



Health Management Information System Augmentation for Ministry of Health and Family Welfare

*The Ministry of Health and Family Welfare (MoHFW) has in place an elaborate Monitoring and Evaluation system, namely the **Health Management Information System (HMIS)** to monitor and evaluate the impact of its health programmes and provide key inputs to policy formulation and interventions.*

CLIENT: Ministry of Health and Family Welfare

LOCATION: India

CLIENT DESCRIPTION:

The Ministry of Health and Family Welfare (MoHFW) is the apex governmental body responsible for implementation of national health programmes running in India in the areas of family welfare, public health, prevention and control of major communicable diseases and promotion of traditional and indigenous systems of medicines.

CHALLENGES

The Government of India launched the National Rural Health Mission (NRHM) with an aim of achieving the targets set by the Millennium Development Goals (MDG) and making the Health Delivery System more responsive to the health care needs of the people of India. The NRHM aims to undertake architectural correction of the health system to enable it to effectively handle increased expenditure allocations and promote policies that strengthen Public Health Management and Health Service delivery in the country. In light of the fact that the Mission is ambitious with very tight targets, the MoHFW wants to implement an elaborate Monitoring and Evaluation system, namely the Health Management Information System (HMIS) to monitor and evaluate the impact of its health programmes and provide key inputs to policy formulation and interventions.

For planning of resources and for evaluation, one of the most important things is that one needs to know where the health centers are located and how they are performing in spatial context, means the region where certain hierarchies of health center are doing well while at other regions it is not doing so well. The spatial analysis will give us a reason for non-performance, which can be infrastructural, socio-economic, governance etc.

SCOPE

Augmentation of HMIS Reporting & Analytics Capabilities

- Upgrade the existing analytical package from SAS 9.1 to 9.2
- Procure the appropriate licenses and carryout the migration for upgrading the existing Business Intelligence Server (Reporting) capabilities
- Procure the appropriate licenses and carryout the migration for upgrading the existing Analytics Server capabilities.
- Procure, install and commission thick clients (Visual Data Discovery) at offices in Delhi and States/UTs for enabling the use of analytics capability.

HMIS Portal Augmentation

Procure and deliver various tools/cots/off-the-shelf solutions/products in order to augment the existing HMIS portal with features such as messaging, bulletin board, search engine, content management, dashboards, and personalization.

HMIS Portal GIS Enablement

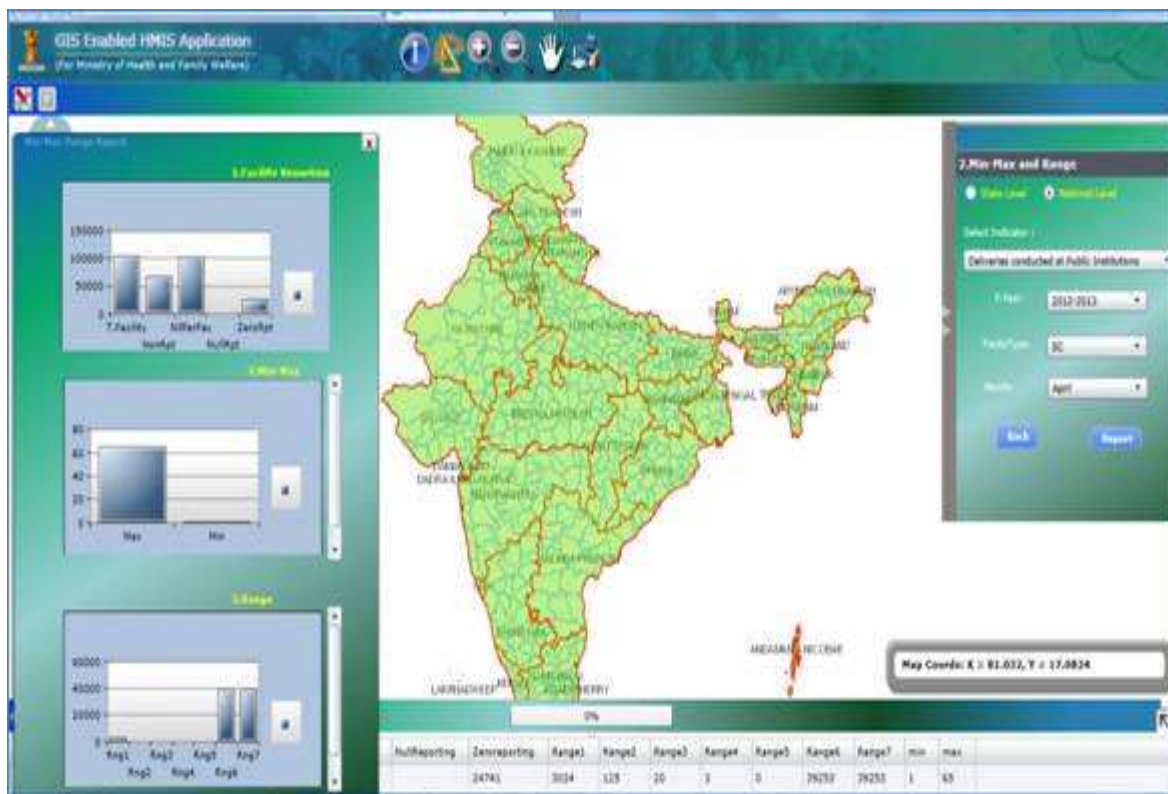
Vayam has procured and installed the ArcGIS server 10.1 and 3 GIS desktop licenses and integrating it with the HMIS & MCTS application data hosted at NIC Data Center at New Delhi. The application has the following capabilities.

- It integrates the spatial data from GIS system.
- The existing OLAP Cubes of HMIS and MCTS (Mother & Child Tracking System) data is integrated with the spatial data of the GIS. The exploration of the same are made

available on the Web OLAP Viewer and Dashboard which are already configured as part of the existing Monitoring and Evaluation system (i.e. HMIS).

- The maps from NIC is being used using a pull and publish mechanism wherein the maps from the NIC server are pulled and published on the HMIS interface with data fetched from HMIS and MCTS.
- The interface is Web-based zero-download client that delivers OLAP query and reporting.
- It is being seamlessly integrated with the existing EBI Server.
- The integration associates cube structures with map layers.

1) National Level dashboard for specific health indicator



Support for On-going Additional Requirements

Vayam will implement and rollout out any additional requirements specified by MoHFW during the Phase 2 of the project, i.e., during the on-going support phase. These additional requirements may be for the services required for HMIS augmentation or any other application/IT initiative of the ministry. This may include changes, additions in the existing application or development of a new service, application.

TECHNOLOGY

- SAS
- MS SharePoint

- ArcGIS Server 10.1
- Frontend: Microsoft.NET Framework 3.5
- Database: MS SQL Server 2008

BENEFITS TO THE CLIENT

The HMIS Portal has a Web based Data Entry Application which integrates Data Consolidation from various sources. It has Data Warehouse functionalities, Data Analysis, Intelligence and Reporting and Performance Management.

Geo - Spatial Analysis

- The Health Centre facilities will be geocoded with the Help of GIS Technology.
- It can select and identify region
- It Filter by value, Filter by region
- It Creates calculated measures

GIS Web Application Functionality

- Pan and zoom
- Drill-up/Drill-down
- Expand/Collapse
- Bookmark—save and return
- Query & Search
- Edit over Web Functionality
- Synchronized OLAP and GIS map data exploration

Replication:

- The solution is replicable for any of the state Health Monitoring and Evaluation project. The parameters can be changed and analysed.
- The same can be replicated for monitoring education facilities and other infrastructure facilities like potable water supply, whereby GIS and BI integration can give an overview of the individual performance and pattern of performance.