

Chapter 26

SAARC DISASTER KNOWLEDGE NETWORK

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I) OVERVIEW

A logical extension of the efforts and knowhow gained in making the SADKN portal is to design and build portals for meeting the Disaster management Information and education needs at the SAARC national and regional level. SAARC Disaster Management Center (SDMC), on behalf of SAARC is building the South Asian Disaster Knowledge Network (SADKN) Public awareness Portal in their location at New Delhi. SADKN project is development of state-of-the-art web-based interface to organize information, knowledge and experience on Disaster Management. SDMC Web Portal will be fully integrated enterprise wide infrastructure solution that provides unified command and infrastructure services for critical emergency management organisations that are dispersed across a heterogeneous local, county, regional and state government environment.

SAARC Disaster Knowledge Network Application is based on the best of breed of technology and helps in –

- Create knowledge and awareness about real-time disasters to people of SAARC countries
- Create a network of government, research/ academic institutions, non-government organizations, in SAARC Asia on disaster management
- Provide immediate access to documented and published information contributed by the networking organizations in the field of disaster management
- Provide an organized collaborative Knowledge base (K-base) to organize and locate information easily
- Establish an environment, which will encourage people of SAARC to create, learn, organize, share and reuse knowledge

The major features of such an initiative are listed below:

- It acts as a network of government, research/ academic institutions, nongovernment organizations on disaster management providing immediate

access to documented and published information contributed by the networking organizations in the field of disaster management.

- It acts as an organized collaborative Knowledge base (K-base) to organize and locate information easily and establish an environment, which will encourage people to create, learn, organize, share and reuse knowledge.
- The Portal will provide details on various types of disasters like Earthquake, Cyclones, Flood, Landslides, Drought etc. as well as information and details on International organizations, government organizations, educational institutes, training institutes, corporate organizations and various communities that deals on disaster related matters.
- Its other features will include Weather updates, Maps, Blogs, Discussion Forums, Video and Photo Gallery, Sitemaps, documents and reports on disaster management legislations, policies, plans etc. It will also contain the links to other disaster related websites containing data on disasters that have occurred in the country region or across the globe.
- The Portal will provide real time weather updates at different locations of a Country.
- The Portal will provide Community forum for discussion in between different communities to exchange information on disaster management.
- The Portal will act as an alert and warning system for any disaster in the country.
- The portal will contain every available resource of the disaster management which can be accessed by using the 'site search' which will be available in each of the page of the portal. The resources will be put in the archival, from where the data and information can be retrieved.
- The portal will contain both static as well as real time information on emergency disaster management. The later can be made available by routing to other sites which provides real time information.
- Publishing workflow will ensure that content is properly reviewed and approved prior to publishing by using a multi-step and role-based workflow
- Content scheduling will ensure that content is always published on time and is never out of date by automating its publishing and archiving schedule.

2. Efficiency improvement

Prior to the establishment of this application, SDMC is having the following pain points:

- One stop source of information on disaster management in SAARC
- Network of government, research/ academic institutions, non-government organizations, in SAARC Asia on disaster management

- Immediate access to documented and published information contributed by the networking organizations in the field of disaster management
- Organized collaborative Knowledge base (K-base) to organize and locate information easily
- Environment to allow people to create, learn, organize, share and reuse knowledge across SAARC countries - Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka.
- User can not able to visualize and analyse the disaster information and passing alerts to the public, which will be helpful to control the disaster damage for planning and preventing measures.

II) RESULT INDICATORS

1. Key Performance

a. Stakeholder services and benefits achieved through ICT interventions

Key Stake Holder is the SAARC Disaster Management Centre. The SAARC Disaster Knowledge Network Application set up at NIC hosts the solution. This solution built indigenously has helped in hosting the collected disaster related information from Research, Education and Scientific communities apart from serving as a repository of all real-time disaster data, disaster management plans, policies, research documents etc.,. With this new public awareness application, SDMC has achieved recognition in the disaster management services organizations and is now helping other organisations to establish public awareness portals.

b. % of services covered as ICT interventions

- 99% to 99.8% percentage of requests to be responded within 5 to 15 seconds
- Elapsed time from issuance to receipt of an identified earthquake is less than 3 Minutes
- 24x7x365 fully automated Watch office(power, computers, communications, 24/7 operations) with trained staff monitoring the center
- The database design is flexible enough to allow for both vertical and lateral growth

The implementation has been successful and has been appreciated by national and international disaster forums. This project of SAARC nation's importance helps knowledge sharing and awareness, mitigate damage to life and property by any disaster in all SAARC country citizens. The solution is envisaged to cover all of the population of the SAARC country and in the current implementation has capabilities to capture real-time disaster data from various source organisations (i.e., USGS,

Meteorological Departments etc.,) to process and visualize the data on SAARC Maps. These visualizations are most helpful to the citizens to know about disaster when and where occurred. The system also can show disaster dashboard where all the latest disasters are shown on the SAARC country map. This will help to locate a disaster area and finding the shortest distance to the disaster location for to mobilize volunteers and to know about nearest Shelter, Hospital details. This will help the concerned government, non-government bodies to take up evacuations in time to avoid damage to life and property. Proper mechanisms of Decision Support Systems have been established for disseminations.

2. Efficiency improvement

It is a difficult process to identify people from regional scientific and research organisation bodies and create a forum to discuss about current disaster issues. Creating awareness about various disasters among citizens of regions is a time taking and costlier task. Regional bodies are not able to reach all the citizens of their region. User can not able to visualize and analyse the disaster information and passing alerts to the public, which will be helpful to control the disaster damage for planning and preventing measures.

After establishing the new system, all the stated SDMC problems are addressed. User can be able to visualize the disaster affected areas, act accordingly and it will help in implementing the disaster plans. These visualizations are most helpful to the citizens to know about disaster when and where occurred. Citizens will get to know information about different types of disasters and disaster management procedures, plans.

III) ENABLER INDICATORS

The SAARC countries are one of the most vulnerable regions to natural disasters, experiencing a wide variety of natural hazards, including flood, cyclone, earthquake, drought, storm surges, tsunamis etc. Climate change and rapid urban growth are likely to increase the vulnerability of the region. Home to 641 million people living below poverty line, South Asia shares a disproportionate burden of the global loss of life from disaster. More than 70 percent of the casualties from major disasters in the world since the year 200 have occurred in this region and the majority of the top ten most affected countries worldwide, in terms of the number of victims are from this region.

SAARC Disaster Management Centre (SDMC) was set up in October 2007 at the premises of National Institute of Disaster Management in New Delhi. The Centre has

the mandate to serve eight Member Countries of South Asia Association of Regional Cooperation (SAARC) - Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka - by providing policy advice and facilitating capacity building services including strategic learning, research, training, system development and exchange of information for effective disaster risk reduction and management in South Asia. The centre has the vision to be recognized as a vibrant Center of Excellence for knowledge, research and capacity building on disaster management in South Asia and in the rest of world.



1. Processes

With an objective of Disaster Risk Reduction and Management SAARC Disaster Management Centre (SDMC) has taken an initiative of creating a network known as SAARC Disaster Knowledge Network (SADKN). The SADKN web-based interface would provide an opportunity to the people of SAARC countries to have an exposure to latest Information and Communication Technology for Disaster Risk Reduction and Management activities and initiatives. SADKN aims at establishing an environment, which will encourage people of South Asia to create, learn, organize, share, and reuse knowledge.

SDMC Portal is a fully integrated enterprise wide infrastructure solution that provides unified command and infrastructure services for critical emergency management agencies that are dispersed across a heterogeneous local, county, regional and state government environment. Portal infrastructure enables the seamless interoperability

required to support the full range of emergency services required to support local, county, regional, state and national level operations. SDMC Portal allows for real time sharing of information within and across jurisdictional boundaries and between the emergency operations centers to the field. It offers an innovative approach to connecting disparate responding agencies under a unified command infrastructure without being intrusive to an organization's existing technologies.

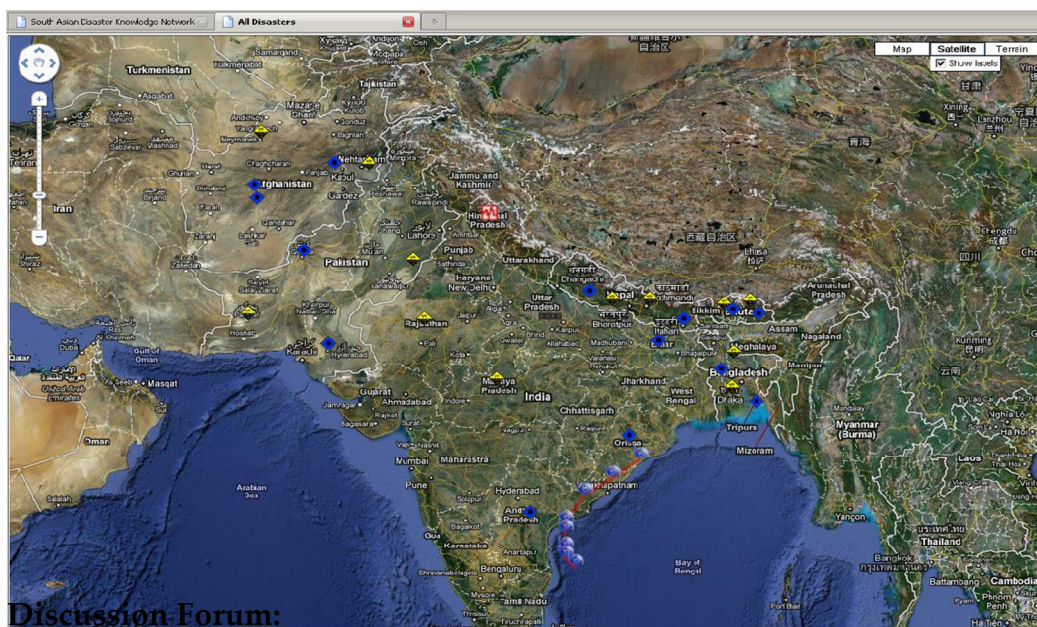
With the objective defined, SADKN portal's some of the highlight features are:

Disaster Knowledge and Preparedness:

- Information related to all the possible disaster has been given with proper definition, related web-links, published resources, images and videos.
- The content has been prepared in such a way that it provides the possible knowledge about the particular disaster preparedness.

Real-time Disaster Data:

- Real time disaster data for disasters like cyclone, earthquake, flood and drought, available from the different sources has been put on the SADKN portal to provide a map based understanding of the disaster prone area and further preparedness form the same.
- Disaster dashboard contains all the disaster related data, happens over past time at one screen.



- A controlled Discussion forum to manage the discussion efficiently has been successfully implemented.

- It allows registered users to participate in ongoing disaster related discussion hosted by disaster domain experts from SAARC countries.
- Discussion forum covers all the possible categories of disasters. So any user can easily navigate to the desired category discussion like flood, cyclone, tsunami etc.
- Registration facility has been provided for each discussion forum to maintain the seriousness of the ongoing discussion.

Chat & Blog:

- To increase the interaction between the disaster domain experts and Users of SADKN portal, Chat and Blog facility has been provided.
- Chat includes category wise separate rooms for disaster related discussion online.

Weather Updates:

- Weather information for all the SAARC countries has been made available on a single point where user can easily find the weather information of the specific SAARC country to City level.
- The Link to meteorological departments of all SAARC countries has been given on the same page.

FAQ's:

- A category based disaster related FAQ has been made available to the users to cover extensive amount of common question to provide instant reply to the more frequent questions.
- New FAQ's can be added through feedback section.

Map Centre:

- **Find a Location:** This is a special search tool that provides information about particular search location for which user is interested in.
- **Distance Calculator:** This feature allows the user to find the distance between two locations and directions between them.
- **Disasters History:** It provides Disasters history for Flood, Drought, Earth Quake, Cyclone Track and Cyclone warnings based on the country, type of disaster and time period. This portal can allow user to view the map preview for selected disaster.

Country Pages:

- SADKN portal has been designed in such way so that it covers the SAARC regional based information and National information of SAARC countries as well.

- SADKN portal provides 8 separate SAARC country pages that contain information to SARRC countries disaster statistics more specifically.
- The pages contains information about the country, their disaster profiles, hazards profile, disaster management frameworks, institutions, act/policies/plans, their partner organizations, scientific and professional organizations, Training institutions etc

Smart Search:

- It provides three types of search to users, :
 - **1) Site Search:** which extensively search the SADKN web portal for any keyword entered
 - **2) South Asian search : Disaster Network Search:** which extensively search all the disaster related URL's motioned in South Asian Disaster Network. These URL's can be maintained by the SADKN Admin. Admin can add or delete any URL.
 - **3) Google Search:** This provides users a facility to search any keywords over internet using Google search engine.

Kids Section:

- A very interesting KIDS corner has been designed with the help domain specialist to provide disaster related information in an interactive and interesting way.
- This section emphasizes on providing Knowledge to kids in Disaster awareness, Preparedness, Knowledge sharing and Safety tips in a very friendly way.

2. People and Resources

a. Project management & Monitoring – Full time team in place

A full time dedicated team of experienced professional (technical and disaster expert) has been working at SDMC office from the TCS (Application developer) and SDMC side.

b. Achievements of training of internal & external members on the new system

This section outlines SDMC approach to providing timely training to ensure that all the end-users in Main Location have the knowledge and capabilities necessary to effectively use the new systems and processes.

Training is conducted in the following form:

- End-user training
- System administration training

- Network and database administration training
- The audience for the training will be SDMC users in different divisions.
- SDMC Application and End-User Training:
- The audience for this training programme will be the end-users of the system. Groups will be formed by selecting few users from each division depending upon the size of the division. This group will be imparted training on SADKN application usage and after getting trained, these users will train other users in their respective divisions.

Application Administration Training:

The audience for this training will be SDMC technical resources. They will be imparted training on overall administration of the SDMC application. After getting trained, this group of technical resources from SDMC will be able to perform the services defined in application administration tasks of the SDMC application.

c. Change management strategy defined and implemented

Since managing portal like SADKN is not one time job, one need to build this over a period of time and continuously look in to the aspects of improving the same. SDMC is also in the same manner keep looking for new areas of improvement of SADKN portal. Some of them are mentioned below.

The current status is extended to build a Thematic based **Knowledge Network**, that will be network of all the theme based disaster areas like earthquake network, cyclone network etc. This network will connect all such disaster related network.

Connect to other able sources that are working in the area of disaster management.

d. Leadership support (Political, Bureaucratic) and its visibility

The project has been lead by Shri. P. G. Dhar Chakrabarti, IAS (1980 batch), Director-SDMC, Executive Director-National Institute of Disaster Management (NIDM) New Delhi with a support very experienced team of professionals at SDMC.

e. Financial Model (Funding pattern, Business model PPP etc) defined and implemented

The funding for the project has been done from UNISDR. As per the project progress the funding has been in proper flow.

The SADKN portal has been assigned to the TATA Consultancy Services Ltd. (TCS), one of the leading IT firm all across the globe. The designed technical solution from TCS will then be hosted in the NICSI, New Delhi environment.

Technology

Technology plays a very important role in successful implementation of any projects like SADKN and at the same SDMC has chosen the best available technological tools and methodology to attain the same.

f. Disaster Recovery & business continuity plan defined & implemented

The process of disaster recovery, as the name suggests, is to restore normal functioning of business, partially or fully, following a disaster thus ensuring continuity of business. The method adopted for recovery would depend upon the nature of the disaster itself, the resources available for this purpose, and their readiness-for-use for recovery.

SADKN portal will be available to public 24x7 bases. So in order to maintain the same SDMC has hosted the application at NICSI, New Delhi premises. NICSI has been a trusted agency to host the datacenter for different government and in the same way SADKN portal will also be done. The application at NIC SI environment will be hosted will proper Backup and Disaster recovery Plan. The standard rules and methodologies at NICSI will be applied to SADKN portal. Meanwhile a local server hosting the SADKN will be available at SDMC premises for service backup.

g. Technological solution cost effective and maintenance over time

TCS has been chosen by the standard selection procedure of SDMC to develop SADKN application. The SADKN application has been developed with the help of Microsoft's .Net technology. Many open source technological tools has been used in the development of SADKN application which makes it more cost effective. For generating the maps Geoserver and Google Map has been used, and both are available free of cost over web for non-commercial usage.

h. Routine Maintenance Work

The following Routine Maintenance Work will be done:

- Database Maintenance
- Clearance of Applications Logs
- Application Performance Tuning
- Operating System Tuning
- Security Monitoring

i. Security and confidentiality standards defined and implemented

SADKN emphasizes on providing knowledge related to disasters to the people, so it is a matter of great responsibility to check the authenticity and correctness of the Information contained in the portal. The information contained in SADKN portal needs to proper in a way not to create any kind of legal dispute. Since SADKN portal is a fully non-commercial public awareness portal, all the information related to Disaster is fully available to the people. At the same time to maintain the authenticity of the information available a complete security structure is designed and implemented in the SADKN portal. Three types of Administrator are defined in SADKN portal to upload any content. Admin will not only take care of correctness of document or resource but at the same time check the authentic source also to avoid any kind of legal and copyright issues.

The three Admin structure is as follows:

- **SADKN power Admin**

This is the main central Administrator for the SADKN portal who takes care of all the activities happening on the portal. SADKN admin will grant permission to any user who wants to register for Discussion Forum and also approves the documents that has been uploaded by the other potential Admin.

- **SADKN National Focal Point Admin (NFP)**

SADKN NFP Admin is the one who is the Focal point appointed by the respective SAARC Countries for document upload and provide the country specific data to SADKN portal. The uploaded information will go SADKN power Admin for approval, once SADKN power Admin approves the request the same information will be reflected on SADKN portal

- **SADKN Potential Partner Admin**

SADKN Potential partner Admin has the same rights as NFP Admin.

To maintain the security of the SADKN portal from virus, mal wares and other threats NIC SI has provided a very strong security structure by installing the most updated and strong antivirus system and firewall security. The available security system will be updated time to time and experts will check the system security to avoid hacking and other threats.

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