

**STRUCTURE, ORGANIZATION &
HUMAN RESOURCES**



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VIII CHAPTER

8.1.0. The structure and organization of any institution has to change with the times, in keeping with goals and technologies and also in response to the limitations of the existing structure. In the case of the GSI, as has been brought out despite the recommendations of the various Committees (as given in Chapter III) the expected improvements have not taken place. Partly, it is due to some of the specific recommendations were not given effect, but at the core are three major issues:

- *One*, GSI's place in relation to the administrative Ministry so as to ensure adequate long-term policy planning and functional autonomy.
- *Two*, effectiveness of the top management in bringing about change; and
- *Three*, the capability of the Human Resource of the organization to implement the change.

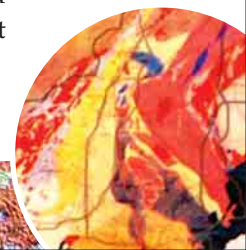
8.1.1. Some of the related concerns and issues were discussed in Chapter – V. Based on those issues, and keeping in view the Vision for GSI laid out in Chapter – VI, the Committee makes the following observations and recommendations.

8.1.2. GSI's role in the administrative setup:

8.1.2.1. Three options were posed to the Committee: Firstly, that GSI should become a separate 'Department of Geoscience' since GSI's mandate had many elements which were not the core concern of the administrative Ministry. The Committee with due consideration, is of the view that GSI has an expertise established reputation and as an impartial scientific institution. The Vision too reaffirmed this perception. As a department of the Government, GSI would necessarily have to get involved in policy making, budgeting, and helping to discharge the Minister's accountability to Parliament etc. which would detract from its scientific core responsibility. The Committee further observed that the Ministry of Earth Sciences had separately been constituted which included the India Meteorological Department and certain other scientific organizations; and possibly at some future point in time, when the concept of multidisciplinary Geoscience is sufficiently established, GSI might possibly be part of that Ministry of Earth Science only to reduce any anomaly vis-à-vis mandate of the Ministry of Mines.

8.1.2.2. The second option is that GSI be made an 'Attached Office' rather than a Subordinate Office, as in official parlance, a Subordinate Office is responsible for detailed execution of the policies of the Government, and assists the Department in handling technical matters in its respective field of specialization. An 'Attached Office' by contrast is generally responsible for providing executive direction for implementation of the policies laid down by the department to which it is attached. It also serves as a repository of technical information and advises the department on technical aspects of questions dealt by it.

8.1.2.3. The Committee is of the view that with its long and distinguished history and its preeminence in the field of geoscience, GSI actually needed no classification as a subordinate or attached office and should actually be classified as an Institution of National Importance. In any case, it is certainly not



appropriate to classify it as a subordinate office. The Committee accordingly recommends that GSI may immediately be classified in view of administrative requirements, as an 'Attached Office' only to ensure, it is not classified as a 'Subordinate Office'.

8.1.2.4. A third option posed to the Committee is to accord statutory status to GSI, which will on the one hand give it the requisite autonomy and status and allow it to function commercially where required and on the other, gives it statutory authority with regard to survey, exploration, data acquisition and management. The Committee after careful consideration feels this was the best solution for the long-term. The Committee has recommended a draft enactment for the purpose, which is at *Annexure – VIII.I*. The Committee has also decided that while making recommendations regarding the structure and organization of the GSI it will be seen compatible with a future statutory status for the organization. The Committee will however like to clarify that their recommendation for a statutory status is not based on the expectation that GSI will have major operations of an essentially commercial nature. On the contrary GSI needs to be a public service organization, engaged in geoscientific activity for the benefit of society as a whole. The Committee recommends statutory status in fact, for the following main reasons:

- GSI's pursuit of Science is seriously impeded by current administrative and technical procedures.
- Excellence, particularly in the scientific field requires a degree of flexibility and autonomy, which is available through a statutory status.
- Statutory status enables GSI to manage its finances through a non-lapsing Fund, which enables it to organize itself around a 'Field Season' based planning system.
- The statute casts an explicit duty on GSI to make available geoscientific information to the public, which is necessary in the national interest. At present this duty is cast through the Right to Information Act, 2005 only, which does not adequately cater to the requirements in the case of institutions like GSI which are by their nature, basically information generators, providers and repositories.

8.1.2.5. The Committee is conscious that in case GSI acquires statutory status, the administrative, financial and managerial monitoring role of the Ministry will be reduced to a considerable extent while that of Parliament will increase. Qualitatively, this will hopefully enable more focus on outputs and outcomes, which in the Committee's view is infact, what is required. However, since the administrative, financial and managerial oversight of the Ministry will be substantially reduced, the Committee is of the view that internal management of these aspects within GSI has to be strong and robust and accordingly recommends that the senior positions of financial and administrative management must be filled from amongst persons with adequate knowledge and that selection of such persons should be done by the Government on the basis of merit and experience.

8.1.2.6. With regard to the general structure and organization of GSI, the Committee recommends as follows, and these recommendations are equally applicable to GSI as a subordinate or attached office or as a statutory body:

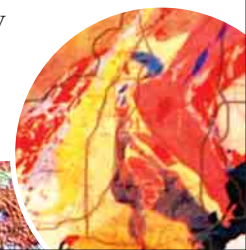
8.1.3. Overall management of GSI:

8.1.3.1. The Committee has already expressed its concerns in Chapter – V regarding what it perceives to be the main failings in the way the top management of GSI is constituted and functions, and is of the view that GSI's handling of both policy & planning and internal administration need strong and effective

management structures. While the larger policy and programmatic directions from the Government would be laid down mainly through the instrumentality of the Central Geological Programming Board (CGPB) chaired by the Secretary of the administrative Ministry, and the Twelve Committees of the CGPB will ensure that the Vision and Charter for GSI provide the operational framework for its programmes, be seen to and in-house management systems are still necessary for policy & planning and for internal administration. The Committee accordingly recommends a 'Collegium' system, consisting of the Additional D.Gs and DDGs with appropriate specialization and expertise. The collegium will be constituted by the Director General, GSI suo moto or at the instance of the administrative Ministry as appropriate to the situation in each case (some of the cases are mentioned elsewhere in the Report), and depending on the nature of the case may either be chaired by the D.G himself or by the senior-most Addl. D.G. The type of situations where the Addl. D.G. rather than the D.G. would chair the meeting are those involving statutory or rule related functions or administrative matters where a management rather than scientific or technical decisions are required. The Collegium's recommendation would be in the nature of non-binding considered advice. The Committee feels that the collegium system, by introducing participatory decision making, will address some of the concern and issues raised in Chapter – V, particularly those relating to transparency, communication within the organization and empowerment and delegation.

8.1.3.2. Since internal autonomy should not develop into isolation, it is necessary to distinguish between units which perform functions from units which still require extensive interface with Central Government organizations and position them for most efficient service delivery. The Committee identified the CGPB Secretariat, Geoscience Partnerships, International Cooperation, Commercial Operations, Information & Publications and Science Policy & Coordination as subject-units whose presence in Delhi would be of great positional advantage. The Committee has also felt that given the large number of scientific institutions located in Delhi, as also the Departments of Government of India, it is imperative for GSI to show a strong high-level presence in Delhi through its 'Science Policy & Coordination Division'. It is also necessary for the Director-General to be in Delhi on a regular and structured basis so as to enable him to interact at a high level for policy and scientific advice. The Committee accordingly recommends that GSI to upgrade its existing Liaison office in Delhi to 'DG's camp office in Delhi', and it includes with it the CGPB Secretariat, Geoscience Partnerships, International Cooperation, Commercial Operation and Science Policy & Coordination Divisions. Effectively, this constitutes the Policy, Support System except for Planning & Monitoring Division, which needs to be located in Kolkata for operational reasons.

8.1.3.3. The Committee has also deliberated on whether 'Finance' and 'Personnel' divisions would be better positioned in Delhi or in Kolkata as at present. The Committee notes that there is unanimity on the need for delegation of powers from the Ministry to the GSI and that the Ministry too is mindful of this requirement and that substantial delegation of financial powers has in fact been made vide Order No. 18/2/2008-M.II dated 23.03.09. The Committee feels, however, that this delegation has to be accompanied by substantial decentralization within GSI so that the benefits flow down the hierarchy; and the Committee has felt that in case powers are decentralized to the Regions and Missions, Finance Division's function will essentially be compilation of the Budget, financial advice, and monitoring of the expenditure, while Personnel Division's function will be related to policies, rules and regulation relating to mainly recruitment and management of HR services of GSI. (The actual management is currently vested in the IR-HR division as it is designated). Finance and Personnel Divisions will be interacting with organizations like Planning Commission, UPSC, etc. to a considerable extent particularly, in case, GSI is declared an Attached Office or is accorded statutory status and it will, therefore, be expedient if they



have a significant presence in Delhi rather than in Kolkata though in the process, only nucleus staff will be involved because of the decentralization that will have to take place. The Committee recommends that while Personnel division as a whole may be stationed in Delhi, Finance Division may have a Director level officer in Delhi with support staff, for discharging the liaison and interaction functions. The Committee however, makes it clear that since Group C&D posts in GSI are generally regionalized, postings at this level in Delhi shall be on the basis of option (with incumbents retaining the seniority in the parent Region) and contract re-employment will be resorted to fill up the remaining vacancies.

8.1.3.4. In the normal course, recommendations regarding organizational structure precedes the recommendations regarding management. The Committee is, however, conscious that weakness of the management is the core of GSI's current difficulties in planning and execution, and has, therefore, endeavoured to lay down the basic features of the top management functioning before proceeding to discuss the organizational structure. The Committee is also conscious that if and when GSI secures a statutory status, its ability to make changes in the organizational structure easily may diminish and, therefore, whatever structure is being recommended must be fully geared to ensure strong and effective management in line with the Vision and the Charter. The Committee would like to make it unequivocally clear that the Director General, as the head of GSI, must be a person of vision, who commands the highest scientific respect of the geoscientific community and who has the requisite leadership qualities. The post of Director General is a special secretary level post, and the incumbent will head a national survey organization, which is striving for excellence. Ability to interact on the national and international platform on all matters of geoscience is crucial to its reputation and is therefore essential, that he be a geologist of eminence, and he should be selected by an open process through a Search-cum-Selection Committee system and shall preferably have three-year tenure. The Committee also suggest that the issue of enabling geophysicists also to be eligible to head GSI may be revisited after about 10 years.

8.2.0. Organizational Structure:-

8.2.1. The Committee has considered the present organizational structure of GSI after studying the structure of other geological surveys. In particular, the Committee has given thought to the issue of adoption of a 'matrix management' approach as is prevailing in USGS and GSC and was in fact recommended by the Ghosh Committee. However, based on the interaction of some members of the Committee particularly with the GSC, from which it appears that the adoptive process can be long and difficult, the Committee feels that given the more urgent need to put together a good top management system first, experimenting with the matrix system for operational management may not be an immediate option. However, the Committee has endeavored in its recommendations to create a hybrid system, which has certain basic features of matrix management likely to pose no difficulties in its immediate adoption.

8.2.2. The Committee generally feels that the management structure be one, that is responsive to the Collegium mechanism mentioned in the previous paragraph; is decentralized administratively and financially; and encourages specialization, innovation and excellence.

8.2.3. The Committee is of the view that the 'Region' and 'Wing' concepts, adopted on the basis of the Kashyap Committee recommendations form an excellent starting point. The Regions provide the levels required for decentralization while the Wing concept supports management of specialization. The combination of Wing and Region in fact provides an eminently workable substitute for the matrix system, with the advantage of being a tried and tested concept within GSI and therefore, posing no risk to

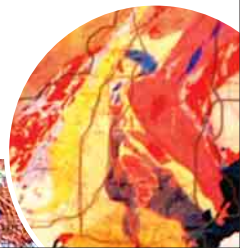
a new type of top management at a formative stage. This concept is also fully compatible with a statutory setup. The creation of the actual structure needs to be based on the principles that:

- the span of control at all levels must be within reasonable limits
- responsibility is well laid out
- robust monitoring mechanisms are feasible even if communication and reporting systems are multi-channel
- specialization is not overridden by administrative crosscutting
- accountability is clear at all levels, and enforceable.

8.2.4. Missions and Support Systems: -

8.2.5. Accordingly, for programme execution the following five 'Missions' and three Support Systems are suggested [see Fig. VIII-1 and Fig. VIII-2].

- **Mission – I: Baseline Geoscience Data**
 - Remote Sensing and Aerial Surveys
 - Photogeology & remote Sensing
 - Hyperspectral Survey
 - Airborne Mineral Survey
 - Geomorphological Survey
 - Marine and Coastal Surveys
 - Ground Surveys
 - Geological Survey
 - Geophysical Survey
 - Geochemical Survey
- **Mission – II: Natural Resources Assessment**
 - Mineral Resource Assessment
 - Natural Energy Resources (except Oil and Gas)
 - Subsurface Hydrology
- **Mission – III: Geoinformatics**
 - Data Repository & Management
 - Information Delivery
 - Advanced Spatial Data Systems
- **Mission – IV: Fundamental and Multi-disciplinary Geoscience and Special Studies**
 - Geotechnical, Landslide & Seismic
 - Climate Change impact & Fragile eco-Systems
 - Biogeochemistry & Medical Geology
 - Fundamental Geoscience



- Crustal Evolution
- Stratigraphic Correlation
- Palaeobiology
- Deep Geology
- Isotope Geology and Geochronology
- Meteoritic & Planetary Studies
- Polar Studies
- **Mission – V: Training & Capacity building***
 - Training Advisory Committee (for training strategies and monitoring & evaluation)
 - GSITI (for Induction, ToT, International and Special Courses)
 - Regional Institutes (for Central & State Institution training)

8.2.6. To ensure smooth planning and evaluation of programme, there would be 3 Support Systems as follows: (for organogram see -Fig. VIII-2)

- **S&T Support System**
 - IT. Infrastructure & Connectivity**
 - Chemistry and the Chemical Laboratory Network
 - Laboratory Network (Other than Chemical)
 - Capital Assets Procurement and Management
 - Drilling & Workshop
 - Transport
 - Survey
- **Administrative Support System**
 - Finance
 - Personnel
 - Legal Cell
 - HRD
 - Information and Publications
 - Libraries, Parks and Museums
 - Estates

* *Though training would normally be deemed to be a support activity, it is conceived as a Mission in view of the Vision and Charter proposed for GSI, which aims at creating enhanced executional capability and capacity development for the sector as a whole.*

** *The Committee is aware that this function is presently with Geodata division. However, these functions are essentially maintenance/enhancement engineering functions, typically outsourced and with relatively little requirement of domain knowledge. The Committee is of the view that separation of the engineering aspects from the content aspects is likely to lead to greater focus on content and consequent development of Geoinformatics*

- **Policy Support System**
 - Science Policy & Coordination
 - CGPB Secretariat
 - Planning & Monitoring
 - International cooperation
 - Commercial Operations
 - Geoscience partnerships

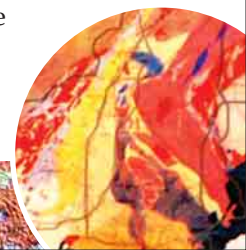
8.2.7. The Committee is of the view that the existing system of Regions and Operations Unit (as State Unit) need no change in number and geographical jurisdiction. The Committee however, feels that the structural relationship between the Missions, Support Systems and Regions and State level operational units there under need to be properly defined, through the following general principles:

- Each of the Missions needs to be headed by an Additional D.G. level officer (except the Training Mission for the present). A Dy. D.G level officer may be directly in charge of one or more divisions of the Mission where specialization is involved. However there would be an Addl. D.G (Geophysics) in the Mission on Baseline Geoscientific data generation in view of the importance of this discipline in the Mission.
- The S&T Support System and Policy Support System would be headed by Addl. D.G level officers. The Administrative Support system would be relatively less unified, since Addl. D.G (Finance) as Financial Advisor of the GSI has to remain at arms length for day to day activities. There would however be an Addl. D.G (Adm.) as in-charge for the rest of the Support System, with a DDG (Personnel) to ensure Personnel policy Coordination, and a DDG (HR) for HR and training matters. All other services under the Support System will be the responsibility of a DDG (General Adm.)
- Regions too need to be headed by Addl. D.G. level officers, with a Dy. D.G or Director for each Mission and Support System activity at the Regional level, subject to the scale of activity in the Region.
- State units need to be headed by a Dy. D.G. with one or more Director level officer for each Mission and Support System activity to the extent it is relevant to the operations in the State.

8.2.8. The operational, communication and reporting relationship should be based on the following principles:

- Missions and Support Systems would be responsible for planning activities, giving targets to the Regions (and State units), coordinating availability of resources, monitoring performance and giving sectoral scientific and technical reports.
- The Regions (and State Units) would be responsible in the Region/State for budget management, personnel management, physical resource management, local coordination, execution, monitoring and reporting including area-based technical and scientific reports.

8.2.9. At the cutting edge level, i.e. State Unit, the impact would be felt in tighter management and coordination as well as in promotion of specialization (and innovation and excellence) through the



interaction of the Mission system. Needless to add, the human resources need to be organised appropriately for the purpose as is discussed below.

8.3.0. Human Resource in GSI

8.3.1. High quality personnel are essential to deliver high quality geoscience. This is all the more so in a multidisciplinary context. It is necessary that human resource management policies for GSI recognize that-

- Different geoscientific disciplines will develop in different ways. There is no 'one size fits all'.
- Too much differentiation of disciplines (or streams) is not only detrimental to good geoscience; it makes human resource management more difficult since some sub-disciplines may be unviable for such management.
- Organizational structures must be robust, with effective span of control and clear (even if multi-channel) reporting and communication.

8.3.2. In scientific structures it is possible to distinguish between the formal hierarchy and the programme hierarchy (based on the combination of disciplines), and responsibilities and accountability systems need to be well defined.

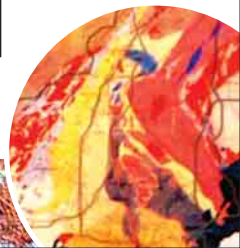
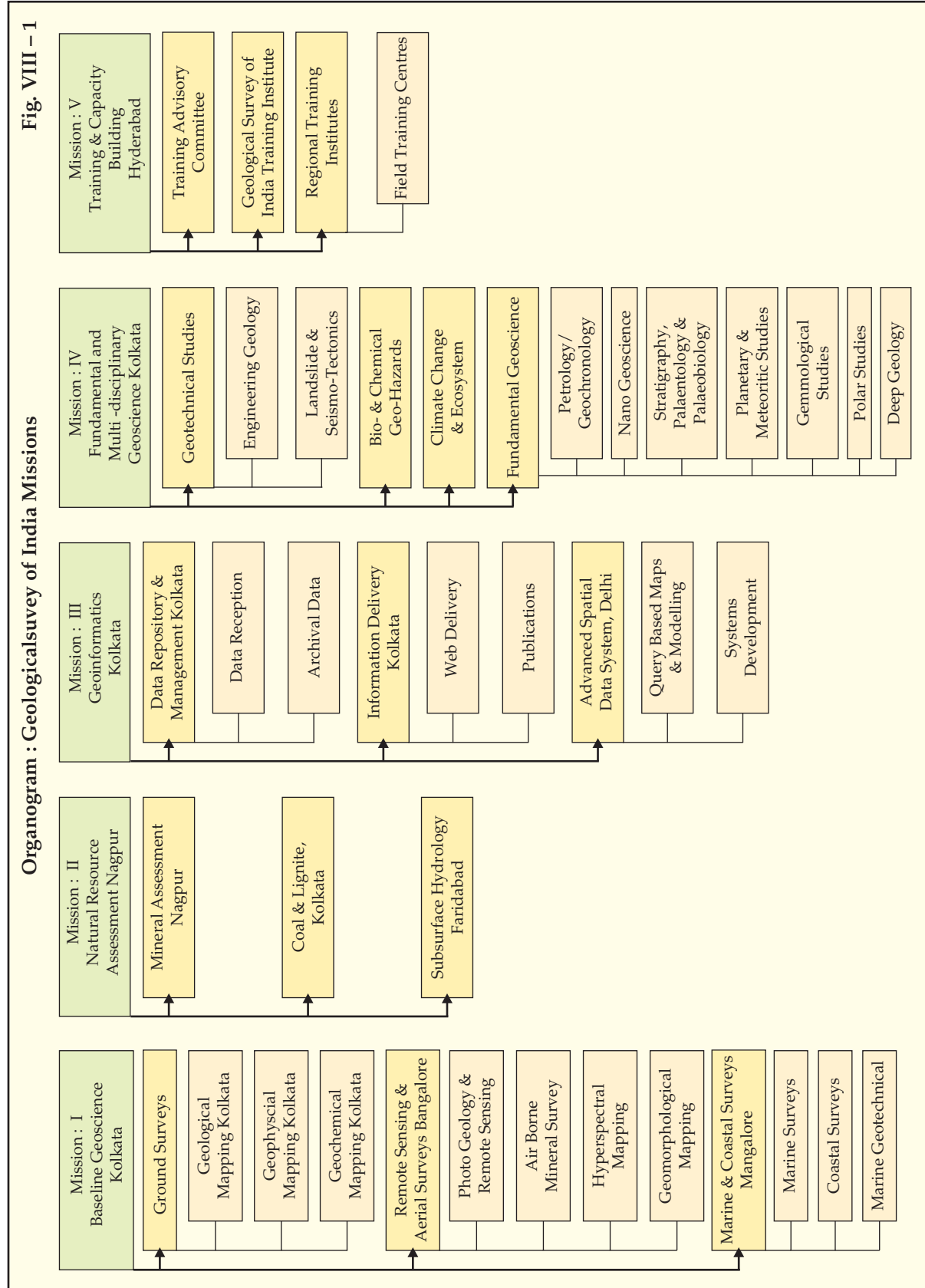
8.3.3. In the case of the GSI, the formal hierarchy will consist of the Headquarters, Regions and State Units, headed respectively by the Director General, Additional Director General and Dy. Director General. The recommended programmatic hierarchy consists of the Headquarters, Mission and State Units. The scientific and technical (S&T) human resources are therefore organised (in the form of streams) in terms of the programmatic activities (mainly Geoscience data, natural resource assessment, Fundamental and applied Geoscience) and positioned in terms of the formal hierarchy. The S&T streams are accordingly (as already classified):

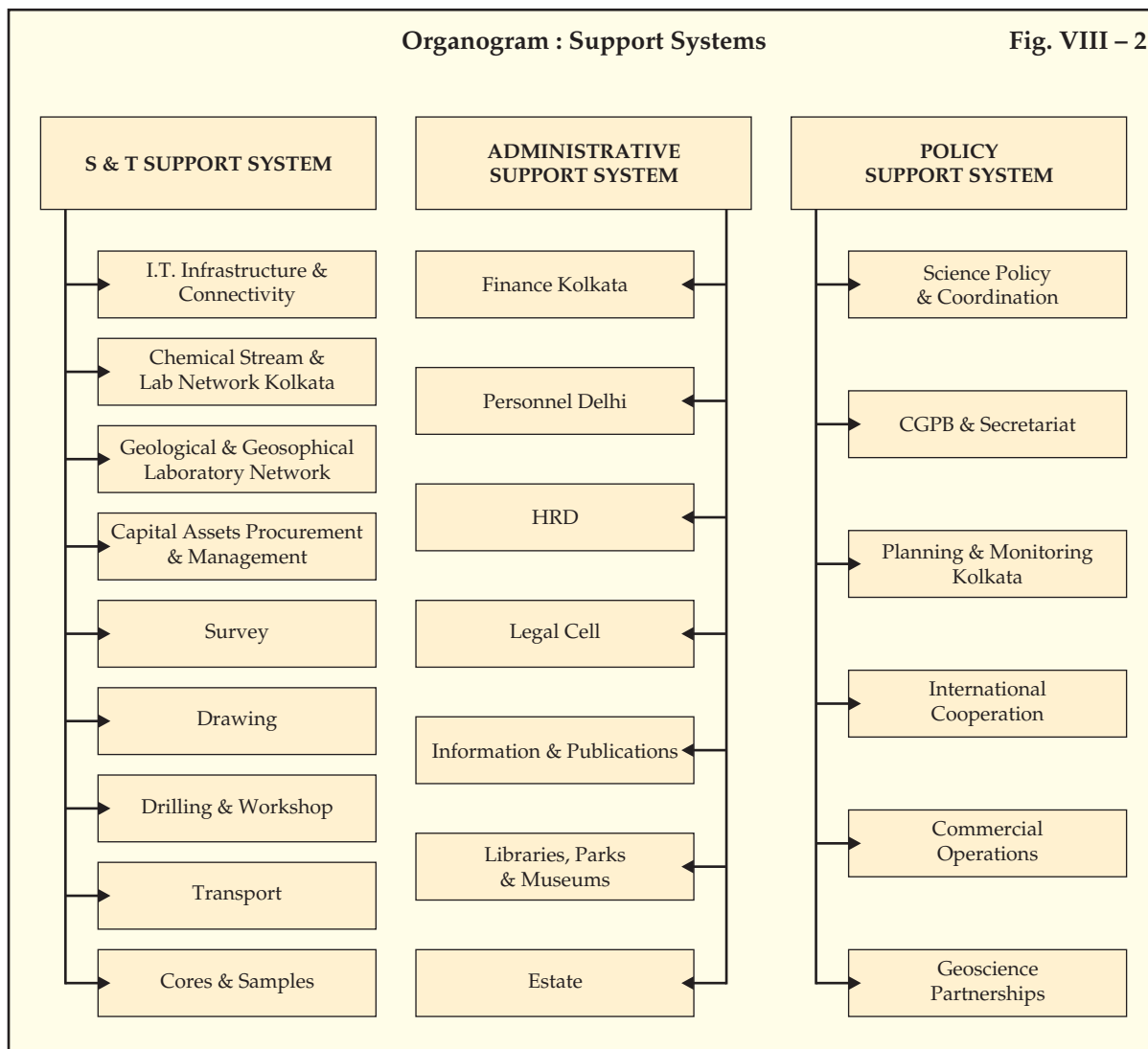
- The Geology Stream
- The Geophysics stream
- The Engineering stream
- The Chemistry Stream

8.3.4. Apart from the above following non-technical cadres are also present in GSI:-

- Administrative Cadres
- Finance Cadre
- Materials Management Cadre

Isolated Cadres (i.e. Survey, drawing, Transport, Library etc.)





8.3.5. The following paragraphs describe the main functions of the streams in the light of the preceding paragraphs: (The support streams are dealt at some length in Chapter – IX)

- **Geology Stream:-**
 - The Geology stream is the backbone of the Survey, bringing together a wealth of data collected from different sources using various methods, to provide contextual answers to geoscientific issues. Broadly, geologists engage in either physical geology, which describes current earth processes or historical geology, which attempts to understand issues relating to the evolution of the earth and the geology of the past. Physical geology includes mineralogy, petrology, structural geology, geomorphology and economic geology etc, while historical geology includes stratigraphy, paleontology and paleogeography etc.
- **Geophysics Stream:-**
 - The Geophysicist performs the crucial function of collecting, collating and providing the thematic information of geological inhomogeneities or geophysical anomalies, which enable

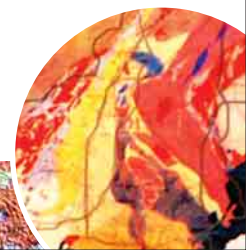
geologists to interpret the data in a specific geological context. Broadly the geophysical methodologies include seismic, electrical resistivity, gravitational, magnetic, radiometric and electromagnetic parameters using a variety of sophisticated instruments often specially designed as geophysical instrumentation and mounted on special platforms such as aircraft, marine vessels or satellites.

It was brought to the notice of the Committee that till recently Geophysics (Instrumentation) and Mineral Physics were separate streams which were recommended to be merged into Geophysics because of the obvious overlap. However, the merger is yet to be completed. The Committee after careful consideration is of the view that in the current scenario, there is no justification for a separate Geophysics (Instrumentation) cadre whose task is to advise on procurement and maintenance (including repair and calibration) of geophysical instrumentation, since the range and sophistication of new instrumentation make in-house expertise difficult particularly in the context of embedded systems. On the other hand, now for most system segments, adequate basic information is available in the public domain including internet and if this is supplemented by adequate close contact with other geoscientific institutions within the country and in leading geoscientific nations, the need for separate in-house instrumentation expertise becomes unnecessary, and remnant work can be handled by geophysicists having aptitude with the assistance of Group B&C staff trained in instrumentation techniques, in coordination with the in-house Support System Unit dealing with procurement.

As regards Mineral Physics, the Committee is of the view that while this is an important branch, being unviable for purposes of cadre management, there is no other practical alternative than to assign the function to the Geophysics stream.

In view of this the Committee suggests that to the extent that existing personnel of these two streams cannot be accommodated within the main stream for administrative reasons, they should remain part of diminishing cadres and there should be no new recruitment to these cadres.

- Chemical Stream:-
 - The Chemistry stream till now has mainly performed a supporting function by providing laboratory based reports on the composition of substances and the changes that they undergo, thus helping the geologist in understanding the geological processes at work. This was mainly for exploration or special studies. However, Geochemical mapping as a general activity is a very powerful instrument in a wide variety of circumstances. Accordingly, the Committee has recommended that the ongoing Geochemical mapping programme be stepped up in a time bound manner with the aim of providing Geochemical maps to supplement Geophysical and Geological maps for a variety of uses. It is, therefore, further recommended that a separate 'Geochemistry' division should be created and adequately supported from the Chemistry and Laboratory Support System to help geologists to unlock the secrets of the earth. The Committee here would like to note that presently the nomenclature in this stream is 'Chemist' upto the level of STS but is 'Geochemist' at Director and above level. The committee feels that this is an inappropriate change since Geochemistry is a branch of Geology, and has therefore made its recommendation to remove any confusion in this issue.



- Engineering Stream
 - The Engineering stream provides vital support to many fields of activity of GSI particularly in drilling operations during subsurface exploration for assessing and establishing the resource potential of minerals. At present there are 90 drill rigs deployed all over the country in connection with exploration. Apart from this, the stream helps in sustaining the operation & maintenance of vehicles for timely implementation of all geo-scientific activities in various terrains. A decision has been taken by the Ministry of Mines that the Drilling Division and Engineering Division should be merged into a single Engineering stream. The Expert Committee in its report in 2004 had recommended winding-up of workshops, which has been accepted by the Government. In the scenario of winding up of workshops the personnel constituting the Engineering Stream should be retrained to take-up the work in the Drilling Division given also the fact that the nature of the work makes outsourcing of drilling work in the future at best a partial solution.

8.4.0. Mode of Induction:

8.4.1. Stream Structure:-The broad structures of the scientific streams are similar being (apex downwards) as in Table – VIII.1.

Table – VIII.1

Group A Posts (Gazetted)					
S. No.	Designation	Level	Pay Scale (V CPC)	Pay Band & Grade Pay (VI CPC)	
				Pay band	Grade Pay
1.	Addl. Director General*	HAG	Rs.22400-525-24500	PB – 4	12000
2.	Dy. Director General	SAG (J.S)	Rs.18400 – 22400	PB – 4	10000
3.	Director	JAG(NFSG)	Rs.14300 – 18300	PB – 4	8700
4.	**Suptdg. Geologist/ Geophysicist/Chemist		Rs.12000 – 16500	PB – 3	7600
5.	Geologist (Sr.)/ Geophysicist/Chemist	STS	Rs.10000 – 15200	PB – 3	6600
6.	Geologist (Jr.)/ –do–	JTS	Rs.8000 – 13500	PB – 3	5400
Group B Posts (Gazetted)					
1.	Asstt. Geologist/ Geophysicist /Chemist in 6500–10500		Rs.7500 –12000	PB – 2	4800
Group B Posts (Non-Gazetted)					
1.	S.Tech. Asstt.(STA) Geology/ Geophysics/Chem.#		Rs.6500–10500	PB – 2	4200
Group C Posts (Non-Gazetted)					
1.	J.Tech. Asstt.#		Rs.5000–8000	PB – 2	4200
2.	Lab.Asstt. G.I Geol./		Rs.4500–7000	PB – 1	2800
	Lab.Asstt.G.II Geophy/		Rs.4000–6000	PB – 1	2400
	Lab.Asstt.G.III Chem		Rs. 3050 – 4590	PB – 1	1900
	Gr. I, II, Gr. III .				

Scales merged as per Government notification accepting 6th CPC Recommendation.

* This is the designation proposed by the Committee. Presently the designation is Sr. Dy. D.G.

** Presently designated as Director. This designation proposed by the Committee since the 12000-16500 is not generally designated as Director in other services. The Ghosh Committee has earlier made a similar recommendation.

8.4.2. Group A and Group B (Gazetted) direct recruitment is presently done through UPSC. In the case of Geophysics, Chemistry, Geophysics (Instrumentation), and Mineral Physics, lateral direct recruitment through UPSC is also contemplated in the existing Rules. The position of posts in the Streams is given in Table – VIII.2.

Table – VIII.2

GROUP-A									
Sl. No.	Level	Geologist		Geophysicist		Chemist		Engineering	
	No.	No.	% DPC	No.	% DPC	No.	%DPC	No.	%DPC
1	Addl. Director General (Sr. DDG)	32*	100	1(one post out of 10 DDG post upgradeable to Addl. D.G. level)					
2	Dy. Director General		100	4	100	3	100	3	100
3	Director (SG)	314	100	51		44		21	
4	Director		100		100		100		100
5	STS	751	100	118	75	61	75	32	100
6	JTS	1330	50	237	50	234	50	38	10
GROUP-B									
1	Group-B (Gaz.)	72		40		72		60	

* 2 (Two posts out of 32 DDG posts upgradeable to Addl. D.G. level)

8.4.3. The Committee observes that the ratio of direct recruitment to promotion and ratio of posts at higher and lower levels are such that stagnation at certain points are taking place, affecting organisational efficiency and morale of the officers.

8.4.4. Accordingly, as a common principle the Committee proposes that in Group A, direct recruitment in all 4 streams be restricted to the lowest level, with reasonable promotional avenues from Group B (Gazetted). This ensures that there is no gross inequality at the top of all streams at the level of Dy. Director General and above. It also ensures that by inducting substantial number of Group B personnel into Group A, there will be a suitable balance of experience and qualification and also reasonable equity for direct recruits to Group A in all streams in so far as promotional prospects at the higher levels (DDG and Addl. Director General) are concerned.

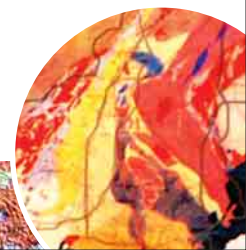
8.5.0. Induction of Geoscientists and Engineers:

8.5.1. In the following paragraphs are discussed recruitment issues for the Geologist, Geophysicist, Chemistry and Engineering streams. Since Mineral Physics and Geophysics (Instrumentation) stream will have no future recruitments they are not discussed. Also since the Committee recommends that no direct recruitments should be made to Group B[Gazetted] and that recruitments to Group A should be done only at JTS level, discussion is confined to this level.

8.5.2. The Geological Survey of India along with the Central Ground Water Board (CGWB) is privileged to have a specific examination 'Geologists exam' conducted by Union Public Service Commission (UPSC) for induction of Geologists in Group-A & B posts. Direct induction of Geologists, into GSI is restricted to JTS level in Group-A and posts available are 50% of the total sanctioned strength. The remaining 50% is through the process of Departmental Promotion.

The present scheme of induction through the Geologist Exam is as follows:

- Part I. - Written examination in the subjects as set out below. The papers are of M.Sc level.



- Part II. -The Commission calls interviews for Personality Test of such candidates as it deems fit,
The following are the 4 papers for the written examination: (1): General English; (2): Geology Paper-I; (3) Geology Paper II; (4)(i) Geology Paper III for GSI and (ii) Hydrogeology for CGWB.

The minimum educational qualification for writing the Geologists examinations are as follows:

- a. Master's degree in Geology or Applied Geology or Marine Geology from a University incorporated by an Act of the Central or State Legislature in India or other educational Institutes established by an Act of Parliament or declared to be deemed as Universities under Section 3 of the University Grants Commission Act, 1956; or
- b. Diploma of Associateship in Applied Geology of the Indian School of Mines, Dhanbad; or
- c. Master's degree in Mineral Exploration from a recognized University (for posts in the Geological Survey of India only);
- d. Master's degree in Hydrogeology from a recognized University (for posts in the Central Ground Water Board only).

8.5.3. Direct recruitment to Group A posts for the Engineering stream is through the Combined Engineering Exam held by the UPSC [IES]. 90% of the strength at JTS level is filled through this examination and remaining 10% through DPC.

8.5.3.1. The minimum educational qualification is:

- A degree in Engineering from a University; or
- passed Section A and B of the Institution Examinations of the Institution of Engineers (India); or
- a degree/diploma in Engineering from such foreign University/College/Institution and under such conditions as may be recognised by the Government for the purpose from time to time, or
- passed Graduate Membership Examination of the Institute of Electronics and Telecommunication Engineers (India); or
- passed Associate Membership Examination Parts II and III/Sections A and B of the Aeronautical Society of India; or
- passed Graduate Membership Examination of the Institution of Electronics and Radio Engineers, London held after November, 1959.

8.5.3.2. The IES Examination is conducted according to the following plan:

- Part – I The written examination comprises two sections – Section I consisting only of objective type of questions and Section II of conventional papers. Both Sections cover the entire syllabus of the relevant engineering disciplines viz. Civil Engineering, Mechanical Engineering, Electrical Engineering and Electronics & Telecommunication Engineering.
- Part – II Personality test of such of the candidates who qualify on the basis of the written examination.

8.5.4. For Geophysicists, there is no written examination at present, and the UPSC selects candidates through interviews for 50 percent of posts from amongst those who possess (i) the requisite academic qualifications i.e. Masters degree in Physics/Geophysics or Geology / Applied Geology of a recognized University or equivalent; or Diploma in Applied Geology of the Indian School of Mines, Dhanbad; and (ii) about 2 years experience of Geophysical work. Dr is at JTS and STS level.

8.5.5. Similarly for Chemistry, direct recruitment of Chemist (Jr.) is done through interview by UPSC for 50% of the posts, rest 50% are filled through DPC. Essential Qualification for direct recruitment to Chemist (Jr.) is as follows :-

- (i) M. Sc. degree in Chemistry or Applied Chemistry from a recognized University or equivalent.
- (ii) Training in all aspect of inorganic analysis including modern instrumental analysis methods.
- (iii) About 3 years experience in a laboratory concerned with utilization of ores and minerals.

Presently the direct induction into Group C (Technical) posts, which together constitute roughly 27% of GSI's personnel strength, are organised into many different streams. There is no uniformity in recruitment. The recruitment to these posts, which is done at regional level, is through a process of interview.

8.5.6. The Committee recommends that for Group-A (S & T) posts in Geoscience streams viz. Geology and Geophysics not only should there be a single entry point at JTS level only but also that induction should be through combined "Geoscientist Examination" to be conducted by UPSC. Group-B (Gazetted) posts should be filled by promotion from Group-B (Non-Gazetted) only.

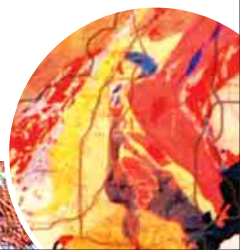
8.5.7. The Committee is conscious of the fact that many Universities, especially IITs, have recognized specific emerging Geoscience fields and are now offering courses and awarding degrees like Integrated M.Sc. in Applied Geology; M.Tech (Geo-exploration); M.Tech (Mineral Exploration); M.Sc Applied Geochemistry; M.Tech (Engineering Geology) M.Sc (Marine Geology); M.Sc.(Earth Science and Resource Management); M.Sc (Oceanography and Coastal area studies); P.G. in Geochemistry P.G. Diploma in Environmental Geology; and Diploma in Exploration Geology. Similarly, there are now many new courses designed for Geophysics. It is recommended that the essential qualification for writing the proposed combined "Geoscientist Examination" should include these postgraduate degrees.

8.5.8. The Committee accordingly recommends the following scheme for a combined "Geoscientist Examination" by UPSC [details of educational qualification, scheme of examination etc for induction are set in *Annexure – VIII.II*]

- i. Two Compulsory papers (a) General English & General Studies and (b) Geology/ Geophysics/ Physics (B. Sc degree standard papers).
- ii. Three Optional Papers (Post Graduate degree standard papers);

Similarly, the Induction of Chemists at JTS level may be done by a separate examination through the UPSC as per scheme of examination for Geologist/Geophysicist above, with two compulsory papers viz.(a) General English & General Studies and (b) Chemistry(B.Sc.standard), details for optional papers is given in *Annexure – VIII.II*.

8.5.9. Since a large number of Government of India Departments and organizations require to recruit



Geoscientists at JTS level, the Committee recommends that the GSI and Ministry of Mines take the initiative to discuss the matter with Department of Earth Science, Ministry of S&T, CGWB, Atomic Minerals Division of Department of Atomic Energy and other stake holders so that a common 'Geoscientists' examination meeting the needs of similarly placed institutions is jointly conducted.

8.5.10. Recruitment of Professionals for Engineering Services at JTS level through UPSC Examination (All India Engineering Services) is recommended to continue. The induction is basically for Drilling stream and therefore persons with Engineering degree should be considered for recruitment in GSI.

8.5.11. Promotion to Group-A: The Committee recommends that while promotional percentage be commensurate to the number of posts in the relevant grades, to give weightage to experience and enable adequate 'age spread', there should be no compromise in educational qualifications, and only such persons should be promoted to Group A who possess the educational qualification for direct recruitment.

8.5.12. The Committee recommends that for direct induction in Group-B (Non Gazetted-tech.) the minimum qualification should be a Bachelors degree in Science with Geology as one of the subjects for STA (Geology), Physics for STA (Geophysics) and Chemistry for STA (chemistry), and Diploma. for Engineers.

8.5.13. The Committee recommends that induction in Group - B (Non Gazetted) and Group-C Technical posts be made through the Staff Selection Commission (SSC) on the lines of selection of Junior Engineers recruited for CPWD.

8.5.14. The scheme of induction through Staff Selection Commission should consist of a Written Test followed by an Interview and may be as follows:

Written Test: It may consist of two papers:

- (i) Paper-I [objective type]:
 - a. General Awareness
 - b. Geology/Physics/Chemistry
- (ii) Paper-II [Written Quest. & Ans.]: General Geology/Physics/Chemistry.

(*Note:* Paper II will be evaluated in respect of only those candidates who qualify in Paper I at the minimum standard which may be decided by the Commission at its discretion).

Personality Test (Interview): Only those candidates who attain minimum qualifying standard in Part-I of the Examination, as may be fixed by the Commission in their discretion, should be eligible to be called for Personality Test/Interview. The interview/personality test may gauge the candidates' interest, knowledge, various traits, aptitude, suitability etc.

8.5.15. Those selected through above scheme of examination by SSC for Group-B [NG] posts on joining GSI will require to undergo one year training in a Regional Training Institute and pass Departmental Examination to clear probation and those selected to lower posts in Group - C may undergo six months training course and pass departmental exam to clear probation.

8.5.16. The Committee is informed that many of the incumbents at different levels of Gr. C (Tech.) posts are under-qualified for selection/promotion to the respective higher grade. The Committee

recommends that such employees should be encouraged to obtain Degree/Diploma level qualification through liberal grant of study leave and recourse to correspondence courses now being offered by various Universities, besides providing suitable incentives. Degree/Diploma level qualification can be achieved through Distance Education/Open University system for Degree in Chemistry/Physics/Geological exploration. In addition, in-service training courses to impart skills/expertise suitable for higher-level job requirements should be arranged through the GSI Training Institute and on successful completion of these courses this should be counted as equivalent to minimum educational qualification for the promotional grade.

8.5.17. Details about essential and minimum qualification etc, for direct recruitment and promotions in all S&T Streams are given in Table – VIII.5 to VIII. 8 below and for Support streams in Chapter – IX.

8.6.0. Cutting edge manpower requirements and deployment:

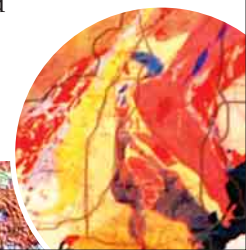
8.6.1 The major work envisaged for GSI in the next 2 decades has been elaborated in Chapter VII. Most of the activities are already part of GSI's work programmes. However, given the milestones, and also in some cases the additional equipment and scientific resources, incremental manpower will be required, particularly at the cutting edge, in Group B (Gazetted) and Group A (JTS and STS levels). The manpower requirement as detailed in Table – VIII.4 is based on estimation valid from mid of XII Plan. With appropriate cadre restructuring, the manpower requirement for the remaining part of the XI Plan and first half of XII Plan is a marginal addition to the present sanctioned strength for S&T personnel in STS, JTS and Group B Gazetted and Non Gazetted. This is needed for taking up new programmes like Geomorphological mapping programme, hyperspectral mapping programme, accelerating NGCM and strengthening Geoinformatics.

8.6.2. The Mission-wise estimation is as follows:

8.6.2.1. Baseline Geodata Generation: - The work comprises:

- Geophysical surveys on 1:50,000 scale in the balance 1.170 million sq.km area to be completed by end of XV Plan period comprising
- Geomorphological mapping on 1:50,000 scale in 3.2 million-sq. km sq. km to be completed by end of XII Plan period, beginning with FS.2009-10.
- Geochemical mapping of priority area of 1.332 million sq. km to be carried out in two phases. Phase-I covers hard rock area of 0.813 million sq. km (1130 toposheets) including OGP on 1:50,000 scale to be completed by end of XIII Plan period and Phase-II covering balance of 0.519 million sq. km (720 toposheets) during XIV & XV Plan period.
- Aerial and marine surveys

The above work will require 765 Geologists, 315 Geophysicists, 264 Chemists and 21 Engineers in Group A & B and apart from these Senior Technical Assistants (STA) from respective streams shall also be deployed. The basis for projecting S&T personnel for base line data collection is: 125-150 sq. km of mapping under Specialized Thematic mapping per Geologist per season; two Geologists per season for one toposheet coverage under National Geochemical programme; around 120 sq. km per Geologist+Geophysicist per year for areogeophysics mapping; around three Geophysicists for three toposheet per year for geophysical mapping and based on remoteness and complexity of terrain nearly 5 toposheet per year per geologist for Geomorphological mapping. (Ground validation of remotely sensed data)



8.6.2.2. Natural Resource Assessments:- The work comprises: mainly regional exploration for low-grade hematite (45% Fe against 55% earlier), magnetite, base metals, noble metals, diamonds and high grade Ilmenite and also for Energy Resources. The baseline mapping will be supplemented by hyper spectral mapping of the OGP in 1:50,000 scale and further detailed exploration on large scale (i.e. on 1:10,000 or larger) in selected provenances.

This will require: 555 Geologists, 107 Geophysicists, 125 Chemists and 70 Engineers in Group A & B and in addition to these, STAs from respective streams. This is based on a norm of nearly 100 Km² of coverage by a Geologist and nearly 80 Km² by a Geophysicist; also deployment of nearly 70 drilling rigs each with one Engineer.

8.6.2.3. Fundamental Geoscience and Special Studies (Research and development) comprising a large number of areas.

These activities will require: 200 geologists, 25 geophysicists, and 45 chemists in Group A & B. The projection for S&T personnel as above is worked with around 200-300 items of research in the areas of deep geology, petrology, paleontology, geochronology etc in all the regions are expected per Plan.

8.6.2.4. Multidisciplinary Geoscience projects comprising a large number of areas in the field of engineering geology, earthquake geology, landslide studies, environmental geology etc.

These activities require: 350 geologists, 20 geophysicists, 35 chemists and 09 engineers in Group A & B. Around 175 items per year are envisaged/expected to be taken up for geoscientific study all over India and for each item two geologist shall be deployed.

8.6.2.5. Geoinformatics: - The role of GSI in this area will be primarily to provide domain knowledge in system development and management. The System Resource Specifications etc. will be developed and enhanced mainly through outsourcing. System management, including hardware, and connectivity maintenance and enhancements too will be outsourced; and as such the GSI's contribution will be a core team of geologists and geophysicists who will need to imbibe IT skills, particular spatial data management knowledge in order to be able to interface with IT professionals managing the system.

There will be a requirement of 350 geologists and 50 geophysicists for the purpose. The break up for IT Human resource requirement is i) 100 Geoscientists for third party system integration for development and integration of new applications modules for Portal and extending network infrastructure ii) 150 geoscientists for Enterprise GIS, and Geoinformatics domains; iii) 100 Geoscientists for generation of new products and dissemination using electronic media. This requirement is for XI Plan period; for subsequent plan periods it is suggested that an internal manpower assessment committee may be constituted.

8.6.2.6. Training:

8.6.2.7. The Committee has considered the issue of training in depth, and is of the view that the present training infrastructure is insufficient to meet the needs of GSI itself if Geoscientific personnel intake is expanded to meet the goals being laid down in this Report. The infrastructure to meet the requirement of States etc. as is being proposed in Mission V (details in Chapter-XI) would be totally inadequate.

8.6.2.8. As proposed in Chapter XI Regional Training Institutes need to be set up as adjuncts to the Regional offices and the Mission would need to develop training resources for the main Institute at Hyderabad as well as for the Regional Institutes and associated field training centers (FTC). The faculty

for the Institute would be outsourced to the extent possible, with core faculty only for the standard subjects requiring frequent availability of resource personnel. For the Regional Institutes, the faculty would be a mix of outsourced resource persons and officers of the Regional Office, except in the Southern Region, where it would be part of the Main Institute. As such the following would be the requirement for Training Institutes:

8.6.2.9. For DDG in the Mission & Support Systems HQ and in Regional HQ it is recommended 2 JAG

Table – VIII.3

Manpower Requirement for Training Institute

Sl. No	Institute	DDG	Director/Suptdg. Geo-Scientist	STS@	GP/C
1	Mission – HQHyderabad	1	8*	24	5GP,3 C&-5E
2	Zawar FTC	-	1	5	-
3	Ranchi FTC	-	1	5	-
4	Raipur FTC	-	1	5	-
5	Chitradurga FTC	-	1	5	-
6	Lucknow FTC	-	1	5	-
7	** Aizwal FTC	-	1	3	-
8	† NR Institute	-	5Ω	15	3C
9	† ER Institute	-	1	5	3C
10	† SR Institute	-	8	21	3C -
11	† WR Institute #	-	3	9	3C
12	† CR Institute	-	1	5	3C
13	† NER Institute	-	1	5	3C
	Total	1	34	112	5GP21C-5 E

*: 2 JAG officers for Planning (internal and external programmes);2 JAG officers for coordinating (internal and external prog.).2JAG for Administrative and Staff training and 2JAG officers for Administration of Training institute.

** : New proposed FTC for Tertiary Geology /Landslide hazard /Geomorphological studies.

: For supervising and conducting training programmes in Fundamental Geoscience, Remote Sensing, Marine Geology, Geoinformatics, Geophysics etc

Ω: For supervising and conducting training programmes in Engineering Geology, Environmental geology, Landslide hazards, Geomorphological mapping etc,

#: Training in Mineral Exploration.

@: STS officers experienced in respective field.

†: Training institutes adjunct to regional offices will conduct Lab related trainings for Officers and staff and also administrative training for officers and staff. These centres will utilize guest faculty from within the region

level and 3 STS/JTS level officers are placed for planning, programming and coordinating purposes and in state unit with each DDG one JAG level officer with support staff from Asstt.Geologist and STA's. Thus, a total of 135 JAG and 96 STS/JTS Officers from Geology, 30 Geophysicist, 24 Chemist and 9 Engineers will need to be posted with DDG for office functions in Mission, Regions and State Units.

As per the programmes envisaged at the end of XI Plan and beginning of XII Plan the detailed break-up of the S&T manpower requirement, in terms of activity and also in terms of various missions/ activities is as follows (in Table-VIII.4):

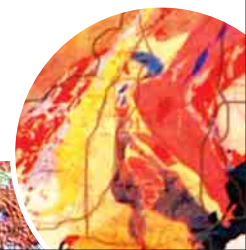


Table – VIII. 4

STS, JTS & Group-B (Gaz.) Manpower Requirement in S & T Streams

S. No.	Mission & Activities	Group A & B			
		Geologist	Geophysicist	Chemist	Engineer
1 Baseline Geodata					
A	Specialized Thematic Mapping	100G+70 AG	-	40 C + 5 AC	-
b	^Integrated Thematic Mapping	^45G + 60AG	^10 GP + 15 AGP	-	-
c	Geomorphological mapping	90G+60AG	-	-	-
d	Geochemical mapping	50G+80AG+	-	132 C + 25AC	-
e	Geophysical mapping	-	75GP+15AGP	-	-
f	Airborne Survey	130G	100 GP+10 AGP	10 C	15 E+6AE
g	Marine Survey	120G	50GP+5AGP	30 C + 10AC	-
h	Hyper spectral mapping	45G+20AG	5GP+30 AGP	-	-
	Sub-Total	<u>535G+230AG=</u> 765	<u>240 GP+ 75 AGP=</u> 315	<u>212C+40 AC=</u> 252	15 E+6AE21
2. Natural Resource assessments					
a	Mineral Resource Survey	465G+70AG	90GP+15AGP	105 C + 15AC	50 E+15 AE
b	Energy Resources Study (other than coal and lignite)	20 G	-	5C-	5 E
	Sub-Total	<u>485G+70 AG</u> 555	<u>90 GP+15 AGP</u> 105	<u>110 C+15 AC</u> 125	<u>55 E+</u> <u>15 AE</u> <u>70</u>
3. Fundamental Geology					
a	Research & Development (incl. lab.)	200G	25GP	35 C + 10AC	-
4 a	Multidisciplinary Geosciences (incl. geotech. environmental, earthquake etc.)	350G	20 GP	25 C+10 AC	9 AE
5 a	GeoInformation management (incl. IT, Map etc.	350 G#	50 GP#	-	*
6	Training Institute	112 G	5 GP	21C-	5 E
7	Addl./DDG offices	96 G	30 GP	24 C	9 E
	TOTAL (1 to 5)	2428	550	502	114

G/GP/C/E = Geologist/Geophysicist/Chemist/Drilling Engineer

AG/AGP/AC = Asst.Geologist/Asst. Geophysicist/Asst. Chemist/Asst. Drilling Engineer

STA = Senior Technical Assistant (Gr. B (N.G.))

* = Computer Scientist (Software and Hardware details in Chapter – X)

#: = Requirement as projected for second half of XI Plan period. This needs thorough examination by committee as suggested in Chapter – X to work out requirements of manpower from XII plan onwards.

^ = The activity begins from XIII Plan

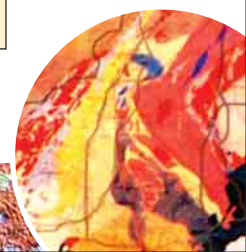
8.7.0 S&T Personnel Strength [Geoscientists and Engineers]:

8.7.1 Based on programmatic requirements brought out earlier as well as the cutting edge staff requirements brought out in the previous paragraphs, the Committee proposes the following staff strength (at cutting edge and supervisory levels) and mode of recruitment for the various streams: -

Table – VIII. 5

A. Geology Stream

Group	Level (Designation)	Scale (As per V CPC)	No. of sanctioned posts at present	Filled in Post	Requirement of posts as per this Report	Proposed Recruitment %		Education Qualification for Direct Recruitment (DR)	Experience and Minimum residency period(for DPC)	
						DR	DPC			
1	2	3	4	5	6	7	8	9	10	
Gr. A	Addl. Director General (Opn.)	Rs.22,400-525-24,500/-	2#	2#	13Ж	-	100%	-	2 yrs. In the grade of SAG (Geology)	
	Dy. Director General(SAG)	Rs.18,400-22,400/-	32#	32#	59	-	100%	-	In the grade of Director with combined 8 yrs service in Director (NFSG) & Director grade. or in the Director grade with combined 18 years service in Gr. A.	
	Director (G) (NFSG)	Rs.14,300-18,300/-	314	73	585	-	-	-	30 % of Senior duty posts for those who entered the 14 th year of service at JTS on the 1st January of the year calculated from the year following the year of the examination.	
	☉ Suptdg. Geologist	Rs.12,000-375-16,500/-		241			-	100%	-	5 years as <u>Geologist (Sr)</u>
	Geologist (Sr.)	Rs.10,000-325-15,200/-	751	573	1169		-	100%	-	4 years as <u>Geologist (Jr)</u> .
Entry in Gr. A	Geologist (Jr.)	Rs.8,000-13,500/-	1330	342	959	75%	25%	Post Graduate@	Asstt. Geol. Promotion to Geologist (Jr): - 4 years' service at Gr. B and post-graduation.\$	
Gr. B	Asstt Geologist Gr-I	Rs.7,500-12,000/-	72	18	300		100%		STA promotion to Asstt Geologist Gr-I: -5 years' service & 1 yrs training at GSITI	
Gr. B (NG)	STA* (Geology)	Rs.6500-10500	90	11	360	75%	25%	B. Sc with Geology*	For Lab. Geol. Gr. I promotion to STA-7 years' service & 1 yrs training at GSITI. Upgradation of JTA to STA only after completion of 5 yrs. In JTA Scale & 1 yr. training in GSITI and acquiring degree.	
	JTA * (Geology)	Rs.5000-8000	110	23						



Group	Level (Designation)	Scale (As per V CPC)	No. of sanctioned posts at present	Filled in Post	Requirement of posts as per this Report	Proposed Recruitment %		Education Qualification for Direct Recruitment (DR)	Experience and Minimum residency period (for DPC)
						DR	DPC		
1	2	3	4	5	6	7	8	9	10
Gr. C	Lab Geol Gr-I	Rs.4500-7000	35	33	35		100%	-	For Lab. Geol.Gr. II officer- promotion to Lab Geol Gr -I: 5 years service & 6 month 'training at GSITI.
	Lab Geol Gr-II	Rs.4000-6000	35	28	35		100%	(Under failing which clause) H.S. in Science Group with 3 years experience in Science Laboratory]	For Lab. Geol Gr.III- promotion to Lab Geol Gr-II: 4 years service & 1 years' training at GSITI
	Lab Geol Gr-III	Rs.3050-4590	80	43	80	75%	25%	HS in Science Group with 2 years Laboratory experience]	For PB-1 promotion to Lab Geol Gr-II: 5 years service and 1 years' training at GSITI

- : Indicative. Actual percentage and other modalities may be worked in consultation with DoPT
- #: presently Two posts are in the scale of Addl. Dy. D.G. on floating basis.
- Ж: Recommended by the Committee.
- @: M. Sc. in Geology; Integrated M. Sc. in Applied Geology; M. Tech Applied Geology; M. Tech (Geo-exploration); M. Tech (Mineral Exploration); M. Tech (Engineering Geology); P.G. in Geochemistry.
M. Sc (Marine Geology); M. Sc.(Earth science and Resource Management); M. Sc (Oceanography and coastal area studies); P.G. Diploma in Environmental Geology; and Diploma in Exploration Geology [for limited number of post – M. Sc. in Geoinformatics.].
- §: Post Graduate as in Col. 9.
- *: Merged scales as accepted by Government of 6th CPC Recommendation, the new post will be designated as Assistant Geologist, Gr. II
- ⊙: Designation recommended by Committee, (because this scale is not Director Scale in office service)
- +: After selection 1 year training in GSITI

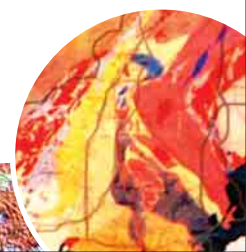
Notes:

1. The Geology Stream has been declared an 'Organized Service'.
2. Director (NFSG) will comprise of 30% of Senior duty post;
3. The post earlier designated as Sr. Dy. Director General is to be designated as Additional Director General.

Table – VIII. 6

B. Geophysics Stream

Group	Level (Designation)	Scale (As per V CPC)	No. of sanctioned posts	Filled Post	Requirement of posts as per this Report	Proposed Recruitment %		Education Qualification for Direct Recruit (DR)	Experience and Minimum residency period(for DPC)
						DR	DPC		
1	2	3	4	5	6	7	8	9	10
Gr.A	Adl. Director General (Geophy.)	Rs.22,400-525 - 24,500/-	1&	1&	1 Ж		100%		As for Geology Stream
	Dy. Director General	Rs.18,400-22400/-	4	4	9	-	100%		
	Director (GP) NFSG	Rs.14,300-18,300/-	51	38	85				
	☼ Sutdg. Geophysist (GP)	Rs.12,000-375 - 16500/-					100%		
	Geophysicist (Sr.)	Rs.10,000-325-15200/-	118	37	264		100%		
	Geophysicist (Jr.)	Rs. 8,000-13,500/-	237	100	196	75%	25%	Post Graduation@	
Gr.B	Asstt Geophysicist Gr-I	Rs.7,500-12000/-	40	13	90		100 %		As for Geology Stream
^Gr.B (NG)	STA* (Geophysics)	Rs. 6500-10500/-	50	12	130	75%	25%	B. Sc. with + Physics/ Geophysics, Geology with Maths/ AMIE in Electronics or Communication Engineering	As for Geology Stream
	JTA * (Geophysics)	Rs. 5000 - 8000/-	80	9					
^Gr. C	Lab Asstt (GP) Gr-I	Rs. 4500 - 7000/-	17	17	17	-	100%	-	As for Geology Stream
	Lab Asstt (GP) Gr-II	Rs. 4000 - 6000/-	18 -	14	18	-	100%	Failing Promotion HS in Science. Diploma (3 years course) from a recognized Electrical, Mechanical, Automobile polytechnic or equivalent, with experience of not less than one yr.	As for Geology Stream



Group	Level (Designation)	Scale (As per V CPC)	No. of sanctioned posts	Filled Post	Require- ment of posts as per this Report	Proposed Recruitment %		Education Qualification for Direct Recruit (DR)	Experience and Minimum residency period(for DPC)
						DR	DPC		
1	2	3	4	5	6	7	8	9	10
	Lab Asstt (GP) Gr-III	Rs. 3200- 4900/-	35	18	35	75%	25%	HS in Science. Diploma (3yr. course) from a recognized Electrical, Mechanical, Automobile polytechnic or equivalent, with experience of not less than 1yr.	As for Geology Stream

- : Indicative. Actual percentage and other modalities may be worked in consultation with DoPT
- @: M. Sc. in Physics (with specialization in Potential Theory); M. Sc. in Geophysics; Integrated M. Sc in Exploration Geophysics; M. Sc in Applied Geophysics; M. Tech (Geoexploration); M. Sc. (Marine Geophysics);and as in *Annexure – VIII.II*.
- \$: Post Graduate as in Col. 9
- *: Merged scales as accepted by Government the 6th CPC Recommendation, the new post will be designated as Assistant Geophysicists, Gr. II
- +: After selection 1 year training in GSITI
- &: 1 post of STSS from combined Geophysics; chemistry & Engineering Services
- Ж: recommended by the committee.
- ⊙: Designation recommended by Committee, (because this scale is not Director's Scale in other services.
- ^ Group B (NG) and Group C of Geophysics Instrumentation merged with Geophysics; such personnel shall cater to the need of the maintenance of Geophysical instruments in the field and assist Geophysical investigation parties.

Notes:

- A. The Committee proposes that the Geophysics Stream be declared to be an 'Organized Service'.
1. The post earlier designated as Sr. Dy. Director Geologist is to be designated as Additional Director General. Director (NFSG) will comprise of 30% of Senior duty post; (on becoming Organized Service)

Table – VIII.7

C. Chemical Stream

Group	Level (Designation)	Scale (As per V CPC)	No. of sanctioned posts	Filled Post	Requirement of posts as per this Report	Proposed Recruitment %		Education Qualification for Direct Recruit (DR)	Experience and Minimum residency period(for DPC)
						DR	DPC		
1	2	3	4	5	6	7	8	9	10
	Addl. Director General	Rs.22,400-525 – 24,500	1 [€]	1 [€]	0 ^{€*}				
Gr- A	Dy. Director General (Chemical)	Rs.18,400–22,400	3	3	8	-	100%		As for Geology
	Director (Chem) NFSG	Rs.14,300–18,300	30	30	74	-	100%		
	⊗ Supdtg. Chemist	Rs.12,000–375-16500							
	Chemist (Sr.)	Rs.10,000–325-15,200	61	31	245		100%		As for Geology
	Chemist (Jr.)	Rs.8,000–13,500	234	76	182	50%	50%	M. Sc. in Chemistry	For pro-motion to Chemist (Jr.) 3 yrs service as Asstt. Chemist Grade I.\$
Group -B (Gaz.)	Asstt Chemist Gr-I	Rs.7,500–12,000	72	21	75		100%		As for Geology Stream
Gr. B NG	STA (Chem)*	Rs.6500-10500	90	34	240	75%	25%	B. Sc with Chemistry as one of the subject and 2 year experience in reputed Lab. Stream	As for Geology
	JTA (Chem)*	Rs.5000-8000	100	6					
Gr. C	Lab Asstt Chem Gr-I	Rs. 4500-7000	20	4	30		100%	-	As for Geology Stream
	Lab Asstt Chem Gr-II	Rs.4000-6000	30	47	45		100%	-	As for Geology Stream
	Lab Asstt Chem Gr-III	Rs.3050-4590	60	40	75	75%	25%	:HS in Science group & 2 years experience in Chemical Lab	As for Geology Stream

- : Indicative. Actual percentage and other modalities may be worked in consultation with DoPT
 \$: Post Graduate as in Col. 9
 *: Merged scales as accepted by Government, the 6th CPC Recommendation, the new post will be designated as Assistant chemist, Gr. II
 +: After selection, 1 year training in GSITI
 &: presently 1 post of STSS from combined Geophysics; chemistry & Engineering Services
 Ж: Recommended by the Committee.
 #: 1 year training in Analytical Chemistry in GSITI
 ⊗: Designation recommended by Committee, (because this scale is not Director Scale in office service)
 &*: Addl. D.G. not continued. Chemical stream is a Support stream.

Notes:

- A. 1. The Chemistry Stream is proposed under 'Organized Service'.
 Director (NFSG) will comprise of 30% of Senior duty post. (On becoming Organized Service)

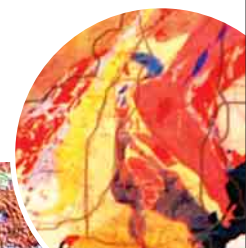


Table – VIII. 8

D. Engineering Stream

Group	Level (Designation)	Scale (As per V CPC)	No. of sanctioned posts	Filled Post	Requirement of posts as per this Report	Proposed Recruitment %		Education Qualification for Direct Recruit (DR)	Experience and Minimum residency period(for DPC)
						DR	DPC		
1	2	3	4	5	6	7	8	9	10
Group -A	Addl. Director General	Rs.22,400 – 525 – 24,500/-	1*	1*	0*				As per Organized Service Norms
	Chief Engineer	Rs.18,400 – 22,400/-	3	3	3		100%		
	@Suptdg. Engineer	Rs.14,300 – 18,300/-	7	4	7		100%		
	#@ Executive Engineer	Rs.12,000 – 375 – 16,500/-	42	36	42				
	Executive Engineer	Rs.10,000 – 325 – 15,200/-					100 %		
	Assistant Executive Engineer	Rs.8,000 – 13,500/-	38	16	38	75%	25%	BE	
Group -B (Gaz)	Asstt Engg Gr-I	Rs.7,500 – 12,000/-	60	27	60		100 %	-	Residency period As per Geology stream & training and exam. By GSI TI
Gr. B (Gaz.)	*Asstt Engg. Gr-II	Rs.6500 – 10500/-	60	14		50%	50%	A degree in Mining or Mechanical Engineering of a recognized University or Institute and its equivalent Or Diploma in Mining or Mechanical Engineering (3 yrs) course after Matriculation or Drilling or its equivalent with 3 yrs experience in various aspects of diamond drilling and connected operation.	Residency period As per Geology stream. Matriculate to clear departmental examination in drilling to be conducted by GSI TI
	*STA (Drilling) (Grp. B, N.Gaz.)	Rs.5500 – 9000/-	90	110	90	20%	80 %	A degree in Mining or Mechanical Engineering of a recognized University or Institute and its equivalent Or Diploma in Mining or Mechanical Engineering (3 yrs) course after Matriculation or Drilling or its equivalent with 3 yrs experience in	Residency period As per Geology stream. Matriculate to clear departmental examination in drilling to be conducted by GSI TI

Group	Level (Designation)	Scale (As per V CPC)	No. of sanctioned posts	Filled Post	Requirement of posts as per this Report	Proposed Recruitment %		Education Qualification for Direct Recruit (DR)	Experience and Minimum residency period(for DPC)
						DR	DPC		
1	2	3	4	5	6	7	8	9	10
								various aspects of diamond drilling and connected operation.	
Group- 'C'©	*JTA (Drilling) (Group C)	Rs.5000 – 8000/-	180	189 1097*	266^ [86]^––	20%	80 %	ITI Certificate holder in Mechanical/ Fitters/Turners etc, induction through examination	Residency period As per Geology stream. Matriculate to clear departmental examination in drilling to be conducted by GSI TI
	Drilling Asstt. Gr.I (Group C) **	Rs.4000 – 6000/-	-	173	-		100%		Residency period As per Geology stream. Matriculate to clear departmental examination in drilling to be conducted by GSI TI
	Drilling Asstt. Gr-II (Group C)	Rs.3200 – 4900/-	260	577	474^ [214]^––	50%	50%	ITI Certificate holder in Mechanical/ Fitters/Turners etc.	Residency period As per Geology stream. Matriculate to clear departmental examination in drilling to be conducted by GSI TI
	Drilling Asstt. Gr-III (Group C)	Rs.3050 – 4590/-	270	48	270	100%	-	ITI Certificate holder in Mechanical OR Matriculate to complete induction training in GSI	-

Indicative. Actual percentage and other modalities may be worked in consultation with DoPT

Non-Functional Selection Grade

** At present - Mechanic Gr-I level, no personnel is from Drilling Division

⊗ Designation recommended by Committee & presently 1 post of STSS from combined Geophysics; chemistry & Engineering Services

& Addl. D.G. not continued. The Committee is of the view that there is no justification for an Addl. D.G. level officer for drilling, since this is a support stream which is field based. There also a need to outsource at least some of the drilling activity.

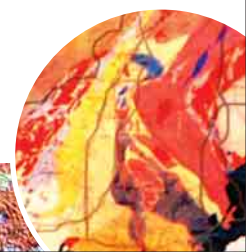
* Scales merged as per VIth CPC.

© The workshop group C merged

• Note: The engineering stream is proposed under 'Organized Service'

^ includes personnel from Workshop; ^–– figures in parentheses is the number of W'shop personnel merged

@...at present Suptdg. Engineer (designated as Director (SG) is NFSG post and along with Executive Engineer in 12000- 16500 scale total sanctioned strength is 17 posts, out of which 7 may be for Director (Sel. Gr.).



8.8.0. Career Progression in Geological Survey of India:

8.8.1. A major reason for the gradual erosion of GSI's position as a premier geoscientific institution is abysmal personnel policy and management characterized by:

- poor pyramidal structure and/or unviable cadres
- delays in promotion
- Inefficient recruitment

8.8.2. The net result has been accumulation of a large number of vacancies at the entry level in Group A, huge stagnation at middle level and incredibly quick turnover at Senior levels due to retirements.

8.8.3. The Committee recommends a systematic approach to address these symptoms, consisting of:

- ensuring only viable cadres
- improving the pyramidal structure, where possible using the 'organised service' approach
- Induction only at JTS level in group-A
- providing regulated promotion from Group B to Group A so as to ensure that natural attrition takes place at all levels rather than only at the top.

8.8.4. The Committee therefore recommends that these principles be implemented through:

- declaration of Geophysics, Engineering and Chemistry as organised services, after appropriate improvements in the structure.
- Cadre review based on recommendation of this Committee and improvement of pyramid to conform as far as possible to the ideal pyramid proposed by DOPT.
- Reaffirmation of Geology Stream as an Organized service.

8.8.5. The Committee recommends that in the long runs, GSI must be in a position not only to carry out geoscientific activity of the highest order but also be in a position to create capacity in the States by building up the human resources. For this purpose, the Committee recommends that GSI systematically create a 'special deputation reserve' of 15% in order to be able to depute Geoscientists at the level of STS and JAG to State Governments for project based activities including partnerships. It is further recommended that GSI build a reserve of 3% to enable its officers to go on long-term foreign training in order to improve the knowledge base and enrich the organization.

8.9.0. Flexible Complementing Scheme:

8.9.1. Earlier Committees notably the Expert Committee (Varma Committee) have recommended introduction of Flexible Complementing Scheme (FCS) in GSI, primarily as a device to remove stagnation caused by a poor pyramidal structure in the organization. The Committee believes that the recommendations made in the earlier paragraph will greatly improve the management efficiency of the Human Resources in all streams. However, given the fact the GSI as a Central Institution has a large all India presence, its pyramidal structure is bound to be constructed on a relatively large base. Moreover, if research excellence is to be encouraged, remuneration have to be delinked from the hierarchy at least in identified areas including Centres of Excellence which may be identified with GSI. Government is understood to be reviewing the Guidelines for applicability of FCS. The Committee recommends that the issue of FCS in the GSI be given a fresh consideration after issue of the new guidelines on FCS. In the meanwhile GSI may ensure implementation of recommendations that the Geophysics, Engineering and Chemistry stream are got declared as organised services to avail of the attendant benefits.

THE GEOLOGICAL SURVEY OF INDIA ACT

An Act for the better provision of the geoscientific surveys of India and its offshore areas and for the incorporation of the Geological Survey of India for the purpose.

Be it enacted by Parliament in the Fifty ninth year of the Republic of India as follows:

PRELIMINARY

1. Short title, extent and commencement:

- (1) This Act may be called the Geological Survey of India Act, 2009.
- (2) It extends to the whole of India.
- (3) It shall come into force with immediate effect.

2. Definitions:

- (i) 'Survey' means the Geological Survey of India as provided in Entry 68 of List 1 of the Seventh Schedule of the Constitution.
- (ii) 'Prescribed' means prescribed by Rules under this Act.
- (iii) 'Field Season' means the 12 month period commencing on 1st October and ending on 30th September each year.
- (iv) 'Financial Advisor' means an Additional Director-General or Deputy Director-General of the Survey appointed under Subsection (2) of Section 7 of the Act with the concurrence of the Ministry of Finance, and shall include an officer of the Survey to whom the Financial Advisor has delegated his powers, to the extent of such delegation.

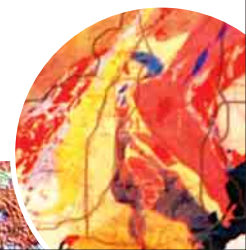
Words and expression used but not defined herein shall have the same meaning as in the Mines and Minerals (Development and Regulation) Act, 1951 (no.67 of 1957).

3. Incorporation of the Geological Survey of India: (1) With effect from such date as the Central Government may by notification in the Official Gazette, appoint in this behalf, the Geological Survey of India shall be a body corporate by the name aforesaid having perpetual succession and a common seal, with powers to acquire, hold and dispose of property, both movable and immovable, and to contract, and shall by the said name sue and be sued.

- (2) It is hereby declared that the Survey shall be an institution of national importance.

4. Director-General and other officers of the Survey: (1) There shall be a Director-General of the Survey who shall be appointed by the Central Government. The appointment shall be made from amongst persons with high professional merit and excellence on the basis of the recommendation of a Search-cum-Selection Committee under the chairmanship of the Cabinet Secretary, in such a manner as may be prescribed.

- (2) The Central Government may appoint such number of Additional Directors-General, Deputy Directors-General of the Survey and other officers and in such manner as may be prescribed.



Provided that one such Additional Director-General or Deputy Director-General, who shall be designated as the Additional Director-General or Deputy Director-General (Finance) shall be appointed with the concurrence of the Ministry of Finance and shall be the Financial Advisor to the Survey.

Provided also that one such Additional Director General or Deputy Director General who shall be designated as Addl. Director General or Dy. Director General (Personnel) shall be appointed with the concurrence of the administrative Ministry of the Geological Survey of India.

(3) Subject to such rules as may be made by the Central Government on behalf, the Director-General may appoint such number of other officers and employees as may be necessary and may determine the designations of such officers and employees.

(4) The salary and allowances and conditions of service of the Director-General, Additional Director-General, Deputy Director-General, other officers and employees shall be such as may be prescribed.

5. **Officers, branches and agencies:** (1) The headquarters of the Survey shall be in Kolkata. Provided that the Central Government may by notification in the Official Gazette, shift the headquarters to such other place in India as may be deemed expedient in the public interest.

(2) The Director-General may, with the prior approval of the Central Government, establish branch offices (by whatever name called) at any other place in India, for the better achievement of all or any of the objects of the Survey hereinafter specified.

(3) The Director-General may with the prior approval of the Central Government set up and maintain institutions or agencies under the Survey for research or scientific or commercial activity.

6. **Objects of the Survey:** The objects of the Geological Survey of India shall be to:

(i) Facilitate the provision of objective, impartial and upto date geological expertise and geoscientific information of all kinds for decision making by government and commercial users.

(ii) Systematically document the geology and geological processes of the surface and subsurface of India and its offshore areas using the latest and most cost-effective techniques and methodologies, including geophysical and geochemical and geological surveys.

(iii) Develop and continually enhance GSI's core competence in mapping through continued accretion, management, coordination and utilization of spatial databases (including those acquired through remote sensing) and function as a 'Repository' or 'clearing house' for the purpose and use new and emerging computer based technologies for dissemination of geographic information and other spatial data, through cooperation and collaboration with other stakeholders in the geoinformatics sector.

(iv) Explore (through land, airborne, satellite, and marine surveys) and scientifically assess mineral and energy resources of the country and its offshore areas and facilitate their optimal exploration through information dissemination.

- (v) Maintain a leadership role in the geological field and develop partnerships with Central, State and other institutions, to help create enhanced executional capability and capacity in the field of geology in furtherance of the objects of this Act.
- (vi) Coordinate geoscientific activities with stake holders in all sectors related to geoscience in order to help sustainably manage the country's natural resources, including water.
- (vii) Conduct multidisciplinary as well as fundamental Geoscientific research and studies (including geotechnical investigations, physical, chemical and biological hazard investigations, climate change geostudies, paleo geostudies etc.), and foster partnerships with State and Central research and academic institutions for the purpose.
- (viii) Actively participate in international collaborative projects to improve the understanding of the earth and its ecosystem and its geology, including studies related to tectonics, global warming, climate change and Polar studies.
- (ix) Generally advance the cause of the geoscience by documentation, propagation, archiving and education, including creation and management of museums, monuments and parks, archives, libraries and other facilities for use of students, researchers and the public. In particular, the Survey shall constantly endeavour to popularize geoscience at school and university levels through production and distribution high quality audio-visual and printed material, and through the medium of the Internet. The Survey may hold exhibitions and special events to bring geoscientific concepts before the public.

Provided that the Central Government may from time to time, by notification in the Official Gazette add such other related objects as may be necessary in the public interest.

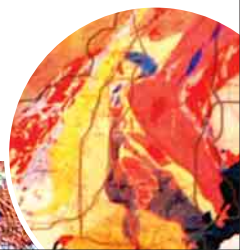
7. Functions of the Survey: With a view to the promotion of the objects specified under Section 6, the Survey shall:-

- (i) Prepare schemes in furtherance of the objects and execute Annual Programmes prepared in such manner as may be decided in consultation with the Central Government
- (ii) Comply with directions issued by the Central Government from time to time to take up activities in consonance with the objects specified under Section 6.

Provided that compliance of the directions of the Central Government shall be to the extent that funds are provided for the purpose.

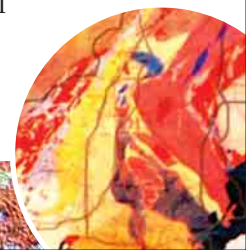
8. Provision of Geoscientific Information: (1) Without prejudice to the generality of the provisions of Section 6, the Survey shall manage its geoscientific information in such a way that subject to the provisions of Section 8 of the Right to Information Act, 2005 (Act No.22 of 2005) or any directions of the Central Government, the information is duly catalogued and indexed in a manner and form which facilitates access through computer networks including the Internet.

(2) It shall be the constant endeavour of the Survey to take steps, subject to any restriction under Section 8 of the Right to Information Act or a direction of the Central Government under Subsection (1) of this Section, to provide as much geoscientific information *suo moto* to the public through various means of communication, including the internet, in as convenient a format as possible so as to reduce to the minimum the need to apply to the Survey for information separately.



9. **Central Geological Programming Board:** (1) The Central Government may by notification in the Official Gazette, constitute a Central Geological Programming Board under the Chairmanship of the Secretary to Government of India in the Ministry of Mines with composition and Terms of Reference as may be determined.
- (2) The Board shall be responsible for coordinating geoscientific activity in relation to the Survey, finalizing the annual programme of the Survey and for ensuring the furtherance of the objects of the Survey.
- (3) The Director-General of the Survey shall be ex-officio member of the Board, which shall also comprise representatives of Central Government Ministries and Institutions connected with Geoscience, representatives of State Governments and other stakeholders in the activities of the Survey.
- (4) The Central Government may from time to time constitute Committees of the Board for specific subjects.
- (5) The Board and its Committees shall be serviced from the Survey and shall meet as often as may be necessary but at least once in six months.
10. **Fund of the Survey:** (1) The Survey shall maintain a non-lapsing Fund to which shall be credited:-
- (i) money provided by the Central Government to meet the expenses of Schemes executed by the Survey and the Survey's recurring expenses
- (ii) all fees and other charges received by the Survey
- (iii) all moneys received by the Survey by way of grants, gifts, donations, benefactions, or transfers or moneys received from any other source.
- (2) All moneys credited to the Fund shall be deposited in such Banks or invested in such manner as the Survey may, with the approval of the Central Government, decide.
- (3) The Fund shall be applied towards meeting the expenses of the Survey including the expenses incurred in the exercise of its powers and discharge of its functions under Section 7.
11. **Budget of the Survey:** (1) The Financial Advisor of the Survey shall cause to be prepared in such form and at such time as may be prescribed, a budget in respect of the Field Season next ensuing showing the estimated receipts and expenditure of the Survey and shall forward the budget for the approval of the Central Government.
- (2) The Budget shall specify in respect of each object specified under Section 7 and for each branch, the nature and extent of the proposed expenditure.
12. **Assets:** (1) All assets in the possession of the Survey on the date of commencement of this Act or subsequently acquired by the Survey from money provided by the Central Government for such acquisition shall be owned by the Central Government unless transferred to the Survey.
- (2) All assets in the ownership of the Central Government in the possession of the Survey shall be maintained by the Survey out of the moneys of the Fund.

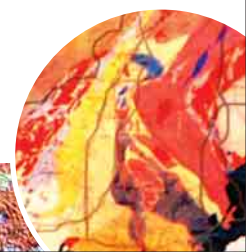
13. **Accounts:** (1) The Survey shall maintain its financial accounts and other relevant records in such form as the Central Government may prescribe in consultation with the Comptroller and Auditor-General of India.
- (2) The Financial Advisor of the Survey shall cause to be prepared an Annual Statement of Accounts including the Balance-Sheet in such form as the Central Government may prescribe in consultation with the Comptroller and Auditor-General of India.
- (3) The Annual Statement of Accounts of the Survey shall be audited by the Comptroller and Auditor-General of India or any other person appointed by him in his behalf and expenditure incurred by him in connection with the audit shall be payable by the Survey to the Comptroller and Auditor-General of India or any other person appointed by him in his behalf.
- (4) The Comptroller and Auditor-General of India and any person appointed by him in connection with the audit of the accounts of the Survey shall have the same rights, privilege and authority in connection with such audit as the Comptroller and Auditor-General of India has in connection with the audit of Government accounts and in particular, shall have the rights to demand the production of books, accounts, related vouchers and other documents and papers and to inspect the offices of the Survey as well as of Centres, institutions or agencies established and maintained by it under Section 5.
- (5) The Annual Statement of Accounts of the Survey as certified by the Comptroller and Auditor-General of India or any other person appointed by him in his behalf together with the audit report thereon shall be forwarded to the Central Government and the Government shall cause the same to be laid before both Houses of Parliament.
14. **Annual Report:** The Survey shall prepare for every year a report of its activities during that year and submit the report to the Central Government in such form and on or before such date as may be prescribed and a copy of this report shall be laid before both Houses of Parliament within one month of its receipt.
15. **Authentication of the orders and instruments of the Survey:** All orders and decisions of the Survey shall be authenticated by the signature of the Director-General or such other officer authorized by him in this behalf. Provided that all orders and decisions involving revenues to or expenditure from the Fund shall be issued after consultation with the Financial Advisor.
16. **Control of Central Government:** (1) The Survey shall carry out such policy directions as may be issued to it from time to time by the Central Government for the efficient administration of this Act. In carrying out such directions, the Central Government may vest the Survey with such of its powers as it shall specify through notification in the Official Gazette.
- (2) In any dispute between the Survey and the Central Government, the decision of the Central Government shall be final.
17. **Information to be furnished:** The Survey shall furnish to the Central Government or such other authority as the Central Government may specify, such reports, returns and other information as the Government may require from the Survey.
18. **Officers and employees of the Survey to be public servants:** Every officer and employee of the Survey shall be deemed to be a public servant within the meaning of Section 21 of the Indian Penal Code.



19. **Power to make Rules:** (1) The Central Government, after consultation with the Survey, may by notification in the Official Gazette make rules for carrying out the purposes of this Act.
- (2) Every rule made under this Section and every notification by the Central Government under this Act shall be laid, as soon as may be after it is made, before each House of Parliament while it is in session for a total period of thirty days which may be comprised in one session or in two or more successive sessions, and if, before the expiry of the session immediately following the session or the successive sessions aforesaid, both Houses agree in making any modification in the rule or notification or both Houses agree that the rule or notification should not be made, the rule or notification shall thereafter have effect only in such modified form or be of no effect, as the case may be; so, however, that any such modification or annulment shall be without prejudice to the validity of anything previously done under that rule or notification.
- (3) Till such time as rules are notified under this Section, the Rules application to the Survey on the date of commencement of the Act shall be deemed to be applicable except to the extent that it is inconsistent with the provisions of this Act.
20. **Regulations:** (1) The Survey, with the previous approval of the Central Government, may by notification in the Official Gazette, make regulations consistent with this Act and the Rules thereunder to carry out the purposes of this Act.
- (2) Every regulation made under this Section shall be laid, as soon as may be after it is made, before each House of Parliament, while it is in session for a total period of thirty days, which may be comprised in one session or in two or more successive sessions, and if, before the expiry of the sessions immediately following the sessions or the successive sessions aforesaid, both Houses agree in making any modification in the regulation or both Houses agree that the regulation should not be made, the regulation shall thereafter have effect only in such modified form or be of no effect, as the case may be; so, however, that any such modification or annulment shall be without prejudice to the validity of anything previously done under that regulation.
21. **Delegation of Powers:** The Central Government may by notification in the Official Gazette direct that any power exercisable by it under this Act may in relation to such matters and subject to such conditions if any specified in the notification by also exercisable by such officer or authority subordinate to the Central Government.
22. **Prosecution of action taken in good faith:** No suit, prosecution or legal proceeding shall be against any person for anything which is in good faith done or intended to be done under this Act.
23. **Saving:** All acts done prior to the date of commencement of this Act by the Government or any officer of the Government in exercise of the authority in them vested shall be as valid and operate as if they had been done in accordance with this Act.
24. **Power to relax:** The Central Government may relax any of the provisions of this Act in the public interest.
25. **Power to remove difficulties:** The Central Government by notification in the Official Gazette, may issue any direction not inconsistent with the object of this Act to remove any difficulty. Provided that no such direction shall be issued after a lapse of three years from the commencement of this Act.

Statement of Objects and Reasons

The Geological Survey of India (GSI) was set up in 1851 initially to find coal for the railways. Over the last 150 years it has earned an outstanding reputation for pioneering work in geological survey and mapping and mineral exploration. With the progress of technology and emergence of new frontiers of geoscience, the GSI needs to be adequately empowered, and freed from routine administrative procedures in order to develop scientific excellence. The Bill provides for incorporation of the GSI enabling it to acquire the necessary management flexibility to conduct geoscientific work in the national interest. The Bill also provides for a non-lapsing Fund to enable GSI to ensure adequate funding of its field and laboratory activities including acquisition of high technology equipment.



Minimum Qualifications, Scheme of Examinations and in Service Induction Parameters

Sl. No	Minimum Qualification	Papers for Examination (any three)	In service induction training
i	I. Geology		
	M. Sc (Geology)Integrated M.Sc. in Applied Geology, M.Sc (Marine Geology); Integrated M.Sc. in Applied Geology; M.Tech (Geo-exploration); M.Tech (Mineral Exploration); M.Tech (Engineering Geology);M.Sc (Marine Geology); M.Sc. (Earth science and Resource Management); M.Sc Oceanography and Coastal area studies); and Diploma in Exploration Geology; P.G. in Geochemistry	Paper-I	General Geology, Geomorphology, Structural Geology, Geotectonic, Stratigraphy, Paleontology
		Paper-II	Mineralogy& Crystallography, Igneous& Metamorphic petrology, Sedimentology, Gemology, Marine Geology
		Paper-III	Remote Sensing & GIS in Geology, Resource mapping, Geoenviromental Geology& Natural Hazards. Engineering Geology, Geochemistry
		Paper-IV	Indian Mineral Deposits and Mineral Economics; Ore Geology & Ore Genesis, Mineral Exploration, Geology of Fuels,
			Normal 2 year probation, including 9 months field cum practical training in Geology Passing of D.E necessary for completion of probation.
ii	II. Geophysics		
	M. Sc. in Physics /Applied Physics); M. Sc. in Geophysics; M. Sc in Applied Geophysics; M. Tech (Geoexploration); M. Sc. (Marine Geophysics); M Sc in applied Geology. Integrated M. Sc in Exploration Geophysics; M.Sc (Tech) Applied Geophysics	Paper-I	Mathematical Methods in Geophysics, solid earth Geophysics, Remote Sensing & GIS applications
		Paper-II	Geophysical Signal processing, Geophysical potential fields, Gravity & Magnetic prospecting, electrical Prospecting
		Paper-III	Petrophysics & Well logging, Seismology, Seismic Prospecting, Radiometric Exploration
		Paper-IV	Marine Geophysics, Geophysical Inversion, Near surface Geophysics, Non-linear Geophysics
			Normal 2 year probation- including nine month's practical and field training in Geophysics. Passing of D.E necessary for completion of probation.
iii	** III. Chemistry		
	M.Sc – Chemistry, M.Sc- Applied Chemistry; M.Sc in analytical Chemistry	Any three Papers out of following six: i. Analytical Chemistry, ii. Physical Chemistry, iii. Inorganic chemistry, iv. Organic chemistry, v. Soil chemistry vi. Hydrochemistry	Normal 2 year probation, including nine month practical training. in analytical procedures in labs. Passing of D.E necessary for completion of probation.

** Separate Examination to be conducted by UPSC, for induction of Chemists at JTS level.