other systems. This is not a part of the cycle or process but an inter system relationship which could influence the performance of the irrigation system itself. The availability of resources, prompt dispatch of the administrative approval, providing efficient support systems are important factors the performance of the irrigation system will depend on.

The process cycle can also be viewed as a value-chain. Any enterprise, either for survival or for success will have to produce physical or non-physical, product or service outputs acceptable to customers, users, or supporters. Because of the value provided, these buyers, users or supporters are willing to pay the price for the output. If providing valued service or

product is the outcome of an enterprise, the next question is how this final value is generated by the organization. Each process in the chain is a creator of this value though the relative importance of various processes may vary depending on the time, circumstances, and the phase in the life of the enterprise. In the case of irrigation system, how the system was planned, the way water flow is managed, how it is designed, or how one process is interlinked with others will each be an important value-creating element. In addition, how well these processes in the system jell or coalesce into one system will be another important part of value creating process. Analyzing each process or a set of activities from the point of view of what significant contributions this particular process is making or not making towards the predetermined objectives will be a very useful exercise in evaluating the performance of the system.

When the author of this paper was suggesting the use of the process cycle or the system as analytic grid in the recent Internal Programme Review meeting he was unaware of the application of this model in the general presentation of Irrigation Management process done by Easter, K.W., (1986): in fact Easter dwelled on the same idea as he was presenting the general conception of management in irrigation.

Easter, K.W., "Introduction and Conceptual Model" in K. William Easter (Ed.), Irrigation Investment, Technology, and Management (Boulder: Westview Press, 1986)

The use of Matrix Approach

To use the process approach in thematic analysis, the cycle or process can be superimposed on the thematic functions, treating the whole system as a matrix. A country study or a single irrigation system study can be looked at from, both process and thematic point of views.

In other words, each activity or project can be classified as primarily belonging to one aspect of the process cycle or falling to a particular theme.

The matrix and its implications be described as follows: (Figure 1)

1. The rows in the matrix represents various themes or functions the irrigation management system perform or emphasize, but at a national level or at each irrigated system level.

2. The processes or columns represent an extension of input-output process in the system sense. It also indicates a value chain, sets of sequential activities which make the organization distinct, productive or beneficial. In other words, an organization or a system derives its strength from making each set of activities enjoy distinctive comparative advantage or contribute distinctive values.

3. The organization or the system may also derive its advantage from being able to operate as a complete whole or from inter-facing or dove-tailing these set s of activities. Of course it must also be recognized that some systems may not be well integrated; in that case the system may subsist or exist at a suboptimal level.

This matrix will give the following advantages:

1. It would look at any irrigated system as a complete whole and may be able to identify how well each process is performed and how well each is integrated with others.

2. Such analytical grid also indicates where the efforts should be concentrated for improving performance.

3. This will also integrate the process or value chain with the thematic functions. It would be much easier to set the priorities.

4. In the case of country programming, it will be most useful. It will indicate not only where efforts are concentrated but also where these be directed.

5. It will also indicate the location of each intervention or research activities, how each is related to others, and what follow up is needed for improving the contribution of each intervention or research project.