PERFORMANCE MONITORING SYSTEM SOFTWARE MANUAL

Department of Environment, Science and Technology
GOVERNMENT OF HIMACHAL PRADESH

Performance Monitoring System

- Define Sectors.. >>
- Define Sub - Sectors.............................. >>
- Performance Indicators........................ >>
- Participating Tehsils............................. >>
- Data Entry: Performance Indicators............ >>
- Enter Targets / Compliance Limits................ >>
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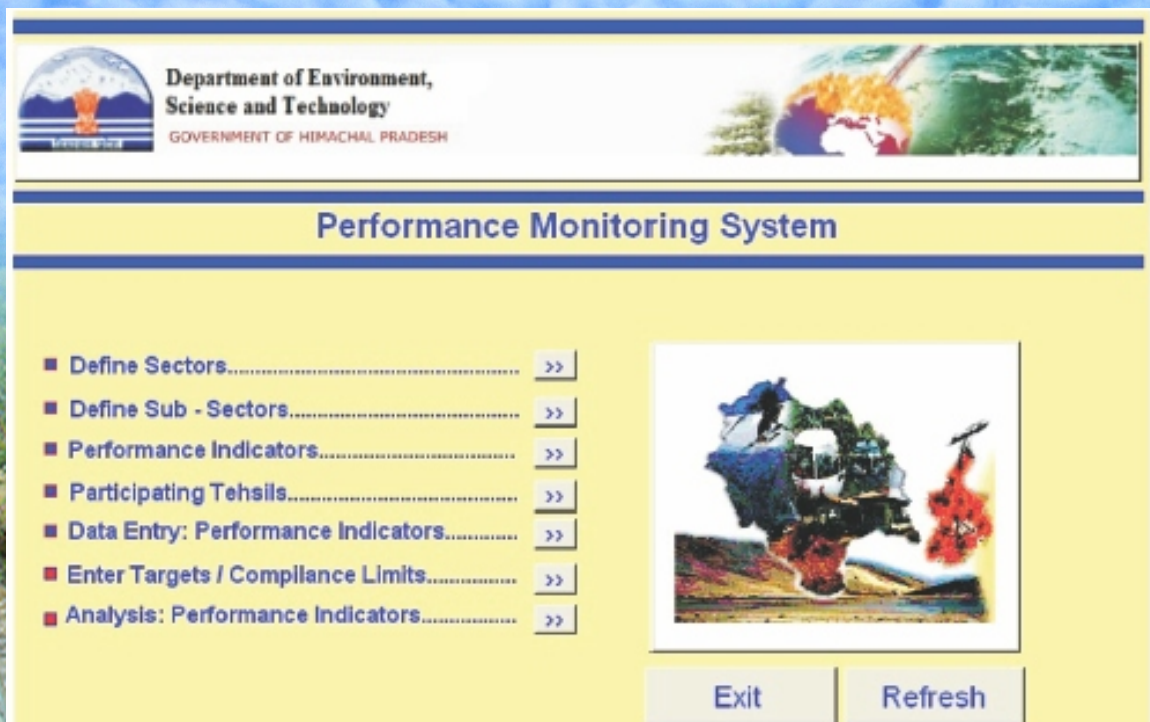
GOVERNMENT OF HIMACHAL PRADESH
DEPARTMENT OF ENVIRONMENT, SCIENCE & TECHNOLOGY

1.0 Project Background of Environment Master Plan for Himachal Pradesh

In 2008, Government of Himachal Pradesh (GoHP) initiated the preparation of an Environment Master Plan (EMP) for the State. The goal of the plan is to provide direction and a framework in the area of environment management with the purpose of protecting and improving the environment within the State. It has been envisaged to link the EMP to the planning process of the State and other environmental standards and protocols already legislated within the State.

The preparation of such a plan involves integration of environmental safeguards at State level, sector level and project level. This involves collection of data and setting baseline, conducting spatial vulnerability assessment, developing public consultation and communication strategy for the Department of Environment, Science and Technology, developing sectoral guidelines, developing an institutional mechanism for implementation of the EMP, establishing need for training & capacity enhancement and developing monitoring & evaluation protocols supported by & Integrated Query based System. Development of environment and social guidelines is an important component of the EMP. The major sectors and activities covered under EMP can be broadly categorized under Infrastructure Development, Natural Resource Management (NRM), and Services as presented in Table 1.

Table 1: Sectors Covered under EMP for Himachal Pradesh

Infrastructure	Natural Resource Management (NRM)	Services
1. Roads, Highways, Rural Roads and Transport	10. Agriculture	15. Education & Vocational Training
2. Hydropower (generation transmission & distribution)	11. Horticulture	16. IT & Telecom
3. Tourism, Ecotourism + Art, Architecture and Cultural Heritage	12. Animal Husbandry & Livestock	17. Livelihoods
4. Industry	13. Forests, Wildlife & Wetlands	18. Waste Disposal
5. Mining and Geology	14. Fisheries	
6. Irrigation & Public Health		
7. Health		
8. Market Infrastructure (including horticulture & agriculture)		
9. Rural & Urban Planning		

2.0 Objectives of the EMP

The objectives of the EMP are:

1) To address the issues of ecological and environmental restoration and bring convergence with the developmental activities in the State.

2) To engage and ensure close coordination on environmental management issues with all the concerned departments, both at the State and National level.

3) To decide future financing of investments for development in a sustainable manner, and

4) To develop suitable institutional arrangements in order to implement the GoHP's policies and strategies.

The outputs of EMP are meant to provide along term perspective of the State on its environment and will imbibe achievement of environmentally sustainable development. The EMP is envisaged to be a guiding tool, which shall provide strategic direction and a unique means for engagement between implementing agencies, development departments and the local government to take action on priority environmental issues of both local and regional concern; developed in partnership with its stakeholders by integrating their feedback; and a tool to monitor environmental performance and progress. The EMP will also provide an operational mechanism for issue identification, preparation and implementation of management plans, accountability mechanisms, monitoring, and enforcement procedures, and assigning roles to various departments and their coordination by the state.

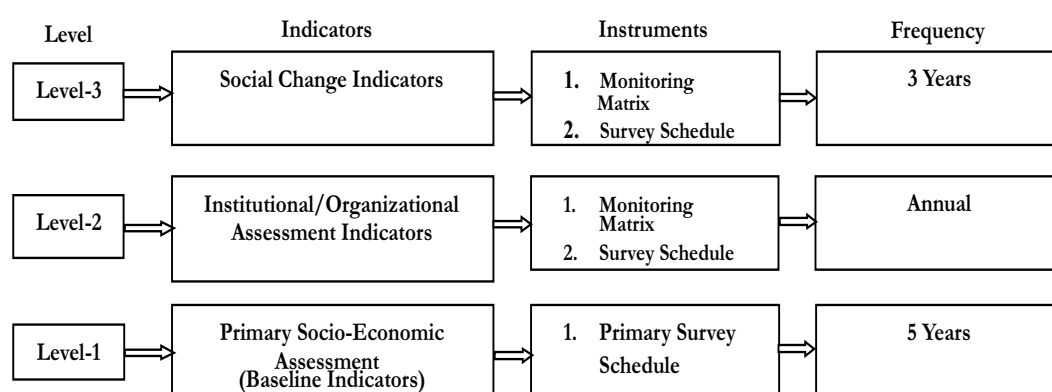## 3.0 Impact Monitoring Indicators

Introduction

Environmental and Social indicators have been established based on identified impacts and implementation schedules / programmes of mitigation measures. These indicators assist the monitoring agency to monitor long and short term impacts as well as efficacy of the mitigation measures. Here, at first broad strategy and line of action has been described to identify these indicators.

Approach and Methodology

A consultative and consensus approach was adopted from among different stakeholders comprising of multidisciplinary sectors such as social, institutional, basin-development and economics, experts from among DEST & Line departments, members of review committee, members of core team of IRGSSA to establish environmental and Social indicators and organizational / institutional assessment indicators. Extensive consultative due-diligence was carried out by IRGSSA team at grass root level from among Line Departments and DEST. Some of the techniques used were exhaustive, one to one interaction, interview schedule based on pilot testing and focused group discussion at village / district and division level. This approach emerged as part of approach and methodology of EMP carried out earlier, where check lists were prepared and used, questionnaire were pilot tested and primary survey carried out. The basic objective was to arrive at indicators, which are quantifiable and which will assist DEST in environmental, social, organizational and institutional assessment and monitoring at State / Tehsil level both in short and long term in the context of master planning. The following section describe application of the above approach and methodology used in the development of indicators followed by matrix and interview schedules, which can be used as monitoring instruments in development of a basin plan.

Social Monitoring Indicators

Social assessment indicators have been developed at three levels. At first / base level, indicators will facilitate primary socio-economic assessment of the study area, which may be applicable to any geographic unit (block / tehsil / district). At second level, indicators will facilitate assessment of stakeholders starting from grass root level to policy level. The outcome of level 1 and level 2 indicators will facilitate development of social change indicators at the third level. The entire monitoring mechanism is shown in figure 1. At each level, the type of instrument to be used for measurement and frequency of measurement has been described below.

Level	Indicators	Instruments	Frequency
Level-3	Social Change Indicators	1. Monitoring Matrix 2. Survey Schedule	3 Years
Level-2	Institutional/Organizational Assessment Indicators	1. Monitoring Matrix 2. Survey Schedule	Annual
Level-1	Primary Socio-Economic Assessment (Baseline Indicators)	1. Primary Survey Schedule	5 Years

Figure 1: Social Monitoring Indicator Mechanisms

Level-1 Indicators

The level-1 include following monitoring indicators:

i. *Demographic indicators* such as population, gender ratio, literacy, occupation, and annual income
ii. *Indicators related to living conditions* such as type of house; fuel for cooking; FMCG; electricity; water and sanitation
iii. *Indicators related to economic conditions* such as land holding size, assets, source of income, expenditure, resource consumption, agriculture expenditure, indebtedness and migration
iv. Indicators concerning environment and health such as water logging, flood prone area, salinity, alkalinity, occurrence of disease
v. *Irrigation and agriculture related indicators* such as shift in cropping pattern, source of irrigation, condition of canal irrigation, productivity, problems in agriculture and irrigation, government schemes, marketing, markets for agriculture produce, quantities sold, pesticide use, fertilizer consumption
vi. *Gender Issues* such as literacy, expenses on female education, health condition, mortality rate, Immunization, women participation in agriculture, households expenses, decision making and social conditions.

Level-2 and Level-3 Indicators

Level-2 and level-3 indicators have been developed by adopting following three steps.

Step 1- Establishment of criteria

The criteria used to identify these indicators are given in Table 1. This criterion includes adequate representation of socio-economic conditions, ease of measurement and linkage to any geographical unit.

Table 1: Criteria for identifying indicators

Sr. No.	Criteria	DEST Social Change Impact Indicators	Establishing Social/ organizational / Institutional Assessment Indicators	Establishing Government Institutional Assessment Indicators
1	Adequate representation of socio-economic conditions	√	√	
2	Ease of measurement and monitoring	√	√	√
3	Application to any geographical planning unit e.g. Division level/ district level, block level, basin/ sub-basin/ watershed/ minor	√	√	√

Step 2 - Identification of elements to design indicators

The three basic elements, which have been identified to develop social change indicators, are: (i) economic condition, (ii) infrastructure, (iii) attitude of stakeholders. It has been perceived that combination of any two basic elements can trigger the third element in a cyclic manner as shown in Figure 2 given below.
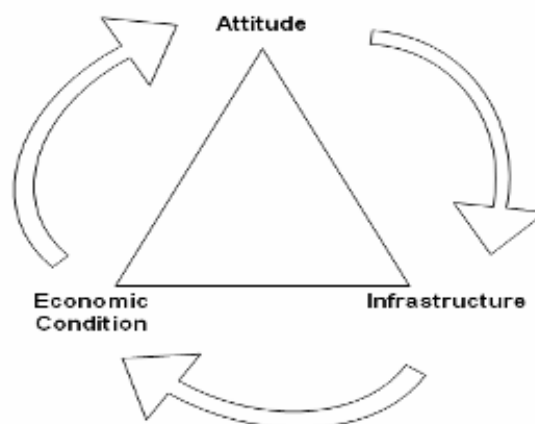
Figure 2: Basic Elements for social change indicators

The two basic elements identified to develop institutional indicators, are (i) knowledge base and (ii) Implementation. These are described in Figure 3. The development of knowledge base is dependent on the sub-elements of awareness and capacity building, while their effective implementation is dependent on sub-elements of coordination and operation at planning and grass-root level.
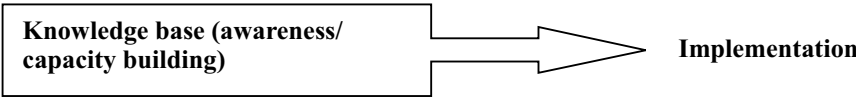
Figure 3: Basic Elements for Government Institutional Assessment Indicators

The basic elements identified to develop social / organizational / institutional indicators, are (i) Knowledgebase, (ii) Socio-economic condition, (iii) Infrastructure and (iv) Attitude of farmers. These are described in figure 4.
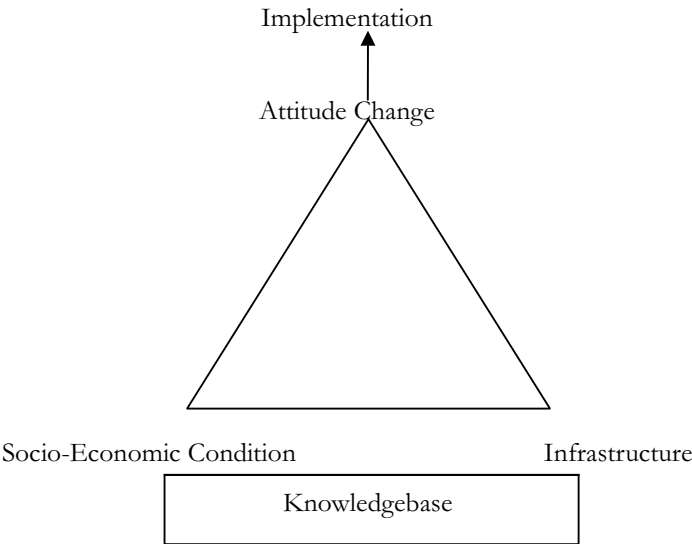
Figure 4: Basic Elements for Social, Organizational and Institutional Assessment Indicators

Knowledgebase provides firm footing for socio-economic change and overcomes infrastructure constraints. The combination of three elements brings about attitudinal change, which leads to implementation and results in outcome. The summary of major elements, which are used to determine these indicators are given in Table 2.

Table 2: Elements to develop indicators

Sr. No.	Elements	DEST Social Change Impact Indicators	Establishing Social/ organizational / Institutional Assessment Indicators	Establishing Government Institutional Assessment Indicators
1	Knowledgebase		√	√
2	Economic Condition	√	√	
3	Infrastructure	√	√	
4	Attitude of stakeholders	√	√	
5	Implementation mechanism		√	√

Step 3 - Identification of indicators and sub indicators

Level-2 and level-3 indicators have been established for the assessment of DEST social change impact, social / organizational / institutions and government institutions involved to bring about social change in the various sector. The government institutional assessment indicators have been developed based on primary survey, the selected DEST & Line department officials had been interviewed as per the sample interview schedule. A sample of the officials were selected through simple random basis.

It has recommended that at minimum data compiled for monitoring be atleast for two years, while the maximum may be five years. Five years has been suggested considering sector-wise five year planning horizon at tehsil, district and state level.

Environmental Monitoring Indicators

Environmental monitoring indicators have been identified based on: (i) expected activities in the state, (ii) identified environmental issues and (iii) expected environmental and socio-economic impacts. It is anticipated that future activities in the Himachal Pradesh will lead to emergence of environmental issues on account of both short and long term environmental impacts. The frequency of measurement has been fixed for annual and five year monitoring period. These have been fixed considering short and long term planning and implementation perspective.

Conclusions

Social and environmental monitoring indicators will form the backbone of any planning exercise in future. The different instruments used by DEST team for monitoring social and environmental indicators will serve as guide depicting both spatial and temporal variations for future analysis.

Performance Measurement and Evaluation System

Performance Measurement and Evaluation System is designed as a tool for measuring the performance of various sectoral line departments' performance in its various areas of Service delivery and operations. A well-designed Project Monitoring System (PMS) can support the existing Management Information System (MIS) to help improve efficiency and effectiveness of management reporting.
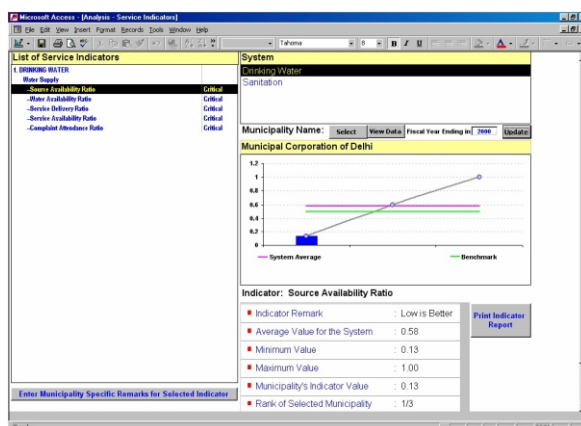
Performance Measurement and Evaluation System will help the planners and managers tell the level of service delivery in terms of its efficiency, quality and effectiveness in comparison to other similar systems through a software based analytical system for Trend Analysis and Service Delivery comparison

Performance Measurement and Evaluation System uses a set of performance measuring indicators (PMIs) to analyze various aspects of service delivery at various levels. PMIs are defined as a measuring scale derived from various parameters, which provide information about the state of a phenomenon relating to managerial, technical, environmental, financial and social aspects of service delivery.

Potential benefits of Performance Measurement and Evaluation System are:

▸ design an effective framework for relating inputs to outputs,
▸ identify critical areas for efficient resource allocation,
▸ identification of strengths and weaknesses in critical areas of service delivery, and
▸ Prioritization of goals and objectives

The key features of Performance Measurement and Evaluation System are:

▸ delivers computerized performance measurement systems,
▸ generates concise and clear environmental performance reports,
▸ improves profitability by highlighting financial performance,
▸ measures and benchmarks service delivery, and
▸ Supports social and environmental management decision analysis.

Performance Measurement and Evaluation System helps organizations maximize management efficiency benchmarking, compliance management and strategic disclosure.

Various analytic features of Performance Measurement and Evaluation System are:
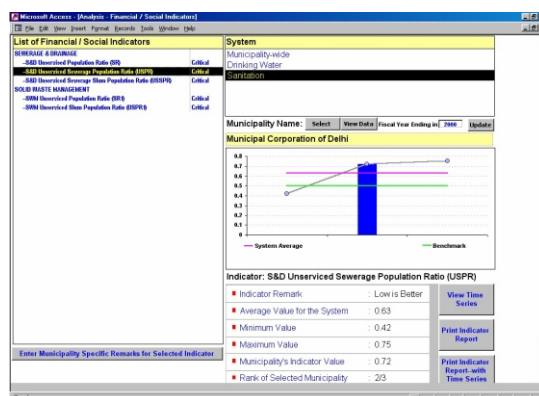
- supports management decision analysis,
- can improve organizational profitability by improving performance,
- delivers computerized performance measurement systems
- measures and benchmarks organizational performance on pre-selected key parameters
- produces computerized reporting for compliance assurance and internal management
- generates concise and clear project performance reports

Performance Measurement and Evaluation System provides decision makers with strategies for making cost effective performance improvements and benchmarking.

Performance Measurement and Evaluation System provides decision makers with a strategic planning tool for making cost effective improvements and benchmarking service delivery against best performers in the arena. When a tehsil monitors performance and evaluates a system, it tends to study the processes and process improvement techniques of a second tehsil. The basic objective of the tehsil is to improve the efficiency of the existing service delivery and introduce new cost effective measures and processes.
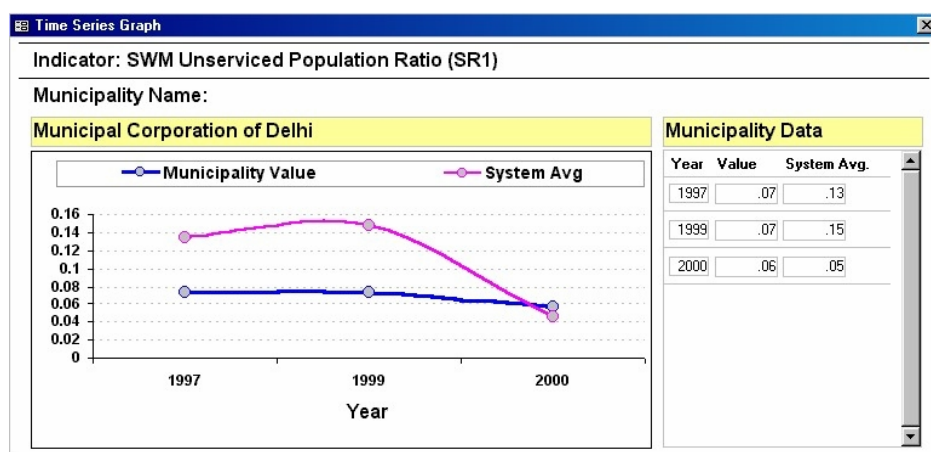
Performance Measurement and Evaluation System can help strengthen tehsil's model code of service delivery through analysis of PMIs in four basic stages necessary for the design and implementation of the performance monitoring and evaluation activity in any Tehsil.

Each stage is crucial in the decision-making cycle as depicted. It requires commitment of the top management at all points to match resource availability with fiscal resources, adaptation and improvement with efficiency and accountability.

Performance Measurement and Evaluation System is a versatile package that helps in conducting an indepth analysis and offers to compare tehsils based on various performance level parameters as well as offers a unique feature - capability to perform a time series analysis of data.

Performance Measurement and Evaluation System has been comprehensively designed and developed in-house and is flexible in design. Performance Measurement and Evaluation System has been made in MS-Access 2000 for both its front-end application as well as the back-end database tables using Forms, Queries and the Reports options available.

USER MANUAL

1.0 Introduction

Performance Monitoring System (PMS) - A Performance Measurement and Evaluation System is designed as a tool for measuring the performance of Tehsil's performance in its various areas of Service delivery and operations. A well-designed PMS can support the existing Management Information System (MIS) to help improve efficiency and effectiveness of management reporting at the Tehsil Level.

PMS will help the urban planners and managers tell the level of service delivery in terms of its efficiency, quality and effectiveness in comparison to other similar systems through a software based analytical system for Trend Analysis and Service delivery comparison.

PMS uses a set of Performance Measuring Indicators (PMIs) to analyze various aspects of service delivery at Tehsil Level. PMIs are defined as a measuring scale derived from various parameters, which provide information about the state of a phenomenon relating to managerial, technical, environmental, financial and social aspects of service delivery of Tehsil Level.

Potential benefits of PMS at Tehsil Level are:

- Design an effective framework for relating inputs to outputs,
- Identify critical areas for efficient resource allocation,
- Identification of strengths and weaknesses in critical areas of service delivery, and
- Prioritization of goals and objectives for Tehsil.

The key features of PMS are:

- Computerized performance measurement systems,
- Concise and clear environmental performance reports,
- Tehsil's profitability by highlighting financial performance,
- Benchmarks service delivery, and
- Social and environmental management decision analysis.

PMS helps districts maximize management efficiency benchmarking, compliance management and strategic disclosure.

Various analytic features of PMS are:

- Management decision analysis,
- Improve profitability by improving performance,
- Computerised performance measurement systems
- Benchmarks Tehsil's performance on pre-selected key parameters
- Computerised reporting for compliance assurance and internal managemen

- Concise and clear project performance reports

PMS provides decision makers with strategies for making cost effective performance improvements and benchmarking.

PMS provides decision makers with a strategic planning tool for making cost effective improvements and benchmarking service delivery against best performers in the arena. When a Tehsil monitors performance and evaluates a system, it tends to study the processes and process improvement techniques of a second Tehsil. The basic objective of the TEHSIL is to improve the efficiency of the existing service delivery and introduce new cost effective measures and processes.

PMS can help strengthen Tehsil's model code of service delivery through analysis of PMIs in four basic stages necessary for the design and implementation of the performance monitoring and evaluation activity in any Tehsil.

Each stage is crucial in the decision-making cycle as depicted. It requires commitment of the top management at all points to match resource availability with fiscal resources, adaptation and improvement with efficiency and accountability.

PMS can be fully customized as per the typical requirements of any Tehsil. PMS is a versatile package that helps in conducting an in-depth analysis and offers to compare Tehsils based on various performance level parameters.
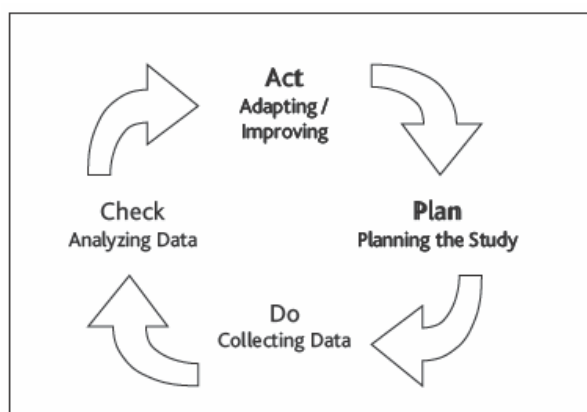
PMS has been comprehensively designed and developed in-house and is flexible in design.

PMS has been made in MS-Access 2000 for both its front-end application as well as the back-end database tables using Forms, Queries and the Reports options available.

PMS combines and analyses diverse indicators of performance and presents them in an easy-to-understand format. The benchmarking methodology is as simple as it is logical:

- Identify performance indicators,
- Establish benchmarks / targets for indicators,
- Evaluate performance relative to those benchmarks, goals, or industry averages,
- Provide guidance on how to improve performance, and
- Express results in financial terms

As requirements change and grow, new performance indicators can be added to monitoring system.

1.1 Systems Requirement

Hardware Requirement:

PMS software can be installed on a personal computer, preferably Pentium IV or above. The system should also have a Cd drive.

Software Requirement:

The system should have at least Microsoft Office 2000 with Microsoft Access 2000 installed on a 32-bit Microsoft Windows operating system that has right-to-left support. The screen area should be fixed above 1024 by 768 pixels.

1.2 Installation Procedure

The following instructions should be followed while copying the software into the system from Cd.

1. Insert the Cd into Cd drive of the personal computer.

2. If "My Computer" icon is available on the desktop, then click on it.

3. Alternatively click on the start button located on the left hand bottom corner of the desktop and go to Windows Explorer.

4. Click on Cd option to browse the content of the Cd.

5. Double click on the file name Setup PMS to install the software.

6. Check the folder (C:\HP-PMS) whether the file is copied.

7. Modify the properties of the modules from 'Read only' to 'Archive'.

8. Select the module you want to run and double click the left hand button on the mouse start the Module.

1.3 Conceptual Approach

PMS software is based on database approach. A database is a collection of information that's related to a particular subject, such as tracking Tehsil's performance data. In day-to-day Tehsil's operation, operational performance is recorded either on worksheets, ledgers or special formats prepared by the units for their specific operation. The information may be tracked from a variety of sources and there is a need to collect, collate and analyze data. In a database, the data is organized within a file where it is stored into tables. These tables can be viewed, added, and updated by using online forms. Further, the specific data can be found and retrieved by using queries; and analyze or print data in a specific layout by using reports. PMS software uses Microsoft Access to develop and analyze the database. Microsoft Access retrieves the data from

one or more tables, and displays it on the screen with the layout that you create from scratch. PMS software for Tehsils has been designed in such a way that it uses a logical sequence of steps. The formats for database are built into the software. These formats can be customized according to the services, service indicators and State- wide social and financial indicators. The performance indicators are collected, entered, analyzed and the performance reports can be printed on any printer.

1.4   Identification of Performance Indicators

The sequence of steps to identify performance indicators are given below:

Step 1: Identify Sectors
Step 2: Identify Sub Sector
Step 3: Identify Performance Indicators
Step 4: development of matrix

Step 1: Identify Sectors

Identify the sectors where the performance monitoring & benchmarking activity is to b launched.

Step 2: Identify Sub Sectors

Identify the sub - sectors based on following criteria.

This classification within a sector depends on the number of sub - sectors, ease of development and measurement of indicators. The choice of selection of sub - sectors depends on the judgment of functional in-charge conducting this exercise.

Step 3: Identify Performance Indicators

The performance indicators are identified based on matrix approach. This   matrix can be developed according to the following activity.

Activity: Identification of areas of concern under which indicators are required to be developed. These areas of concern are identified depending on the focus of the Tehsil or Sector. In applying efficiency principles to Tehsil, the major area of concern could be resource management and productivity e.g. energy use, water use, material use and productivity.

Step 4: development of Matrix

The matrix is developed using the outputs of activities 1 & 2. The major criteria for development of indicators are:

- Fixing the basis for measuring indicators e.g. consumption per unit of output.
- Frequency of measurement e.g. daily, monthly and annually.

The output from step 4 will go as input to the PMS software and finally generate a report.

1.5   Software Operation

Follow Instruction no. 7 given in the installation procedure to start the software. The following window comes on the screen.

This window has the following features.

1.   The tool bar on the top with features like File, Edit, Insert, Records, Windows, Help with click able menu

2.   The Module has 7 bulleted operating parts, each having a clickable button.

3.   The Module has buttons for "Exit" and "Refresh".

4.   By clicking on "Exit", one can exit out of the Module.

5.   Each time the data is entered the "Refresh" should be clicked to update the data.

Description of data entry buttons:

1. "Define Sector"

i)   Click on "define Sector" button to get "define Sector" form.
ii)   Write Sectors under "Sector name" tab.
iii) Write sequence number under "Sequence" tab.
iv)   Close the window.
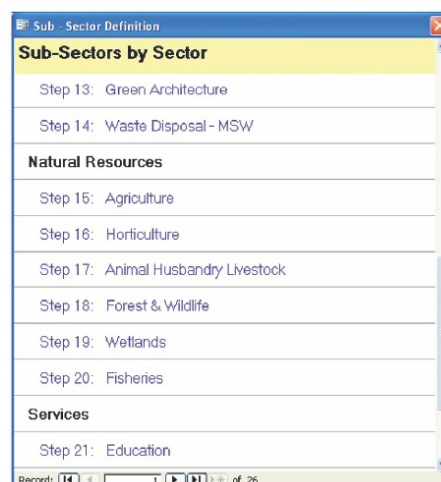
v)   Click "Refresh" to update the database.

2. **"Define Sub - Sectors"**

i)   Write the sub - sectors under "Sub Sector" tab.

ii)   Write sequence number under "Sub - Sector Sequence" tab.

iii) Click " duplicate" button to copy the record e.g. if the two systems have same services, then the new record for the second system can be created by selecting the record to be copied, bringing the cursor to the empty record and again clicking the "duplicate" button representing the first system.

iv)   Click on "View Sub Sector by Sector" button to view the completed service flow diagram in a new format as shown in the adjoining figure.

V)   Close the "Sub - Sector definition" and "define Sub - Sector" windows and press "Refresh" button to update data.

3. **"Performance Indicator"**

i)   Click on "Performance Indicator" button to get "define Service Indicator" form.

ii)   Select the "Sector" in the Sector tab.

iii) Select the "Sub Sector" under Sub - Sector tab.

iv)   Write indicator   name   under "Indicator name" tab.

v)   Select aspect / category under "Aspect / Category" tab. from the pull down menu after adding the aspect / category using the "Edit Aspect" button.

vi)   Write unit of the indicator.

vii) Select the frequency of measurement / reporting of the indicator from the pull down menu.

viii) Select the level "High / Low / Range" from the pull down menu.

ix)   Write the sequence number below the sequence tab.

x)   Check the list of indicators by clicking on the icon "View all Sub - Sector Indicators of the Selected Sector".

xi)   Close the window.

xii) Click "Refresh" to update the database.
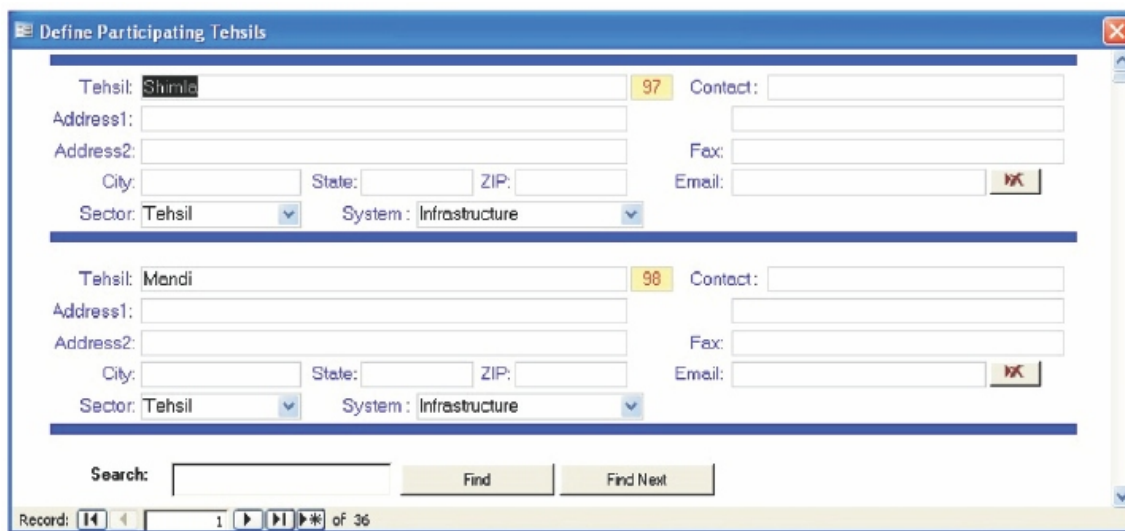
4. "Participating Tehsils"

i) Click on "Participating Tehsils" button to get "define Participating Tehsils" form.

ii) Fill each field related to name, address and contact details of the municipality. Select the system by clicking on the pull down menu for each municipality.

iii) Close the window.

iv) Click "Refresh" to update the database.

5. "Data Entry: Performance Indicator"

i) Click on "data Entry: Performance Indicator" button to get "data Input for Performance Indicator" form.

ii) Select the Sector under "Sector" tab.

iii) List of performance indicators will be display ed on the left hand side under "List of Performance Indicators" tab.

iv) Select the Tehsil name from the list of Tehsils under "Select Tehsil" button.

v) Select the indicator under each Sub - Sector under "List of Performance Indicators" tab.

vi) On the form for each Tehsil, complete the fields under year & value.

Vii) Close the window.

viii) Click "Refresh" to update the database.

6. "Enter Targets / Compliance Limits"

It is an option available in the software, where the users could establish their own targets and goals for performance measurement.

7. "Analysis: Performance Indicators"

i) Click on "Analysis: Performance Indicator" button to get "Analysis: Performance Indicator" form.

ii) Select the Sector under "Sector" tab.

iii) List of performance indicators will be displayed on the left hand side under "List of Performance Indicators" record.

iv) Select the Tehsil name from the list of Tehsils under "Select Tehsil" button.

v) Select the performance indicator under service under "List of Performance Indicators" tab.

vi) On the form for each Tehsil, a graph, showing the performance of the Tehsil selected for a particular period (fiscal year ending) will appear.

vii) Below the graph, under the indicator tab, the indicator name, indicator remark, maximum, minimum and average value of the indicator along with the selected Tehsil's value and rank will appear.

viii) By clicking on "Print Indicator Report" button, "Report for Tehsil's Performance Indicator" report will appear.
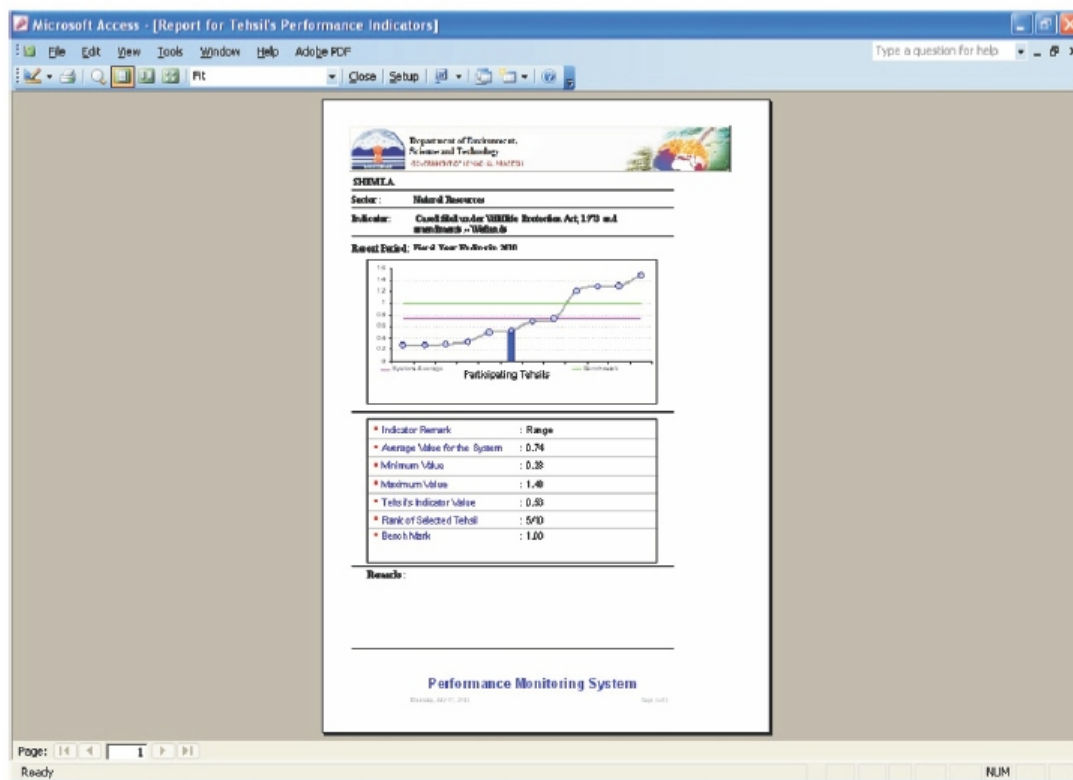
8. The report for each Tehsil can be printed in the above format.

9. Close window.

Prepared By

IRG Systems South Asia Pvt. Ltd.

For

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