

Chapter 29

*Gujarat Pollution Control Board (GPCB), Gujarat State ***

Hardik Shah & Harish M. Advani

I) OVERVIEW

Pollution Control Boards (PCB) have been set up in all the states, with a purpose to curtail pollution of Air, Water and Hazardous Waste, Bio-medical waste generated by the Industries & Hospitals. It is mandatory for each Industry to acquire a No-Objection certificate (NOC/CtE – Consent to Establish) and then a Consolidated Consent for Air, Water & hazardous Acts prior to production of finished products. Similarly Hospitals & Clinics need a PCB Authorization order for storage/treatment/disposal/transportation of Bio-medical waste generated in day to day routines. All the permissions/Order do have a VALIDITY date attached with it.

Organizational structure of the GPCB starts with Regional offices (R.O) and PCB-Laboratories at the Districts HQs, the Head Office (H.O) at Gandhinagar. Bio-medical waste (BMW), Water Cess (W.C), Hazardous, Central Laboratory & Municipal Solid waste (MSW) Branches. The Regional office is equipped with Technical & Scientific Staff. Regional Officer heads the R.O. there are Dpty/Asst. Env. Engineers alongwith Scientific Officers, Scientific Assts & Analyst for Labs.

The DEE/AEE & R.O conducts timely & periodical Monitorings of the Industries. They draw A/W/H samples from waste water, Chimneys/stacks, hazd waste and deposit with the labs for necessary testing of sensitive & parameters to determine the permissibility of Air, water & Hazd waste pollution. The laboratories staff tests applicable parameters of the samples drawn after maintaining the secrecy between the Monitoring teams, barcoding & Analyst of the samples.

If any stake holder industries/Hospitals are found violating the permissible Norms of the Pollution Control boards, legal actions are initiated by the Unit-Heads (UNH) in form of a Show Cause Notice, Notice for Directions & Closure Orders. Bank guarantees are usually obtained from industries allowing a Trial revocation of the Closure for a period of 1 month. Then

** Winner of CSI e-Gov Awards, 2009-2010

follows a series of formalities with the Electricity & Water supply Corporations.

Industries are supposed to pay for the testing of their samples in form of LABORATORY Charges and WATER CESS for water consumption for industrial & Domestic purpose. Water Source is usually the Local bodies nagarpalikas, River Water, Borewells etc. Industries may use Mega pipelines for disposal of waste water generation. The Sample Results constitutes a significant decision making tool towards GRANTING a NOC or a CONSENT for a valid period.

It is during Inspections of Industries/Hospitals that Air Pollution Control measures , effluent treatment plants capacity & disposal of hazardous wastes & Bio-medical waste are minutely looked into towards a recommendation of necessary Orders/permissions/authorizations.

Hence , like any other government department, Files consisting of applications filed by stake holders, notings by the monitoring teams, recommendation by Regional officer are routed to the head office for the H.O branches comments and then to the Unit Head onwards to Member Secretary & finally to Chairman of the Boards. Similarly sample results are attached to each inspection by the respectice 9 laboratories in various districts. Inspections may arise from General complaints, H.O reference, M.P/MLA complaint, CPCB Monitoring schedule, after SCN, Closure Directions, On Application, Routine, Vigilance branch etc.

Pollution Control Boards are related to the Industry department , (CPCB)-Central Pollution Control Boards, New Delhi, (MoEF)-Ministry of Env. Forests in day to day routines. Other stake holders are the TSDF-Hazd waste handlers, CETP-Common Effluent Treatment Plants, CBWTF-BMW waste handlers where several/bulk industries are registered with for transporation, treatment, disposal and incineration of wastes.

Granting & Rejections of various permissions are done by different roles of Regional Officer, BMW head, Water Cess head, Unit heads, Member Secretary & Chairman of the Board depending upon the Pollution potential of Industries ranging from RED to ORANGE to GREEN & project cost

Other Objectives :

- **Identical interpretation** of the Pollution Act by all stake holders be it Industries or Dept.
- **Transparent & Speedy e-File Movement** from Field Offices to Head Office leading to consent/authorizations decisions with 45 days
- Maintaining of previous **Visits / Samples history** for reviews & decisions.

- **Increase Industry & hospitals-Base for effective** environment compliance.
- Maintaining comparative statements for **Industry Stacks/Waste water samples** Ground, Surface Water/Ambient Air CPCB Sampling Points projects **GEMS, MINAR, AAQM** etc over a period of time enabling effective enforcement of pollution control measures
- **Timely alerts** for Renewals/Expiry of CCAs & Payment Dues & returns to industries and effective watch-dog points for the field officers while inspecting stake holders.
- Effective monitoring of Waste-Water , **Hazardous, Bio-medical waste** generation, its treatment and eventual disposal.
- Reducing time-gap between raising of queries & their replies & a effective **Online interaction** between PCB staff, industries through e-TALK, SMS, e-messaging
- **Enforce Isolation** of sample collections by monitoring teams : from Inwarding at Labs to Parameter Testing and Result reflections to top level mangmnt & industries.

II) RESULT INDICATORS

1. Key Performance

- Services (G2C, G2B, G2G and G2E) delivered using ICT ; impact in terms of time and cost of delivery of services*

The G2B Service : Business

As the enclosed (feedback Annexure) from stake holders suggest, Industries & Hospitals are the happiest lots , with **significant reduction in their visits** to Field Offices or H.O. Other services :

- **Online Application** for NOC,Consents & Authorizations for Industries & Hospitals right from their factory premises.
- Uploading the physical file in form of **PDFs files** for 34 type of documents from their Logins
- **Scrutiny** of the applications (Querying & Online replies by stake holders) **PRIOR to submission** of Fees.
- E-Communication betn Dept & stake holders towards faster compliances of queries at any stage of processing thru **e-Talking, e-Messaging & SMS.**
- **Speedier conveyance of Decisions** to end-users & change in delivery mode mechanism to beneficiary. i.e e-Outwarding of final ORDERS & NOTICES.

- Printing of relevant documents like **Bills, Payments Receipts, Assesment Orders, Notices** by the concerned Industries, Hospitals/Clinics & Operators.
- **Technology Know How Transfer** amongst the Industries, themselves.
- Submission of **online Periodical Returns** to the board by Industries & Hospitals/Clinics.
- Mode of Collection of Fees & other Charges from industries **is thru XGN**
- Industries can **view the Result** if their samples drawn, instantaneously.
- **Status** of their Online application & **Pending** functionalities are made **transparent** to the stake holders (except staff notings)
- **SMS** are send to stake holders on **18** occassions of transactions with their e-files & requests
- **Significantly**, XGN handles many functionalities betn **Waste Handlers and their registered customers** as far as Regn-Validities, Transporation, disposal of waste is concerned.

The G2C Service : Citizen

- In case of Natural disasters **Bulk SMS** to a group of end users e.g Megapipeline Overflowing
- Sector / **Product wise List** of Industries
- Monitoring of Public Complaints, SMS to the citizen on the **action taken** against Ind/Hospital
- **Speciality Hospitals** for various type of input conditions in a particular area

The G2G service : Other Govt. dept.

- The **PHCs/CHCs, Govt. Hospitals** are a significant beneficiary of the BMW Module
- The **183 Local Bodies** are the core of the MSW Module as far as monitoring of Municipal Solid Waste is concerned.
- The Inventory of Hazardous Waste generated by Industries & its eventual Treatment/Disposal by the TSDFs forms an important data flow to the **CPCB, MoEF**
- Products/Raw Material/Consent of Authorizations & Validity forms an important base for decisions by the **Industries Department** of Government of Gujarat
- Analysis & Compilation of well-structured data leads to instant MIS related reports for Departmental Studies, **LAQs and RTI also**. Information **NOT called for** from **field Offices** now !!!

b. Implementation coverage till date and during the year (geographical areas covered under pilot, roll-out, future plans)

XGN is a web based application, hosted in NIC Gujarat Server with delivery centres spread all over the state. It has been implemented in all the 18 regional offices of the board an Head office in Gandhinagar. This year it stands rolled-out & implemented in 3 other states viz : Goa, Himachal Pradesh & Uttaranchal covering about 15 other field offices there. Requests from 4 more states have already come in.:

Stake Holders of XGN-Gujarat are the 300 Technical & 150 Scientific staff of the Department, the Top Level Management viz ; Unit Heads, Hazd branch, Legal Branch , central LAB Heads, Member Secretary, Chairman & their Technical assistants. Other stake holders are some 18000+ Industries, 27000+ Hospitals/Clinis, 12 Bio medical Waste Handlers, 31 Common Effluent treatment Plants and 18 TSDFs-hazardous waste handlers apart from registered Re-cyclers. There are around 1900 DAILY USERS in Gujarat & approx 525 in other 3 states.

Road map ahead is the Mobile Computing by waste handlers, Entry of Inspection – Checklist by the Monitoring Teams in the field itself thru PDAs/iPADs, Granting NOC by end users to themselves etc.

2. Government Efficiency improvement initiatives

a. Time and cost efficiency improvements in the working & delivery of services

XGN helps in effective & efficient Management of various functionalities of the Board, which includes

- Timely Acceptance & Disposal of Industries' & Hospitals' Applications
- Monitoring & Sampling of various Industries as per the designated frequency specified by CPCB & MoEF, New Delhi
- Pre-Planning of Work on weekly & Monthly basis by the Regional officer.
- Immediate access to the Efficiency/Pendency of Individual employees.
- **Alerts to the next stage** , wherever urgent action is required
- Every level coercing / cascading the next level to dispose off
- Effective prioritization of in-coming visits, influence of human factor has been reduced

Critical Indicators – Alerts to Dept for effective & **TIMELY follow-Ups** Industries due for Monitoring – District, SIDC wise.

- Applications in pipeline (workload coming month)

- Would be operating without Consents in coming 3 months.
- Watch Dog points for the next Inspections Visit to an Industry.
- TSDFs & CETPs Capacity v/s Current load of incoming waste.
- Staff & R.O. Head sitting on files since stipulated period of disposals
- Discrepancy in Sample Results drawn by staff v/s N.G.Os

	<u>before</u>	<u>after XGN</u>
Manual Appln & Post-XGN Online Applns	2,750	10,212
Disposal of Applications (Grant or Reject)	1,500	9,823
Number of Inspections per year	11,000	24,000
Number of Samples per year	12,500	28,000
Industry profile updations per month	no system	5,000
Sample Result printing per month	600	2,300
Lab Result despatched to industries	400	Cent %
Lab Charges Defaulters approx 45%,	2.3 Crores	3 % (5 lakhs)
PDF/Documents Upload Per Month	no system	2,000 (172GB)
e-returns - approximately	3000/Yr	12,000 /Yr
Water Cess eligible Industry base	1900	4100
W.C Return defaulters	35 % approx	hardly 7 %

- Important point to note here, are these BENEFITS in last 2 years, inspite of NO NEW-Recruitments and 6 NEW FIELD-Offices & 12 % reduction in staff due to retirements.
- Cases of Rejections has gone down from 37% to 5% due to auto-reflection of un-appropriate Reasons for REJECTION to top level management and recommendations by XGN itself based on technical parameters.
- Industries / Hospitals operating without Consent validity or BMW Authorizations Orders have decreased from 35% to approx 12 %.
- NIL paper correspondence between [Industries/hospitals & GPCB] and from [Field ffices to Head Office] have saved a lot on courier/postage expenses.
- Most of the Yearly/Monthly returns are online. System of e-returns have resulted in significant PAPER savings & hence CARBON Credits.
- Transport expenses have significantly reduced due to effective clubbing of Industries to-be-visited when a team goes to a particular tehsil/SIDC.
- The revenue of the department has gone from 28 Crs to 76 Crores in 1.5 years.

- XGN has aided the department in acquiring the ISO 9001 , ISO 14001 and NABL accreditation for the GPCB laboratories

Additionally, improved quality of data has lead to same figures being reflected for various questions under RTI, LAQ, GEER foundation & to parent depts in New Delhi viz : CPCB, MoEF.

b. Specific innovative ideas implemented in eGov area; and their impact on services

- **First Govt. Dept** in India where a physical file movement related to a sensitive & significant permission like Bio Medical Waste Authorization, Water-Cess Assessment order, Consent order or NOC has been completely stopped.
- Applications by Industries/Hospitals are through NET, mandatorily leading to scrutiny of the same without pre-payment of Fees.
- Online Application by Industries in form of 34 sets of information in PDFs format → flows down to field office where scrutiny takes place. e-FILE then auto flows to head office when the Inspection Report is freezed.
- 85 % of the Online Application for NOC/Consent is/authorizations is cleared "In principle" before it actually physically lands at field office.
- All Transactions (except e-Notings) , location of e-file details or even status of various Returns are preserved in e-Box for all Industries & Hospitals for their future reference & a step towards audit trail – height of transparency in a govt department !!!
- Any e-file which has exceeded the stipulated days in a work-flow is auto-reflected to the NEXT level for e-movement/processing.
- Surprise allotment of Visits to Monitoring team, ONLY when they actually enter the Industrial estate.
- NGOs have been given access to the entire data of Inspections, Samplings, Analysis Results, Legal actions & technical data also. This helps in comparison of analysis results drawn by NGOs v/s drawn by GPCB dept.

Some Typical Strategies adopted by the department :-

- First & foremost strategy was NOT-TO-WAIT for the final product to be developed i.e XGN. Instead start implementing the MODULES during their development itself alongwith some tuning going-on simultaneously.
- To automate the TABLE wise operations , so that the staff instead of working through FILES/Pens start e-actions on the computer (XGN) itself, without any duplication of efforts. No extra manpower (data operators) were recruited.

- NOT to prepare a 44,000 Industries/Hospitals data through department staff. Instead enforce a cyclic operation through which the stake holders themselves enter their MASTER DATA. Any discrepancy in this data was modified by the Monitoring team inspecting the Industry/hospital.

c. *To what extent the services are integrated with other offices/departments*

As on date , the integration with other departments is underway :

Industry Department – For New Industries & existing ones going in for expansion, signing MoU in Vibrant Gujarat Industry master details forms the base for IndextB.

GEER Foundation : Shall be using the Fuel used & Consumption from the Stack details of these 18000+ industries in XGN.

CPCB, New Delhi : One of the authorized stake holder of GPCB-XGN.

State Expert Appraisal Committee : Formailities & Granting of Env. Clearance Certificate alongwith the Public hearing & E.I.A procedurals have been given a path thru XGN.

Registration of hospitals & Clinics & BMW Module redirects data of Bio-medical waste generation to the **Commissionerate of Health**.

III) ENABLER INDICATORS

1. *Department Policy & Strategy*

a. *eGov/ICT vision roadmap for department and its current status*

A **FILE-Less** Department, has been achieved in BMW & Water Cess Branches.

- To ensure better compliance of environment laws by industries & hospitals. This has been achieved to an extent that Nos.of Industries operating without a valid NOC, Consent has reduced from 35% to approx 12%. Transparency of all operations betn stake holders & GPCB. Current status is that SMS are send to end-users at 18 instances (except Staff Notings).
- Build up system of minimum reasons for Rejections. Ratio has gone down from 37% to 5 %. Towards a PAPERLESS department >> As on date, XGN caters to approx 90 % of the day to day transactions at various branches.
- Industries granting NOC to themselves without any Application inwarding. Ground Work has been initiated.
- To bring atleast 20 states in India on a common Platform of XGN for Pollution Control measures & Implementation of the Air,Water & Hazd Waste Acts.

- To disseminate TIPs for Technology upgradation in Pollution Control measures for smaller Industries thru Technical Chat Room / Tech Transfer by very large INDs.
- b. *To what extent the common infrastructure (national, state, other department; delivery channels) is being shared*
- XGN entry point is broadband connectivity enabled plug-in node for NET users like Industries , Waste Operators & Hospitals. Staff can work from their residences.
 - The department staff use it from a GSWAN platform i.e Gujarat wide area network.
 - Application & Data hosted on Gujarat NIC server, with periodical backups and Mirroring to the Hyderabad server & Disaster Recovery affiliation with the Pune-DR centre.
 - GSWAN, Broadband connectivity, hired manpower of various states work at NIC Gujarat to maintain standardization of the Software.
 - CPCB New Delhi, Industry Dept and NGOs have been given access to XGN thru authorized LOGINs usernames & passwords.
- c. *Technology standardization policy and its implementation*
- XGN being a web-enabled application has aided in bringing about standardization of concepts & technology in all the 4 states & amongst the stake holders.
 - A standardized platform : .NET & SQL database exists in state servers.
 - Barcoding concepts are in place at all the 8 laboratories ensuring total secrecy of the sample identification.
 - The Grant/Reject approvals are through the Bio-metrics by Unit Heads and regional officers.
 - VPN access is available to all Servers so that any modifications carried out are replicated in all states instantaneously.
 - Application & database exists ONLY at the state server.
2. **Process Reengineering & Legal Reforms**
- a. *Major front end process changes planned and current status*
- Online application has replaced a manual physical application for NOC / Consent, Authorization.
 - Entire master/technical data-entry is done by End-user, which is authenticated ONLY after an inspection is carried out against that application.
 - Acceptance & Scrutiny of Online applications PRIOR to Fees-payment has lead to 85% compliance , before its physical submission(1 Copy for Legal purpose).

- Process of application & Physical Movement of Files from regional Office (RO) to Head office (HO) and within head office has been STOPPED completely since last 18 months.
- Mode of Communication between the Department (RO & HO) & Industries & vice versa. It has been fastened up by SMS, e-Talk, e-Messaging.
- Conveyance of Decisions to end-users & change in delivery mode mechanism to beneficiary. It is e-outwarding of the Legal notices / Consent Orders / Assesment orders / NOC Certificate.
- Printing of relevant documents viz : Orders , Lab Bills, Payment Receipts , Sample Results by the concerned Industries, Hospitals/Clinics & Waste handlers/Operators.
- Feedback mechanism between various stake holders.
- Technology Know How Transfer amongst the Industries, themselves.
- Submission of Online Periodical Returns to the board by Industries & Hospitals/Clinics.
- Mode of Collection of Fees & other Charges from industries.

b. Major back end process changes planned and current status

- XGN Core lies in displaying everybody's PENDANCY on the page immediately after Login screen & any malpractices is displayed on XGN desk board for all dept. staff to view it.
- Target v/s Achievements screens in XGN has resulted in virtual NIL defaulters from 18 regional offices in Monthly Review meetings.
- Monthly review Meetings are done on XGN. Reports are NOT called from field offices.
- Performance Grading of regional offices has resulted in a constructive competition amongst the R.O heads & Staff. Displayed in deparment's domain for ALL employees
- Flow of Information & data from Regional Offices & its compilation at H.O for RTI, LAQ, CPCB, State & Central Govt etc. It is thu XGN not thru emails/postal means.
- Official Documentation of Inspections, Sample Reports, Bills & Payments is done by respective branches
- Auto LAB billing at the time of sample inwarding has resulted in 60% increase in LAB revenue sans human intervention & bill-raising delays.
- Displaying of the Purpose & Results of REPEAT-TEST in LABs to all users have automatically resulted in reduction of Testing malpractices.
- Prioritization of Routine-Inspections to be carried out at field offices is done by XGN, thereby reducing human interaction & hence impartial allocation of visits.

Allowing a table in work-flow to Pull-Up of e-files from lower level, after a specified period of processing has expired has fastened up Application disposals.

3. Capacity Building

a. Leadership support & visibility and current status

GPCB ex-chairman, **Shri. C.L Meena, IAS** has played a major role in this visionary project which stands implemented as on date. The current Chairman, **Dr. K.U Mistry** is a major driving force behind the implementation of XGN. As a GPCB-Member Secretary I look into the standardization of functionalities, making a system come into place. Some ambitious, innovative Policy decisions have been taken during the implementation of XGN.

A major drive was taken up to ensure , all employees clear their CCC-basic computer examination after appropriate training programmes for them. Incentives were declared from time to time, motivating the staff members. NIC team of Mr. Mahajan & Advani (Sr. Technical Directors) have looked into the System requirements, its analysis, database designing , the development part & other Technical aspects. Workshops for Industries , Hospitals & PCB-staff were conducted by NIC.

b. Change management strategy defined and status thereof

XGN is a mega project spread over all districts, with atleast 2500 daily users. There exists atleast 25 type of different roles in use with different functionalities. This, added with Modules being released as & when developed suggests that “**CHANGES & ADD-ONS**” were inevitable part, during this journey of effective e-Governance. Brainstorming sessions with different roles of end-users have taken place from time to time. e.g LAB staff, Monitoring Team, Top level management, Scrutinizers, Regional Officers, Unit Heads @ H.O etc. The various Committee then minutizes the functionalities to be streamlined or any ADD-ONS to be incorporated thru discussions. Within a timeframe , then NIC goes ahead with the TASK.

Training sessions / Workshops have been a regular feature towards implementation of the NEW functionalities , released on a periodical basis.

Work-Flows & the sequence/cycle of I.T operations have been very well defined and fine a place on the XGN DESK-Board, Scrolling News or Sticklers to various types of users.

c. Capacity building plan and its implementation status

- A major drive was taken up to ensure , all employees clear their CCC-basic computer examination after appropriate training programmes

for them. Incentives have been declared from time to time, motivating the staff members.

- A Trainers' team has been gradually developed to sort out minor hiccups at the field offices. This team looks into teething problems & ensure that the operational procedures are standardized at all delivery centres.
- Various Committees exist, looking into the cyclic operations related to Online Applications, its Scrutiny, system of raising query, Movement of e-files, laboratories aspects related to inwarding, releasing a sample for testing and the actual testing of parameters.
- Purchases of BarCode readers, Printers, scanners have been decentralized to field offices. Purchase of computer systems is through GIL (Gujarat Informatics Ltd. GOG) as per the ongoing rate contracts & from empaneled Vendors.
- A group of seasoned & experienced TRAINERS have been allotted specific areas to generate a constructive competitiveness & sense of belonging in them. Each one longing & egging on their districts to top in performance & disposals.
- Over a period of time, there are at least 4-5 seasoned experts in each functionality/branch of GPCB department, on whom onus lies to bring in or even suggest various innovations or transformation of an ongoing process.
- A system has taken birth, which is NOT individual-dependent at all. It has gained momentum with total support from ground staff & stakeholders. Transfers at the top level have NOT affected its implementation or DIVERTED the XGN from its laid down goals.

d. Are the Program Management Teams there full time (department officials/consultants)

NIC team of Mr. Mahajan & Mr. Advani (Sr. Technical Directors) have looked into the System requirements, its analysis, database designing, the development part & other Technical aspects. Workshops for Industries, Hospitals & PCB-staff are conducted by NIC. Additionally 2 NIC programmers & 3 hired manpower assist in the development. The departmental Staff Committees look into a category of defined functionalities. No other consultants have been appointed.

(Hardik Shah, Member Secretary, PCB, Gujarat & Harish M Advani, Sr. Technical Director, GPCB, email: harish.advani@nic.in)