UNIT 7 MONITORING DEVELOPMENT PROJECTS

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7.0 OBJECTIVES

Monitoring is one of the management functions in the process of decision-making. In this unit, the primary objective is to give you a clear understanding of the meaning and steps necessary to create an effective monitoring system.

When you have completed the unit, you should be able to:

- define the concept of monitoring.
- indicate the process of developing a good monitoring information system; and
- carry out revision and updating of the monitoring time schedule.

7.1 INTRODUCTION

In a series of units preceding this, we have discussed the various phases of project planning, management techniques of appraising the investment to be made on a project, and method of formulating execution plans. Whatever be the degree of accuracy with which we formulate a project execution plan, everything rarely goes exactly according to it. There may be changes, deviations and delays in the implementation. These need to be constantly and continuously monitored, so that time and cost overruns can be minimized and appropriate decisions can be taken. In this unit, we will, first of all, understand the meaning of monitoring and then discuss the techniques used for monitoring.

7.2 MEANING

You must have come across the word monitoring on a number of occasions. What is monitoring?

Project monitoring is a device for overseeing the implementation of a project through information feedback to ascertain whether:

– the activities are proceeding in the desired direction so as to enable the objectives to be realized;

– the activities are proceedings according to the given time schedule/ahead of schedule/behind schedule;

– the target population is being reached;

– the achievement of targets and the benefits expected to be generated are being realized;

– coordination between various departments involved in the project execution is taking place; and

– participation of the community (where envisaged) is sufficiently strong to sustain the efforts made through the project.

Thus, we see that monitoring is basically an aid to managerial decision-making by providing immediate information feedback. This helps in the early detection of problems; also, corrective actions in relation to areas, which are lagging behind, can be taken on time. It, thus, provides a critical appreciation of the current status of the project.

Let us illustrate the above points with a suitable example – a poultry complex is under construction. According to the original schedule for project implementation, the survey in the village to identify the beneficiaries is to be completed within two months from the date the project has started. While monitoring the progress of implementation after three months, the Block Development Officer may come to know that the survey is not yet over and this is likely to delay the overall development project. Under such circumstances, the decision to be made by the officer could be to provide more manpower for the survey to accelerate the activity, if this is the only reason for the delay.

Similarly, the project could have allocated financial resources for providing subsidy to families who would take up poultry, piggery, dairy development and some other activities for a livelihood. After three months of project execution when the officer monitors the progress, he may come to know that many families prefer poultry farming, but there is no demand for piggery in that area. With such information, the officer may decide to reallocate the resources from piggery project to poultry farming.

The officer may come to know that many families who have gone in for dairy development activity are not able to sell milk due to inadequate facilities for collection of milk production or have suffered for want of fodder for the milch animals. Using the information provided in the monitoring report, the Block Development Officer may arrange for creation of milk collection centres and supply of feed and fodder.

Hence, a proper monitoring of the project activities and events helps in deciding whether:

- the project schedule can be retained in its original form or revisions need to be made in order to complete the project within the stipulated time;
- any resource reallocation is to be made within the project, so that the overall objectives can be achieved; and
- any additional support or infrastructure is to be created in order to sustain the efforts made.

Check Your Progress I

Notes: a) Use the space given below.

b) Compare your answer with the text.

List two essential features of monitoring.

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7.3 INFORMATION SYSTEM

From the above illustrative examples, it becomes clear that for any mid-course corrections or managerial decisions, the Project Manager requires information. However, mere compilation of information is not enough. For the purpose of monitoring, the information should be analysed; and the analysis should lead to conclusions on the status of the project. The conclusions, thus, arrived at should be used for decision-making. The decision has to be implemented and later followed up to examine whether the decisions improve the situation and the rate of progress. Such a system of obtaining information, reviewing information and taking corrective measures are the essence of project monitoring. This can be explained with the help of the following diagram.

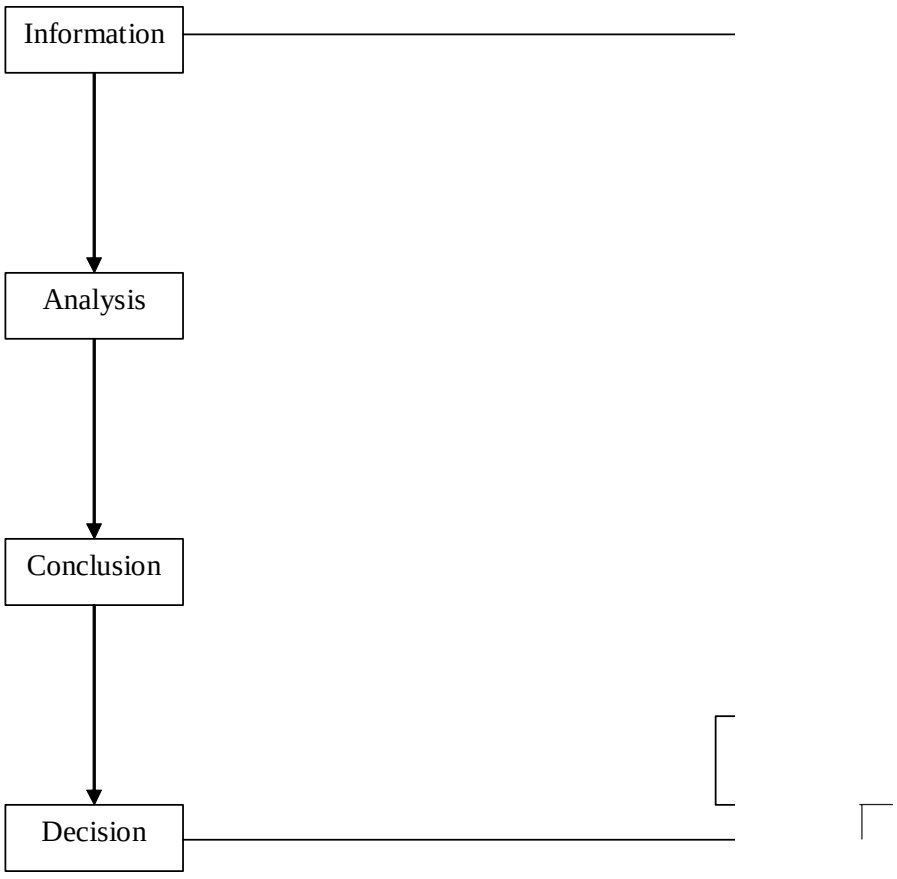

Figure 1 : A Diagramatic Representation of Project Monitoring

The information required for project monitoring should satisfy the following criteria:

– The information should be reliable;

– It should be relevant to the particular situation in which monitoring is done;

– The information must be available on time; and

– Information should be in a tabular form/format.

The information provided for monitoring should not be seen as a tool to be used against the reporting officer for admonishing him. It is to be seen as the basis for helping the officer through appropriate support and decisions. While monitoring certain aspects of a project, all the related information must be available. For instance, in the case of monitoring the poultry complex project, the Block Development Officer should have information on the number of beneficiaries who entered the project, number of farms producing eggs, availability of marketing facilities, supply of feed for the birds, and availability of veterinary services. If all the related informations are provided the situation can be reviewed in its totality to help in taking appropriate decisions.

Timely availability of information is a prerequisite for effective monitoring. This may be every fortnight, every month or every quarter. The information should be available within a week after the reference period ends. Any delay in arrival of information may result in ineffective monitoring and, thereby, lead to delays and reduction in benefits from the project.

One of the reasons why, in the exciting monitoring system, the District Administration finds it difficult to use the information is the length of the report. If it runs into a number of pages, no one would have enough time to read and use it. Therefore, it is suggested that the information provided should be in the form of simple tabular statements accompanied by brief comments from which the manager can know what has happened in the project, why certain results have not been achieved and so on.

The analysis of the information should be simple. Percentage and ratio computed from the data provided in the report for monitoring can be effectively used for assessing the progress made in the project. The conclusions drawn should have a direct bearing on the analysis and should lead to a decision. Unless the decision is implemented, it may not be viewed as a logical culmination of the monitoring process. It is necessary to follow up the project after mid-course corrections are introduced, so that the project can be continuously controlled during its execution phase.

Monitoring Time Schedule Adherence

Let us illustrate the method of monitoring the project to see whether the activities are going according to the given time schedule. For this, we use the schedule worked out for the occurrence of events as discussed in the previous unit on implementation planning. For each event, we have worked out the earliest occurrence time (EOT) and the latest start time (LST). These are what we have planned. While monitoring progress in the execution phase, the actual dates on which the various events have occurred need to be made available. Against the planned schedule, the Block Development Officer can see whether

the various events have occurred or not. The analysis of information in this context enables updating the schedule of implementation. After updating, the manager may come to the conclusion that the project is going according to the given schedule or behind or ahead of the schedule. If the manager concludes that the events have occurred as per the schedule, there is no need for anxiety. On the other hand, if the events have occurred behind the time schedule, the apprehension would be that the project is going to be delayed. Wherever delays are seen, the decisions should be to compress the remaining portion of the project execution period and this is known as 'crashing' or compression.

i) **Proforma for Reporting:** The information required for monitoring the occurrence of events can be given in the proforma below:

Proforma for Reporting on the Occurrence of Events

	Earliest Occurrence Time (EOT)	Latest Occurrence Time (LOT)	Slack (3)-(2)	Actual Occurrence Time	If in progress, Expected Occurrence Time	Reasons for Delay, if any	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
1							
2							
3							
4							
5							
6							
7							

Proforma for reporting on the Occurrence of Events

The event code numbers are provided in the first column. The second and third columns provide the planned occurrence time of events. In the next column (column 4), the cushion available for occurrence of each event is provided. This is the SLACK. In the first four columns, the planned schedule of events for occurrence is provided. The persons responsible for realizing each event in the project should report from column 5 onwards. In column 5, the actual date on which the event occurred has to be reported. At the time of reporting, certain activities may be in progress as a result of which the events would not have occurred. In such cases, the persons responsible for the events will be required to indicate when the event is expected to occur.

The project activities may be delayed due to various reasons, some of which might be unavoidable. These would not have been anticipated at the time of formulating the project schedule. For example, the construction of poultry sheds could have been planned during the period November to February. During this period, the labour may be in short supply, since they are engaged in agricultural operations. On account of this reason, the construction on poultry complex would get affected. Therefore, the Project Manager should know the reasons for any delay in occurrence of certain activities or events in the project. The information on the reasons for delay needs to be provided in column 7 of the proforma presented above. This information will help the Manager to take suitable steps to overcome delays.

The Project Manager should receive suggestions from the persons engaged in various activities, so that while taking decision, these could be put to use. The suggestions are to be provided in the last column of the proforma given above.

ii) **Time Schedule Updating:** The anlysis of information is done by posting the data on actual occurrence time in the original schedule. If the actual occurrence time of non-critical events is less than the latest occurrence time, the project will not be delayed on account of this event. However, if the actual occurrence time exceeds the latest occurrence time of the event in the case of critical events, then the project will be delayed. By updating the schedule, the Manager may arrive at the conclusion on the likely completion of the overall project, whether it is going to be in time or behind time. The above method of monitoring progress and adherence to the time schedule is known as **network based monitoring**.

iii) **Monitoring Results or Benefit Flow:** Besides monitoring adherence to a given time schedule, the Project Manager will have to see whether or not the expected results are generated according to the planned targets. This method of monitoring is known as information based monitoring system. The information required to monitor this aspect can also be provided in tabular form. The manager can, then, quickly review and take necessary managerial decisions for mid-course corrections. Let us take, for example, the project, which aims at alleviation of poverty in the villages through IRDP. The size of population below the poverty line is known from the survey conducted prior to launching the programme. The overall objective of IRDP is to help the families to cross the poverty line. For instance, in a village where there are say, 650 families, the programme would have covered, say 250 families under IRDP assistance. The percentage of population covered to the total target is the coverage indicator, which gradually increases each year.

The Block Development Officer, while closely following the progress, is expected to have information on the number of families covered under the programme, which have crossed the poverty line. Out of the 225 families covered, in the example taken earlier, about 105 have crossed the poverty line. A ratio to the total number of families covered under the programme is an indicator of poverty alleviation. Though 105 families would have crossed the poverty line, all of them may not use the increased income for improving their socio-economic conditions. The information from the village on the number of such families who have invested their surplus income to educate their children, improve their housing, provide better clothing and improve food habits, will be

extremely useful in assessing the level of development the programme has brought about in the village.

Project Management Information System (MIS)

The information for assessing the performance of development projects can be obtained through the information system at the Block level. For designing an information system for monitoring, the following steps are to be followed:

– List the key data required to assess the performance of development projects. Let us take the example of poverty alleviation under IRDP. For this, the Block level organisation would require information on the number of beneficiaries given loan, number of families whose income generating economic activities have been grounded, number of families earning more income than what they were getting prior to entering the programme, etc.

– Specify the channel through which the information should flow. In the case of Block level monitoring, the information should be collected at the grassroots level by the Village Level Worker (VLW) and reported to the Block Development Officer.

– Decide how often the information should be reported from one level to another, i.e., determine the periodicity. Some information may be required once in a year, while some others may be needed once in a quarter or at more frequent intervals.

– Develop appropriate formats in which information should be recorded and reported. The VLW will report in a format for his village, which should be consistent with other formats being used, as for example, by the extension officer in his report to the Block Development Officer. These need to be designed in such a way that the person responsible for reporting may spend minimum time to furnish the data.

– Train the staff responsible for recording information and reporting the same to higher authorities. Unless training is imparted, the reliability of reporting, its regularity and punctuality cannot be ensured.

Check Your Progress II

Notes: a) Use the space given below for your answer.

b) Compare your answer with the text.

1) What criteria should be met by a sound project monitoring information system?

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2) What are the steps to be followed in designing an information system for monitoring?

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7.4 MONITORING SYSTEM

A monitoring system forms a vital part of the management process. The degree of monitoring would depend upon the nature of activities. For example, critical activities would need close follow-up. The change in the critical path, which might occur frequently, also needs to be monitored very closely. For instance, an equipment expected in two month's time might take six months due to a strike at the supplier's factory. The activity of installing the equipment might have been a non critical activity. But, with the fresh information, it could become a critical activity. Changes of this type underline the need for periodic reviews and updating of the project network. This forms the core of a monitoring system based on a sound Management Information System (MIS).

Review and Updating

Consider figure 2 below. It represents the network for a project.

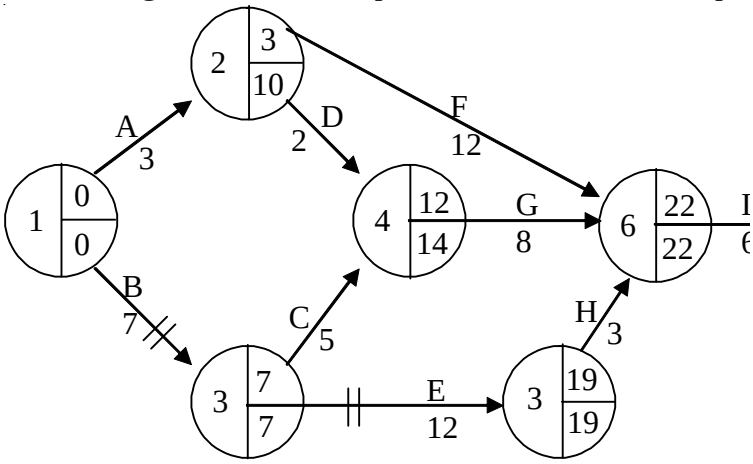


Figure 2

A review was carried out at the end of the twelfth day. The progress, which should have been made and the progress reported is given below.

Progress as per original plan	**Progress reported**
Activities A and B completed or in progress and to take maximum another two days to be completed.	A completed in 6 days, D completed by the end of 7th day ahead of schedule. B very much delayed, now expected to take another 8 days.
E and F in progress; G,H and I yet to be started	F is in progress and will take another 6 days. C, E, G, H and I are yet to be started.

According to the first evidence, activities C and H are likely to take longer time than originally planned, viz., 7 and 6 days respectively. There is no change in the estimated duration of other activities. It is now required that the course of action is updated. How does one go about it? Well! A fresh network, an updated one, needs to be prepared as per the procedure outlined below:

- Fix the earliest event time and latest event time of event (node) 1 at 12.
- For the completed activities, indicate the duration as zero.
- For the activities, which are in progress, indicate the durations equal to the time required for completion of the remaining portion of each activity.
- For the activities, which are yet to commence, indicate the durations according to the revised estimates.
- Complete the network calculations and find the critical path.

The updated network is shown in figure 3 below:

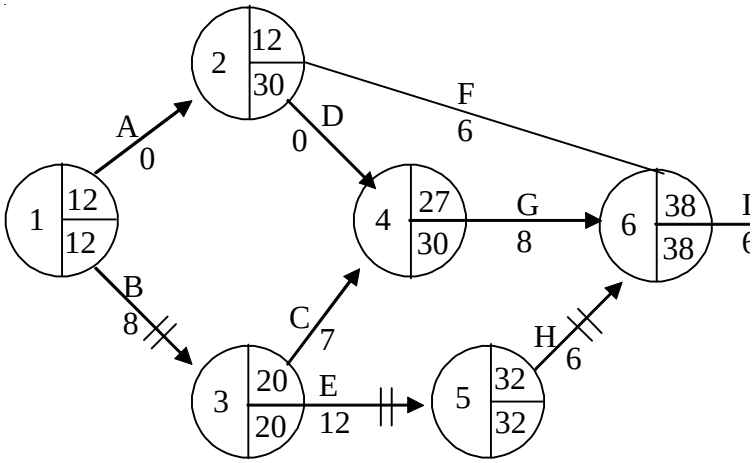


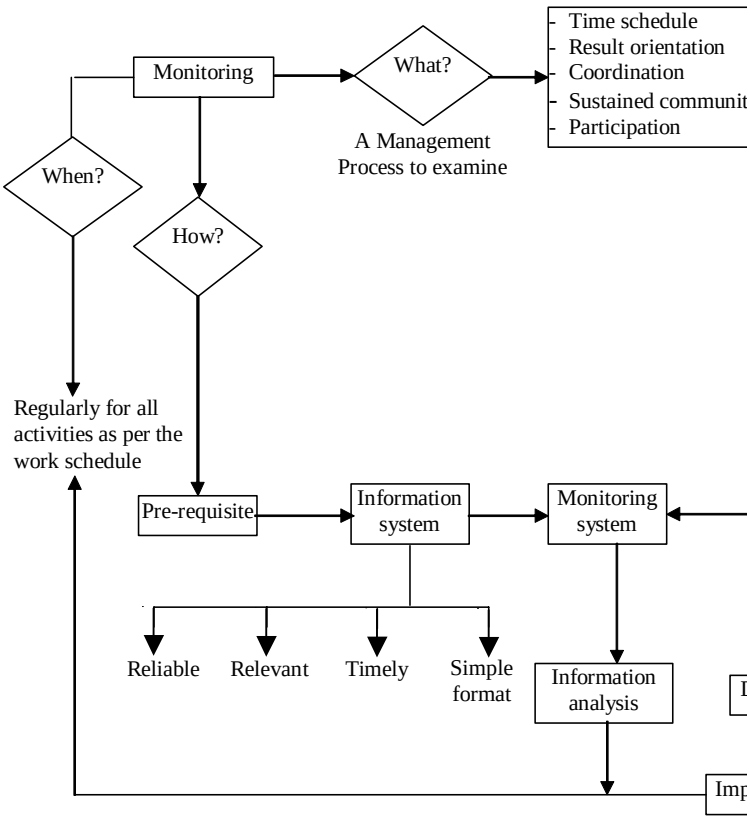
Figure 3

Thus, the revised project completion time is 44 days and there is no change in the critical path.

The periodicity of updating depends on the nature of the project. A large project generally requires less frequent updating as compared to a short duration project. Normally, with the progress of the project, the frequency of updating increased to make all possible efforts for minimizing the effects of deviations of individual activities from the original schedule.

7.5 LET US SUM UP

We saw that project monitoring is a management tool for overseeing the implementation of a project through information feedback on the direction and pace of the project, so that corrective action, as necessary, may be taken in time. The process can be shown schematically as below:



7.6 KEY WORDS

Information System : An integrated system consisting of collection, compilation, analysis and use of data pertaining to the project.

Monitoring : Management device to detect deviation from the planned action path and take corrective action.

7.7 SUGGESTED READINGS

Casley, D.J. and D.A. Lury (1982), *Monitoring and Evaluation of Agriculture and Rural Development Projects,* Johns Hopkins, Baltimore.

Choudhury, Sadhan (1986), *Project Scheduling and Monitoring in Practice*, South Asian Publishers, New Delhi.

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Satyanarayana, M. and Lalitha Raman (1984), *Management Operations Research,* Himalaya Publishing House, Bombay.