

REPORT OF
THE WORKING GROUP ON

OCCUPATIONAL SAFETY AND HEALTH

**FOR
THE TENTH FIVE YEAR PLAN
(2002-2007)**



**GOVERNMENT OF INDIA
PLANNING COMMISSION
SEPTEMBER –2001**

Acknowledgements

Planning Commission had set up a Working Group to prepare the Xth Five Year Plan on Occupational Safety and Health at the workplace under the Chairmanship of Shri Vinod Vaish, Secretary, Ministry of Labour, Govt. of India. The terms of reference assigned to the Working Group were dealt with by constituting three sub groups dealing with mining sector, factories & docks and unorganized sector.

As per the Constitution of India a number of Legislations have been framed dealing with the safety, health and welfare of the workers employed in the organized sector. However, due attention has not yet been given to the workers in the unorganized sector. For the first time this report has not only attempted to fill up this gap but has also endeavoured to frame guidelines which could help in drawing up a coherent national policy on Occupational Safety and Health and to enact a general legislation on Occupational Safety and Health applicable to all workplaces including the unorganized sector in the country. The Working Group has laid stress on competence building and in creating awareness among the workforce towards Occupational Safety and Health. Apart from the Executive Summary, there are eight chapters in the Report which also include the recommendations.

I would like to place on record, the group's deep sense of gratitude to Shri Vinod Vaish, Secretary, Ministry of Labour, the Chairman of the Working Group for his valuable guidance, constant support and encouragement in the successful completion of the report.

I would also like to thank the members of the Working Group S/Sh. A.K. Rudra, DGMS, S.K.Saxena, DGFASLI, K.C. Gupta, DG, National Safety Council, H.N. Saiyed, Director, NIOH, Ahemdabad, L.R.Sailo, Secretary(L), Tamil Nadu, B.Subba Rao, Secretary(L), Karnataka, R.C. Vaish, Secretary(L), Bihar and Dr. B.C. Gupta, Secretary (L), Punjab who brought to bear their experience and expertise in the different disciplines of Occupational Safety and Health. The invaluable help and cooperation extended by Shri K.K. Marwaha, Deputy Secretary, Ministry of Labour Shri Rahul Guha, Director, DGMS, Dhanbad, Shri V.B. Sant, Deputy Director, DGFASLI, Mumbai and Shri P.M. Rao, Director, NSC, Mumbai are gratefully acknowledged. I also acknowledge with thanks the cooperation and valuable help rendered by officers and staff of ISH Division of Ministry of Labour and DGFASLI, Mumbai.

Convener

K.Chandramouli

LIST OF ABBREVIATIONS

AMP	-	Abandonment Mine Plan
BCCL	-	Bharat Cooking Coal Ltd.
BIS	-	Bureau of Indian Standards
CBWE	-	Central Board of Workers' Education
CFS	-	Container Freight Stations
CIF	-	Chief Inspector of Factories
CLC(C)	-	Chief Labour Commissioner (Central)
CLI	-	Central Labour Institute
CMAL	-	Coal Mines Authority Ltd.
CONCOR	-	Container Corporation of India
CPWD	-	Central Public Works Department
DDG	-	Deputy Director General
DGFASLI	-	Directorate General Factory Advice Service & Labour Institutes
DGMS	-	Directorate General Mines Safety
DME	-	Departments of Mineral & Energy
DMRS	-	Development of Mines Rescue Services
DMSIS	-	Development of Mines Safety Information System
DOPT	-	Department of Personnel & Training
ESIC	-	Employees State Insurance Corporation
FAS	-	Factory Advice Service
HAZOP	-	Hazard Operability
ICD	-	Inland Container Depots
ILO	-	International Labour Organisation
ISO	-	Internal Safety Organisation
ISP	-	Information System Planning
ITRC	-	Indian Toxicology Research Centre
JNPT	-	Jawaharlal Nehru Port Trust
LPA	-	Loss Prevention Association
MAH	-	Major Accident Hazard
MOL	-	Ministry of Labour
MSHA	-	Mines Safety and Health Administration
MSIHC Rules	-	Manufacture, Storage & Import of Hazardous Chemicals Rules
NB-OSH	-	National Board on Occupational Safety and Health
NGO	-	Non-Governmental Organisation
NICMAR	-	National Institute for Construction Management and Research
NIOH	-	National Institute of Occupational Health
NSC	-	National Safety Council
OISD	-	Oil Industry Safety Directorate

OSHA	-	Occupational Safety & Health (Act) 1970 – USA (Administration
PIACT	-	An ILO training Project (French)
PIF	-	Providing Infrastructure Facilities in DGMS
POL	-	Petroleum Oil Liquid
PSCT	-	Port Side Container Terminal
R&D	-	Research & Development
RCDs	-	Rail Container Depots (RCD)
RLI	-	Regional Labour Institute
S&T	-	Science & Technology
SEWA	-	An NGO
SOMA	-	Survey of Mine Accidents and Development of Mines Safety
SSEX	-	Strengthening of Machinery for Conduct of Statutory Examination
SSI	-	Small Scale Industry
SWP	-	Safe work Procedure
TISS	-	Tata Institute of Social Sciences
UNDP	-	United Nations Development Programme
UPSC	-	Union Public Service Commission USA)
UT	-	Union Territory
VDU(T)	-	Video Display Units (T) Terminal
W.P.	-	Writ Petition
WHO	-	World Health Organisation

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INTRODUCTION

The Constitution of India has specific provisions for ensuring OSH for workers in the form the three Articles 24, 39 (e and f) and 42. The statutes relating to OSH are broadly divided into three- statutes for safety at workplaces (eg. Factories Act, 1948 and Mines Act, 1952), statutes for safety of substances (eg. Indian Explosives Act, 1884), and statutes for safety of activities (eg. Radiation Protection rules under the Atomic Energy Act). The terms of reference for the present report covers OSH aspects relating to safety at workplace.

The Mines Act, 1952 and Rules and Regulations framed thereunder, Factories Act, 1948 and Rules framed thereunder, Dock Workers (Safety, Health and Welfare) Act, 1986 and Regulations framed thereunder, Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996 and Rules framed thereunder , Dangerous Machines (Regulation) Act, 1983 and Rules framed thereunder, Insecticides Act, 1968 and Rules framed thereunder, Shops and Establishments Acts of State Governments, Beedi and Cigar Workers' (Conditions of Employment) Act, 1966, Municipal Solid Waste (management and Handling) Rules, 2000 notified under the Environment (Protection) Act, 1986, etc. are the important statutes covering OSH aspects of workers. At present, comprehensive safety and health statutes for regulating OSH of persons at work exists only in respect of the four sectors namely, mining, factories, ports, and construction.

On the status of safety in mines, if looked at from the point of view of accidents in mines, it can be said that over the years the accident figures have come down. However, the matter of concern is the plateau reached in fatal accidents in the last two decades of the previous century. The year 2000, however, saw substantial reduction on accident figures which were down to 0.27 and 0.25 fatalities per 1000 persons employed for coal and non-coal sectors respectively. Serious injuries in mines show a steady decline. While examining accidents in details, it could be seen that similar causes of accidents repeat themselves in a disturbing manner. In view of this, it was found necessary to apply scientific and technological research findings more in containment of accidents. Training and re-training of workforces also need to be emphasized. Time is now ripe to introduce new initiatives and stress upon areas of high risk in order to minimize them.

In case of industries sector, there has been decreasing trend in injuries during the period 1994-1999 whereas there was an increasing trend in the number of registered factories during the same period. The percentage reductions in injuries were estimated at 6.8% per annum on an average. There is a decreasing trend in both the frequency and incidence rates of industrial injuries. However, these rates are higher when compared to those of developed countries. Regarding occupational diseases, very few cases have been reported in factories.

The number of reportable accidents in major ports from 1995-96 to 1999-2000 decreased from 402 to 250 thus registering a decrease of about 38% . However, the number of fatal accidents during the same period remained almost the same.

Although a major percentage of total work force is engaged in the unorganized sectors, like, agriculture, construction, shops and establishments, home work, eating places and waste management, etc. excepting a few pilot surveys in some of these segments of the unorganized sector, no authentic statistics at the national level are available on accidents and occupational diseases. Construction is considered as one of the highly hazardous industries and the rate of fatal accidents is 4 to 5 times that in the factories sector.

The occupational safety and health is one of the subjects allotted to Ministry of Labour under the Government of India allocation of Business Rules. The Ministry of Labour, Government of India and Labour Departments of the State and Union Territories are responsible for the safety and health of workers. Directorate General of Mines Safety (DGMS) and Directorate General Factory Advice Services & Labour Institutes (DGFASLI) assist the Ministry in the technical aspects of occupational safety and health in mines and factories & ports sectors, respectively.

DGMS is a subordinate office of the Ministry of Labour. By drafting appropriate legislation and setting standards, by overseeing compliance thereof as intensively as its resources permit and through a variety of promotional initiatives and awareness programmes DGMS exercises preventive as well as educational influence over the mining industry.

DGFASLI as an attached office to the Ministry of Labour, liaises with the State Factory Inspectorates and advises them on the administration of the Factories Act, 1948. Besides, provides training to Inspectors of Factories and technical personnel from the industries. DGFASLI also conducts multi-disciplinary surveys in industries and ports. The Director General, FASLI is also the Chief Inspector of Dock Safety under the Dock Workers (Safety, Health and Welfare) Act, 1986 in respect of major ports and enforces the provisions of statute related to dock safety through Inspectorates Dock Safety at the major ports.

There are comprehensive safety and health statutes for regulating safety and health of persons at work exists only in respect of four sectors – namely, factories, docks, mines and construction sectors, however, these legislations are highly sector-specific. The approach in the statutes is to lay down specific and detailed requirements to prevent risk of injuries in specific operations or circumstances. This lacks uniformity and a well-coordinated approach to safety and health in all sectors of the economy. There is a strong need for a general (umbrella) legislation covering safety and health aspects of workers employed in all sectors of economy irrespective of the number of employees employed in those units. There is a trend all over the world to enact legislation on the subject, which has general applicability to all work-sites. This legislation should be applicable to factories, mines, plantation, ports, construction, unorganized sectors and also to such categories of workplaces or work activities as may be notified by Central Government.

In this context the Planning Commission had set up a working group on Occupational Safety and Health under the chairmanship of the Secretary, Ministry of Labour, Government of India vide their order no. M-13015/9/2000-LEM/LP dated 27.04.2001.

Composition of the Working Group

The composition of the working group was,

- | | |
|---|------------|
| 1) Secretary (Labour), Govt. of India | : Chairman |
| 2) Advisor (Health), Planning Commission | : Member |
| 3) Director General, Factory Advisory Services & Labour Institutes,
Ministry of Labour | : Member |
| 4) Director General of Mines Safety, Ministry of Labour | : Member |
| 5) Director General,
National Safety Council, Navi Mumbai | : Member |
| 6) Director, National Institute of Occupational Health,
Ahmedabad | : Member |
| 7) Secretary (Labour), Tamilnadu | : Member |
| 8) Secretary (Labour), Karnataka | : Member |
| 9) Secretary (Labour), Bihar | : Member |
| 10) Secretary (Labour), Punjab | : Member |
| 11) Joint Secretary (Industrial Safety & Health)
Ministry of Labour | : Convenor |

TERMS OF REFERENCE OF THE WORKING GROUP

The terms of reference of the working group were:

- a. To review the existing set up for occupational safety and health in the work place;
- b. To assess weaknesses of the existing set up and suggest ways to improve it;
- c. To suggest ways to improve occupational safety standards in the large segments of work force not included so far;

- d. To examine the efficacy of the administrative machinery under the State Governments to ensure occupational health and safety to the workers in factories and other non-agricultural establishments through the institution of “factory inspector” which exists under the Factories’ Act;
- e. To suggest such other measures as are necessary to ensure occupational health and safety of workers in (i) the agricultural occupations and (ii) non-agricultural occupations in particular, workers in non-registered factories, road transport, shops, eating establishments, printing, dyeing, chemical storage and handling, etc.
- f. To examine the efficacy of regulations concerning the health and safety implemented by Government Departments other than “Labour” such as Explosive Act, Boiler Act, etc.
- g. The Chairman of the Working Group may include additional term(s) of reference in consultation with Member (LEM), Planning Commission: the Chairman of the Steering Committee on Labour and Employment.

The Working Group met under the Chairmanship of Shri Vinod Vaish, Secretary, Ministry of Labour on 4th June, 2001. After the preliminary discussion on the various terms of reference, it was decided to constitute three sub-groups, as given below –

- (i) Mining Sector
- (ii) Industry and Port Sector
- (iii) Unorganised Sector
- (iv)

The composition of the sub-working groups is given at Annexure:I.

The terms of reference of the sub-working group were the same as that of the working group as mentioned earlier. The sub-working groups had several meetings, deliberated on the issues concerned and submitted their report to the Chairman of the Working Group.

The sub-working group on Mining Sector met at Kolkata on 19.6.2001 and among other issues emphasized the need for continued research and development work, human resource development and computerization of mines safety information systems. The sub-working group also stressed the need for upgradation of survey systems and digitization of mine plans.

The sub-working group on Industry and Port Sector met at Mumbai on 20.6.2001 and 4.7.2001 and discussed various issues such as competence enhancement, occupational health, self-regulation, certification of OSH system, etc. in the light of the terms of reference of the Working Group.

The sub-working group on Unorganised Sector met at New Delhi on 25.6.2000 and 10.7.2001. In the light of large number of work force employed and the hazards involved, it was decided to extend the OSH coverage in agriculture, construction, shops and establishments, beedi and cigar works, home work, eating places, and waste management sectors. The reports of the sub working groups are also annexed.

The working group met subsequently on 10.7.2001 and 1.8.2001, where the Secretary(Labour) emphasized that essential mile-stones for Occupational Safety & Health (OSH) should be included and not left to the market forces. Minutes of these meetings are placed at Annexure:II.

A drafting committee was setup to prepare the final report after consolidating the reports of the sub-working groups incorporating decisions taken in the meetings of the working group. This report comprises of eight (8) chapters and discusses all the terms of reference in detail. For easy reference, a separate chapter (Chapter-VIII) has been made incorporating summary of all the recommendations made in this report.

EXECUTIVE SUMMARY

The working group after considering the reports submitted by the three sub-groups finalized its report.

A Summary of the recommendations of the Working Group is as follows:

General Recommendations:-

- ❖ **National Policy on Occupational Safety and Health** – A coherent National Policy on Occupational Safety and Health of workers employed in all sectors of the economy to be prepared through tripartite consultations.
- ❖ **General Legislation (Umbrella) on Occupational Safety and Health** – A large number of OSH Legislations are applicable in a fragmented manner and has been developed in a piecemeal manner resulting in duplication in some areas and gaps in others. There is no single unified legislation which can take care even of the basic responsibilities for the OSH in all the sectors as is the practice adopted by most of the developed countries and many of the developing countries recently. It is therefore proposed to bring in a General Legislation on OSH. This will help in reduction in multiplicity of enforcement agencies and will have proper coordination among them while providing a focus on OSH measures in industry.
- ❖ **Apex Body on Occupational Safety and Health-** At present the sector specific enforcement agencies are working in three specific areas and no agency is available which cover safety and health of the workers in unorganised sectors. Thus there is need for an Apex body at the national level to deal with matters connected to safety and health of workers employed in all sectors of the economy.
- ❖ **Core Group on OSH** – There is need to constitute a core group on OSH at workplace under the Ministry of Labour for inter-Ministerial coordination.
- ❖ **National Accreditation Agency** - In order to integrate Occupational Safety and Health in the manufacturing/processing/service sector, there is need for creation of an independent national level Accreditation Agency consisting of eminent professionals for establishment of national standards on OSH and development of an audit mechanism for assessing effectiveness of OSH in industries, ports, mines and unorganized sectors by external safety audits.

- ❖ **Competence enhancement of enforcement officials** – There is need to enhance the technical skill and exposure of enforcement agencies to the latest techniques in the field of OSH.
- ❖ **Training for Industry** – In order to improve OSH understanding and its need at the workplace, there is need to undertake substantial strengthening of development of standard work procedure or safe work procedures, code of best practices, do's and don'ts, prevention of identified hazards, public awareness about OSH by training and awareness campaigns, participation of organization, short term courses on OSH and the revision of syllabus of Engineering and Medical Colleges at college/university level to include OSH as a compulsory subject.

Sector Specific Recommendations:-

Mining Sector :

- Development of new safety management system through extensive discussions at the national level among all concerned players in the field. The approach would be to integrate safety into the organization, thereby limiting its ability to identify and resolve management oversights that contribute to accident causations.

The new thinking must embrace organizational, behaviour and cultural systems on top of hazard control, analysis to hazards and engineering solutions to prevent accidents.

- Keeping in view the Government policies regarding down sizing and optimum utilization of existing manpower and understanding the fact that expansion of mines inspectorate can only be up to a certain degree, it will be necessary to consider external third party safety audit systems for assessing status of safety in Indian mines. Necessary amendments to the Mines Act which would replace these aspects need to drawn up.
- **Role of Mines Inspectorate (DGMS):-** It is the responsibility of the employer to provide and maintain a safe and healthy work environment. Therefore, the role of Inspectorates (DGMS) are important. It is the inspectorate which can bridge the gap between the employer and the employee and formulate adequate guidelines for a better and safe workplace.
- Training and Education of workers in mines.
- Strengthening legal set up of DGMS and setting up of Designated Courts.
- Strengthening of Mines Safety Enforcement Machinery –In order to bring about increased effectiveness it will be necessary to re-structure and

rationalize functioning of DGMS for optimal utilization of the existing resources, replacement of human efforts through automation and planning and prioritization of inspection before proposing the bare minimum increase in strength of the inspectorate.

- Making Internal Safety Organisations (ISOs) effective.
- Risk Management – Introduction of risk management as a tool for development for a good health and safety management system is a breakthrough in the traditional strategy.
- Users to pay for services rendered.
- Amendment to the Mines Act to remove small mines out of the purview of the Mines Act but at the same time DGMS will prepare safe work procedures, best practices, do's and don'ts to facilitate State Governments to ensure OSH in small mines.

Factories & Ports

- Strengthening and Restructuring of DGFASLI :- Need to grant autonomy to CLI and Labour Institutes in its functioning. They should be generating their resources under the principle of “User Pays”.
- Coordination of Administration of Factories Act:- This will include extensive training of factory inspectors, preparation of code of practices, standard procedures and inspection manual in the factories and ports. Setting up of task force to review and simplify the information to be furnished in FAS forms. Compulsory furnishing of information in FAS form by CIFs to DGFASLI.
- Enforcement of Dock Workers (Safety, Health and Welfare) Act, 1986:- This will include appointment of qualified safety officers in all ports and docks, Notification of Dock Workers (Safety, Health and Welfare) Rules by all State Governments. Alternatively it will be notified by the Central Government. To enlarge the scope of Dock Safety Advisory Committee to include representative from small and intermediate ports also.
- Education and Training of factory and dock workers.
- Consultancy studies and services :- Strengthening of facilities at CLI, RLIs, NIOH, ITRC etc. to undertake major consultancy studies on OSH.
- Following amendments should be made-

A) Factories Act

i)Factories employing 500 and above workers should appoint safety officer.

ii)Independent safety audit of the facilities by factories involving hazardous processes as defined under Section 2(cb) should be conducted.

(iii)To ensure compulsory health insurance of workers employed in hazardous processes.

B) Dock Workers (Safety, Health & Welfare)Act

a) **Inland container Depots** should be brought under its purview.

- All offices of the Inspectorates of Dock Safety as well as State Factory Inspectorates should be strengthened in terms of infrastructure facilities such as transport, electronic networking etc.
- Chief Inspector of Factories should be selected from amongst the cadre of Inspectors of Factories and be given the status of Head of Department directly reporting to Labour Secretary. This will increase his **functional autonomy**.
- Medical Inspectors of Factories and Certifying Surgeons should be appointed in all Inspectorates of Factories in the country.
- A **National Committee on Control of Occupational Diseases** under the Apex Body on OSH may be constituted. This Committee would facilitate close coordination and exchange of information amongst various agencies.
- A **data base** containing information on handling of containers and dangerous goods, hazardous installations, Inland Container Depots, minor and intermediate ports, competent persons, panel of medical doctors, etc., for various ports should be created for the benefit of the port users.
- **Training of crane operators** should be undertaken by respective owners of the equipment. This will help in addressing the problem of accidents due to transport equipments in port areas.
- Statement of status of OSH in company's annual report.
- Tiny/Small (Un registered units):- The small scale units employing less than 10/20 workers and outside the purview of the Factories Act, 1948 should be covered by any other legislation to ensure OSH of the workers in these units.
- Software development units to be brought under the purview of the Factories Act.

Unorganised Sector

- Unorganised labour which contributes about 90% of the total workforce in the country remained a neglected lot especially for the lack of protection on safety and health. The largest segment of the workforce in the country belongs to the unorganized sector, 185.3 million workers in the agriculture sector, 14.6 million in the construction sector, 9.51 lakh in the plantation sector and about 41.35 lakhs in the beedi industry.
- To begin with the following 6 sectors have been identified for strengthening OSH in the Xth Plan. Agriculture, Construction, Shops and Establishments, Beedi and Cigar Manufacturing, Home Work, Eating Places and Waste Management.
- The **Agriculture sector** is one of the most hazardous occupations and it includes hazards which primarily are caused by :
 - i) Agriculture hand-tools and implements such as pick-axe, spade, sickle etc.,
 - ii) Farm machinery – tractors, threshers, fodder chopping machines, etc.,
 - iii) Chemical agents – pesticides, fertilizers, strong weed killers, etc.,
 - iv) Climatic agents – high temperature, heavy rain, humidity, high velocity wind/storm, lightening, etc.,
 - v) Electricity,
 - vi) Animal/snake bites,
 - vii) Other agents-dust, solar radiation, etc., and
 - viii) Psychological stress due to socio-economic problems.
- The Insecticides Act, 1968 and the Dangerous Machines (Regulation) Act, 1983 and their rules are the two legislations presently applicable to specific aspects of the agricultural operations. The enforcement of these act lies with the State Agriculture Departments. No major studies/survey in the area of hazards involved in these occupations have been undertaken at the national level so far. Therefore it is proposed to undertake such studies/surveys in the Xth Plan.
- India has also recently supported a Convention for the safety of Agricultural workers. A national policy on OSH matters for the Agricultural labour would also need to be drawn up.

Construction Sector

This is one of the most vulnerable segments of the unorganized labour in our country. A large number of workers in this sector are vulnerable to the vagaries of workplace accidents and occupational health problems. They are exposed to a wide variety of serious OSH hazards and the rate of fatal accidents in this industry is 4 to 5 times that of manufacturing sector. The workers are also exposed to a host of hazardous substances, which have a potential to cause serious occupational diseases such as asbestosis, silicosis, lead poisoning etc. There is also a serious potential for fires due to storage and use of flammable substances and a potential for disasters due to collapse of the structures and subsidence of the soil on which the construction activity is being carried.

The Building and other Construction Workers (Regulation for Employment and Conditions of Service) Act, 1996 was promulgated in 1996 and Central Rules under this Act were notified in 1998. Except for Kerala and Karnataka no other state have notified these rules.

Shops and Establishments

Shops and Establishments are covered under the Shops and Establishment Act enacted by the various State Governments in 1948. The enforcement of these statutes has been entrusted to either the State Labour Commissioner or the local authorities. There is a separate chapter on Health and Safety providing for cleanliness, ventilation, lighting, precautions against fire and first aid facilities at the workplace as prescribed under Statute.

Beedi and Cigar Manufacturing

About 90% of the workforce are home workers and majority of them are women. The remaining 10% are employed as factory workers for whom the provisions of the Factories Act are applicable. The Beedi and Cigar Workers (Conditions of Employment) Act, 1966 is applicable to this sector which include home workers as well and the legislation is enforced by the State Commissioners of Labour.

The common recommendations for improving OSH standard in the selected seven segments of the unorganized sector are summarized below:

- ❑ Research/Surveys/Studies will be organized by the Ministry of Labour through professional bodies/organizations such as DGFASLI, Agricultural Universities, Social Sciences Institutions and NSC to identify type of hazards and accidents and to bring out documents for drawing action plans in the sectors concerned. Sector-wise surveys will be conducted to identify the hazards and the various types of accidents, this will be of immense use in developing the material for training and awareness campaigns. These organizations can jointly work with DGFASLI, NIOH and NSC in carrying out the proposed surveys and in identifying the safety and health hazards associated with them and assist in bringing in awareness with low-cost solutions.
- ❑ Material for awareness on OHS aspects will be developed in joint collaboration with all the professional bodies/agencies concerned. The material thus developed in national and regional languages will be telecast on T.V channels and broadcast on radio for creating mass awareness on occupational safety and health to the persons involved in all the segments.
- ❑ Video films, leaflets, safety posters etc., should be prepared as publicity material for dissemination of occupational safety and health issues.
- ❑ In order to spread the message of occupational safety and health, among the persons involved in this sector, five mobile exhibition vans will be developed/designed with appropriate audio visual exhibits.
- ❑ To overcome the weaknesses in the enforcement of the statutes, wherever applicable, a comprehensive enforcement strategy and guidelines on OHS aspects should be developed at the national level.
- ❑ OSH awareness campaigns with do's and don'ts and codes of best practices will be developed through professional bodies/organizations and be launched at the national level.

Besides the above mentioned common recommendations, sectoral-specific recommendations are suggested below:

Agriculture Sector

- Amendments to the Dangerous Machines (Regulation) Act, 1983 in the form of a notification in the Gazette, the scope suitably to cover more machinery being used in the agricultural sector. Suitable amendments on the matters relating to safety and health aspect may be considered.
- Amendment to section 36 of the Insecticides Act, 1968, which would include the use and provision suitable Personal Protective Equipment while applying the substance by spray, etc. is suggested.
- Notifications to the Plantation Labour Act, 1951 and Rules framed there under, for enlarging its scope to cover lesser land holdings and fewer number of persons employed may be considered. Also occupational safety and health aspects may be included

Construction Sector

- The scope of the Building & Other Construction Workers (Regulation of Employment and Conditions of Service) Act be enlarged by suitably reducing the existing eligibility criteria to 5 workers and making appointment of safety officers by the employers of establishments employing 100 workers and above as a statutory obligation.
- The Act applicable to the construction sector is presently overseen by non-technical department. In order to supplement their efforts in inspection, the existing professional bodies/organizations, may be associated to oversee technical inspections and investigation of accidents.
- DGFASLI and professional independent bodies/organizations should organize trainers' training programme for education officers Central Board of Workers Education and Supervisory and Management personnel from industry.
- The Central Board of Workers Education under the Ministry of Labour may be given the task of training of construction workers in collaboration with professional independent institutes involved in construction safety.

Beedi & Cigar Manufacturing Sector

Amendment may be carried out to the Beedi and Cigar Workers Act, 1966 (Conditions of Employment and Health) incorporating safety, in case of any

mechanized work activity that is carried on. A provision on ventilation, lighting and fire safety can be also made to ensure better and safe working conditions. Furthermore, in addition to the existing provisions, suitable provision may be incorporated in the Act and Rules making it mandatory to carry out periodical health check-up of the workers (as provided under Sec.44).

Shops And Establishment Sector

- To protect the workers from electrical/mechanical hazards, an amendment may be made to the Shops and Establishment Acts of the State Governments. Similarly, for operation and maintenance of lifts, as well as maintenance of building for carrying out additional construction, white-washing etc. adequate safety provisions should be incorporated in the Rules. In short, there is a need to amend the existing provisions under the Act and Rules to be amended suitably to cover the safety, health and welfare of large number of workers employed in this sector.
- The shops and establishments carrying out electrical and mechanical repair work, small garages, air conditioner/refrigerator repair shops, small jobbing workshops, etc., may be brought under the purview of the Factories Act.
- The enforcement officials from the enforcement agencies of Agriculture Departments may be trained on OHS aspects and inspection strategy and guidelines on OHS may be developed.

Home Work Sector

After assessing the problem through studies and surveys simple booklets and training material may be prepared. For disseminating information on occupational safety, health and environmental awareness campaigns conducted for the benefit of those who are engaged.

Eating Places Sector

All the eating places, which are beyond the Notified Areas and not covered by any statute, may be brought under the Shops and Establishments Acts of the State Governments or the Factories Act through an amendment/notification.

Waste Management Sector

Citizens active participation and effective coordination with all agencies concerned and NGOs is suggested. Safety Awareness Programmes may be **organized** for NGOs and waste collectors.

Plan Schemes

In order to strengthen the OSH in the areas of mines, industries, ports and unorganized sector, it has been proposed to continue some of the existing 9th Five Year Plan and also to introduce few plan schemes in the 10th Five Year Plan. The total outlay is of the order of Rs. 56.50 crores for mining sector, Rs. 48.30 crores for factories and ports, Rs. 9.00 crores for unorganized sector.

The details of the plan schemes in the various sectors are as under:-

In order to render technical support to the officers of DGMS, plan schemes under the five year plans were being implemented in DGMS. The old plan schemes were reviewed and consolidated into four running plan schemes by the terminal year of the IXth plan period, these schemes were,

- a. Survey of mine accidents and development of mine safety information systems (SOMA). (Financial outlay - Rs. 5.50 crores).
- b. Science & Technology support, human resource development & development of mine rescue services (S&T). (Financial outlay - Rs. 11.50 crores including an outlay for Rs. 5.50 crores for civil works).
- c. Providing Infrastructure Facilities in DGMS (PIF). (Financial outlay - Rs. 18.00 crores including an outlay of Rs. 11.00 crores for undertaking civil works).
- d. Strengthening of machinery for conduct of statutory examination systems (SSEX). (Financial outlay - Rs. 6.50 crores).

Review of the schemes strongly underline the need for continuance of the same during the Xth Plan period. The challenges in the coming years will call for more technical support activities covering existing problems and also new areas hitherto not being attended to. The plan schemes of DGMS also must keep pace with the changing scenario in the mining industry and the output from the scheme will have to act as a guiding factor in all technical activities of the industry.

In addition to continuance of these schemes, formulation and implementation of two new schemes are being proposed for DGMS during the Xth plan period. These

new schemes will not only improve the efficiency of enforcement activities of DGMS but also will take the present systems to modern arena of IT application vis-à-vis enforcement of mine safety legislation thereby creating a base for improved health and safety status for the Indian mine workers. These two new schemes would be,

- Capacity building of DGMS for improving safety of the mining industry through e-Governance. (Financial outlay - Rs. 10.00 crores).
- Modernization of survey capabilities in DGMS through digitization of mine plans and automated survey systems. (Financial outlay - Rs. 5.00 crores).

In the area of factories and ports, during the IXth Five Year Plan following six Schemes of DGFASLI were being operated -

- Application of ergonomics and improvement in working conditions and productivity in factories, docks and small and medium scale enterprises
- Establishment of system of chemical safety and monitoring of occupational health status of workers employed in hazardous industries
- Establishment of action resource centers and development of National Inventory of occupational safety and health information for dissemination
- Reorganisation and strengthening of DGFASLI organization and establishment of special cells
- Establishment of Regional Labour Institute at Fariadabad
- Improvement and strengthening of the enforcement system for safety and health of dock workers in major ports

Out of the above six Plan Schemes, following three Plan Schemes are proposed to be continued in the Xth Five Year Plan –

- Establishment of action resource centers and development of National Inventory of occupational safety and health information for dissemination. (Financial outlay - Rs. 3.80 crores).
- Establishment of Regional Labour Institute at Faridabad. (Financial outlay - Rs. 30.00 crores).

- Improvement and strengthening of the enforcement system for safety and health of dock workers in major ports. (Financial Outlay - Rs. 3.00 crores)

The following three new Plan Schemes are proposed for implementation by DGFASLI during the Xth Five Year Plan –

- Formation and functioning of an Apex Body on occupational safety and health. (Financial outlay - Rs. 1.00 crore).
- Capacity Building of the officers of DGFASLI and Inspector of Factories (CIFs) for improving Occupational Safety & Health. (Financial Outlay – Rs. 5.00 crores).
- Strengthening of occupational safety and health strategies in priority hazardous chemical processes. (Financial outlay – Rs. 5.5 crores)

Implementation of the schemes would pave way for development of much needed infrastructure, address issues not being attended to so far and create guidelines for future activities in this sector.

The need for improvement of occupational safety and health standards in the unorganized sector assumes very high priority in today's social environment. Ministry of Labour being the apex body in the country with a mandate of alleviation of working conditions for the large sector not covered so far envisage that the new plan schemes proposed would go a long way in achieving of the goal of safe and healthy workplace for the whole of labour force of the country.

In the unorganized sector, the following two new plan schemes are proposed for implementation during the Xth plan period.

- Competence Building in Enforcement Agencies and Development of Enforcement Strategies and Guidelines. (Financial Outlay – Rs. 2.0 crores)
- Design and Execution of National Level Awareness Campaigns in The Identified Seven Segments of Unorganised Sector.(Financial outlay – Rs. 7.00 crores)

Chapter I

EXISTING SETUP OF OCCUPATIONAL SAFETY AND HEALTH IN THE WORK PLACE

1.0 Constitutional Provisions

The salient features of the national policy on occupational safety and health are derived from the Constitution of India. Article 24 of the Constitution prohibits employment of child below 14 years for work in any factory or mine or in any hazardous employment. The Directive Principles of State Policy which are in the nature of guidance for legislative and executive action provide safeguards to workers. Article 39 requires the State to direct its policy to ensure that the health and strength of workers, men and women, and the tender age of children are not abused and that citizens are not forced by economic necessity to enter avocations unsuited to their age or strength. Article 42 directs the State to make provision for securing just and humane conditions of work and maternity relief. Thus under the Constitution, it is imperative that measures should be taken to ensure that all the workers irrespective of their place of employment are assured of Occupational Safety and Health.

The Seventh Schedule of the Constitution lists the jurisdiction of the Centre and the State Governments to legislate in particular subject matters. In terms of List-I under this Schedule, the Central Government is exclusively authorized to make laws for regulations of labour and safety (vide Item No.55 in the list) and for safety of workers employed in major ports (vide Item No. 27 in the list). In the list of Concurrent subjects welfare of labour (vide No. 24 in the list) and factories (vide No. 34 in the list) have been included. It is, therefore, necessary that the Central Government reviews the statutes of Occupational Safety and Health and takes appropriate measures for improvement of working conditions.

1.1 ILO Conventions

While framing and amending the legislations concerning occupational safety and health, the Government of India, as one of the founding members of the International Labour Organisation (ILO) derives conclusive guidelines from the conventions, recommendations and codes of practices framed by ILO in this regard. The ILO has so far adopted 182 conventions and 190 recommendations encompassing subjects such as worker's fundamental rights, worker's protection, social security, labour welfare, occupational safety and health, women and child

labour, migrant labour, indigenous and tribal population, etc. The Government of India has so far ratified 39 conventions, and the recommendations relating to these 39 conventions have also been implemented to the extent possible. In the field of occupational safety, health and working environment, ILO has framed 13 conventions and equal number of recommendations so far. Out of these, Government of India has ratified 2 conventions namely Radiation Protection Convention (No.115), 1960 and Benzene Convention (No.136), 1971.

Some of the recent conventions and recommendations have a strong bearing on emerging occupational health and safety laws in the country. These conventions are discussed in brief in the following paras.

Convention 155 requires every member State to formulate, implement and periodically review a coherent National Policy in consultation with representatives of employers and workers. The policy should aim at prevention of accidents and injury at work places by minimizing the causes of hazards inherent in working environment. The convention also identifies action at National and unit levels in relation to appropriate control measures for against exposure to harmful substances, provision of measures to deal with emergencies, seek co-operation and inform the workers in matters connected with safety and health.

Convention 161 encompass occupational health services. This convention requires that a National policy be framed on Occupational Health Services with particular reference to prevention of occupational diseases and health surveillance. The policy is to be finalized on tripartite consensus. These services should have functions such as identification and assessment of the risk for the health hazards in the work places and of the monitoring of health of workers. The provisions require that workmen be provided with information, education, training on the relevant aspects of the work and advised on first aid treatment and health programmes.

Convention 174 and recommendations 181, defines "hazardous substance", "threshold quantity" "major hazard installation", "major accident", "safety report", "near miss". The convention requires that a national policy against the risk of major accidents be framed after consulting the employers and workers, implemented and periodically reviewed which should promote the use of the best available safety technologies. The competent authority shall establish a system for the identification of the major hazard installations depending on the types of substances. The employers were required to establish a well documented system for identification and analysis of hazards, technical measures, organisational measures, emergency plans, measures to limit the consequences of a major accident and lessons to be learnt after discussions with the workers representatives.

Convention 176 projects a new philosophy of prevention. The convention through stronger union of workers' representatives adopts a refreshing new approach to health & safety which firmly places responsibility on employers. The employers should control the risk at source or minimize it by designing a safe system of work. The convention gives workers several important rights, to report accidents, dangerous occurrences and hazards to employer and inspectorate, to ask for inspection & investigation by the employer and inspectorate, to get information about the hazards they face, to obtain relevant information from their employer and the inspectorate, to refuse dangerous work and to elect safety representatives.

The convention imposes three key tasks upon Governments :

- to develop or coherent policy on safety & health in mines. The policy to be finalised on tripartism consensus.
- to pass laws to implement the convention's provisions.
- to create an inspectorate to enforce the laws.

Convention 152 of ILO deals with Occupational Health and Safety in Dock Workers. This convention is fairly elaborate and provides for technical and administrative measures designed to safeguard against occupational accidents and diseases in Dock work. It set out in general terms the objectives to be attained and outlines the technical measures to be taken at work place and on board the ship. The administrative steps foreseen by the Conventions aims eventually at mutual recognition by ratifying states of certificates relating to testing of lifting appliances and loose gears

1.2 MINES ACT AND OTHER STATUTES APPLICABLE TO MINES

Under the Constitution of India, safety, welfare and health of persons employed in all mines - coal, oil and metalliferous - all over the country, are the concern of the Central Government. The matter is regulated by the Mines Act, 1952 which is administered by the Directorate General of Mines Safety (DGMS for short), a Scientific and Technological Organisation under the Union Ministry of Labour. In so far as the oil mines are concerned, the jurisdiction of the Mines Act, 1952 extends upto the limits of territorial waters but does not extend to the continental shelf, exclusive economic zones and other maritime zones.

The first Mines Act came into force in 1901. It was superseded twice - first in 1923 and again in 1952 and has undergone major changes in 1959 and 1983. The Mines Act is an Act of Parliament. It is a skeleton law containing the national objectives on the aspects having wide applications. The Act empowers the Central Government to make Regulations and Rules elaborating the objectives of the Act under various enabling provisions.

1.2.1 SUBORDINATE LEGISLATION UNDER THE MINES ACT

- a) To regulate technical operations in mines, separate codes of regulations have been framed in respect of coal, metalliferous and oil mines. The Codes of Regulations currently in force are –
 - i) Coal Mines Regulations, 1957;
 - ii) Metalliferous Mines Regulations, 1961; and
 - iii) Oil Mines Regulations, 1984.
- b) In order to provide for rescue of work persons in the event of explosion, fire etc. the Mines Rescue Rules, 1985, have been framed. These apply to coal and metalliferous underground mines.
- c) To equip the mine workers, in all types of mines, to recognise and deal with hazards the Mines Vocational Training Rules, 1966, have been framed.
- d) Welfare, health and medical provisions in respect of coal, metalliferous and oil mines have been elaborated in the Mines Rules, 1955.
- e) The Mines Creche Rules, 1966 and the Coal Mines Pit Head Bath Rules, 1959 have been framed to provide respectively for shelter to children of female employees in all mines and bathing facilities for workers employed in coal mines.

Besides the Mines Act, 1952 and the Rules and Regulations framed thereunder, the DGMS also enforces the Indian Electricity Act, 1910 and the Indian Electricity Rules, 1956, and the Land Acquisition (Mines) Act, 1885 in mines.

1.2.2 Measures taken for implementation of statute in mining sector

Legislative measures taken by DGMS for implementation of statutory norms in mines take the form of -

- 1) Statutory notices and returns
- 2) Inspections of mines
- 3) Inquiries into accidents and dangerous occurrences
- 4) Surveys of different types
- 5) Grant of permission, exemption and relaxation
- 6) Approval of mine safety equipment
- 7) Statutory certificate of competency to hold positions of responsibility

Over the years DGMS has evolved certain voluntary and non-statutory techniques of monitoring safety and health provisions in mines. These are generally over and above the statutory provisions and serve to broaden the canvas of monitoring. Some of these techniques are,

- 1) Preview of project reports and mining plans
- 2) Promotional initiatives
- 3) National Tripartite Conference on Safety in Mines
- 4) National Safety Awards (Mines)
- 5) Vocational Training and Other Training
- 6) Observance of Safety Week, Safety Campaign etc.
- 7) Holding of First Aid and Rescue Competitions etc.
- 8) Promoting Participation of workers in safety management
- 9) Promoting Self-regulation by management
- 10) Awareness programmes and information dissemination

Advisory initiatives of DGMS for achieving better standards of safety and health in mines are through,

- 1) Dissemination of information by issue of DGMS technical & legislation circulars
- 2) Development of guidelines and standards
- 3) Interactions in different bipartite and tripartite forum.

1.3 Legislations applicable to Factories

The Factories Act, 1948, a central enactment, deals with occupational health and safety as well as welfare of workers employed in a factory. A factory has been defined to mean a workplace where ten or more workers are employed in a manufacturing process with power and twenty or more workers without power. The provisions of the Act, may however, be extended to factories employing less workers by a State Government by issuing Notification under Section 85 of the Act. So far, this power has been used to cover power looms, saw mills, rice mills, oil mills, flour mills, chemical units, pesticides formulating units, printing presses etc. under the provisions of the Act by different States. The Act does not apply to mines, units belonging to armed forces of the union, the railway running shed, the hotel or a eating place.

The Act is enforced by the Inspectorates of Factories under the State Governments and the administration of Union Territories, who also have the power to make statutory rules to supplement the provisions of the Act. The Ministry of Labour in the Central Government is accountable to Parliament for enforcement of the Act. It ensures uniformity of application of the Act throughout the country by issuing model rules which are adopted by the States and the Union Territories with necessary modifications to suit local needs. It also ensures coordination of the activities of the Factory Inspectorates through a technical organization under its control known as Directorate General Factory Advice Service and Labour Institutes (DGFASLI).

The employer is required to provide machinery and equipment which are safe and also to maintain guards in position and working order while a machine or an equipment is in use. The Act prohibits cleaning, lubricating or adjustments being carried out on running machinery except in special circumstances. Specific requirements relating to protective equipment for eyes, for workers entering confined spaces or working at heights have been made. Special equipment such as hoists, lifts, cranes and other lifting appliances, pressure vessels and exhaust equipment are required to be tested and periodically examined and certified by competent persons. Precautions for preventing fire and explosions and escape in case such events take place, are provided. The Inspectors have been empowered to stop any work where danger to the life or limbs or health of workers is imminent. In the year 1976, a new provision was added for appointment of safety officers in factories employing 1000 or more workers or engaged in dangerous operations, if so notified by the State Governments.

The Act empowers the State Governments to declare any process or operation as dangerous and to ensure protection of persons employed in the operation or in the vicinity. Women and adolescents are generally prohibited from working in a dangerous process or operation. Twenty seven processes and operations have been identified as dangerous in the model rules. These rules lay down detailed instructions regarding preventive measures, protective devices, cautionary notices as well as medical examination of workers. The state Governments have adopted these model rules depending on their local needs.

The Act lists 29 occupational diseases and obliges the manager of a factory and medical practitioners to notify the Chief Inspector of Factories if any worker contracts any of the diseases.

The responsibility for compliance of the provisions of the Act is placed on the 'occupier' of a factory. The persons employed in a factory are also required to observe safety precautions, wear protective clothing and use protective equipment.

It became increasingly clear particularly after the Bhopal disaster in 1984 that a wholly prescriptive approach was no longer adequate for dealing with hazards posed by new technology in the chemical industry. The primary responsibility for prevention of occupational accidents and diseases had to be placed with those who create the risks and compliance of specific requirements of the statute and regulations could not be considered to be adequate for discharge of responsibility by the manufacturer. There must also be full and informed cooperation between the employers and the employees in ensuring occupational safety and health. The Factories Act was comprehensively amended in 1987 to include these principles of safety management.

In the year 1987 some far reaching amendments were made in the Factories Act 1948 in respect of hazardous processes. Some of these were,

- Constitution of site appraisal committee,
- Compulsory disclosure of information by occupier,
- Medical examination of workers exposed to hazardous processes,
- Laying down permissible limits of exposure of chemical substances,
- Participation of workers on safety and health management,
- Right of workers to warn about imminent dangers.

1.3.1 Contribution of DGFASLI

DGFASLI has contributed significantly in improving safety and health standards in factories by undertaking a number of programmes and activities. Some of these are,

- i) National Safety Awards and Vishwakarma Rashtriya Puraskar
- ii) National level seminars and workshops
- iii) Conference of Chief Inspectors of Factories
- iv) National studies and surveys
- v) Awareness programmes and information dissemination
- vi) Development of training aids such as video films, slides, training manuals etc.

1.3.2 Other legislations applicable to factories

1. The Workmen's Compensation Act, 1923
2. The Employees State Insurance Act, 1948
3. The Environment (Protection) Act, 1986
4. The Water (Protection and Control Pollution) Act, 1974 and the Water (Prevention and Control of Pollution) Rules, 1995
5. The Air (Prevention and Control of Pollution) Act, 1981 and the Air (Prevention and Control of Pollution) Rules, 1995.
6. The Hazardous Wastes (Management and Handling) Rules, 1989

7. The Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989
8. The Explosives Act, 1884
9. The Gas Cylinders Rules, 1981
10. The Explosives Rules, 1983
11. The Static and Mobile Pressure Vessels (Unfired), 1981
12. The Insecticides Act, 1968
13. The Indian Boilers Act, 1923

1.3.3 Dock Workers (Safety, Health and Welfare) Act, 1986

The Dock Workers (Safety, Health and Welfare) Act, 1986 is applicable to any dock work which is being carried out in or within the vicinity of a port. The dock work is defined as any work in or within the vicinity of any port in connection with, or required for, or incidental to, the loading, unloading, movement or storage of cargoes into or from ship or other vessel, port, dock storage place or landing place, etc.

An ‘appropriate Government’ in relation to a Major Port is the Central Government and in relation to other ports, the State Government. The Central Government may also constitute a Tripartite Advisory Committee for advising it on the administration of the Act and the Regulations. The Inspectors have been given power to prohibit any dock work if it appears to him that the work is dangerous to life, safety and health of dock workers, until measures have been taken to remove the cause of danger. The Act provides a forum for appeal against the order of the Inspector.

The salient features of the Dock Workers (Safety, Health and Welfare) Regulations are –

- Appointment of Safety Officers and Welfare Officers for dock work;
Constitution of Safety Committees and the implementations of the decisions taken therein;
- Duties of “authorized persons”;
- Training of dock personnel;
- Initial and periodical medical examination of dock workers;
- Provision for safety in container handling and container terminals;
Provision for protection against harmful effects of excessive noise, vibration and air pollution;
- Provision on Emergency Action Plan;
- Provision on canteen facilities.

The provisions of the Act and Rules and Regulations framed there under are being enforced by Chief Inspector of Dock Safety through its Inspectorates located at 11 Major Ports.

1.3.4 Contribution of DGFASLI in the Dock Sector

DGFASLI and the inspectorates of dock safety have taken numerous measures which have resulted in improving the safety and health of workers employed in ports. Some of these measures are,

- i) safe system of handling containers with use of spreaders and twist locks
- ii) supply and use of personal protective equipment
- iii) medical examination of dock workers
- iv) safety audits of all major ports
- v) preparation of emergency action plans in ports.

1.4 Unorganized sector

Occupational Health and safety cover for the unorganized sector can well be said as non-existent. However, a very large work force in the country is covered under this and no statistics or studies are available for formulating coherent policies or action plan to cover this very important economic activity.

The existing setup on OSH for coverage of other hazards is briefly discussed below: -

1.4.1 Agriculture Sector

This sector provides employment to the largest number of persons, which is presently over 185 million. This sector constitutes the backbone of the National economy. Development, growth and productivity of this sector affects the growth of the other sectors. Further, from the published ILO documents, it is evident that agriculture is one of the most hazardous occupations. Sample surveys by certain institutions provide information about the nature of hazards and type of accidents. They are due to: i) Agriculture hand-tools and implements such as pick-axe, spade, sickle, etc., ii) farm machinery - tractors, threshers, fodder chopping machines, etc., iii) chemical agents - pesticides, fertilizers, strong weed killers, etc., iv) climatic agents – high temperature, heavy rain, humidity, high velocity wind/storm, lightening, etc., v) electricity, vi) animal/snake bites, vii) other agents-dust, solar radiation, etc., and viii) psychological stress due to socio-economic problems.

The Insecticides Act, 1968 and The Dangerous Machines (Regulation) Act, 1983 and their Rules are the two legislations presently applicable to specific aspects of agricultural operations.

The Insecticides Act deals with the manufacturing, packaging, labelling, distribution, handling and use of insecticides in general. Therefore, the control measures given in this Act relating to the hazards in the use of insecticides are applicable to the agriculture sector also. This Act is enforced by the State Agriculture Departments in so far its applicability to the agricultural operations is concerned.

The Dangerous Machines (Regulation) Act is enacted as “An Act to provide for the regulation of trade and commerce in, and production, supply, distribution and use of, the product of any industry producing dangerous machines with a view to securing the welfare of labour, operating any such machine and for payment of compensation for the death or bodily injury suffered by any labourer while operating any such machine, and for matters connected therewith or incidental thereto.” This Act applies to the dangerous machines, as defined under the Act, intended to be used in agriculture or rural sector. The enforcement of this Act also lies with the State Agriculture Departments.

1.4.2 Construction Sector

The Construction sector has been steadily growing since Independence. It is the prime mover for the growth of the Nation's infrastructure and produces goods and services worth Rs. 2.1 trillion. The industry also is the second largest employer, as it employs 31 million persons round the year [source: Construction Industry Development Council, New Delhi].

The construction workers are one of the most vulnerable segment of the unorganised labour in our country. They are exposed to a wide variety of serious OSH hazards. The rate of fatal accidents in this industry is 4 to 5 times that of the manufacturing sector. The workers are also exposed to a host of hazardous substances, which have a potential to cause serious occupational diseases such as asbestosis, silicosis, lead poisoning, etc. There is also a serious potential for fires due to the storage and use of flammable substances and a potential for disasters due to collapse of the structures and subsidence of the soil on which the construction activity is being carried.

In 1996 the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996 was promulgated. The Central Rules under this Act were notified in November, 1998. Since the Rule making powers and enforcement rest with both the Central and State Governments depending upon which one is the "Appropriate Government" under the Act, notification of Rules by different States is essential. Except Kerala, other States have not yet notified their Rules.

The Central Government has notified its Chief Labour Commissioner as the Central enforcement agency under the above Act. Except Kerala, other States have yet to notify their enforcement agencies.

The DGFASLI Organisation has been providing technical support over the years in drafting of Central Rules/Model Rules, carrying out studies, surveys, safety audits and conducting training programmes, workshops and seminars in this sector for the past over three decades.

The National Safety Council, has been conducting training programmes (national and unit levels), safety audits, information dissemination, producing awareness material and organising campaigns for the construction industry for over a decade.

1.4.3 Shops and Establishments

The Shops and Establishments spread across the length and breadth of the country provide the network necessary for reaching the goods and services to the consumers. This sector employs about 6 million employees.

The sector is covered by the Shops and Establishments Acts enacted by various State Governments as far back as 1948.

In most of the States they have been made applicable to the notified areas falling under the jurisdiction of Local Authorities but there is a provision to extend them to the whole State. The enforcement of these statutes has been entrusted to either the State Labour Commissioners or the Local Authorities.

In these statutes, there is a separate Chapter on Occupational Health and Safety providing for cleanliness, ventilation, lighting, and precautions against fire as may be prescribed and first aid. A variety of operations which pose safety and health hazards are performed in shops and establishments such as electrical and mechanical repair shops, small garages, air conditioners/refrigerator repair shops, small jobbing workshops, coffee grinding shops, flour grinding shops, etc. The above mentioned Chapter, however, does not provide for control measures required for ensuring safety in these type of operations.

1.4.4 Beedi and Cigar Manufacturing

This is one of the traditional agro-based industry employing over 4.1 million workers. About 90 percent of them are "home workers" and majority of them are women. The remaining 10 percent are employed as factory workers to whom the provisions of the Factories Act are applicable. In this sector the health hazards have been well studied and documented. They are mostly due to long hours of defective postural conditions and tobacco dust causing respiratory problem and Asthma.

The Beedi and Cigar Workers (Conditions of Employment) Act, 1966 which is applicable to this sector defines the term "employee" in a broad manner which includes "home worker". This legislation is enforced by the State Commissioners of Labour. This Act has provisions relating to cleanliness, ventilation, overcrowding, drinking water, latrines and urinals, crèches, first aid, canteens, working hours, etc. which are applicable only to the 'industrial premises' where as mentioned above only 10 per cent of workers are employed.

1.4.5 Home Work

Many types of 'home work' are being carried out traditionally for a number of decades.

A rough estimate of the current level of employment in home work sector for the country would be around 35 million.

The report published in 1988 of the National Commission on Self-Employed Women constituted by the Ministry of Human Resource Development has addressed the problems of "home based workers" in a detailed manner devoting a whole Chapter.

Since then several new types of home work may have been added. Manufacture of leather products like hand bags, jackets, belts; stuffed toys, sports goods, foot wear in and around Agra for big exporters/companies; are examples of some new types of home work. Further, consequent to the strict enforcement of some labour laws such as the Child Labour Act, even activities like drying and labelling of fire works have also been outsourced as home work as revealed by reports of accidents in newspapers.

There is no legislation providing OSH coverage for home work. However, ILO convention 177 defines the term 'employer' for home work. The employer has a crucial role and he can be made accountable for creation of awareness to the home workers employed by him. Suitable legislative measures may have to be formulated in this regard in line with ILO guidelines. As formulation of legislative measures may take considerable time, employer support could be enlisted on voluntary basis as an immediate measure

1.4.6 Eating Places

There is no reliable data relating to workers employed in eating places. However, estimates indicate that more than one million persons are employed in this sector. In majority of the States, these workers are covered under their respective Shops and Establishments Acts, while in Tamilnadu, they are covered by an exclusive enactment called The Catering Establishments Act. While in Tamil Nadu all the eating places throughout the State are covered, in other States the eating places situated outside the Notified Areas, such as those along the Highways are left uncovered. However, there is a provision to extend the statute to the entire State through a notification.

As discussed earlier under the section on Shops and Establishments, there is a separate Chapter on Health and Safety in the Shops and Establishments Acts, the provisions of which seem to be adequate to address the hazards present in the

eating places. However, these provisions being general in nature are required to be supported by specific guidelines.

1.4.7 Waste management

Waste management is a function of urban local bodies. Union Ministry of Urban Development and Poverty Alleviation and the State Governments deal with the legislation governing waste management in urban areas. Local civic authorities in some states deal with collection and disposal of wastes. However, these laws are by no means comprehensive. A new set of rules, Municipal Solid Waste (Management & Handling) Rules 2000 was promulgated by the Ministry of Environment and Forests. These rules cover the urban local bodies of the country and have fixed the responsibilities of the State Governments, Central Pollution Control Board, State Pollution Control Boards and Municipal authorities. These rules have come into force in October 2000 and need to be vigorously followed up vis-à-vis implementation.

Waste generation ranges from 200 gms to 500 gms per capita per day in cities ranging from 1.0 lakh to 50 lakhs population. An estimate places the solid waste quantity generated every year in excess of 20 million tones.

Epidemiological studies show that the workforce engaged in waste management services are exposed to high health risks and frequently suffer from respiratory tract infections, gastro-intestinal problems, worms, etc. Indian domestic waste contains human excreta, bio-medical waste and sometimes other toxic and hazardous wastes. Improper management of waste can therefore pose big problems for the entire populace.

1.5 Status of Occupational Safety and Health in Mines

Incidence of accidents being an important indicator of the status of safety, it may be pertinent to examine the accident scenario. Statistics of accidents in coal and non-coal mines over the years are given at Annexure:III.

From the accident figures it can be seen that in coal mines both fatal and serious injuries have come down over the years. During post independence and pre-nationalisation era, the reduction was drastic. However, the death rate per 1000 persons employed in mines is hovering around 0.32 during 1992-93 and had shown some increase during 1994-95 largely due to some disasters in coal mines. However, this figure has again come down considerably to 0.27 during the year 2000. Serious injury rates, however, are showing a steady decline.

The situation in non-coal sector as far as accidents are concerned shows that after steady decline for over three decades the trend of fatal accidents were again on the rise during 1994 to 1997. However, sustained efforts could bring down this figure to 0.25 in the year 2000. Serious accidents in non-coal mines show a steadily declining trend.

If ten-yearly average of fatalities and fatality rates for both coal and non-coal mines are looked up, it would show an overall declining trend.

A detailed examination, though would show that the fatality rate in coal mines have remained almost static for the last two decades, and in non-coal mines after a steady decline over the first five decades, the fatality rate have increased in the last decade. These trends are disturbing. It is time to take up an in-depth examination of the total accident scenario using modern scientific approach. While on the job, all possible factors, both external and internal, should be considered so that correct and practical solutions are arrived at.

Cause wise analysis of fatal accidents in coal and non-coal mines in India for the period 1996-2000 (5 years) reveal that few causes like roof-fall, dumpers and trucks and rope haulage in coal mines and side fall, fall of persons, dumpers/trucks and fall of objects in non-coal mines contribute a major share of the fatal accidents. The trends show a disturbingly similar pattern over a long period of time. Looking from the point of view of accident statistics containment of these few causes would show considerable improvement in the safety performance of the mining industry

Science and Technology have made long strides in our country. It is time that S&T should be used effectively to provide necessary protective cover to minimise and to ultimately reduce the incidence of accidents with resultant injuries in our mines, to a reasonable and acceptable level in a time bound manner.

The work-force needs to be comprehensively trained, operations need to be updated and upgraded for higher in-built safety and work-sites rendered inherently more safe. Repetition of similar accidents point to the fact that it is possible to devise preventive measures resulting into a pro-active accident prevention strategy.

From the observations made above, it can be established that the existing traditional system of administration of Mines Act and subordinate legislation framed thereunder through inspections, statutory and other investigations into fatal accidents and dangerous occurrences and follow up measures arising out of the traditional approaches to ensure that risk is kept within acceptable levels have reached its limit of effectiveness. Time is now ripe to introduce new initiatives and stress upon areas of high risk in order to bring them down to acceptable risk levels.

Present day safety scenario in the Indian mining industry based on traditional safety elements, which include: safety officers, safety committees, safety rules, slogans, posters, campaigns etc. are all marginally effective. These traditional strategies place safety responsibility with a staff officer who is isolated from the line function and is burdened almost exclusively with the production process and hardly having time or will or means to hunt for hazards.

Any day at any time and anywhere in the world 'Safety' is a clear-cut barometer of organisational excellence. There cannot be an excellent organisation that has a lot of accidents.

Effective safety programmes will only become a reality when the management at all levels fully integrate safety responsibility into the industry's mainstream. This will not result from safety programmes that are superimposed upon the industry, but only when safety is fully accepted as an integral part of the industry and its mission.

1.6 Status of Occupational Health and safety in Factories

The data relating to injuries resulting from accidents in factories indicates a declining trend during 1994-98 (Annexure: IV) in contrast to the increasing trend in number of registered factories in the country. There is a marked reduction in total number of injuries (56726 injuries) during the year 1998 when compared to the figure of 1994 (83646 injuries) registering almost 6.8% reduction per year. During the year 1993 to 1997, (Annexure: V) there is a decreasing trend in both frequency rate and incidence rate of industrial injuries.

Regarding occupational diseases, very few cases have been reported in factories. As per the information available (Annexure:VI) only 1963 cases of occupational diseases have been reported in three of the 11 states who have responded to the request by DGFASLI.

1.7 Status of Occupational Health and safety in Ports

The trend of total no. of reportable accidents from 1956 to 1999-2000 is shown in Annexure: VII. There is a decreasing trend in the total no. of reportable accidents. However, during the said period, the volume of cargo handled has increased considerably from 16.1 million tonnes in 1956 to 124.4 million tonnes (excluding bulk POL) in 1999-2000

1.8 Status of Occupational Health and Safety in unorganized sector

Excepting a few pilot surveys in some of the segments of the unorganized sector, no authentic statistics at the national level are available on accidents and occupational diseases in these segments. The sample surveys in the agriculture sector provide information about the nature of hazards and type of accidents. These are due to agriculture hand-tools and implements, farm machinery, chemical agents, climatic agents, animal/snake bites, etc. With regard to the construction sector the rate of fatal accidents is 4 to 5 times that in the manufacturing sector. The workers are also exposed to many types of hazardous substances, which have a potential to cause serious occupational diseases such as asbestosis, silicosis, lead poisoning, etc.

1.9 National level set up

1.9.1 Ministry of Labour

The occupational safety and health is one of the subjects allotted to Ministry of Labour under the Government of India allocation of Business Rules. The Ministry of Labour, Government of India and Labour Departments of the State and Union Territories are responsible for the safety and health of workers. As most of the legislation on safety and health are Central Government legislations, the Ministry performs the important function of piloting the bills through Parliament after inter-ministerial consultations and consultations with the State Governments and other organizations of employers and employees. Liaison with the International Labour Organization and other countries is carried out by the Ministry. Co-ordination at the national level is undertaken by the Ministry by periodically convening the State Labour Ministers Conference and State Labour Secretaries Conference, in which policy matters and issues on uniformity in labour laws are discussed. Directorate General Factory Advice & Labour Institutes (DGFASLI) and Directorate General of Mines Safety (DGMS) assist the Ministry in the technical aspects of occupational safety and health.

1.9.2 Directorate General of Mines Safety (DGMS)

DGMS is a subordinate office of the Ministry of Labour. By drafting appropriate legislation and setting standards, by overseeing compliance thereof as intensively as its resources permit and through a variety of promotional initiatives and awareness programmes the officers of DGMS exercise preventive as well as educational influence over the mining industry. DGMS is also promoting the concept of 'self-regulation' as well as 'workers' participation in safety management' and, with changing scenario, attempting to superimpose its traditional role of seeking compliance by legal sanctions and work prohibition optimally with advisory and other safety promotional initiatives, thereby creating an environment in which safety is given due priority.

The Director-General is assisted by specialist staff-officers in mining, electrical & mechanical engineering, occupational health, law, survey, statistics, administration and accounts disciplines at the headquarters. The headquarters has also a computer centre, a technical library and S&T laboratories as a back-up support to the organisation.

The field organisation presently has a two-tier net-work of field offices. The entire country is divided into six zones, each under the charge of a Deputy Director-General. There are three to four Regional offices under each zonal office. Each Region is under the charge of a Director of Mines Safety. There are in all 21 such Regional Offices. Sub-regional offices have been set up in important areas of concentrated mining activities away from Regional office. There are five such sub-regional offices, each under the charge of a Deputy

Director. Each Zone, besides having inspecting officers of mining cadre has officers in electrical & mechanical engineering and occupational health disciplines.

Besides the regular activities, DGMS also implements plan schemes aimed at specific problems identified which need special attention. The output from the plan schemes become valuable input for legislative changes and formulation of action plans in the matters of safety and health vis-à-vis the mineral industry.

1.9.3 Directorate General Factory Advice Service & Labour Institutes (DGFASLI)

The Directorate General Factory Advice & Labour Institutes, being the technical organization of the Ministry, liaises with the State Factory Inspectorates and advises them on the administration of the Factories Act, 1948, the infrastructural facilities required for the purpose, and issuance of Rules under the Act. Amendments to the Act are dealt with by discussing these in the Conferences of Chief Inspectors of Factories belonging to the State and Union Territories, and their recommendations are communicated to the State Governments through the Ministry for follow-up action by them. Besides, the DGFASLI, on behalf of the Ministry, carries out important function of providing training for Factory Inspectors and co-ordinates their training outside the country. Considering the number of industries in the country and the fact that the State Governments have the major responsibility for enforcement, training in safety and health for personnel from industries is carried out by the five Labour Institutes of the DGFASLI. The Central Labour Institute at Mumbai and Regional Labour Institutes at Kanpur, Kolkata and Chennai are having professionals from various disciplines such as engineering and of management, hygiene, occupational health, industrial physiology, ergonomics, industrial psychology etc. These institutes are also having facilities for conducting research and consultancy studies in various areas of safety and health.

The Director General, DGFASLI is also Chief Inspector of Dock Safety under the Dock Workers (Safety, Health and Welfare) Act, 1986 in respect of major ports. Dock Safety Inspectorates are established in all major ports. The Dock Safety Division at the headquarter coordinates with the dock safety inspectorates and amendments in statutes concerning dock work.

The construction safety division at the headquarter conducts national level seminars, workshops and training programmes in area of construction safety. Training modules and manuals, slides and transparencies are prepared and made use of in the training programmes conducted by the division. The guidelines on safe work practices are also prepared.

DGFASLI as a coordinating agency with the State Governments, the Ministry of Labour and as agency having interaction with the international bodies such as ILO, UNDP, WHO etc. on the matters connected with the occupational safety and

health in the manufacturing sector and the port sector has a very important role to play. The organization at its Labour Institutes has several disciplines/divisions to study the problem of safety and health in an integrated manner and arrive at practicable solutions to the problems. In addition to the regular activities, the organization also undertakes developmental activities as identified in various Plan Schemes formulated and approved by the Ministry of Labour.

1.9.4 Regulating agencies for the unorganized sector

Chief Labour Commissioner (CLC) enforces the 'Building and Other Construction Workers (Regulation of Employment & Conditions of service) Act, 1996' and the central rules framed thereunder. DGFASLI provides technical support in drafting model rules, carrying out surveys and conducting training programmes in construction sector. The National Safety Council (NSC) undertakes training and awareness creation activities in this sector.

The Central Insecticides Board under Ministry of Agriculture and Co-operation regulated manufacturing, packaging, labeling, distribution, handling and use of pesticides. The State agriculture departments are enforcing the provisions of the insecticide act as relating to agriculture operations.

The State Labour Commissioners and the local authorities enforce the provisions under respective State Shops & Establishment Acts. These Acts are applicable to commercial establishments, hotels, restaurants, eating houses, theaters and other places of public amusement or entertainment.

The Directorate General, Labour Welfare under the Ministry of Labour deals with the welfare aspect of workers employed in beedi and cigar manufacturing.

In spite of various agencies involved in regulating work place safety and health issues in the unorganized sector, the efforts are by no means comprehensive and unified.

1.9.5 State Factory Inspectorates

The provisions under the Factories Act, 1948 and the State Factories Rules notified there under as enforced by the department of labour of respective state governments. For this purpose, in many states, Inspectorate of Factories are established, which also enforce other labour related statutes such as the Child Labour(Prohibition and Regulation) Act, 1986; The Maternity Benefit Act,1961; The Workmen's Compensation Act, 1923 etc. as relating to factories. Factory Inspectors are appointed at local and district levels for enforcing the provisions of these statutes.

The Inspectorates of Factories are also staffed with specialist in the field of occupational health and industrial hygiene at headquarter to extend support to field inspectors.

CHAPTER: II

WEAKNESSES OF THE EXISTING SET-UP

2.0 Need for National Policy on Occupational Safety and Health

Due to proliferation and increasing severity of hazards in different walks of economic activity (e.g. use of hazardous substances, outsourcing of hazardous work and harmful effects of widely used new technologies) and Government's declared objective to keep pace with international trends and need for projecting a positive image internationally as a country concerned about the health and safety of its working population, it is now appropriate that a National Policy on OSH is formulated and declared by the Government.

Experience shows that even if no additional legislative initiatives can be taken by the Government due to practical constraints, a Policy Declaration acts as a framework for guidance and action and helps in promoting voluntary actions at different levels. In fact the need for a coherent policy on OSH was internationally recognized as early as in 1981 as reflected in Article 2 of the ILO Convention No. 155 on Occupational Safety, Health and Working Environment.

2.1 Need for a General Legislation on Occupational Safety and Health

Increasingly, there is a trend all over the world to enact legislation on the subject which has general applicability to all work-sites. The legislation deals with matters of principles and empowers the government to make detailed regulations, codes of practice and standards for specific work-sites or work activities. The advantage in dealing with technical matters through regulations is that these can be revised or updated from time to time without delay and the procedural formalities involved in statutory amendment. Important examples of such general enabling legislation are the Occupational Safety and Health Act, 1970 of the USA and the Health and Safety at Work etc. Act 1974 of the U.K.

The question of enactment of a similar piece of legislation in India has been under consideration of the Central Government for long time. A Working Group was constituted in the Ministry of Labour in 1983 for the purpose, comprising representatives of the relevant Ministries of the Government. The working Group considered various forms of general legislation and enforcement systems in different countries. It was felt that the U.K. model of having a central autonomous body, namely, the Health and Safety Commission and the unified enforcement agency, namely, the Health and Safety Executive would not be appropriate in view of our federal structure and the tradition of enforcement of safety provisions of law in different sectors of activities by different inspectorates. The Group favoured the course of framing a general law but leaving the administration to existing departments of Government concerned. In order to

ensure effective administration and coordination of various functions under the new law, it, however, recommended the setting up of a Safety and Health Advisory Board.

At present, comprehensive safety and health statutes for regulating safety and health of persons at work exists only in respect of four sectors – namely, factories, docks, mines and construction sectors. In addition, there are number of other statutes for regulating safety in particular activities, operations, sectors such as transport, storage and handling of explosives, petroleum, insecticides, radio-active materials, installations, use and maintenance of boilers and unfired pressure vessels and operations of Railways, Shipping and Aviation. Thus, the approach in the existing statutes for regulating safety at work is to lay down specific and detailed requirements to prevent risk of injuries in specific operations or circumstances. This approach lacks uniformity and well-coordinated approach to safety and health in all sectors of the economy.

In addition, software development units, hotels, unregistered manufacturing facilities, isolated storages of hazardous chemicals employing less than 10 workers are also outside the scope of application of safety and health legislations.

There are also problems regarding the procedures involved in amending these statutes. The administrative procedure to effect amendments to these statutes is so long drawn that quite often there is a time lag between the notification of the amendment and existence of the situation requiring such amendments. Further, these amendments cater only to particular problems. Thus, the Working Group feels that there is a need for a general legislation covering safety and health aspects of workers employed in all sectors of economy irrespective of the number of employees employed in those units.

2.2 Apex Body on Occupational Safety and Health

At present, there is no agency or department of the Government of India exclusively dealing with matters of occupational safety and health. DGFASLI is dealing with safety and health of workers employed in factories and ports, whereas, DGMS deals with safety and health of miners. There are other departments under the Ministry of Labour which deal with safety and health issues in different sectors such as CLC for construction sector, etc. Also, there is no agency, which covers safety and health of workers in unorganized sectors. Thus, there is a need for an apex body at national level to deal with matters connected to safety and health of workers employed in all sectors of economy. This body may be designated as Apex Body on Occupational Safety and Health. The Apex Body on Occupational Safety and Health will assist the Government of India in the implementation of National Policy on Occupational Safety and Health. It would also coordinate the activities relating to enforcement of provisions under General Legislation on Occupational Safety and Health. It would coordinate with all departments of Governments, dealing with matters

connected to occupational safety and health in the implementation of National Policy.

2.3 Lack of Enforcement Strategies

By and large, the enforcement agencies have not developed enforcement strategies through collective deliberations and analysis of the situations. Inspections have been generally left to the individual Inspectors without much of guidelines whereas the major issues concerning a particular sector can only be resolved through the direction and initiative of the enforcement agency as a whole with commitment from the highest level. For example, the Dangerous Machines (Regulation) Act which provides for the regulation of trade, commerce, production, supply, distribution and use of the dangerous machines in agriculture, can only be enforced effectively if a strategic initiative is taken at the State and National levels to involve the manufacturers of such machines and seek their commitment, not to by pass the built-in safeguards for cutting costs. Thus, there is an imperative need for formulating well thought out enforcement strategies for different legislations to address the major concerns.

2.4 Technological Change: Upgradation of knowledge base through education and training

In terms of the administration of the OSH legislations, there has been a lack of educational and awareness effort. The general approach has been to make a legislation and expect compliance while the need is for a proactive approach to reach out the persons responsible for compliance through well designed educational/awareness campaigns such as the targeted Conferences/Seminars and media participation. Literature in the form of simple leaflets providing the rationale behind the statutory provisions and practical guidance on different statutes regarding achieving compliance is also lacking.

The effectiveness of the safety professionals in the industries and the enforcement organizations, i.e. DGMS, DGFASLI is, to a great extent, dependent on the capability and competence of its front-line officers who come in frequent contact with various segments of the mining community, factories, ports and other industries. Recourse has been taken to intensive mechanization to meet high targets of production. Both, on account of the increased complexities of safety and tremendous expansion of activities, the responsibilities of DGMS & DGFASLI in drafting/developing matching safety legislation, standards and codes of practice; in scrutinizing and approving working plans and granting conditional permissions & exemptions; in analyzing the hazards associated with introduction of new machine or equipment; in monitoring and promoting compliance with safety provisions; in evolving and promoting a variety of safety promotional measures and in generally exercising the advisory/educational influence, too have increased considerably. Problems that lie ahead are far more challenging because Indian mining industry is poised to take a quantum jump in the years to come.

The imperativeness of imparting structured training and retraining to the officers of DGMS and DGFASLI has been emphasised, amongst others, by the National Conferences on Safety in Mines, Committee set up by the Government of India to review the role and functions of DGMS, the PIACT Mission (ILO), conference of CIFs, etc. Importance of keeping the Inspectors abreast with the latest developments having been well recognised internationally. Article 7 of the ratified ILO Convention No.81 (Labour Inspection Convention, 1947) too casts clear responsibility upon every member state for the Inspectors to be adequately trained for the performance of their duties.

2.4.1 Competence Enhancement of Inspectors of Mines

Infrastructure facilities for imparting structured training to the officers of DGMS and other key personnel of the mining industry had been set up to some extent in DGMS as the 'Mine Safety & Health Academy' under the plan scheme 'HRD' during the IXth plan period. The officers of DGMS are holders of degree in their respective disciplines. The officers in mining discipline additionally hold the First Class Mine Manager's Certificate of Competency. Therefore the level of training required to be given to them has necessarily to be 'super specialisation'. The Directorate-General of Mines Safety being the only organisation in the country where rich and varied expertise of this level in the field of Mine Safety with stress on development, administration and practical means of implementation of safety provisions exist, is eminently suited to implement the proposed scheme. The only, alternative could be sending out the officers of DGMS to Academies like the National Mines Health and Safety Academy, USA, for intensive training, which proposition would obviously may not be feasible.

2.4.2 Competence Enhancement of Inspectors of Factories

After their initial appointment, the Inspectors of Factories in some states undergo induction training in various aspects of their functioning such as administrative procedure, inspection procedure etc. In fact, some states have a formal arrangement for training of all state officials including the Factory Inspectors. However, the safety and health aspects are not included as part of the syllabus of this training. The Labour Institutes under DGFASLI conduct Basic Course in Industrial Safety for freshly recruited Inspectors, Refresher course for experienced Inspectors and Specialized courses in the emerging field of occupational safety and health.

In addition to this, in the light of new hazards being introduced in the manufacturing sector with the use of modern technology, new products, new processes, there is a need for creating opportunities for exposure of Inspectors of Factories to the latest techniques in the field of occupational safety and health in developed countries.

2.4.3 Education and Training of Supervisors and Workers

It is widely known and established fact that safe human behaviour developed through proper training and supervision has a key role in accident prevention. In recognition of this, the Factories (Amendment) Act, 1987, for the first time placed a general duty on the occupiers under Section 7-A to train workers in OSH. This is further strengthened by conferring under Section 111-A right on the workers to get trained on OSH at the workplace.

2.4.4 Diploma Course in Industrial Safety

As per the provisions, under section 40-B of the Factories Act, 1948 and the Rules notified there under by various states, as well as under the Dock Workers (Safety, Health and Welfare) Regulations, 1990, Diploma Course in Industrial Safety is an essential qualification for appointment of safety officer in factories and ports.

The minimum qualification for admission to the Diploma Course in Engineering or Bachelor of Science, or Degree in Engineering/Technology with certain years of practical experience. In some states, Bachelor of Arts has been prescribed as minimum qualification whereas some have admitted fresh graduates to these courses. As a result no uniformity at national level is maintained in the quality of education, and level of competence of candidates passing out is not satisfactory. This has been revealed very clearly in many safety audits conducted by the institutes under DGFASLI. The Working Group feels that there is a need for (i) uniformity in the quality of safety education, (ii) recognition of institutes conducting the courses, (iii) recognition of competency of safety officers at national level.

2.4.5 Certificate course in Industrial Medicine.

As per the provisions under the Factories Act, 1948, the Dock Workers (Safety, Health and Welfare) Act, 1986 and Rules/Regulations framed there under, for appointment of Factory Medical Officer, a certificate course in Industrial Medicine of at least 3 months duration (or Diploma in Occupational Health) is essential qualification. DGFASLI has also prepared guidelines as well as the syllabus for conducting this course by any institutions. Central Labour Institute, Mumbai has been conducting Associate Fellow of Industrial health (AFIH), since last 7-8 years, for medical professionals to enable them for appointment as Factory Medical officers. Every year 50 candidates are admitted to the course. There is a need to enhance the efforts to conduct more such courses.

2.4.6 Training of Industrial Hygienists

The Second Schedule to the Factories Act prescribes permissible levels of exposures in respect of certain chemical/toxic substances. The provisions under section 7-A also places duty on the occupier to monitor and assess the working

environment, in order to ensure the safety and health of workers. In order to ensure compliance with those particular provisions, occupiers are expected to place this responsibility on certain qualified trained and experienced persons. Industrial Hygiene being a specialized field, there are no institutions imparting education/training in this area. Realizing a need for specialized learning, Central Labour Institute, Mumbai has started a 6 weeks training course in Industrial Hygiene, for the officers/staff of factories inspectorates of various states to start with. There is a need to conduct such courses for other participants also.

2.4.7 Safety and Health Education at Colleges/ Universities

Through various studies conducted in the area of behavioural science environment and safety, it has been revealed that culture of safety and environment has to be inculcated right from childhood. Appropriately, certain changes have been made in the syllabus of primary education as well as secondary education in order to make children aware about the environment. However, in the process, safety aspects have not been included adequately, although certain topics such as road safety, home safety, and outdoor safety could be added to strengthen the syllabus contents, at these levels.

At college levels as well as university level also not many courses are offered in the field of safety and health. Some universities/colleges have started degrees/diploma in safety engineering, yet exclusive subject of safety and health is not taught in most of the universities/colleges.

2.5 Mining Sector

Just like in any other industrial accident, unsafe acts and unsafe conditions of work lead to accidents in mines. Most of the accidents are preventable - they do not just happen they are caused. Accidents usually occur as a result of a combination of factors - the three main factors being the working environment, the equipment and the worker. Ultimately most of the accidents are either directly or indirectly attributable to human failings. Every accident causes suffering to the victims and his family and in case of fatal accidents or permanent disablement the effect is catastrophic on family life. We are still paying heavily for accidents both in terms of human suffering and economic waste. Safety at work is still a serious problem.

2.5.1 Shortage of Manpower for Enforcement of Statute in Mines

Mining is a growing industry of the country. The output of most minerals have increased several folds in the last few decades and the projection for the Xth plan and thereafter show steep growth in output of most minerals. In order to meet the targeted growth, the major mineral industries are resorting to intensive mechanisation and extending workings to complex geo-mining locales which is

bringing with it new problems of health and safety hazards which had hitherto remained largely benign. Mining activity of minor minerals has also increased by leaps and bounds to meet the growing demand by opening of new mines and by partial mechanisation, though most of the mines have remained largely manual. An increasingly large workforce consisting of men and women are being deployed in such operation with very little concern on matters connected with their occupational health and safety. There is therefore a need for stringent enforcement of the Mines Act so as to provide a protection against occupational hazards. The challenges posed by mechanisation and new technology need to be addressed through upliftment of technical skill of inspectors and frequent inspections so that safety and health of workpersons get it's due priority.

Active role of an independent regulatory body for evaluating safety standards in mines is a prevalent global practice. In India, DGMS has been playing this positive role since its inception in 1901. However since 1971 the growth of the organisation has been stunted in a scenario where mining activity increased by leaps and bounds. The result is even though the organisation has been over stretched to its limit of performance, it could not fulfil the demands of the nation and reach the norms of inspection that have been evolved over the long existence of the organization. Further, being a statutory organization, most of the documents generated are statutory in nature where scope of simplification and rationalization is limited. Moreover small mines go un-inspected for years and many others cannot receive the attention they deserve. The coal mines, oil mines and mechanized metalliferous mines call for closer inspection because of their intrinsic hazards. Complete inspection of such mines is required once in a year by mining inspectors against which with the existing strength it is possible to make such inspection once in 4-5 years. Similarly electrical and mechanical inspectors are required to inspect such mines once in a quarter but with the existing strength it is hardly ever possible.

2.5.2 Need for Computerization of Total Safety in Mines Information

Information required for decision making purposes by the safety professional working at mine operational level, company level, Government level, and by researchers in the S & T Institutes, is essentially multi-disciplinary in nature. In the absence of a comprehensive computerized information system, most of these agencies operate in an environment of inadequate information. Mines safety problems have a tendency to recur. Usually in order to supplement the incomplete information, experienced safety professionals recall similar problems and solutions of the past, which might have worked or not, and influence the safety decisions, thus allowing for a lot of subjectivity to creep in. In fact safety practices relating to safety committees, safety rules, accident investigation and reporting, and safety promotions are common with all these agencies, with good or poor safety results. These factors are, therefore, not the differentiating ones. Lack of reliable and comprehensive information at the base, leaves the imprints of mediocrity in all such efforts. This deficiency is, however, masked by highly

publicized achievements of the traditional safety elements which include safety directors, safety committees, safety conferences, safety rules, slogans, posters, campaigns, awards and all those in the basket. It is necessary to break out of this line of traditionalism and transform the style of safety management by placing its decision making process really technology-based.

Different organisations who are concerned with mine safety have so far developed/maintained their own systems to suit their immediate needs. These local systems have different and sometimes overlapping coverage and emphasis.

In DGMS the initiative was first taken in the year 1975 through creation of a scheme named "Development of Mines Statistics". The achievement so far includes devising a system to collect pertinent mines safety information generated in course of its own statutory functions, information relating to operational aspects of the mine, accident and other dangerous occurrences, brief geo-mining characteristics of mines etc. Similar systems have been developed in Coal India Limited and its subsidiaries, other coal companies and major non-coal companies as well. Starting with manual paper-based system, these local systems have slowly shifted to codification and standardization of information. The research institutions, academic institutes and other R&D laboratories maintain their own information base, with results obtained from safety related investigations and experiments. Organizations like IBM, State Departments etc. also possess a vast reserve of processed data, as well as their own system of collecting and disseminating information relating to mines. Most of them have arrangement for analyzing data for their own decision making purpose.

While serving the overall objective of mines safety, there are irregular but frequent interactions amongst these organizations in the form of either mutually sharing the existing information or generating additional data through common activities. But there is no organized system to process and store these data for common use. It is felt by many organizations in the mining industry that wide gap in this area exists today which need to be addressed in the near future so that accessibility to relevant information does not come into the way of establishing world class safety and health environment for the mine workers of the country.

2.5.3 Inadequate Infrastructure Facilities in DGMS

DGMS is a specialized organization engaged in the area of Mines Safety spread all over the country. The main activity of the officers of DGMS includes enforcement of statute regarding safety in mines. The nature of work itself warrants high level of security need, compact residential areas where officers and staff can be mobilized very quickly during emergencies in mines, large volumes of documents, etc. need archival facilities, records pertaining to statutory examinations, etc. need high level of security and secrecy and above all provision of facilities like good communication, better residential accommodations,

mobility of officers and staff etc. would definitely give an edge to the organization for functioning in a much more concerted and effective manner.

DGMS is an emergency organization. The Officers of DGMS are required to respond instantly in case of any emergency like disaster/accident etc. in mines. In case of accidents in mines, the officers of DGMS have to immediately rush to the site and set up emergency response activities. The mines work round the clock, so, the officers of DGMS have to be ready for emergencies at all times.

DGMS has no office and residential complexes of its own at Hyderabad, Ranchi, Nagpur where Zonal and Regional Offices are located and at Bhubaneswar, Bilaspur, Goa, Jabalpur, Udaipur and Digboi where Regional and Sub-Regional Offices are located. DGMS have acquired land at several places e.g. Asansol, Bhubaneswar, Nagpur, Sitarampur, Dhanbad, Goa, Udaipur, Parasia and Digboi. It is necessary to construct own office building and residential complexes at these places. The necessity of adequate infrastructure has long been felt considering the existing inadequate facility available at the organization.

In order to strengthen the Organization and to increase its' efficiency, it is necessary to provide proper inputs to the officers of DGMS by providing better infrastructure facilities as mentioned. It is difficult to discharge the statutory obligation and other special type of jobs, which the DGMS Officers are required to perform with the existing facility that are very old and outdated.

2.5.4 Legal Action for Violation Of Mine Safety Law: Necessities

The Mines Act has given two major weapons in the armory of DGMS for ensuring compliance with the provisions of the statute. These are: power to order work prohibition & power to prosecute. Most of the criminal cases instituted by DGMS, particularly in Zones and Regions where a law officer is not posted are entrusted to out side lawyers who may not exercise necessary interest due to various reasons. Under the present situation prosecutions have lost their effectiveness as a deterrent because these are long drawn affairs and the Directorate-General of Mines Safety is not in a position to follow up all the cases for shortage of officers in the legal cell.

The necessity of timely action against violations of law cannot be overemphasized. Laws are meant to be complied with, and managements must appreciate this basic tenet and respect the authority of the enforcement agency for this purpose. Every contravention must merit punishment. Further, for such punishment to have a salutary effect, it must be prompt & meted out to the concerned delinquent official, regardless of the position enjoyed by him in the hierarchy of management.

- Penalties levied for the various contraventions of the provisions of the Mines Act, 1952 should be enhanced suitably so as to make the contravention of law cost prohibitive.
- Special Courts may be constituted/designated Courts be setup to deal with all cases under Mines Act, 1952 for expeditious disposal of the same.
- Legal setup in DGMS should be suitably strengthened so that not only are the inspecting officer/field officer provided due and necessary help in framing charges for contravention of law but suitably qualified and educated manpower is also available to conduct the cases filed by DGMS in the Courts by putting things/matter in the right prospective.

2.5.5 System of Examination for Grant of Statutory Competency Certificates to Managers and Supervisors

Over the years the process of conduct of statutory competency examinations and grant of certificates by the Board of Mining Examinations have become wide and elaborate to cover majority of the vital areas of operations involving safety of the persons employed in mine. There are different schemes of examinations for candidates with variety of academic background and practical experience in mines. At present there are 30 different types of examinations, dealing with about 36,000 applications from all over the country every year.

Introduction of certificates of competency for electrical and mechanical engineers employed in mines is being considered actively by the Government. At National level considerable progress have been made in raising literacy level. Hence more and more qualified persons are now available and are appearing for various junior level statutory examinations. In this context there is an increasing feeling that written examinations shall be introduced for junior level supervisory certificate examinations also, keeping in view the trend of mechanization with increased use of new technology and sophisticated equipment.

The mines engaged in production of coal and lignite are mostly under public sector undertakings that are in organized sector. With increased demand on coal and advent of modern technology, it is necessary to update and modify the standards and procedures for grant of statutory certificates. The career growth of mining personnel engaged in the mine entirely depends upon their certificates of competency.

It may be appreciated that in order to implement the additional workload, it is essential to augment the present system and infrastructure for conduct of statutory examinations through large scale computerization of the examination system. This, in addition to infuse much needed efficiency, will also bring in total transparency vis-à-vis conduct of examinations.

2.5.6 Problems of Occupational Safety & Health in small mines

Small mines represent a growing and important component of the mineral sector in the form of value of output, contribution to the economy and employment. It has been estimated that small mines contribute about one sixth of the value of the world's non-fuel minerals output. In many developing countries output is significantly higher than this figure. In India, for example, some 1,00,000 small mines account for about 50% of non-fuel mineral production. The employment effects of such activity are considerable, especially in tribal and rural areas. An estimated work force of about one million is involved in this activity in India.

There is no valid definition of 'small mine' but there are different criteria to define this sector, such as quantity of ore produced, amount of revenue from sales, size of deposit/working and number of employees. For the purpose of understanding the generic term, "small mine", one may assign the following attributes :

- exploitation of surface or near surface deposits ;
- out-put less than 30,000 tonnes per year.
- aggregate employment of less than 50; and
- predominantly worked by manual means or much less mechanisation.

However, some of the mines are exempted from provisions of most of the Mines Act in certain cases. Section 3 of the Mines Act details conditions under which these exemptions would be effective.

The major issues/ problems vis-à-vis enforcement of legislation in small opencast mines are

- Establishment of ownership of small mines;
- Identification of particular mine without recorded location & clearly demarcated boundaries;
- Non-availability of documentary evidences/ records;
- Negligible penalties in case of prosecutions, long time in disposal of cases if any in Courts of Law;
- Inadequate number of Inspecting officers in DGMS;
- Quarry licenses/leases are granted by concerned state government authority. Generally neither safety requirements are taken into

consideration while granting such a license/lease nor any mention is made regarding such requirements in the license/lease order, resulting into complete ignorance of the licensees/lessees regarding safety requirements and related provisions of the statute.

- There are no parameters to assess the financial solvency of the lessee/licensee to ensure that the lessee/licensee is economically sound to provide for basic infrastructure and resources to run a mine in safe and scientific manner.
- Generally quarry licenses are granted for a maximum period three years. The mine operators normally avoid investing in safety and welfare measures for such a small period.
- Very small size of the quarry licenses (upto 30 m x 60 m.) makes it almost impracticable to work the quarry safely with due consideration of safety legislation;
- The workings are generally made by contractual workers i.e. they are paid based on the production of minerals. Since their earnings are dependent on production only, the hours of work in such mines is not fixed. The concept of weekly day of rest and working hours do not have much relevance for such workers.
- Workers are mostly migratory, illiterate, unorganised, seasonal and change their employers quite frequently and therefore it is very difficult to keep a record of work history.
- Lack of facilities for medical examination prior to employment of workmen in a mine;
- Due to economic reasons, mine workers often live in environment which is perhaps worse than their work place including the air borne dust in the environment.

Occupational Health & welfare issues in small mines

Occupational health and welfare issues related to small scale mines have been discussed and debated in various forums. Different agencies concerned with the health and welfare of workers have expressed their helplessness in doing anything significant due to complexities of issues involved and multiplicity of State and Central government agencies. Some of the important occupational health and welfare issues are;

- Comprehensive data on number of mines, their location, ownership etc. is not available.

- Because of resource constraints and inadequate number of inspecting officers it is beyond means of enforcement agencies to ensure regular inspection of small mines for compliance with the statutory provisions.
- The wages of most workers in small mines are linked to production of material hence the concepts of fixed hours of work, overtime wages, weekly days of rest, leaves, and other benefits are difficult to implement.
- The workers are mostly illiterate, unorganised, migratory and change their employer frequently. Therefore it is difficult to ensure records of work history.
- The working of small mines being mostly seasonal the continuity of work records is not maintained.
- A majority of small mines are located in remote and inaccessible areas where medical facilities are practically non-existent.
- Since there are no facilities for medical examinations, the Initial and Periodical Medical Examination of workers are difficult to conduct.
- Majority of small mines are owned by small entrepreneurs who do not have ways and means for conducting surveys for health hazards such as dust, noise etc. in mines.
- Majority of mines lack basic facilities for drinking water, first-aid and sanitation.
- There are no government or private agencies to provide occupational health and hygiene services for small scale mines.

2.6 Factories and Docks

2.6.1 Strengthening and Restructuring of DGFASLI

2.6.1.1 Qualification of Officers at Entry Level

At present, for appointment of officers in DGFASLI (at the entry level) the requirement is basic qualification in their respective field of education such as Engineering, basic applied Science, Medicine, etc. There is no requirement for special qualification in safety, health, hygiene, management, industrial engineering etc. although these are desirable in some of the cases.

2.6.1.2 Career Advancement

The promotional avenues for the officers of DGFASLI are very limited, this has created dissatisfaction and demoralization amongst the officers resulting in deterioration in output.

2.6.1.3 Autonomy to Labour Institutes

The services are offered by the labour Institutes to State Governments free of cost, and at reasonably low costs to industries and other users. There is a need to rationalize the fee structure based on the concept of “user pays”.

The expenditure on consultancy assignments is borne by the Government and met through the allocated budget as a result very few assignments can be taken up. The fees charged for these consultancy assignments are deposited to the consolidated fund and cannot be spent on the activities, such as upgradation and development programmes of these institutes. There are severe constraints for taking up big projects specially national level studies and surveys which require considerable budgetary support.

Procedural constraints and delays are also experienced while executing ILO/International projects. As such, not many ILO funded projects are taken up, although ILO has evinced interest in many projects.

2.6.2 Coordination of Administration of Factories Act, 1948

2.6.2.1 Notification of Rules

There is no uniformity in statutory standards in the field of safety and health in factories in absence of notification of model rules framed the Factories Act 1948 by all states.

2.6.2.2 Conference of Chief Inspectors of Factories

The conference of Chief Inspectors of Factories is convened annually to discuss various safety and health issues and bring out practical solutions. The decisions of the Conference are referred to the Ministry of Labour for forwarding these after due consideration to the State Governments for giving effect. The decisions of the Conference are not given due importance and are not implemented by various States.

2.6.2.3 Inspection Standards

At present, there are no uniform standards for inspection of factories in the country. State Governments and Chief Inspectorates of Factories adopt their own standards depending on the specific situation.

The standard checklists and inspection manuals are not available/used for inspection of factories. As a result there is no uniformity in the system of inspections.

2.6.2.4 National Studies and Surveys

There are number of areas in which national/regional level studies are required to be undertaken for determining the problem of safety and health. Some such areas are; safety and health in Export Processing zones, Software development units, Ship breaking, Power generating units, Multi National Enterprises, functioning of Safety Committees, cost of accidents etc.

2.6.2.5 Monitoring of administration through FAS Forms

Although the information in FAS forms are required to be forwarded by the State Inspectorate of Factories on quarterly/annual basis to DGFASLI, it is not made available in timely manner. As a result, the national level status regarding occupational safety and health in factories and the level of compliance with the provisions of the Factories Act could not be ascertained at national level in time.

2.6.2.6 Consultancy Studies and Services at unit level

In addition to the Labour Institutes under DGFASLI, the consultancy services are also offered by number of organizations as well as individual safety professionals. Most of these services are in the nature of safety audit, HAZOP studies, preparation of on-site emergency plans and safety report which are statutory requirements. The Working Group noted that there is no system of recognition of these institutions/professionals by any national agency. In absence of such arrangement, any person can undertake such studies and hence the quality of the report can always be questioned.

2.6.2.7 Effectiveness of Chief Inspectors of Factories

The Chief Inspectors of Factories in the State are the enforcing authorities as per the provisions of the Factories Act which are mostly technical in nature. They are required to enforce the safety, health and welfare standards contained in the statutes on the basis of the ground realities and policy of the concerned State Governments. In order to take quick decisions in matters pertaining to their areas of work, such as, issue of notices, launching of prosecutions, deputation of inspectors for training, conducting surveys, ordering enquiries into accidents, etc. CIFs need to have functional autonomy.

2.6.2.8 Qualification of Inspectors of Factories

The qualification for appointment (at the lowest level) in State Factory Inspectorates should be enhanced by adding degree or diploma in industrial safety/health/hygiene as an essential requirement.

2.6.2.9 Appointment of Medical Inspector of Factories/Certifying Surgeons

The information regarding appointment of Medical Inspectors of Factories/certifying surgeons etc. in various states is given in Annexure:VIII. Some States have notified the medical inspector of factories as Certifying Surgeons whereas some states have declared Civil Surgeons, Medical Doctors in government hospitals, private medical practitioners as Certifying Surgeon for the purposes of the Factories Act, 1948.

2.6.2.10 Collection and Compilation of Statistics at State level

There is a considerable delay in collection of statistics at local level, regional level and their compilation at state level.

2.6.2.11 Occupational Safety And Health Management System (OSH.MS)

Realizing the need for tackling the problem of safety and health in an integrated manner along with other enterprise functions, industries in many advanced countries have adopted a systems approach on the lines of Total Quality Management, Environment Management System, etc. In India also, Bureau of Indian Standards (BIS) has framed BIS Standard IS: 15001. OSH Management System – Specifications with guidance for use. The standard is not mandatory. In addition, ILO recently has issued draft guidelines on OSH.MS, on the lines of ISO 9000 and ISO 14000 series. There are no exclusive and exhaustive provisions relating to OSH.MS in the safety statutes. However, some elements of OSH.MS such as preparation of safety policy, constitution of safety committees, appointment of safety officers and medical officers, establishment of occupation health centre are existing in the Factories Act, 1948 and Rules framed there under. There is need to give statutory backing to these guidelines/standards and to have a National Policy on OSH.

2.6.2.12 Control of substances hazardous to health

Although very few cases of occupational diseases are reported in factories, the working conditions in most of the factories handling hazardous chemicals have higher risk potential. It is necessary for every factory to establish a system of workplace environment monitoring. Though certain requirements are existing under the Factories Act 1948, these are not adequate in some areas such as appointment of competent person, method, frequency and duration of monitoring, and prevention and control measures for specific chemicals. Therefore, separate

statutory requirements should be made in respect of control of substances hazardous to health.

2.6.2.13 Occupational Diseases in factories

The statistics pertaining to notification of occupational diseases in various States for the year 1998 are given in Annexure:VI. Except in the States of Gujarat, Orissa and West Bengal, no case of occupational disease has been reported. However, the statistics pertaining to compensation for cases of occupational disease available with ESI authorities reveal that there are number of cases reported to that authority.

2.6.2.14 Duplication of agencies for clearance of sites

As required under Section 41-A of the Factories Act, 1948, some State Governments have constituted site Appraisal Committees under the Chairmanship of the Chief Inspector of Factories for advising State Governments to consider applications for grant of initial location of factory involving hazardous processes. The provisions under Sub Section (5) of this Section also states that once approval is granted under the provisions of this section by the State Government, further approval from Central Board or the State Board established under Pollution Control Statutes, is not required.

In addition, under the provisions of the MSIHC Rules, 1989, site notification in the prescribed format, is required to be submitted by the occupiers of the industrial activities covered under these rules to the authorities.

The Working Group feels that there is multiplicity of the requirement.

2.6.3 Unit level set-up

2.6.3.1 Appointment of Safety Officers

In order to strengthen the system of self-regulation, the present requirement regarding appointment of Safety Officers needs to be amended. All factories employing 500 and above workers should be required to appoint Safety Officers. The functioning of safety officers in factories is also not very satisfactory. In most of the factories, the safety officers are not given the status of the Head of the Department. As a result, the recommendations and suggestions made by safety officers in order to improve the status of safety and health in factories are not given due weightage.

The Working Group noted that the basic qualifications, experience and specialized qualification i.e. Diploma in Industrial Safety is not sufficient enough to appoint a Safety Officer as Head of the Department. In order to improve the status of safety officers, the review of the qualification and experience of the

candidates being admitted to Diploma courses of Industrial Safety conducted by various institutions needs to be reviewed and upgraded.

In order to ensure the competency and skill of safety officers for dealing with matters connected with safety and health, the Working Group feels that a system of accreditation of safety officers should also be thought of. This accreditation could be undertaken by the national level body.

2.6.3.2 Need for simplification and rationalization of forms

As per the provisions of the Factories Act and the Rules notified there under, number of forms/registers have been prescribed. There are as many as 32 forms prescribed under Factories Rules. Maintenance and submission of information in these forms needs to be simplified and rationalized. A number of representations on this aspect have been received by Ministry of Labour. Already, Government of Andhra Pradesh and Haryana have reduced the number of forms (including Annual Return) to a bare minimum. The Working Group feels that there is an urgent need to bring down the number of forms to a manageable number, say 5 – 6 including that for Notice of Occupational Diseases, Accidents, Dangerous Occurrences and Annual Returns which are very essential. The possibility of having a common annual return in respect of all labour laws should also be explored.

2.6.3.3 Safety Audit in factories

For an objective and independent assessment of the OSH status in a top-tier MAH factory, the system of independent safety audit has been statutorily introduced through an amendment of the MSIHC Rules in 1994 by the MoEF as well by notification of Major Accident Hazards Control Rules by certain state governments. Considering the limitations of an inspection carried out by an Inspector, particularly of a hazardous unit, in a short span of time available to him, an independent safety audit by a team of experts spread over a few days would no doubt be in-depth and comprehensive and reveal the improvements needed in OSH system.

The Working Group noted that many units are voluntarily taking to the practice of independent safety audits even when they are not a MAH unit having the statutory obligation to do so under the MSIHC Rules. Thus the requirement for an independent safety audit is becoming increasingly accepted by management of factories. There is a need to propagate the system of Safety Audit. There is also strong need for creation of an independent national level accreditation agency of eminent professionals for establishment of national standards on OSH and development of an audit mechanism for assessing effectiveness of OSH in industries, ports, mines and unorganized sectors by external audits.

2.6.3.4 Recognition of Safety and Health Performance

At present, there is no incentive to the factories for practicing good safety management systems and showing excellence in safety performance. Already certain insurance companies are adopting practice of reducing Fire Insurance premium if additional fire protection measures are installed as per TAC recommendations. This system of incentive/rebate in insurance premium could be extended to ESIC Insurance coverage.

2.6.3.5 Statement on Status of OSH in Company's Annual Report

Some of the progressive companies are incorporating on voluntary basis a paragraph on OSH in their Annual Report for information of shareholders and authorities. This gives a boost to OSH activities in their units. There is already a statutory obligation for companies to incorporate information on the measures taken for R&D, environment improvement and energy conservation in their Annual Reports. Companies should also include in their Annual Reports a resume on the OSH measures adopted. To make it compulsory, suitable amendment to the companies Act should be proposed.

2.6.4 Safety and Health in Ports

The Working Group noted that in absence of notification of State Rules under the Dock Workers(Safety, Health and Welfare) Act, 1986, no enforcement activities are taking place in minor, intermediate and private ports and the safety health are much below par or totally absent.

2.7 Unorganized sector

2.7.1 Agriculture

Very few sample surveys have been carried out to identify the occupational hazards and the type of accidents in this sector.

Besides the electrical hazards, presently only two types of hazards i.e. the hazards due to use of pesticides and dangerous machines (power threshers) are covered by the statutes, leaving other hazards uncovered.

The definition of “dangerous machine” in ‘The Dangerous Machines (Regulation) Act, 1983’ is narrow as it specifically covers only power threshers. As there are many other types of dangerous machines, the definition is required to be broadened.

The above Act cannot be effectively enforced by Inspectors appointed under this Act as its coverage extends besides the use of dangerous machines in agriculture, i.e. to production, supply and distribution, and trade and commerce, which are carried out in factories and sales departments.

Virtually there is no voluntary movement on OSH in the agriculture sector. The Associations of farmers, Agriculture Universities/Colleges, NGOs, large farm houses, etc. have not enrolled themselves as members of any professional institution/body working on OSH (for example NSC). As a result there is little awareness on OSH aspects.

Although some leading manufacturers of pesticides organise awareness campaigns for farmers on the use of pesticides, there is lack of training conducted on OSH in this sector.

2.7.2 Construction

The State Governments, excepting the State of Kerala, have not so far notified their Rules and identified the enforcement agencies under the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996. Hence, the enforcement of the legislation has not yet taken off.

The Department entrusted with the responsibility of enforcing the above statute at the Central level, does not possess in-house technical expertise on OSH which is a critical requirement for proper understanding and enforcement of the OSH provisions. The Director General at the Centre and the Chief Inspectors in States have been given powers under the Act to employ experts or agencies having technical qualifications and experience for the purpose of carrying out any inspection or in connection with any enquiry into an accident or dangerous occurrence. But no guidelines and terms and conditions have been framed for application of these powers. The experts and agencies have also not been identified. Technical feedback is also not forthcoming from the present enforcement officials for development of technical standards based on the field conditions.

The Inspection Officials have not so far been given initial training for proper enforcement of the above statute. There is also lack of adequate training for the safety officers, safety committee members, supervisory and middle management personnel and the key categories of skilled workers (such as erectors of scaffoldings), working in this sector.

2.7.3 Shops and Establishments

As discussed in the foregoing Chapter, the provisions of the Health and Safety Chapter under the Shops and Establishments Acts do not cover a variety of operations which pose health and safety hazards and are carried out in such premises. These operations include electrical and mechanical repair shops, small garages, air conditioners/refrigerators repair shops, small jobbing workshops, coffee grinding shops, flour grinding shops, etc.

Further, the provisions in the Health and Safety Chapter are very general and specific guidelines have not been developed.

The Labour Inspectors who enforce the Shops and Establishments Acts do not have technical background and have also not received training regarding enforcement of health and safety measures.

As the number of Inspectors compared to the number of Shops and Establishments falling under their jurisdiction is very small, effective enforcement suffers. Innovative approaches/inspection strategies are therefore required to be developed.

2.7.4 Beedi and Cigar Manufacturing

The overwhelming percentage of beedi and cigar workers (90 %) carry out the work in their homes and are therefore not covered by any of the OSH protection measures applicable to the factory premises where the remaining 10% of their co-workers work. The strategy for covering the beedi and cigar workers will be the same as suggested for the home work sector.

2.7.5 Home Work

The premises in which the “home work” is performed do not belong to the “employers” who outsource the work to the “home workers”. As such the employers have no control over the working conditions such as cleanliness, lighting, over-crowding, working postures, washing facilities, drinking water, etc. However, since for every type of home work, there is an employer, he should have a basic responsibility to atleast educate the home workers and provide basic health and safety information to them in a simple language (duly explained orally). Such a duty has not been placed on the employer under the OSH statutes which apply to the premises from which the home work is out-sourced (factory or shop and establishment).

2.7.6 Eating Places

Presently, a significant number of eating places which lie outside the Notified Areas of Local Authorities are not covered by any OSH legislation in most of the States (except the State of Tamil Nadu) as discussed in the foregoing Chapter.

Even for the eating places which are covered by the statute (The Shops and Establishments Act of the State concerned), specific guidelines applicable to their hazards (fire prevention and protection) have not been developed.

2.7.7 Waste Management

For managing wastes, the existing State laws in some of the states are very old and deal with only collection and transport of the waste and they do not provide sufficient powers to civic authorities and as a result, their enforcement is ineffective. Although, the recent set of rules, i.e. The Municipal Wastes (Management and Handling) Rules, 2000 were notified by the Central Govt. their enforcement is yet to take off.

Moreover, there is no inter sectoral co-ordination in most of the civic authorities for waste management.

CHAPTER-III

SUGGESTIONS TO IMPROVE OCCUPATIONAL SAFETY AND HEALTH IN THE WORK PLACES

3.1 National Policy on Occupational Safety and Health

A coherent national policy on occupational safety and health of workers employed in all sectors of the economy should be prepared. This policy would serve as guidelines for all government departments, enforcement agencies, employers and employee organizations as well as other organizations to take appropriate measures to promote occupational safety and health.

The policy need to be framed through tripartite consultation among the Government, employer's representatives and representatives of the **employees**.

3.2 General Legislation on Occupational Safety and Health

A general legislation to secure the safety and health of persons at work as well as other persons, against the risk arising out of or in connection with activities at places of work should be enacted. This legislation should be applicable to factories, mines, plantation, ports, construction, unorganized sectors and also to such categories of workplaces or work activities as may be notified by Central Government or by National Board on OSH on behalf of the Central Government.

3.3 Apex body on Occupational Safety and Health

An Apex Body on Occupational Safety and Health under the Ministry of Labour should be constituted. The members on the body shall be drawn from the Ministries of Govt. of India, Employers organizations and Employees organizations. The size of the board should be limited to 15-20 members. The representatives of professional organizations of repute could be co-opted as members on the board.

In order to carry out its activities efficiently and effectively, the Body may constitute various councils , committees and sub-committees for specific purposes/activities.

3.4 New Initiatives for the mining sector

Mines safety management in India has its own paradigm for safety. The present strategies place safety responsibility with a staff coordinator who is isolated from the line function and more often than not is given the task of finding out hazards by means of inspections, etc. This approach fails to integrate safety into the organization, thereby limiting its ability to identify **and resolve management**

oversights that contribute to accident causation. Activities employed in traditional safety programs are frequently “post vention” - that is, heightened activities after an incident, and with time returning to activity level prevailing prior to the incident. For the mining sector of the country a new safety management system need to be formulated through extensive discussions at a national level among all concerned players in the field.

3.4.1 Suggested measures for the future

An approach based on a combination of “strategic” and “systems” thinking has to be devised to prepare the whole of mining industry in order to achieve greater heights as far as safety and health of persons employed in mines are concerned. The new thinking must embrace organizational, behavioral and cultural systems on top of hazard control, analysis to anticipate hazards and engineering solutions to prevent accidents.

Improvement in productivity with enhanced safety as a consequence, as an objective and as a balance through safety auditing should be the safety policy of the industry. In this context, considering the Government policies regarding downsizing and optimum utilization of existing manpower, and understanding the fact that expansion of the Mines Inspectorate can only be upto a certain degree, it will be a necessity to consider external third party safety audit systems for assessing status of safety in Indian mines. The Ministry of Labour have taken some steps in this area and an amendment of Mines Act proposal is being considered by the government which proposes accreditation of external private auditors for mine safety audit.

3.4.2 Role Of The Mines Inspectorate (DGMS)

The government, employers and workers have clear responsibilities for health and safety in the working environment.

According to the ILO international instruments, the prime responsibility for the health and safety of workers in their employments rests with the employers. The employer should provide and maintain a safe and healthy working environment, ensure the provision of occupational safety and health services to workers, and give a high priority to health, safety and the work organization in general in order to reduce the incidence of occupational injuries and diseases. The employer plays an essential role in the performance of occupational health practice. To ensure its success, the employer should allocate the necessary resources, demonstrate his desire for workers to participate in the implementation of occupational health programme and be willing to accept suggestions from occupational health specialists on its successful implementation.

Under the scenario explained in the preceding paras, the role of Inspectorates (in present instance – DGMS) become ever more important. It is the Inspectorate who can bridge the gap between the Employer and the Employee and formulate adequate guidelines for a better and safer workplace. All over the world, this is the role played by the respective Inspectorates. In USA, Mines Safety & Health Administration (MSHA); in UK Health and Safety Executive (HSE); in Australia different Departments of Minerals & Energy (DME); in South Africa the South African Inspectorate all play the same role. The situation is no different in any other country in the world whether developed or developing.

3.4.3 TRAINING & EDUCATION OF WORKERS IN MINES

The important step to be taken is development of Standard Work Procedure or Safe Work Procedure (SWP) for every recognized, repetitive task that the mineworkers perform.

3.4.4 STRENGTHENING LEGAL SET UP OF DGMS AND SETTING UP OF DESIGNATED COURTS

Strengthening of the existing legal setup of DGMS for ensuring adequate attention in all such cases requiring redressal through the court of law would effectively offset the present problems of following up a case in the Courts of Law.

3.4.5 Strengthening of Mine Safety Enforcement Machinery

In order to bring about increased effectiveness it will be necessary to re-structure and rationalize functioning of DGMS for optimal utilization of the existing resources, replacement of human efforts through automation and planning and prioritization of inspection before proposing the bare minimum increase in strength of the inspectorate.

3.4.6 Making ISOs Effective

It is essential that the Internal Safety Organisations are suitably strengthened with adequate responsibility coupled with required authority.

3.4.7 Third Party Auditing

Safety audits have proved to be a very effective tool for assessing and eventually for improving safety and health conditions in mines. Considering paucity of resources in the form of adequate manpower in DGMS, recourse could be taken to a system of third party audits by accredited mining experts.

3.4.8 Risk Management

Introduction of risk management as a tool for development of a good health and safety management system is a break through in the traditional strategy. The system is an effective tool for improvement of safety and health scenario.

3.4.9 Users to pay for services rendered

With liberalization of economy and need for the Government to generate revenue, it will be necessary for DGMS to charge the users for services rendered. Traditionally till present times, a host of services are provided by DGMS to the mining industry, manufacturers of mining equipment and others related to the industry free of charge. Statutory permissions for extraction of minerals are granted, approvals are given for the mine safety equipment, assessment of safety status in mines are taken up, certificates are granted to competent persons for supervising and managing a mine, sample tests are carried out for ascertaining quality of some products used in mines, training courses are conducted for the benefit of particular categories of officials and workers, occupational health audits are taken up, etc. All these services are aimed at enhancing safety and health of workers and their workplace. Time has now arrived when the Government must consider charging the users for all these very important services. Suitable schemes need to be drawn up for the purpose.

3.5 Strengthening and restructuring of DGFASLI

In order to enhance the competence of officers regular in-service training in the field of their activities should also be arranged. Competence enhancement through participation in training programmes, seminars, workshops, presentation of papers, publication of technical documents should be considered as essential parameter for career advancement of the officers.

In order to increase effectiveness and efficiency in the services offered by Labour Institutes under DGFASLI, complete autonomy should be given to these institutes. This will also facilitate generation of adequate funds for self-sustainment of their activities through plough back of these funds. A task force to study the problems in depth and device a mechanism for giving this autonomy should be constituted.

Opportunities should be created for exposure of DGFASLI officers in developed countries to the latest techniques in the field of occupational safety and health. For this purpose a plan scheme should also be prepared.

3.5.1 Coordination of Administration of Factories Act

Extensive training of factory inspectors should be undertaken by organising programmes at state level or regional levels. For this purpose a plan scheme could also be prepared. Alternatively, a component on training of inspectors of factories should be added to any new plan scheme being proposed.

Standards for inspection of factories, including procedure and check-lists should be prepared. These standards should be made available to all state factories inspectorates. Training programmes for use of these standards by inspectors could also be organised.

Codes of practices on occupational safety and health for use by industries in selected areas such as noise, handling of chemicals, ship breaking, etc. should be prepared and published. Video films, manuals, booklets, should also be prepared and distributed amongst industries.

Submission of information in FAS forms to DGFASLI by the state factories inspectorates should be made mandatory by incorporating suitable provisions under the Factories Act 1948 or through Regulations.

A task force should be constituted to review and simplify the information to be furnished in FAS Forms.

3.5.2 Enforcement of Dock Workers(Safety, Health & Welfare) Act 1986

All port trusts and employers should appoint qualified safety officers as per the statutory requirements.

All State Governments should be directed to notify the Dock Workers (Safety, Health and Welfare) Rules in respect of other ports. Alternatively these can be notified by Central Government.

Dock Safety Advisory Committee constituted by Ministry of Labour should be enlarged to include representatives from some of the other ports.

3.5.3 Education and Training of factory and dock workers

The minimum qualification for admission to the Diploma Course in Industrial Safety should be upgraded to Graduate in Engineering or Post graduate in Science.

All institutions conducting diploma course in industrial safety/any other course in the field of safety and health, which are prescribed as essential qualifications for appointment as professionals in factories/ports as per the statutes, should be recognised by the Apex Body on OSH.

All safety officers, factory medical officers, industrial hygienists appointed/to be appointed in factories and ports should be accredited/registered with the Apex Body on OSH.

The syllabus at college/university levels especially in the areas of science, technology and medicine should be modified to include topics of safety and health. Efforts should be made in medicine field and engineering field to introduce a compulsory subject in field of occupational health and occupational safety with the help of Indian Medical Council/University Grants Commission/All India Council of Technical Education.

Public awareness about health hazards due to environmental pollution, diseases due to exposure to harmful substances should be created through mass media. Booklets, pamphlets, leaflets etc. should be prepared and distributed amongst the industrial/port workers for creating awareness. For this purpose, a component in the proposed plan schemes for the Xth Plan should also be included, seeking cooperation/participation of organizations specialized in the field of safety, health and environment.

A short-term course (15 – 30 days) should be designed and conducted for the medical doctors in government, semi-government, ESI hospitals for increasing their awareness and competence in diagnosis of occupational diseases. This will also enable them to report the suspected cases of occupational disease to authorities concerned in time.

Regular training programmes on occupational health including the Certificate Course on Industrial Medicine should also be conducted at Regional Labour Institutes under DGFASLI.

In order to strengthen the OSH education and training and improving their quality and complete compliance with the spirit of the provisions of the Factories Act which place duties of the Occupier for providing suitable training to their workers and supervisors, there is need for development of Model Guidelines for Approval of Training Centres/Institutes by CIFs as required under Section 111-A of the Factories Act, Development of Model Curriculae and Manuals of Training Courses for key categories of workers (such as those employed in hazardous processes and dangerous operations) and Development of Educational Modules on OSH for inclusion in the syllabi of the Engineering colleges.

3.5.4 Consultancy studies and services

Institutions and professionals rendering consultancy services in the field of occupational safety and health should be recognised at national level by Apex Body or any other agency made responsible for that purpose.

Private laboratories, or laboratories attached to technical institutions should be encouraged to undertake consultancy services in the field of workplace environment monitoring, health monitoring etc. These laboratories should be registered/accredited by the Apex Body or any other agency appointed by Apex Body for that purpose.

Existing facilities at CLI, RLIs, NIOH, ITRC should be upgraded to the level of National Referral Laboratories.

3.5.6 Participation of NGO/other organisation in activities of DGFASLI

For undertaking national level studies and surveys, DGFASLI should seek cooperation in the form of facilities, manpower and financial resources from employers organizations/associations.

National level workshops, seminars and specialized training programmes should be conducted in collaboration with NGOs and professional organizations such as NSC, LPA, OISD, BIS etc.

Local level awareness programmes and promotional programmes should also be arranged by DGFASLI for spreading the safety and health message amongst general population. This should be done in collaboration with local level community bodies/industries, association/NGOs.

3.5.7 State Inspectorates of Factories

In order to bring in the uniformity and to strengthen the status of Chief Inspector of Factories for making decisions in matters of safety and health, the Chief Inspector of Factories should be selected from amongst the cadre of Inspectors of Factories. He should be given the status of the Head of Department in the state.

The system of appointing medical practitioners particularly those working in either government/government aided hospitals or even private practitioners as certifying surgeons for carrying out the activities as envisaged under the provisions of the Factories Act should also be adopted by states. However, nominated certifying surgeons should be adequately trained in the field of occupational health.

All officers of Inspectorates of Factories at local level and regional level should be provided with basic infrastructure such as Cellular Telephone, Residence telephone, computer, fax and transport. Networking of local and regional officers should also be established for easy and quick transfer of information from one office to another.

Online submission of statutory forms, compliance reports and other statutory information by occupiers of the factory should be facilitated. For online dissemination of information regarding new developments, circulars, directives

and changes in rules and regulations, these information should be placed on the web-site of the inspectorates of factories.

In order to bring in uniformity in approach and coordination amongst various departments of State Government, such as: Office of Labour Commissioner, Department of Environment, State Pollution Control Board, Electrical Inspectorate, Public Health Department, Employees State Insurance & Workmen Compensation Department, Fire Brigade and Boiler Inspectorate, there is a need for a state level committee on occupational safety and health comprising of representatives from these departments as well as department of Industry, Employers Association and Employees Association.

A national committee under proposed Apex Body on Occupational Safety and Health on control of occupational diseases may be constituted. The Occupational Disease Centres established by the ESI Corporation, occupational Health Centres established by different public sector undertakings, large public hospitals and Industrial Medicine/Occupational Health Laboratories at CLI, RLIs, NIOH and ITRC should be net-worked for diagnosis and prevention of occupational diseases, and sharing of information.

3.5.8 Safety and health in small and intermediate ports

Dock Workers (Safety, Health & Welfare) Rules and Regulations should be immediately notified by all State Governments.

Enforcement of these rules/regulations should be entrusted to existing enforcing authorities such as Chief Inspector of Factories/Department of Port under State Governments.

Training programmes in the areas of safety and health in dock work should be conducted for the benefit of dock workers, employers and port officials of small, intermediate and private ports.

3.5.9 Site Appraisal/Environmental Clearance

Concept of single window clearance for approval of factories/sites from safety, health and environment, pollution, as required under various statutes enforced by state governments should be adopted. A competent authority/committee should be established for this purpose.

3.6 Occupational Safety and Health Management System

In order to reduce burden of inspection on Inspector of Factories, a system of self regulation should be encouraged for adoption by management of industries. The guidelines issued by ILO and BIS standard IS: 15001 should be adopted by factories. Management of factories should be encouraged to get their OSH MS

certified by accredited auditors from time to time. In order to ensure proper implementation of OSH MS management should appoint Safety Officers, safety observers in addition to statutory requirements.

3.6.1 Safety and health performance and insurance premium

Factories showing excellency in safety performance or certified OSH MS should be given rebate/incentive in insurance premium under ESIC schemes.

3.6.2 Statement on Status of OSH in Company's Annual Report

Companies should include in their Annual Report a resume on the OSH measures adopted. This can be made statutory requirement if felt necessary.

3.6.3 There is also need for creation of an independent national level accreditation agency of eminent professionals for establishment of national standards on OSH and development of an audit mechanism for assessing effectiveness of OSH in industries, ports and mines by external safety audits.

3.7 Suggested measures for improvement in unorganized sector

This has been discussed in details in Chapter:IV.

CHAPTER: IV

SUGGESTIONS TO IMPROVE OCCUPATIONAL HEALTH AND SAFETY IN THE LARGE SEGMENT OF WORK FORCE NOT INCLUDED SO FAR

4.0 Improvement of Occupational Health and safety scenario in small mines

An exercise carried out to estimate requirement of inspecting officers for effective enforcement of mine safety laws in small mines of the country suggested such enormous numbers that at the outset itself the possibility of strengthening the existing inspectorate to take up full-fledged enforcement activities in small mines get rejected. The alternative could be entrusting this job to State Governments who also hold the lease granting authority and in case of identified violations of law the lease itself could be withdrawn.

Under the aegis of international guidelines and more and more social needs, the occupational health problems in small mines are assuming ever more importance. In order to address this issue it will be necessary for DGMS to undertake programmes in collaboration with institutes like NIOH (National Institute of Occupational Health), Ministry of Health, ILO, UNDP, educational and research institutes in India and other International bodies for a comprehensive survey of the issues involved. This would identify the need for various corrective measures and help in formulating mitigating measures. A big task would be to disseminate the formulated control measures to the owners of these small mines.

Considering the urgent and immediate need for improving the health and safety scenario of workers employed in small mines certain steps which are in need of implementation are as follows.

The State Governments while granting mining lease should insist upon implementation of the safety norms as per extant statute including appointment of a qualified manager and impose a complete ban on dry drilling. A notice of such grant of lease may be sent to DGMS by the State Governments concerned. The State Governments while granting lease may also include as a part of the lease document safe work procedures, do's and don'ts, etc. DGMS may only make some surprise inspections occasionally to check the status of safety and health in these mines. DGMS may be entrusted with the job of preparing guidelines for formulation of these documents.

As far as the health of the workers are concerned, a pilot project need to be taken up by DGMS in collaboration with NIOH and other concerned agencies for a comprehensive survey on the state of health of workers in small mines. The project will yield definite information about the state of affairs prevailing in the small mining sector and allow the policy makers to formulate appropriate policies

for improvement of the situation. Under the project suitable models may be developed to demonstrate good practices to create awareness among mine workers in this sector.

At present the institution of ESI has little or nothing to do with the small mining sector. Modalities need to be drawn up for involvement of ESI in the area of health and safety of small mine workers.

4.1 Manufacturing Sector

4.1.1 Tiny/Small(Unregistered) Units

There are a large number of SSI units in the country and many of these units are employing less than 10/20 workers. As a result, these units are outside the purview of The Factories Act, 1948. The safety and health aspects of workers employed in such units are not adequately attended to by any other legislation also.

As mentioned in the earlier paragraph, the safety, health and working conditions of workers employed in tiny/small units are not very satisfactory. A number of surveys relating to working conditions in such units have been conducted by Labour Bureau covering following occupations.

1. Building Construction
2. Jari Industry
3. Fire Works
4. Hosiery
5. Metal Ware
6. Brick Kiln
7. Rice Shelling
8. Cashew nut processing
9. Indigenous Sugar (Khandsari)
10. Carpet manufacturing
11. Power-looms
12. Saw mills
13. Oil mills
14. Dal mills
15. Readymade Garments
16. Toys & Dolls

In addition, DGFASLI has also conducted safety and environmental study in 42 stone crushing units in the States of U.P. and Tamil Nadu. The findings of the report reveal that there is an urgent need to address to the safety and health requirements of the workers employed in such un-registered manufacturing units.

4.1.2 Software Development Units

In software development units, the workers are required to work with – Visual Display Units (VDUs), Key Boards, Printers, Mouse etc. The hazards associated with these equipments are –

- Eye Strain
- Fatigue and musculo-skeletal problem
- Radiation
- Fire Hazard
- Over crowding

These hazards can be taken care of by introducing interventions such as – adequate and proper lighting, work stations compatibility and ergonomic design of VDUs and key boards, protection against fire, minimum work space, etc. In order to protect the safety and health of workers employed in software development units, it is necessary that the above interventions are made statutory and incorporated in a suitable provision under the workplace Safety and Health Act. At present, the Factories Act, 1948 is a legislation, which addresses to the safety and health of the workers employed in premises carrying on certain manufacturing processes. Thus, it would be necessary to extend the provisions of the Factories Act to software development units. The provisions under the Factories Act deal with mechanical aspect of manufacturing process such as fencing, material handling, pressure vessels and also with the use of dangerous substances or the processes which would cause health affect to the workers exposed. The software development activity does not involve any mechanical process nor does it involve any harmful substance. Therefore there is a need for a separate statutory provisions relating to software development processes.

4.1.3 Hotels

The Supreme Court of India in Civil Appeal No. 1144 – 45 and 1147, 1148 and 1149 of 1982 and Writ Petition (C) Nos. 9728 – 29 of 1983 has held that hotel is a factory. The Hon'ble Court has also held that since the manufacturing process in the form of cooking and preparing food is carried on in the kitchen and kitchen is a part of the hotel, or a part of the premises of the hotel, the entire hotel falls within the purview of the definition of a factory.

However, Section 2(m) of the Factories Act, 1948 excludes certain premises including railway running shed or a hotel, restaurant or eating place from the application of the provisions of the Factories Act. In order to give effect to the judgement of the Supreme Court, the amendment to the provisions of Section 2(m) of the Factories Act has already been proposed. Since the hotels use LPG for cooking process and large number of appliances are involved in the processes, the safety and health of workers employed in hotels need to be addressed to

adequately. This can be achieved through making safety and health statute applicable to hotels also.

4.2 Port Sector

4.2.1 Inland Container Depots / Container Freight Stations/ Port Side Container Terminals (PSCTs)

There are a number of Inland Container Depots (ICDs) in India spread all over, out of which some of them are Railway Container Depots (RCDs) manned by Container Corporation of India (CONCOR). The remaining ICDs are the Container Freight Stations manned by State Government undertakings and Central Warehouse Corporation and by private agencies. In these ICDs, a large number of workers are employed for carrying out various types of operations such as stuffing, destuffing, stacking, destacking of containers with the help of lifting appliances such as transtainer, top lift trucks, mobile crane etc. The nature of the work carried out in these ICDs is exactly the same as carried out in the major ports and docks. Although the workers employed in major ports carrying the work similar to those in ICDs are covered for their safety, health and welfare by the Dock Workers (Safety, Health and Welfare) Act, 1986 and the Regulations framed thereunder, the workers in these ICDs are not covered by any statutes for the same. Since the number of ICDs is likely to increase due to continuous strength of increase in the container traffic, there is every need to cover the workers employed in these ICDs for their safety, health and welfare. Therefore, the DGFASLI has proposed necessary amendments in the Dock Workers (Safety, Health & Welfare) Act, 1986 and the Regulations thereunder for bringing ICDs and CFs within the legislative coverage.

4.3 General Legislation On OSH

General legislation proposed for enactment under para 2.0 of Chapter Three would address to the problem of legislative protection to the large segment of workforce not included so far. This coverage can be extended to various occupations, and work activities in progressive manner by issuing regulations by Central Government.

4.3.1 Enforcement Authorities

Enforcement of the provisions of the regulations/rules notified under General Legislation in respect of units carrying on manufacturing activities should be entrusted to the State Factories Inspectorates. For inland container depots, Chief Inspector of Dock Safety should be entrusted with the responsibility of enforcement of rules and regulations covering safety and health of workers employed. As stated in earlier chapter Three, Apex Body on OSH will oversee and ensure effective enforcement.

4.3.2 Enforcement strategy

Given the limitations of manpower and other facilities for enforcement of safety and health status in these workplaces, a system of certification can be issued. All employers should be required to submit Annual Return alongwith a report on safety and health audit, certified by an accredited auditor. Sample inspections can be made by the enforcement authorities on the basis on the audit reports.

4.4 Education Training and Promotion

Training programmes should be organized at places of work or at convenient locations near to places of work. Participation of employers and their representative should be made mandatory.

Guidelines, codes of practice relevant to their area of work for ensuring safety and health of workers should be prepared and distributed amongst these units. Occupiers/employers should be required to publicize these amongst their workers.

Involvement of NGO, professional organizations, employers associations should be extensively sought in these efforts.

4.5 Unorganized Sector

4.5.1 Agriculture

It is necessary to carry out representative sample surveys for identifying the type of hazards and accidents specific to the activities undertaken in the agricultural operations. Such surveys can be undertaken by the National Safety Council in cooperation with the concerned State Agriculture Departments, Universities/Colleges and the Farm Machinery Training Institutions of the Central Government.

The definition of the term “Dangerous Machines” in the Dangerous Machines (Regulation) Act, 1983 is required to be amended to make it broad-based to cover all types of dangerous machines used in agriculture.

Different Associations of farmers, Agriculture Universities/Colleges, NGOs, large farm houses, etc. should be enrolled as members of National Safety Council to bring them in the main stream of the voluntary OSH movement so that they may avail the benefits of the OSH information and guidance applicable to their activities. In this regard, support from the Central and the State Governments will be helpful.

A well designed national level OSH Training and Awareness Campaign is required to be undertaken in the Agriculture Sector.

To overcome the identified weaknesses in the enforcement of the relevant statutes, an enforcement strategy is required to be developed. This suggestion has been discussed in the next Chapter.

To meet the gaps presently not covered by the existing statutes applicable to the sector, enactment of the general legislation is proposed. After the general legislation is enacted, its application will be extended to different sectors as and when the situation in a particular sector is ripe.

4.5.2 Construction

There is an urgent need to identify and declare established technically competent authority under Ministry of Labour for enforcement of the technical provisions and also development of standards based on field conditions.

State Government have to expedite the notification of their Rules under the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996 and identify the enforcement agencies.

There should be a Central Plan Scheme for covering the following activities:

- a) Developing and conducting appropriate training of the Inspection Officials of both the Central and State enforcement agencies.
- b) Developing Model Guidelines and terms & conditions for identification and use of the services of experts and technical agencies for the purpose of carrying out technical inspections or enquiries into accidents or dangerous occurrences as required under the statute.
- c) Developing a suitable enforcement strategy for the purpose of achieving best results in terms of the compliance with the key statutory provisions for the construction sector.
- d) Developing and conducting training courses for key categories of workers (such as scaffolding erectors, operators of lifting machines, etc.) and the supervisory and middle management staff from the industry.
- e) Development of Do's/Don't's, Codes of Practice/Training Manuals/Guidelines/Check-list are important for safe performance by those employed in this sector is essential.

For concurrently and effectively implementing the activities under the above Scheme, it is suggested that different activities be contracted out on project funding basis to independent/autonomous institutions having competence in the above fields.

4.5.3 Shops and Establishments

The Shops and Establishments which carry out electrical and mechanical repair work, small garages, air conditioners/refrigerators repair shops, small jobbing workshops, coffee grinding shops, flour grinding shops, etc. can be brought under the purview of the Factories Act, 1948 by applying Section 85 so that the benefit of the health and safety provisions of the Factories Act is available to the employees of such establishments.

It is suggested that detailed guidelines be developed on the provisions laid down under the Health and Safety Chapter of the Shops and Establishments Acts for providing better information and guidance to the employers of the establishments. This approach will considerably improve the actual compliance and status of OHS in these establishments.

The general suggestion for developing proper enforcement strategies will be applicable to the Shops and Establishments also.

4.5.4 Beedi and Cigar Manufacturing

As 90 per cent of the beedi and cigar workers are “home workers”, their OSH can be improved by applying the strategy suggested below for the home work sector.

4.5.5 Home work

Every “home work” is out-sourced by “employer” either from a factory covered by the Factories Act or from a shop or establishment covered under the Shops and Establishments Act of the State Government concerned. It is suggested that a basic responsibility is placed on the employer to educate the home workers and provide basic safety and health information to them in simple language (duly explained orally) by amending the above two statutes suitably.

A well-designed national level OSH Awareness Campaign is required to be undertaken in the home work sector.

4.5.6 Eating Places

It is suggested that all the eating places may be covered under the Shops and Establishments Acts of the respective State Governments through Notification. The extension of the statute will ensure that the provisions of its Safety and Health Chapter will become applicable to the presently uncovered eating places.

The detailed guidelines which will be framed on the safety and health provisions of the above statutes as suggested earlier will also become available to the employers of these eating places as well.

The enforcement strategy to be developed, as suggested above, will take into consideration the inspection of the newly covered eating places.

4.5.7 Waste Management

In view of the fact that very little or no legislative cover is available for managing wastes, inter-sectoral involvement and closer co-ordination with implementing agencies need to be established. It must be kept in mind that awareness and proper actions by the parties involved and understanding regarding hazards arising out of this is a critical success factor vis-à-vis good management of wastes. A sustained effort towards generating awareness through participation of citizens' and other key players need to be mounted on a priority basis. As NGOs' have a better outreach to the key players in this area, their involvement will go along way in mitigating this problem.

CHAPTER: V

EFFICACY OF THE ADMINISTRATIVE MACHINERY UNDER THE STATE FACTORY INSPECTORATES AND OTHER MEASURES FOR WORKERS IN PRINTING, DYEING, CHEMICAL STORAGE AND HANDLING IN UN- REGISTERED ESTABLISHMENTS

5.0 Manufacturing Sector

5.0.1 Statutes enforced by State Inspectorates of Factories

In some states, inspectorates of factories also enforce the provisions under various other statutes applicable to factories, in addition to the Factories Act. A list of such statutes is given below:

1. The Indian Boilers Act 1923
2. The Payment of Wage Act, 1936
3. Maternity Benefit Act, 1961
4. Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989
5. The Workmen's Compensation Act, 1923
6. The Child Labour (Prohibition and Regulation) Act, 1986

At present, inspectorates of factories are performing enforcement activities in respect of factories only.

5.0.2 Unregistered Units

The state-wise information regarding manufacturing units not covered under the Factories Act 1948 is not readily available. Based on the information collected from CIFs regarding number of registered factories employing less than 50 workers, and the number of SSI units not registered under the Factories Act 1948, the total number of such units may be approximately estimated at in excess of 2 millions. Some of these SSI units may be manufacturing, handling, using hazardous chemicals or carrying on operations dangerous to the health and safety of workers.

In order to ensure safety and health of workers employed in these unregistered manufacturing units, it is necessary that these units are covered under the safety and health statutes.

5.1 Other Sectors

5.1.1 Other establishments

In addition to unregistered factories, safety and health of workers employed in other establishments such as hotels, software development units etc. are also need to be secured through suitable legislative measures. The General Legislation on OSH should be made applicable to these establishment also, in a progressive manner. Regulations can be notified by Central Government in consultation with the Apex Body on OSH or otherwise to cover these establishments.

5.1.2 Cinema Theatres, Hotels and Restaurants

As per the information available, in the year 1995, there were 171,727 Cinema, Theatres, Hotels and Restaurants in the country employing 6,01,233 persons. The establishments are covered under the Shops and Commercial Establishments Acts enacted by various State Governments. The enforcement of the provisions is looked after by State Labour Department through State Labour Commissioners. The report on the review of working of this legislation published by Labour Bureau in 1995 reveals that most of the irregularities detected during the inspection of these establishments were pertaining to non-payment of wages, arrears, overtime, leave-wages, non-maintenance of records, non-observance of working hours, etc. which are not directly relating to safety and health.

The Working Group noted that the Hon'ble Supreme Court, in the Civil Appeal No.1144-45 and 1147 - 1149 of 1952 and W.P.(c) was 9728 – 29 of 1983, has held that a hotel is a factory, as per the definition of the term under Section 2(12) of the Employees State Insurance Act, 1948. This definition of the term “factory” is the same as under Section 2(k) of the Factories Act 1948. However, there is a specific exemption under the Factories Act 1948, under Section 2(m) to exclude Hotel from the applicability of that Act. It is felt that a suitable amendment to the Factories Act should be made to cover Hotels.

5.2 State Factories Inspectorates

The details regarding number of registered factories, working factories and number of inspection in various States is given in Annexure-IX. The inspectors are qualified and experienced in the field of safety and health. Some States have also appointed specialist inspectors of factories such as Medical Inspector, Chemical Inspector, etc.

If all the establishments including both manufacturing, commercial, etc. are brought under the coverage of the safety and health statutes, the annual routine

inspection of these unit with the available strength of inspectors of factories is not possible.

5.2.1 Mandatory registration with Factories Inspectorates

All the manufacturing establishments, hotels and software development units should be brought under the scope of the Factories Act. These units should be required to get registered with the Factories Inspectorates.

5.2.2 Inspection

All registered units should be required to submit a simple Annual Return giving bare minimum necessary details regarding employment and arrangements for ensuring safety and health of workers. Larger units or units carrying on hazardous processes or dangerous operations should be required to submit safety audit report by accredited auditors once in 2/3 years. Smaller units and non-hazardous units should be inspected by regular inspector of factories or by public officers such as those in District Industries Centres, industrial development corporations etc. to be notified as additional inspectors under Section 8(5) of the Factories Act, only on sample basis. However, in case of complaints, accidents, dangerous occurrence, the concerned units should be thoroughly inspected by regular inspector of factories.

Establishments other than those registered with inspectorate of factories should be required to be registered under Shops and Establishments Act. The enforcement and coordination should be entrusted to State Labour Commissioners, as per the present practice.

5.2.3 Education and Training

Training and awareness programmes in the field of safety and health should be organized at local level or district level in collaboration with factories inspectorates, industries association, District Industries Centres and professional organizations.

5.2.4 Promotion

In order to spread awareness about safety and health, bring in cooperation, facilitate exchange of ideas and resources, district level Industrial Safety and Health Committees should be established under the Chairmanship of factory inspector. The committee should also include officials from other departments of the Government.

Posters, leaflets, pamphlets depicting safety and health aspects in various work activities, work places should be prepared and published in collaboration with NGO and organizations specialized in the field of safety and health.

As regards other measures, all these types of units should be brought under the scope of the Factories Act or the Regulations to be framed under General Legislation on OSH. Thus there will be statutory requirements on the part of the employers to ensure safety and health of workers. However, the strategies as already discussed should be adopted for promotion of safety and health. More emphasis should be given on self regulation, third party certification and less of inspection.

CHAPTER: VI

EFFICACY OF REGULATIONS CONCERNING THE HEALTH AND SAFETY IMPLEMENTED BY GOVERNMENT DEPARTMENTS OTHER THAN LABOUR SUCH AS EXPLOSIVES ACT, BOILERS ACT, ETC.

6.0 Regulations Concerning Safety and Health

The statutes concerning safety and health of workers employed in various workplaces, as well as for abatement of pollution of environment are listed in Annexure:X. Some of these statutes namely, (i) The Factories Act, 1948 (ii) The Dock Workers (Safety, health and Welfare) Act, 1986 (iii) The Plantation Labour Act, 1951, (iv) The Mines Act, 1952 (v) The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996 (vi) The Workmen's Compensation Act, 1923 (vii) The Employees State Insurance Act, 1948 (viii) The Shop and Establishment Acts are implemented by the Ministry of Labour at central level or by department of Labour at state level.

The various statutes concerning safety, health and environment, not implemented by department of labour are briefly described below:

6.1 The Water(Protection and Control of Pollution) Act, 1974 and the Water (Prevention and Control of Pollution) Rules 1995.

These Rules are enacted for prevention and control of pollution in water courses. These are applicable to all places of work including factories covered under the Factories Act. The Central and State Pollution Control Boards are the enforcing agencies. Some of the duties of the enforcement authorities include:

- providing technical guidance
- monitoring, analysis and conducting investigations regarding water pollution
- setting standards for industrial effluents in water.

The enforcement is carried out by state boards through the qualified engineers and scientists appointed for that purpose.

As per the requirement of this statutes the occupier of the factories are required to ensure that amount of effluents in the water let out do not exceed the permissible limits. However, there are no provisions relating to control of harmful substances during use, handling and transportation as well as safety precautions to be taken in order to protect workers against exposure to these substances.

6.2 The Air (Prevention and control of Pollution) Act, 1981 and the Air (Prevention and Control of Pollution) Rules, 1995.

These regulations are enacted for prevention and control of pollution in air. These are applicable to all places of work including factories covered under the Factories Act 1948. The Central and State Pollution Control Boards are the enforcing agencies. Some of the duties of these authorities include:

- grant No Objection Certificate to industries
- setting standards for industrial pollution in the ambient air
- monitoring, analysis and conducting investigations regarding air pollution.

The enforcement is carried out by the State Pollution Control Boards through qualified engineers and scientists.

The occupiers of factories are required to ensure that amount of pollutants released in the ambient air do not exceed the permissible limits prescribed under the statutes. However, there are no provisions relating to monitoring and control of airborne concentration of pollutants at the source as well as in the work room. The statutes also do not prescribe the precautions to be taken to protect workers against harmful airborne substance.

6.3 The Hazardous Wastes (Management and Handling) Rules, 1989

These rules are aimed at control of generation, collection, treatment, transport, import, storage, and disposal of specified hazardous wastes. These are also applicable to factories which use, handle or generate hazardous wastes. The enforcement of these rules is carried out by the State Pollution Control Boards. Some of the duties of the enforcement authority are:

- provide authorization to units for handling hazardous waste
- ensure safe handling of hazardous waste
- monitor and carry out tests
- identify and notify the sites for disposal

The occupiers of the factories ARE required to take necessary adequate steps to contain contaminants and prevent accidents and limit their consequences on human and the environment while handling hazardous wastes. They are also required to provide persons working with information, training and equipment necessary to ensure their safety.

These rules deal with only hazardous wastes as specified and hence their coverage in relation to safety and health of workers is not adequate.

6.4 The Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989.

These rules are aimed at regulating handling of certain specified hazardous chemicals. The enforcement of these rules in factories is under state factories inspectorate. Some of the duties of the enforcement agency are:

- approval of site
- notification of major accident
- approval/seeking of safety report
- prevention and control of major accident
- approval of on-site emergency plans
- cooperate with district emergency authority in preparation of off-site emergency plan.

The occupiers of factories are required to:

- notify their site to the authority
- identify major hazards and take necessary step to control major accident.

These Rules do not contain requirement regarding (testing and experimentation of critical equipments) involvement, medical examination and certain important elements of safety management system.

6.5 The Explosives Act, 1884

This act is aimed at regulating the manufacture, possession, use, sale, transport, import and export of explosives. Central Government has been empowered to make rules as discussed in following paras.

6.5.1 The Gas Cylinders Rules 1981

These rules regulate the activities concerning filling, import and transport of cylinders with any compressed gas which exercises a pressure either exceeding 1.5 kg.f/cm^2 gauge at $+15^\circ\text{C}$ or pressure exceeding 2 kgf/cm^2 gauge at $+50^\circ\text{C}$ or both. The Rules stipulates requirements such as fitment of valves, safety relief devices, markings on cylinders and valves, identification, colours, labeling etc. The actual users including factories are required to obtain licence for possession of gas cylinders from competent authorities i.e. Chief Controller of Explosives in case total quantity of gas or total number of cylinders as the case may exceeds than stipulated in the rules.

6.5.2 The Explosives Rules 1983

These rules are made for regulating import, export, transport, manufacture, possession, sale and use of explosives such as gun powder, nitrate mixtures, nitro compound, chlorate mixture, fulminate, ammunition, fireworks, and liquid oxygen explosives. These rules are also enforced by Chief Controller of Explosives.

6.5.3 The Static and Mobile Pressure Vessels (Unfired) Rules 1981

Under these rules, factories storing compressed gas, i.e. any permanent gas, liquefiable gas or gas dissolved in liquid, under pressure or gas mixture, which is in a closed vessel exercise a pressure exceeding two atmosphere (gauge) at the maximum working temperature, are required to obtain a licence. These rules stipulate requirement such as construction and fitments, periodic testing, location, fire protection, loading and unloading facilities, transfer operations etc. in respect of pressure vessels whose water capacity exceeds one thousand litres.

The Explosives Act and Rules notified thereunder to a large extent prescribe requirements relating to technical aspects of handling, storage and use of explosives, compressed gases etc. However, certain important requirements such as training and education of workers, their involvement in safety activities, are not covered. The requirements in respect of control measures at the place of use are also not stipulated, leaving these at the discretion of occupier and their representatives. Thus these regulations have limited coverage.

6.6 The Insecticides Act 1968

This Act regulates the import, manufacture, sale, transport, distribution and use of insecticides with a view to prevent risks to human beings or animals. Any person desiring to manufacture any insecticide is required to register and also obtain licence from the Registration Committee and licencing authority respectively. The Insecticides Rules, 1971 notified under this Act, prescribe certain provisions regarding use of protective clothing, equipment and other facilities for workers during manufacture of insecticides. Important requirements such as reporting of accident, case of poisoning, maintenance of health records, management of spillage and wastes, washing and bathing facilities, ventilation, etc are not stipulated.

The provisions under the Act and the Rules are implemented by the Central Insecticides Board and Registration Committee under Ministry of Agriculture at the Central and licencing authorities in the States.

6.7 The Indian Boilers Act, 1923

This act regulates manufacture, registration and use of steam boilers. Central Government has been empowered to constitute the Central Boilers Board.

The Indian Boilers Regulations 1950, prescribe detailed technical requirements for design, construction, manufacture, registration, testing and examination of all types of boilers, steam piping and other accessories. State Governments are empowered to make rules for appointment of inspectors, certification of Boilers, enquiry into accidents, etc.

In many states, the factories inspectorate and Boilers Inspectorate are under one authority i.e. Chief Inspector of Factories and Boilers.

6.8 Efficacy of Regulations

As described in detail above, these regulations are not sufficient to ensure safety and health of workers employed in factories. These regulations having very specific objective, covers the problems of safety and health to a limited extent. The Factories Act 1948 and Rules notified there under being a comprehensive workplace, statute covers safety and health provisions extensively. The Working Group feels that these regulations as applicable to factories should be incorporated in Factories Act/Rules and should be implemented by the factories inspectorate avoiding duplication of enforcement agencies. However, for this purpose inspectors will have to be trained extensively for undertaking this activity.

CHAPTER: VII

PLAN SCHEMES

7.1 Plan Schemes for The Mining Sector

7.1.1 Background

In order to render technical support to the officers of DGMS, plan schemes under the five year plans were being implemented in DGMS. The old plan schemes were reviewed and consolidated into four running plan schemes by the terminal year of the IXth plan period, these schemes were,

- a. Survey of mine accidents and development of mine safety information systems (SOMA);
- b. Science & Technology support, human resource development & development of mine rescue services (S&T);
- c. Providing Infrastructure Facilities in DGMS (PIF) and
- d. Strengthening of machinery for conduct of statutory examination systems (SSEX).

Review of the schemes strongly underline the need for continuance of the same during the 10th Plan period. The challenges in the coming years are improvements in the standards of occupational health and safety keeping pace with the drive for increased production and productivity with increased mechanization. This will call for more technical support activities covering existing problems and also new areas hitherto not being attended to. The plan scheme of DGMS also must keep pace with the changing scenario in the mining industry and the output from the scheme will have to act as a guiding factor in all technical activities of the industry.

In addition to continuance of these schemes, formulation and implementation of two new schemes are being proposed for DGMS during the 10th plan period. These new schemes will not only improve the efficiency of enforcement activities of DGMS but also will take the present systems to modern arena of IT application vis-à-vis enforcement of mine safety legislation thereby creating a base for improved health and safety status for the Indian mine workers. These two new schemes would be,

- Capacity building of DGMS for improving safety of the mining industry through e-Governance &

- Modernization of survey capabilities in DGMS through digitization of mine plans and automated survey systems.

7.1.2 Continuance of The Old Plan Schemes

7.1.2.1 Augmentation of S&T Capabilities, Mine Rescue Services and Human Resource Development (S&T)

Background:

The scheme had been formulated by merging three on-going plan schemes of DGMS, namely “Augmentation of Science and Technology support capabilities in DGMS” (S&T, 1981); “Development of Mines Rescue Services” (DMRS, 1981); & “Human Resource Development” (HRD, 1990). These three schemes were functional independently during the 8th plan period and during the first 4 years of the 9th plan. In 2001-2002, i.e. the terminal year of the 9th plan, keeping the objective of integration in view, these three schemes were merged into one scheme “S&T”.

OBJECTIVES OF THE SCHEME

The objectives of the scheme are,

- to render scientific and technological support to the enforcement wing of DGMS in proper fulfillment and discharge of its statutory responsibilities and advisory role. It would also provide scientific support to other institutions concerned with Occupational Health and Safety matters;
- to develop, improve and update need based rescue and emergency response services to the mining industry in India, rendering technical support to field Inspecting Officers of the D.G.M.S. while discharging their duties and in taking rescue and emergency response decisions. In addition, to develop a common code of practice to be implemented during emergencies of specific nature.
- to establish Mine Safety & Health Academy comprising Training Institutes at Dhanbad and Nagpur for imparting structured training to DGMS officers in order to upgrade and update their technical and professional competence for enabling them to play their regulatory, enforcement and advisory role effectively.

Justification for Continuance

Present day trend is to make the safety legislation more and more 'flexible' by laying down only the 'performance objectives' in the statute and leaving the modalities of meeting the same to be evolved by the mine operators in the form of

standing orders, codes of practice, manager's scheme etc. All these have to be vetted by DGMS. To assist the field officers in arriving at correct decisions, detailed technical guide-lines and model codes have to be evolved and supplied by Technical Support Services.

Likewise, whenever any equipment, appliance or material is/are to be approved for use in mines, the safety characteristics and pit-worthiness of the same also need to be monitored in mines.

Another important function of DGMS in this context is to advise and assist the Govt. in discharge of its regulatory function. DGMS prepares the draft of proposed amendment with necessary justification. Before proposing the amendment, DGMS has to carry out considerable literature survey, consultations and conceptualization.

Opencast mining which now contributes more than 70% of the total coal production in India is in ascendancy. In metalliferous mines the share of opencast mining is much larger. The problems of ground stability of opencast mines are entirely different from the problems of ground control in underground mines. Ground stability problems in opencast mines need to be studied in details by S&T of DGMS to arrive at correct & practicable solutions.

Blasting is an integral part of extraction by opencast method. In modern opencast projects heavy blasting using several tonnes of explosives in each blast is being resorted to. Ground vibrations from blasting constitute an undesirable side effect of the use of explosives. Blast vibrations are also to be monitored in response to complaints.

In view of the above problems in opencast mines, it is necessary that S&T Support to field officers on Slope/Dump Stability and Ground Vibration problems in surface mining are rendered on a continuous basis.

Mechanisation is on the increase to meet the needs of increased output of minerals. A variety of machinery and equipment are being deployed in coal, metalliferous and oil mines. Hazards associated with introduction of new and sophisticated machines have to be analysed and suitable guidelines/model codes of practice evolved. In respect of critical equipment requiring DGMS approval, standards, specification & approval criteria have to be evolved & performance of the same during trial periods as also during normal use monitored.

Facilities for monitoring parameters like convergence, stress, strain, subsidence, load etc. in mines have been developed in S&T. Permissions for extraction of coal and other minerals are granted by DGMS. At times, certain experimental permissions granted require careful watch over ground movement/stress in the vicinity of the area off extraction. Ground Control Unit provides assistance in monitoring these parameters.

Mine fires are a national problem & result in loss of coal reserves, add to the cost of production and cause environmental pollution by emission of steam, smoke & noxious gases. It is estimated that in Jharia Coalfield alone 1864 million tonnes of coal are blocked due to fires. Mine fires also pose safety problems. 7 persons were killed in a coal mine in A.P. due to fire. In early 1994 one underground fire caused 55 fatalities. Subsidence resulting from mine fires also pose a problem of stability of the surface/features. Therefore, it is essential that steps are taken to prevent mine fires and should a fire occur, to control it at the earliest so that it does not assume a magnitude when it will go out of control. Facilities have been developed under S&T to determine proneness of different coal seams to spontaneous heating. Facilities are also being developed to monitor the condition of mine fires and fire control measures. The working group is of the opinion that this area of work should be further strengthened during the tenth plan.

Due to intensive mechanisation being introduced in mines to meet the increasing demands for minerals, the occupational health hazards due to various environmental pollutants are getting aggravated. Occupational health considerations have not been receiving due attention in the past and as such sufficient work has not been done in this field. Although mine environmental & medical surveillance is the responsibility of the mine managements there is a need to have continuous monitoring by DGMS to-

- monitor both quantitatively and qualitatively, the medical surveillance exercised by the mine management as well as to ensure correctness of the radiographic interpretation and biological investigations carried out by the Occupational Physicians employed by the mining industry.
- monitor the environmental surveillance & control exercised by the mine management including evolving permissible standards & standardised measurement techniques in respect of various environmental pollutants.

Facilities to conduct dust, noise and illumination level surveys have been developed in DGMS. In view of increasing occupational health problems and growing concern for the same, it is felt necessary to continue the work done so far on a regular basis.

The committee after deliberations felt that fresh research work should be taken up by DGMS in collaboration with mining companies and research institutes in the following areas during the tenth plan.

- pillar size considerations vis-à-vis mechanization in underground mines,
- strata control & rock mechanics studies,
- introduction of new methods of work vis-à-vis thick seam mining,

- studies of mine fire, etc.
- blasting problems in coal and non-coal mines,
- study of induced caving of hard roof, possibilities of introduction of hydro fracturing,
- slope stability in open cast mines &
- use of fly ash for stowing and stabilization works in both underground and opencast mines.

The need for strong application research in the field of mining cannot be overemphasized. The sub-working group for mines emphasized involvement of DGMS in research projects undertaken by the Ministry of Coal and Coal India Ltd. It is also stressed that due to faith bestowed on DGMS by the industry, involvement of DGMS in application research work becomes very important in successful completion and implementation of valuable research findings in the industry.

“Silicosis” of mine workers have plagued the mining industry since long. A project in this area for identification of the dimension of the problem in small mines and formulation of mitigating measures can be taken up by the Occupational Health unit of DGMS in collaboration with NIOH.

The need for imparting structured training and retraining to the officers of DGMS has been emphasised by the National Conferences on Safety in Mines, the Committee set up by the Government of India to review the role and functions of DGMS and the PIACT Mission (ILO). The importance of keeping the Inspectors abreast with the latest developments has been well recognised internationally. Article 7 of the ratified ILO Convention No.81 (Labour Inspection Convention, 1947) also casts clear responsibility upon every member state for the Inspectors to be adequately trained for the performance of their duties.

Previously, there were no infrastructure facilities available in the country for imparting structured training to the officers of DGMS. The matter was discussed in the Working Group on "Safety, Health & Welfare of Employees in Mines, Factories & Docks, etc." for 8th Five Years Plan set up by the Planning Commission which recommended that a Mine Safety and Health Academy should be set up in DGMS under a new plan scheme entitled "Human Resource Development for improving Health & Safety Standards in Mines" to enable the officers of DGMS to play their regulatory, enforcement and advisory roles effectively. The plan scheme was accordingly started on the 1st April, 1990. It was proposed to create 52 posts for running the scheme. Due to various reasons the envisaged posts could not be created, as a result of which the programmes could not be implemented fully. However, during the tenth plan period it is envisaged to outsource the activities like development of training modules, conduct of courses,

etc. under this programme. Under the present set-up the scheme will run as a module of the larger plan scheme “S&T”. The Government need also to consider making the ‘HRD’ activity of DGMS under an autonomous body. The HRD academy could be made into an autonomous body which could charge the users for generation of adequate revenue so that eventually this institute may run on its own.

For the mining industry and the Government, more than ever before, it has become essential to bring together the world of science and the realm of technology within the total scheme of operations. Under the circumstances, the role of the S&T plan scheme of DGMS has to be that of a pathfinder in terms of technology, management practices, safety audits, assessment of risks of different operations in mines, evaluation and modification of existing standards, appropriate training for DGMS officers, development of training modules, evolution of a effective mine emergency response system, etc. The scientific research and developmental activities in DGMS have to be directed towards technological development and application that maximize the overall benefits for the organisation, the Government and the mining industry. In view of this, the scheme "S&T Support" is not only a 'need' but also has become a 'necessity'.

Financial outlay

The financial outlay for continuing the scheme into the Xth plan would be Rs. 11.50 Crores including an outlay for Rs. 5.50 Crores for civil works.

7.1.2.2 Survey of Mine Accidents and development of Mine Safety Information System (SOMA)

Background:

The scheme has been formulated by merging two on-going plan schemes of DGMS, namely “Development of Mine Safety Information System” (DMSIS, 1976); & “Study of Mine Accidents to Plan Preventive Measures” (SOMA, 1975). These two schemes were functional independently during the 8th plan period and during the first 4 years of the 9th plan. In 2001-2002, i.e. the terminal year of the 9th plan, keeping the objective of integration in view, these schemes were merged into one scheme “SOMA”.

Objectives of the scheme:

The objectives of the scheme are,

- to carry out studies into mine accidents and dangerous occurrences in order to arrive at the root cause of accident and to suggest preventive measures which, on implementation would improve safety standards in mines,

- to develop a suitable statistical tool for identification of mines with relatively higher potential of accidents through in-depth analysis of accident data and risk assessment through risk analysis and to propose the preventive measures to eliminate dangers there from,
- to develop a multi-disciplinary perspective in respect of major cause group of accidents by undertaking in-depth study of the underlying factors causing such accidents; to identify and forecast potential areas of dangers as well as to suggest preventive actions
- to reconstruct complicated accident for proper investigation of causes leading to the occurrences. It also envisages to develop additional model to give support to the statistical analysis by forecasting hazards through risk assessment and risk analysis.
- to collect , compile, and disseminate detailed information on various technical and welfare aspects of mining activities for :-
- assessment of implementation of various provisions under statute
- assessment of the profile of labour force,
- assessment of trend in mechanization in mines,
- projections of future development in mining,
- rendering assistance for undertaking in-depth analysis of accidents and their causes etc.
- development and assessment of impact of safety programmes and campaigns.

Justification for the continuance:

The mining industry makes a major contribution to the National economy and to the well being of the society as a whole. For continuing viability of the industry, it is important that full advantage is taken of the advances in mining methods and procedures, design of mining machinery and equipment, and advances in approaches to management of all mining activities including health and safety.

Because of the inherent hazards of mining as an activity, and the complexity of mining machinery and equipment and the associated systems, procedures and methods, it is not possible to be inherently safe. Regardless of how well the machinery and methods are designed, there will always be the potential for serious accidents. It is therefore not possible for any external agency to ensure safety of an organisation such as a mining company, nor of the machinery or

methods it uses. The principal responsibility for the safety of workers employed in mines rests with the management of that mine.

It is now widely accepted world over that the various techniques of risk assessment and risk management contribute greatly toward improvements in the safety of mining operations. Considering the accident scenario in India, it has now become essential that risk assessment be undertaken of all hazardous operations, equipment and machinery, taking account of the procedures used, maintenance, supervision and management.

Introduction of risk management as a tool for development of good health and safety management system is a break through in the traditional strategy as it differs from the existing one by a necessity of the entire staff being involved in the realization of safety improvement programme with responsibility and accountability sharing proportionate to the decisions making authority. The system is sure to be an effective tool for improvement of health and safety scenario in our mining industry. Risk assessment process will identify hazards existing in the work environment and in all operations, assessment of risk levels of these hazards, determination and prioritization of necessary preventive action ensuring safer and better workplace.

Further, the monitoring and auditing at regular interval recommended as a part of the system would ensure that safe operating procedures are followed, evaluated, corrected, standardized and documented, training procedures for workers and executives are in place and are carried out regularly, and commitment to health and safety is demonstrated at all levels of the organizations. On implementation of the system, an appropriate safety level in each stage of operation may be obtained by a systematic and documented management system with well-defined responsibility and accountability for safety among the mine employees.

Presently accident proneness of the mines are determined by calculating severity index from past accident data. However, recent studies show that a new indicator involving severity of accidents as well as frequency of accidents could be a better indicator of accident proneness. Work in this area need to be done for arriving at an acceptable indicator for assessing accident proneness of mines.

Necessity for collection, compilation, processing and dissemination of important mine statistics cannot be overemphasized. This activity must continue, so that modern concepts like networking, on-line availability of data, etc. can become a reality.

Under the plan scheme “SOMA”, the Government in general and DGMS in particular could take the lead in the areas mentioned in the preceding paras during the 10th plan period.

In view of what have been stated, and considering the fact that the activities of SOMA is a critical success factor for the success of the inspection activities of DGMS and mining activities in the country, it is essential that the scheme continues into the tenth plan.

Financial Outlay:

The financial outlay for continuing the scheme into the Xth plan would be Rs. 5.50 Crores. No civil works is being proposed under the scheme during the Xth plan period.

7.1.2.3 Strengthening of Machinery for Conduct of Statutory Examinations (SSEX)

Background:

This scheme was conceived during the 9th plan period and was principally approved by the Ministry of Labour. However, due to various procedural and other problems, the work could not start till the penultimate year of the current plan period. Feasibility study vis-à-vis computerization of the examination system has been done during the year 2000 & 2001.

Objectives of the Scheme:

The main objectives of the scheme is to strengthen and improve the efficiency of the statutory examination system by –

- Developing a quick and transparent system of examination with the aid of computer and associated information technology.
- Review of the examination system in vogue, in order to eliminate redundancy and standardize procedures.
- Developing computerized application-processing system, issue of certificate and maintenance of records connected therewith.

Justification for continuance:

During the last decade there has been a quantum jump in the domestic requirement of minerals. Production of coal alone has grown by four times. There is a substantial gap between the demand and the domestic production of other minerals in our country. In order to bridge the gap between the demand and supply some new mines have to be opened in near future. This can only be possible with the availability of trained and competent manpower for safe and efficient mining of minerals. Thus the requirement of statutory qualified managers, under managers and other supervisory officials is also likely to grow.

Under Coal Mines Regulations, 1957 and Metalliferous Mines Regulations 1961 the number of managerial persons to be appointed for various types of mines are specified. The numbers of supervisory officials necessary to run mining operations are also governed by statute. The scales are fixed in relation to production and employment at the mines. Hence, with the projected increase in mining activities in the years to come, the requirement of statutorily qualified persons holding competency certificates will only increase.

As already stated number of applications for candidates going to appear for the above examinations has grown many times over the last few years. In addition the volume of work has also increased with different schemes of examinations, holding of written examination at more than 14 centres in 12 different languages. The same is likely to go up. Moreover the Inter-Ministerial Committee had recommended the introduction of examinations for assessment of competency for mining machinery/ electrical/ mechanical engineers employed in mines. Further, the committee also recommended introduction of written examinations for grant of junior level supervisory certificates of competency like mining sirdar. The same has already been accepted by the Ministry of Labour and is under the process of implementation. But the total resources in the examination division including manpower had virtually remained stagnant over the last 15 years thereby adversely affecting the efficiency and output of the system. With manual processing of cases the process has become time consuming and creating considerable hardship to the public and mining industry in terms of availability of statutorily qualified persons. With further projected growth in the mining industry it would be a heavy burden that the existing set up is in no position to cope up with.

Therefore it is increasingly felt that a thorough change of the system of examination in the form of computerized facilities must be developed quickly, otherwise the whole system may collapse.

In this backdrop, continuance of the scheme becomes synonymous with successful organization of the examinations.

Financial Outlay:

The financial outlay for continuing the scheme into the Xth plan would be Rs. 6.50 Crores.

7.1.2.4 Improving efficiency by providing infrastructure facilities (PIF) in DGMS

BACKGROUND:

This was a new Plan Scheme proposed for implementation from the 9th Plan period. Over the years, many high powered committees and special study groups

deliberated upon the issue of Role & Functions of DGMS, its need for provision of better infrastructure, etc. All these committees reiterated the need for provision of better infrastructure facilities for improving the efficiency of the organization. In view of the above, the Ministry of Labour approved the scheme during the 9th plan period. However, due to various reasons, the scheme could not start functioning till the penultimate year of the plan. During 2000-2001, financial sanction for taking up a small part under the scheme was granted and accordingly civil construction work was taken up for DGMS office complex at Bhubaneswar and some other minor works.

OBJECTIVES OF THE SCHEME:

- To improve the efficiency of DGMS by providing better infrastructure facilities which include providing own office buildings and residential complexes to the officers and staff members, providing better communication facilities and office equipment and furnishing the offices.
- Improvement of effectiveness of inspection through restructuring of the existing inspection set up;
- Improvement of enforcement of the Mines Act & the allied legislation; and
- Extension of inspection activities by covering a large number of mines which hitherto had remained uninspected for several years.

JUSTIFICATIONS FOR CONTINUANCE:

As this scheme could not take off in its envisaged format during the ninth plan period, it is necessary to continue for achievement of the goals set.

Due to non-existence of Govt. office and residential accommodation at some places, the officers and staff had to face great difficulties and different administrative problems arise during transfer and posting of officers and staff. It is therefore proposed to provide Govt. office and residential accommodation at headquarter as well as all field offices to increase the efficiency of the officers and staff. Apart from residential and office accommodation other facilities are also being proposed to be provided. It is believed that by providing better facilities to the officers and staff of DGMS the efficiency and quality of work performed would be greatly enhanced. Ultimately the benefits of the scheme would accrue not only to DGMS but also to the mining industry as a whole in the form of safer and better mining activities.

Financial Outlay

The required financial outlay for this scheme works out to be Rs. 18.00 Crores during the Xth plan period including an outlay of Rs. 11.00 Crores for undertaking civil works.

7.1.3 New Schemes for the Xth plan period

7.1.3.1 Capacity building of DGMS for improving safety of the mining industry through e-Governance

BACKGROUND:

Indian mining Industry in general and DGMS in particular to-day finds itself faced with the challenge of developing an e-Governance system that specifically addresses the specific needs and requirements of the Government as well as the industry. Unfortunately, despite the necessity of an integrated and workable computerized information system vis-à-vis mine safety in our country, efforts towards achieving this goal have been at the best isolated and compartmentalized. The function of safety professionals indicates diversity. While the area of mines safety has many unique functions, practitioners bridge a number of disciplines and work within many settings. As a discipline, safety is distinct from, but involves elements of, business and management, engineering and technology, education and training, health and medicine, law and government, and other disciplines. Hence safety profession is certainly diverse and multi-disciplinary. Safety professional need knowledge of many subjects because safety is an important component of everything around us. They must work with people in many different jobs and disciplines, and require sufficient knowledge to communicate effectively. In this context, it is essential for DGMS to create an e-Governance system in order to function effectively.

The proposed plan scheme if developed, may cater to the information need of persons related to safety in mines in India comprehensively with comparative ease.

Information required for decision making purposes by the safety professional working at mine operational level, company level, Government level, and by researchers in the S & T Institutes, is essentially multi-disciplinary in nature. In the absence of a comprehensive electronic system, most of these agencies operate in an environment of inadequate information. Mines safety problems have a tendency to recur. Usually in order to supplement the incomplete information, experienced safety professionals recall similar problems and solutions of the past, which might have worked or not, and influence the safety decisions, thus allowing for a lot of subjectivity to creep in. Lack of reliable and comprehensive information at the base, leaves the imprints of mediocrity in all such efforts. Through the plan scheme under consideration it is proposed to transform the style

of safety management by placing its decision making process really technology-based.

OBJECTIVES:

The objectives of the scheme would be,

- Identification of mines safety information need and identify the boundaries of an e-governance system;
- develop a core group within the organization to formulate and use computer based 'MIS' vis-à-vis mines safety;
- develop modules of need-based software with the help of experts;
- create infrastructure to implement computer based systems including establishment of LAN/ WAN, establish electronic communication channels;
- establish a comprehensive protocol for use of such system; &
- establish a comprehensive training system for officers of DGMS in use of a computerized e-governance system.

PROPOSED ACTIVITIES DURING THE XTH PLAN PERIOD:

- Undertake global search for a suitable vendor capable of developing the proposed e-governance system;
- Undertake detailed 'Information System Planning' (ISP) to establish the information systems need to support the goals, functions and critical success factors;
- Start and complete systems analysis to set the framework for information systems development in the organization and set the priorities for information systems development;
- Preparation of a complete report on the outcome of 'ISP' and detailed systems analysis;
- Procurement of hardware and relevant basic softwares for implementation of the systems in a phased manner;
- Creation of infrastructure for supporting the total system including procurement of computers, peripherals, etc. and establishment of electronic communication channels;

- Undertake development of software modules depending on the priority and time-frame set during the 'ISP' through identified software vendors;
- Test run and implementation of the software modules so developed; &
- Establish necessary training system for the officers of DGMS.

TENTATIVE FINANCIAL IMPLICATION FOR THE SCHEME:

It will be necessary to undertake a detailed study to arrive at firm cost for implementation of the project. However, a tentative estimate based on prevailing market prices indicate that an amount of about Rs. 10.00 Crores would be necessary for the project during the 10th plan period.

It may be mentioned here that no manpower is being proposed for the scheme.

7.1.3.2 Modernization of survey capabilities in DGMS through digitization of mine plans and automated survey systems.

BACKGROUND:

Accurate survey work and consequent upon that preparation of accurate plans are the backbones of any mining enterprise. All activities in a mine progress according to mine plans prepared after careful survey of the workings. Over the years the techniques of surveying and surveying instruments have undergone a sea change. From olden day basic angle and distance measuring instruments today the modern world has graduated to satellite imagery, automatic and computerized distance measuring, total survey stations, gyro theodolites, distomats, etc. In the survey plan preparation front, specialized softwares are now available which can receive data/ information directly from the equipment and generate plans, etc. Global Positioning Systems have emerged as a big tool in the hand of the surveyors and operators of mines.

The work of DGMS involves examination and checking of survey plans for all the mines in the country. The law requires that any mine will submit an abandonment mine plan (AMP) before a mine is closed or abandoned. On a future date, if necessary DGMS supplies these AMPs to interested operators. These plans also form a reliable basis for identification of dangers to adjoining operating mines. At present DGMS is the only repository of such plans in the country. There are more than 5000 AMPs in the custody of DGMS. These plans are subject to deterioration over a period of time due to moisture, shrinkage of paper on which these plans were made and due to various other factors. Time is now ripe for digitizing these plans and store them in electronic format so that these invaluable documents are not lost to the sands of time.

It is also necessary at this point in time to upgrade the surveying facilities in DGMS by providing modern survey equipment like, gyro theodolites, GPS, electronic distance measuring instruments like distomats, automatic leveling equipment, total survey stations with computer interface, etc. It is also imperative that these modern equipments are matched with capabilities of computerized preparation of plans etc. with the help of specialized software packages. The proposed modernization would reduce the dependence on individual competence of surveyors, which play a major role in accurate survey work today.

OBJECTIVES:

- Establishment of modern survey system and digitization of abandonment mine plans in DGMS;
- Training of staff & officers in use of modern surveying and computers.

PROPOSED ACTIVITIES DURING 10TH PLAN PERIOD:

- identification of suitable software vendors for digitization of survey plans;
- digitization of AMPs and arrangement for storing them in electronic form;
- procurement of modern survey equipment, computers and necessary softwares;
- establishment of a computerized surveying system in DGMS;
- training of staff & officers of survey discipline of DGMS in use of modern survey equipment & computers, etc.

FINANCIAL IMPLICATION FOR THE SCHEME:

Tentative cost of the scheme during 10th plan period would be Rs. 5.00 Crores. No additional manpower is being proposed for the scheme.

7.2 Plan Schemes for Factories

7.2.0 Background

In the 9th Five Year Plan following six Schemes of DGFASLI are being operated -

- Application of ergonomics and improvement in working conditions and productivity in factories, docks and small and medium scale enterprises
- Establishment of system of chemical safety and monitoring of occupational health status of workers employed in hazardous industries
- Establishment of action resource centers and development of National Inventory of occupational safety and health information for dissemination
- Reorganisation and strengthening of DGFASLI organization and establishment of special cells
- Establishment of Regional Labour Institute at Fariadabad
- Improvement and strengthening of the enforcement system for safety and health of dock workers in major ports

Out of the above six Plan Schemes, following three Plan Schemes are proposed to be continued in the 10th Five Year Plan –

- Establishment of action resource centers and development of National Inventory of occupational safety and health information for dissemination
- Establishment of Regional Labour Institute at Faridabad
- Improvement and strengthening of the enforcement system for safety and health of dock workers in major ports

New Plan Schemes for the 10th Five Year Plan

The following three new Plan Schemes are proposed in the 10th Five Year Plan –

- Formation and functioning of National Board on occupational safety and health
- Capacity Building of the officers of DGFASLI and Inspector of Factories (CIFs) for improving Occupational Safety & Health.

- Strengthening of occupational safety and health strategies in priority hazardous chemical processes

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7.2.1 Details of the Plan Schemes

7.2.1.1 Establishment of action resource centers and development of National inventory of OS&H information for dissemination

Background

The scheme was originally formulated during the seventh five year plan with title “Setting up a Data Bank cum Information Centre at Central Labour Institute”. The scheme was approved by the Planning Commission in the seventh plan but only a token sum was sanctioned as budget grants and hence no significant activity was carried out. The scheme was continued in the modified form during eighth and ninth five year plan period with the title “Development of Safety and Health Information System and Data Bank”.

Objectives of the Scheme

The objectives of the scheme are:

- Development of occupational safety and health national inventory and connectivity between State Factory Inspectorate and DGFASLI. The inventory will cover information pertaining to manufacturing activities covered under the Factories Act 1948, occupational injuries and diseases in the sector, management of OSH at unit and state level.
- Creation of occupational safety and health information action resource centers at five labour institutes by providing them with computer hardware and software facilities and also by involving other organisations specialised in the field of safety, health and environment to participate in the project.
- Human Resource Development of personnel attached to action resource centers
- Dissemination of information through electronic media using the latest information technology for creating public awareness about safety, health and environment.
- Dissemination of information through conventional media to reach the large workforce including decision makers not having access to the information technology. This will include publication of newsletter and technical reports, safety cards etc.
- Creation of databases containing information on handling of containers and dangerous goods, hazardous installations, inland container depots, minor and

intermediate ports, competent persons, panel of doctors in ports etc. Dock Safety division will participate by way of providing raw data collected from the field.

- By acquiring latest IT facilities, e-governance will also get boost as same infrastructure can be used for achieving both objectives.

Justification for continuance

Management of occupational safety and health has become a very vital issue because of the technological advancements and deployment of newer technology, complex and hazardous processes. The threat of occupational hazards, particularly in the chemical and petrochemical industries is of great concern, specially for the people who are responsible for policy planning and designing of instruments and other interventions for protecting the large workforce in the country. The major problem faced by the policy planners is the non-availability of timely information on vital areas such as occupational injuries and diseases, infrastructure available at the unit and the state level for taking up awareness, promotional and developmental programs. Directorate General Factory Advice Service & Labour Institutes is relied upon by Central and State Governments for a variety of information pertaining to occupational safety and health. At present the facilities available in our country do not allow as quick a response as is often needed. Further, substantial increase in the number of registered factories, introduction of sophisticated modern technology and complexities in plant and equipment design have brought many constraints in the area of occupational safety and health policy making at national level. For planning of effective strategy on control of accidents and ill-health, timely and reliable statistics is vital. Establishing a system for the flow of information and creating an inventory of occupational safety and health information for each state in the country can address the above problems. As a first step in this direction, this Directorate undertook a pilot project in the state of Kerala to identify the various sources of information and infrastructure available, management of occupational safety and health and also occupational injuries and diseases.

The present scheme envisages creation of the national inventory on OS&H information to widen the information base and making available the information at one source to help in the activities specially those related to policy planning directed at improving the occupational safety and health of the workers.

The national inventory besides having OSH information state-wise collected through respective State Factory Inspectorate will also include the following :

- Abstracts of OS&H national literature
- OS&H literature acquired from abroad
- Factory advice service databases
- Dock safety related databases

- Details of MAH installations, hazardous chemicals, national specialists, etc.
- Scanner based database on accident events, etc.

To set up and operate the action resource centers at Central Labour Institute and four Regional Labour Institutes additional manpower is needed. Manpower is also required to operate the central repository for dissemination.

In order to create a national inventory of OSH information, the following activities are envisaged to be carried out in each state :

- i) Identification of support information
- ii) Location of sources of information
- iii) Creation of suitable mechanism for information collection
- iv) Selection, Procurement and Use of appropriate technology for processing and storage of information including upgradation of existing hardwares and softwares.
- v) Development of procedures for user friendly dissemination of information
- vi) Development of suitable infrastructure for achieving the above.

The activities in each state will be carried out by the task force at five labour institutes for the States falling in their region. The identification of information and sources of information will be carried out by the existing officers and staff from the labour institutes. It is proposed to sub-contract the data collection work to outside agencies. This will reduce the burden of creating new post for this purpose in the plan. The delivery of information package to the end-users in the form of customized software will also have to be sub-contracted. The analysis of the data for each State will be carried out by the labour institutes for which a minimum number of new posts are suggested. The experience gained during the pilot project carried out in the State of Kerala on “Assessment of Capabilities and Management of Occupational Safety and Health” will help in the implementation of this plan scheme.

Total Plan Outlay for the Project

It is estimated that to achieve the objectives as envisaged above, a sum of Rs. 3.80 crores would be needed now because the projects based on the experiences gained during the study in State of Kerala would be extended to the other states of the country.

7.2.1.2 Establishment of Regional Labour Institute (RLI) at Faridabad.

Background

An Expert Committee appointed by the Ministry of Labour to review the activities of the DGFASLI organisation in 1982 has strongly recommended setting up of Sub-Regional Centers of the existing RLIs. The Ministry has also felt that the activities of the RLIs needs strengthening. However, instead of setting up of Sub-Regional Centers with nominal staff it is felt that a new RLI at Faridabad be established and the area of operation of the existing RLIs be redistributed. The scheme was initiated during the 8th five year plan. During the 8th plan RLI Faridabad was set up in a rented premise and activities started by pooling in resource from the Central Labour Institute. However, Land was acquired and boundary wall constructed during the 9th plan period.

Objectives of the scheme

The objectives of the Scheme are:

- To cater to the needs in the areas of safety and health in the States of Punjab, Haryana, Himachal Pradesh and Jammu & Kashmir, Union territory of Chandigarh and the National Capital Territory of Delhi.
- To establish a center of excellence in safety and health comparable to similar Institutes in the industrially developed countries.
- To extend services in the specialized areas of emergency preparedness, risk assessment etc. throughout the country
- To establish a policy planning cell for better coordination with different ministries and state departments.
- To set up state of the art testing and investigating laboratories needed for safety, health and hygiene studies/surveys.

Justification for continuance

The scheme was initiated during the 8th five year plan. During the 8th plan RLI Faridabad was set up in a rented premise and activities started by pooling in resource from the Central Labour Institute. However, Land was acquired and boundary wall constructed during the 9th plan period. Discussions are on with Central Public Work Department on the proposed building plans/drawings for RLI, Faridabad.

During the Xth five year plan it is envisaged to complete the construction of the building and start the activities in a full fledged manner.

Total 10th Plan Outlay for the Project

Rs.30.00 crores after taking into consideration the escalation in cost for construction of the building and setting up of the other infrastructure facilities at RLI, Faridabad.

7.2.1.3 Improvement and strengthening of enforcement and implementation system for safety and health of dock workers in major ports.

Background

The scheme was formulated during 7th plan period to provide for safety, health and welfare of these dock workers and matters connected therewith, the Central Government has enacted the Dock Workers (Safety, Health & Welfare) Act, 1986 and Regulations, 1990 framed thereunder. These statutes have placed a heavy burden on the Inspectorate in different aspects of enforcement of provisions on safety and health due to the increasing containerisation of cargo, handling & storage of dangerous goods, introduction of new technology for cargo handling and other developments leading to the increase in volume of traffic have contributed to the complexity of the problems and therefore the need to continue the scheme is recommended.

It is anticipated that the cargo traffic would steadily grow, side by side, with increased port capacities and induction of high tech equipment.

Handling and Storage of Dangerous Goods in large quantities would follow with the expansion of the industrial factors, which would place additional burden on enforcement officials specially Manufacture, Storage and Import of Hazardous Chemicals Rules.

Objectives of the scheme

The objectives of the scheme are:

- To update knowledge and competence building of Inspectors to cope up with the recent developments in the Maritime trade.
- To develop the capability of the DGFASLI officers in the field of training of trainers, authorised persons, responsible persons, competent persons, etc. and

other specialised category of personnel in the area of handling of containers and dangerous goods.

- To fulfil the statutory obligations of the Central Government through DGFASLI, under the Dock Workers (Safety, Health and Welfare) Act, 1986 and Rules and Regulations framed thereunder at the Jawaharlal Nehru Port (Nhava-Sheva Port)) and Ennore Port commissioned as major ports in the recent past.
- To amend the Statute and Regulations connected with dock work, keeping in view the introduction of new technologies and their hazards in ports including bringing the Inland Container Depots under its purview.
- To develop a data base containing information on handling of containers and dangerous goods, hazardous installations, inland container depots, minor and intermediate ports, competent persons, panel of medical doctors for various major ports etc. for the benefit of the port users.
- To establish enforcement and advisory system in the Inland Container Depots and ship breaking units located all over the country.
- To prepare the Model Rules for adoption by the State Governments with suitable changes, if necessary, in respect of minor and intermediate ports and to provide advise/assistance in framing these Rules.
- To regulate functioning of the intermediate/minor/private ports through constitution of a Dock Advisory Committee.
- To generate awareness amongst all concerned through development of training manual, audio visual aids, publications etc.
- To develop standards, checklists, Code of Practices etc. on various port operations and procedures.

Justification for continuance

All the Inspectorates of Dock Safety located at the major ports have been carrying out ship inspections ever since their inception but to a limited extent. The Inspectorates are in a position to carry out only an average 10% of ship inspections every year against the general norms of atleast 50% of the ships called at the ports. The Manufacture Storage and Import of Hazardous Chemical Rules 1989 notified under Environment (Protection) Act 1986 and its amendments in 1994 have fixed time bound responsibilities on the Chief Inspector of Dock Safety and his subordinate officials of Inspectorates Dock Safety. Further, the Working Group on Safety, Health and Welfare of employees in mines, factories and docks etc. set up by the Planning Commission has recommended that DGFASLI should

assist the State Governments in framing the Rules and Regulations for the minor and intermediate ports.

In order to achieve the general norms of atleast 50 per cent inspection of the ships called at the ports and carry out the other statutory inspections, advisory and promotional activities in all the major ports, the Dock Safety Division, DGFASLI and its Inspectorates need to be strengthened by providing additional manpower with necessary infrastructural facilities.

With advancement in technology, use of new generation ships, handling of hazardous goods etc. the competence building of the inspecting officials have become essential to enable them to function effectively. Preparation of inspection manual, inspection guidelines and checklists etc. for use of inspectors for effective enforcement would also be essential. More so all employers, Port Users etc. have to fulfil their statutory obligations for which development of technical standard, checklist, Codes of Practices, , technical leaflet would serve as a better tool.

DGFASLI has proposed necessary amendments in the Dock Workers' Safety, Health & Welfare Act, 1986 under Regulations thereunder to cover Inland Container Depots which would further require efforts for enforcement.

The objectives of the IX Plan Scheme could not be fully achieved for want of necessary manpower and infrastructural facilities. Hence, the IX Plan Scheme needs to be continued during the X Plan with revised objectives .

Total Plan Outlay for the Project

The estimated cost for the project during 10th Plan period is Rs. 3.00 crores.

7.2.2 New Schemes under DGFASLI for implementation during the Xth plan period

7.2.2.1 Formation and Functioning of National Board on Occupational Safety & Health

Background

At present, there are number of agencies or departments of Government of India as well as departments of State Governments dealing with the areas of occupational safety and health at various places of work. The protection of workers employed in unorganized sectors is also not covered adequately. The administrative procedures involved in keeping the legislative measure up to date and in line with the technological developments are very lengthy and cumbersome. In the light of the multiplicity of laws and enforcing agencies there is a duplication. In order to reduce the burden of inspections, there is a need for promoting the concept of self regulation amongst the employers. This would also

require third party certification of the systems of safety and health adopted by them.

In order to address the issues enumerated above, and provide quality Safety and Health services to the industry, a National Board on Occupational Safety and Health is required to be constituted at the apex level.

Objectives of the Scheme

The objectives of the Scheme are:

- To provide to the industry accredited safety professionals to enable them to meet the statutory requirements for occupational health and safety.
- To assist in the enactment of a general legislation on occupational safety and health applicable to all work places in the country should be enacted. The enforcement of the provisions of this legislation will be carried out at Central/State Governments.
- A National Committee to Control the Occupational Diseases may be constituted. This committee would facilitate close coordination and exchange of information amongst various agencies under the National Board on Occupational Safety and Health.
- To develop and authenticate Code of Practices on Occupational Safety and Health for the use of industries and disseminate.
- To develop model guidelines for approval of training centers/ institutes by the CIFs as required under section 41-C and III-A of the Factories Act, 1948.
- To develop model curriculae and manuals of training courses for key categories of workers (such as those employed in hazardous processes and dangerous operations).
- To introduce Occupational Safety and Health as a compulsory subject at graduate level in technical education and also at Post-graduate level in medical education.
- To establish a chair for the faculty members at Universities and Medical colleges which could be funded by the Ministry of Labour.

Justification

The Manufacturing sector has activities which have got a lot of complexity and multiplicity of activities. All of these activities are not drawing the required attention in respect of OSH requirements under the law. Some of these activities fall under the category of unorganised sector also. Further there are a number of

agencies enforcing the provisions under different statutes. Thus many a times it bring in overlapping in the approaches followed for OSH.

Therefore, there is an urgent need to evolve a suitable mechanism to cover these sectors and remove these short comings.

Identification of hazard potential in all industrial operations and more particularly in Chemical and Petrochemical and Process Industries and mining operation is imperative to build enough safeguards in the plant and equipment and to facilitate the integration of safety in the operations and the stages beyond like maintenance & disposal with a view to ensure safety, losses on account of process interruptions and accidents.

These efforts of identification of hazards also ensure our capability to face the competition by increasing the operational efficiency consistent with the international norms of safety, health and environment. For the purpose of identification of hazards techniques like HAZOP, Risk Assessment are used to establish adequacy of safety preparedness by the managements. Various statutes such as The Factories Act, Mines Act, Environment Protection Act, Dock Workers (Safety, Health and Welfare) Act, etc. require managements to establish their standards for which the services of experts/ competent persons in the above areas are engaged.

At present, these activities are undertaken by safety specialists who have been doing this work by virtue of their training and experience owing to the increasing demand. New entrants in this field have started carrying out these functions and in some cases, it has been observed that persons with inadequate professional competence are also offering services to undertake these responsibilities. As the demand for these professionals would grow in future also, it is imperative to regulate their activity through a well established system of accreditation. Hence, a National level Board on Occupational Safety and Health would have to be set up which would empanel a list of competent professionals after following well established, legally supported procedures in this field and give them accreditation to practice in these areas. Accreditation Committee under the Board shall work independently comprising of members from Government, eminent professionals from Industry, organizations, educational and technical institutions of repute.

In view of these considerations, it is essential that an apex National Body with expertise on all disciplines duly constituted as per the provisions of the constitution is entrusted with the job of scrutinizing new technology from safety, health and environment angle. DGFASLI would act as technical support organisation by making initial scrutiny and placing the proposals to the National Board on Occupational Safety and Health. Till the National Board on Occupational Safety and Health is constituted, this work would be undertaken by DGFASLI who would make this available to the Ministry of Labour. Ministry of Labour through a notification could announce the procedure to all concerned.

The proposed Scheme also aims at formulating suitable policies and programmes for achievement of the objectives of improving the national productivity consistent with the requirements of applicable safety, health and environmental standard, through the process of issuing accreditation to individuals, institutes and organizations to provide expert quality services and monitoring adequacy of the technical experts.

Presently the activities proposed in the new plan scheme are being carried out by some competent persons, safety professionals and others. These agencies have different parameters to undertake such activities and uniformity in approach is lacking which could be attributed to the ability of such personnel as well as the multiplicity of control. The CIFs have on a number of occasions aired their opinion about the quality and quantity of such personnel. The 44th Conference of CIFs discussed the recommendations of the Working Group constituted by the 43rd Conference in connection with the constitution and working of the accreditation Board for carrying out Safety Audits in industries. This accreditation will be constituted and overseen by the National Board.

Financial outlay for the project

Estimated cost of the scheme during Xth plan period would be Rs. 1.00 Crore.

7.2.2.2 New Scheme: Capacity Building of Officers of DGFASLI and Inspector of Factories (CIFs) for improving Occupational Safety and Health Background:

This is a new scheme proposed for implementation during the Xth plan period.

Objective of the scheme:

The Scheme aims at enhancing the competence of the officers of DGFASLI and Chief Inspectors of Factories by evaluation and upgradation of technical knowledge and skills in the area of safety, health, productivity, information technology etc. This will be done through an appropriate exposure to orientation and training programmes, seminars, symposiums on latest technology, systems and processes in developed countries concerning manufacturing, port and dock and construction sector.

Purpose

DGFASLI is an apex advisory organisation functioning as a technical arm of Ministry of Labour rendering technical advice in the field of safety, health and working environment to the policy makers of State and Central Governments, as well as to personnel from manufacturing, ports and docks sector. Further in view of the latest statutes on construction safety being enforced in the country, additional responsibility has been vested to provide Consultancy and Human Resource Development services.

In view of the rapid advances in the technology, it is necessary that the officers of the Factory Inspectorates and personnel from industry are made aware of the associated safety and health problems. They also need to be advised on the measures required to be taken to make industry safe place to work.

There is an urgent need to upgrade the technical competence of the officers of the DGFASLI to meet the challenges,. This would in turn help DGFASLI take up the HRD requirements of the State Factory Inspectorate and others involved in the enforcement of OSH provision in the country.

Scope

It is important to mention that advice, suggestions and recommendations of DGFASLI, offices of CIFs should be based on such competence, experience and international exposure, that these are acknowledged as technically sound, highly reliable and independent so that these are accepted by all. These should also stand the scrutiny of any agency.

The officers of DGFASLI and CIFs are discharging their duties very well, but the competence should be reinforced by further training and exposure to international situation. This has become all the more necessary because new problem areas as already identified have emerged. In order to manage these problems at national level the officers of DGFASLI , CIFs need training in the areas which have been selected after much scrutiny and are described below:

- 1) Chemical Safety and Major Accident Hazards Control.
- 2) Promoting safety, health and productivity in small scale units.
- 3) Management of occupational health in factories and ports.
- 4) Behavioural aspects of safety and health management.
- 5) Ergonomic considerations in safety and health.
- 6) Total Quality Management for safety and health.
- 7) Management of information on safety and health.
- 8) Safety & Health in construction industry.
- 9) Management of safety and health and in ports and factories.
- 10) Multimedia/communication management for safety and health.

The training envisaged is spread over a period of five years.

Implementation Strategy:

- Study tour by Senior Officers, Ministry of Labour, DGFASLI and CIFs for, overviewing the technological changes, identifying training Institutes and management of safety and health at the National level in the changing scenario.
- Training of DGFASLI and Senior Officers of CIFs abroad in selected institutes of the developed countries.

* Training of DGFASLI and Senior Officers of CIFs in recognized Institute of India

- Training of Inspector of Factories by DGFASLI.

Financial Outlay:

The total financial implication for the Xth five year plan would work out to be Rs. 5.00 Crores.

7.2.2.3 New Scheme: Strengthening of Occupational Safety & Health Strategies in Priority Hazardous Chemical Processes.

Background:

This is a new scheme proposed for implementation during the Xth plan period.

Objectives of the scheme:

1. To carry out the predictive assessment of safety and health risk in hazardous chemical processes,
2. To establish diagnostic facilities for prediction of occupational health related disorders;
3. To impart training in the field of workplace monitoring, occupational health, control of risk in hazardous chemical processes,
4. To prepare guidelines, codes of practices, etc. for various chemical processes/operations.
5. Upgrading the existing Industrial Hygiene and Industrial Medical Laboratories as National Reference Laboratories of CLI and RLIs.

Purpose & Scope of the Scheme :

Although the chemical industries traditionally have carefully looked after the safety of processes, chemical accidents were not given high priority even as late as in the mid 1980s. After a number of serious accidents, such as Bhopal Disaster, several fire accidents in refineries and chemical storages and accident in road transportation of chemical much attention has been paid to chemical catastrophes and several new legislations have been made on chemical safety and major accident hazard control. In spite of legislative, administrative and technical control measures taken by concerned authorities chemical accidents and cases of occupational poisoning and new occupational diseases are being reported regularly.

Whatever may be the strategy on chemical safety, there are several reasons why the risk of chemical catastrophes may not decrease even in future. Chemical industries are organized in larger units; automatic control of processes is

improving process safety, but may also allow human errors which may have widespread consequences. Also a part of chemical production is directed to produce compounds of high reactivity and this increases the need for careful process control and of measures for avoiding unwanted chemical reactions. Thus the task is to be able to carry out predictive assessment of safety and health risks and control them before they do serious harm to the society.

Various studies conducted by the Central Labour Institute have revealed substantial prevalence of occupational health disorders amongst the workers such as Byssionosis 9%, Mercury poisoning (Caustic soda industry) 25%, Asbestosis 7.25% and Carbon disulphide poisoning 13.7%. At the same time the number of occupational diseases reported is very meager i.e. only 38 in 1981, 84 in 1982 and 15 in 1983, years for which data are available. The details of the statistics for the year 1998 is available in Annexure:VI. This makes it evident that early identification of occupational diseases is required. To meet these requirements, measures are needed for diagnostic facilities and appropriate training in the field of occupational health.

Occupational health hazards and diseases to the workmen employed in asbestos industries are of great concern to the industries, Govt. and the public. The Honorable Supreme Court of India in its judgement dated 27th January, 1995 relating to the Public Interest Litigation No.206 of 1986 had given several directions concerning the protective measures to be taken against the hazards of exposure to asbestos at workplaces such as mining and manufacturing activities. In the light of Supreme Court directives, it is proposed to launch a comprehensive programme for the protection of the health of the workers engaged in hazardous industries with adequate mechanisms for monitoring of work environment and diagnosis and control of disease.

Hence there is a growing need for the training of inspectors, workers, management personnel and decision makers on different aspects of chemical safety.

Considering all the above facts, the Plan Scheme “Strengthening of Occupational Safety & Health Strategies in Priority Hazardous Chemical Processes” is proposed in the 10th Five Year Plan.

Financial Outlay:

The total financial implication for the Xth five year plan would work out to be Rs. 5.5 Crores.

7.3 New Schemes for Unorganized Sector

7.3.1 Competence Building in Enforcement Agencies and Development of Enforcement strategies and guidelines.

Scope

The construction and agriculture sectors put together employ nearly 215 million persons. The enforcement agencies for the statutes covering OSH aspects have been notified excepting the State Governments under the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996. In addition to the above, existing enforcement agency must be supported by the established technically competent authority under the Ministry of labour for effective enforcement of regulations. This technically competent authority will work towards promotion of regulation and voluntary efforts for occupational safety and health through development of guidelines, checklists, codes of practices, do's and don'ts, inspection manuals, etc. Further to this, identification of certifying agencies, who can carry out third party audits and certification, which would be overseen by the Ministry of Labour. The Insecticides Act, 1968 and the Dangerous Machines (Regulation) Act, 1983 and the Rules made thereunder are the other two statutes relating to OSH aspects. The State Agriculture Departments enforce the provisions of the two statutes. The inspection officials from these Agencies are also non-technical as far as the OHS aspects are concerned. Similarly, the inspection officials under the Shops and Establishments from the State Labour Commissionerates or the Local Authorities should also be trained on OHS aspects for their competence building.

Activities

The following activities are envisaged to be undertaken for competence building of the enforcement agencies in the three unorganised sectors:

- i) Identification of the target groups: The target groups both at the Central and State levels.
- ii) Identification of their training needs: Based on various provisions under the Acts and their Rules, background and experience of the target groups and preliminary inspection approach required to be followed, the training needs of the selected target groups will be identified. Two categories of inspections are suggested in the scheme – non-technical/general inspections of non-technical aspects such as basic OHS and welfare provisions carried out by enforcement agencies, and special inspections by technical agencies and experts. For the general inspection the course coverage would be basic provisions under the statutes and the general health, safety and welfare provisions.
- iii) Design of curriculum and development of training manuals: Training manuals for inspection officials under Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996, the Dangerous Machines

Act, 1983 , the Insecticides Act, 1962, and the Shops & Establishments Acts will be developed.

- iv) Conducting required number of training programmes: With regard to construction sector, in order to cover all the officials at the central level in required number of batches, each batch of 20-25 officials will be trained. At least one similar programme will also be conducted at the State level in each of the major States. For the agriculture sector, the participants will be drawn from each State and a pre-determined number of training programmes (each batch 20-25 officers) will be conducted for the identified target groups of inspection officials. Similarly, one-day training programmes will be conducted for the enforcement officials of the Shops & Establishments Sector.
- v) Evaluation and if required, revision of the courses will be done based on the experience gained in conducting a pilot programme.

Development of Enforcement Strategy and Guidelines

Scope

An appropriate enforcement strategy comprising the criteria for frequency and priority of inspection, checklist for inspection reports, etc. has to be developed. This involves identification of technical agencies and experts for carrying out inspections of various types of machinery and equipment.

Activities

The following activities will be involved under the construction sector:

- i) Identification of technical agencies and experts for carrying out inspections of different types of machinery and equipments.
- ii) Drafting model guidelines for approval/notification of the terms & conditions for engaging technical agencies and experts.
- iii) Based on the experience of the general inspections and the departmental deliberations enforcement strategy covering both general and specialised inspections will be developed.

Benefits

At the end of the Tenth Five-Year Plan Period –

- i) The technical competence of all the inspection agencies will be developed so that they will be in a better position to enforce the OHS provisions relating to their respective statutes.
- ii) The standard of OHS in the workplaces will be increased by better compliance with the statutory provisions by the occupiers/employers.
- iii) The workforce in the unorganised sector will get the benefit of higher standards of OHS at the workplaces.

- iv) Workplaces for inspections are provided and the frequency of inspection determined based on the Inspection strategy.

Outlay

The total financial outlay for the 5-year plan period will be Rs. 2.0 Crores comprising training programmes and development of inspection strategy & guidelines. It is proposed that this entire Plan Scheme be implemented by the Ministry.

7.3.2 Design and Execution of National Level Awareness Campaigns in The Identified Seven Segments of Unorganised Sector

Scope

Various types of occupational hazards are existing in the seven segments of the unorganised sector. The awareness level of the persons employed in these segments on OHS aspects is very low. Therefore, this Plan Scheme envisages creating awareness at different levels relating to the OHS hazards, type of accidents, health disorders and the basic preventive control measures required to be taken in these sectors, generating motivation and voluntary commitment for implementation of the required measures, creating environment for better compliance with the provisions in the existing statutes, wherever applicable creating preparedness at different levels for the coverage of these sectors under the proposed General Legislation.

Awareness Campaigns

a) Some Identified Key Players

i) Central Board for Workers Education (CBWE)- established in 1958 for training and developing strong, united and more responsible trade unions through enlightened members and better trained officials. It extended its activities to the agriculture sector in 1977-78. Thus it has been active in providing education and training in Agriculture Sector for over 22 years. The target groups covered include landless labours, agricultural workers, marginal farmers and tribal labours. It has developed some innovative approaches for identifying and motivating participants from the Rural /Agriculture Sector for being trained as 'Rural Educators' in two-month long courses.

(ii) State Agriculture Departments - Extension Education Service and the Divisions dealing with enforcement of the Dangerous Machines (Regulation) Act and Insecticides Act & Rules made thereunder are directly in touch at the grass root level and are therefore, most appropriate for being used as players for

OHS training and awareness campaign. Extension Education Service of the State Agriculture Department works in co-ordination with the Agriculture Extension Education Services of the Agriculture Universities, thus making their reach more comprehensive.

iii) National Safety Council(NSC): Education, training and awareness campaign are the core activities of the NSC. It has the experience of designing, developing and organising National Safety Day / Week Campaign at the national level for over three decades. NSC has also been contributing to the Celebrations of Fire Service Week and World Environment Day campaigns. It conducts a large variety and number of training courses at the national and unit levels.

NSC has developed a wide network of 13 State Chapters, 23 Action Centres and over 5,000 Members across the country including 3,500 industrial establishments. Some leading manufacturers of pesticides, fertilisers and machinery used in the agriculture sector are members of the NSC. These manufacturers have the responsibility of providing information and guidance on OSH alongwith their equipments, machinery and other products for their safe use. With the established track record of co-operation between NSC and its members, it is in a strong position of building upon this OHS educational material in respect of these dangerous equipment and materials used in agriculture.

iv) Identified Non-Governmental Organisations (NGOs): Many NGOs are doing commendable work in the unorganised sector. CBWE, for example, is already using some NGOs in its training activities. These NGOs will be continued to be involved in this activity too. Similarly other NGOs to be involved in these activities would be identified.

Activities

Some of the important activities/action programmes forming the part of the campaign are given below:

i) National Conference

It is suggested that the Ministry may organise a National Conference on OHS in unorganised Sector for - setting the tone for national level awareness; Identifying and building consensus at the national level on the key OHS issues and solutions; Involvement of the key players in the sector such as Ministry of Agriculture, Ministry of Urban Development and Poverty Alleviation, State Agriculture Departments and State Departments of Urban Developments; Agriculture Universities & Colleges; leading manufacturers of agriculture machinery & equipment and toxic chemicals such as fertilisers, pesticides, insecticides etc. OHS institutions (CLI, NSC, NIOH etc.); employers'/farmers' organisations such as '*Shetkari Sanghatana*' in Maharashtra; concerned enforcement agencies; NGOs working in this field, etc.; Demonstration of national commitment (Ministry of Labour may present Government's draft strategy in the Conference).

ii) National, Regional and Subject-wise Seminars

National and Regional level subject-wise (for example, pesticides, fertilizers, agriculture machinery, etc.) seminars should be organised by the Ministry based on the outcome of the National Conference.

iii) Development of Training Schemes

Organising appropriate training is another important component of the strategy. The training activities comprise –

- a) **Identification of target groups and their training needs:** The target groups could be Education Officers and Rural Educators, Agriculture Officers / Assistants of the State Agriculture Department at the Circle level, Farm Extension Education Officers from Agriculture Universities, farm workers, etc.
- b) **Development of Training Programmes and Course Material:** Appropriate training programmes will be designed and developed. Simple and appropriate course material supported by suitable charts and posters would be required to be developed and translated into regional languages. This work can be done by the NSC in collaboration with CBWE and the State Agriculture Departments/ Agriculture Universities, etc.
- c) **Training of Trainers:** It is necessary to train the trainers for conducting these training programmes. NSC can undertake this activity.
- d) **Conducting Training Programmes:** Trainers who have been trained will in-turn impart training at the grass root level.
- e) **Review of Training Schemes:** Periodical review of functioning of training schemes including review of course content and course material should be done.

iv) Conducting Surveys – To identify hazards, types of accidents and their control measures.

v) Developing Awareness Approach – Based on the above activity and the categories of persons, a suitable awareness approach for creating awareness among the persons employed in the unorganised sector will be developed in consultation with the NGOs. The activities to be undertaken under the campaign are better directed through the “employer” for achieving effectiveness and good results. The “employer”, being a crucial person is at an advantageous position to take up the work of imparting information and training and providing at least part time supervision for OHS in respect of the home workers. The OHS

awareness material would be made available to the employer who in turn could get it translated into local language and distribute to the persons employed.

vi) Use of Agricultural Exhibitions, Fairs, etc.

The State Agriculture Departments, Agriculture Universities & Colleges jointly organise agriculture exhibitions & fairs during the festivals such as "Baisakhi" in Punjab & Haryana, "Onam" in Kerala, 'Pola' in Maharashtra, etc. Besides disseminating technical information in these events, OHS information should also be disseminated. The necessary package could be developed for this purpose.

vii) Utilising Existing Agricultural Education Programmes of T.V. and Radio

T.V. is a powerful medium with a wide reach. It is being already used for agriculture education through very interesting programmes developed by State Governments and Agriculture Universities. These programmes are basically for educating the farmers on various aspects of improved methods of farming. In line with the suggested objective of incorporating OHS information with the technical information and making use of viewer-ship of existing programmes, it is suggested that suitable information packages can be developed and included in these programmes by the State Agriculture Department in collaboration with the State Government, Doordarshan, etc. Since information dissemination to the vast number of home workers spread through out the length and breadth of the country could be very effectively achieved through media, the electronic and print media could be made use of for this purpose. The concerned agency of the Government, in-charge of Doordarshan could be requested to beam the OHS information material like video clippings, short talks, etc. so prepared at an appropriate time slot. The other private channels also could be requested to beam the OHS material/information at an appropriate time slot on a voluntary basis as part of their social obligations.

Radio is also an another effective medium having wider reach to rural areas. Some programmes broadcast in this medium are targeted at agriculture e.g. '*Krishi Wani*' and '*Maze Aawar, Maze Shivar*' in Mumbai Radio Broadcast. This channel can also be used to disseminate OHS information.

viii) Bringing Agriculture Establishments in the Fold of Organised Voluntary Movement by Enrolling them as NSC Members

A separate Cell on OHS in Agriculture Sector need to be set up. A database on OHS Information in agriculture will be developed by this Cell. The existing OHS voluntary movement in organised sector will be extended to the agriculture sector nationwide. Agriculture Universities & Colleges, Employers/Farmers' Associations, and NGOs working in this sector will be advised to become NSC members so that they can have easy access to the OHS information database and guidance. Thus the organised OHS voluntary movement will be taken to the agriculture sector by this arrangement.

ix) Mobile Safety Exhibitions

Mobile safety exhibitions, displaying the hazards, do's and don'ts, correct work practices in relation to work activities in unorganized sectors should also be developed. The mobile exhibitions (5 nos.) one each at labour institutes under DGFASLI should spread message of safety and health amongst large work force throughout the country by organizing displays at various places. The total outlay for this job would be Rs. 3.5 Crores.

x) Production of video films

Audio-visual aids such as video films play very effective role on creating awareness about safety and health amongst target audience. Video films depicting hazards, safe work practices, do's and don'ts in various work activities should also be produced using and reinforcing the present existing facilities under DGFASLI at an estimated cost of 1.0 crores.

Outputs

The following are the outputs at the end of the Plan Scheme:

- Consensus at the national level on key OHS issues and solutions built up.
- Weaknesses in the existing situations identified and corrective measures evolved.
- Well informed trainers of trainers so that they can in turn impart quality training on OHS to the persons concerned at the grass root level.
- The awareness level of the persons employed in the unorganised sector on OHS aspects raised.

Outlay

The total financial outlay for the 5-year plan period under this Scheme will be Rs. 7.00 Crores. Under this Plan Scheme some of the activities will implemented on project funding basis.

CHAPTER: VIII

SUMMARY OF RECOMMENDATIONS

The recommendations have been made in two parts. They are:

Main Recommendations and Sector Specific.

- Constitution of Core Group on OSH at workplace under the Ministry of Labour for inter-Ministerial coordination.
- **National Policy**

A coherent national policy on Occupational Safety, Health should be formulated.
- **General Legislation on Occupational Safety & Health**

A general legislation on occupational safety and health applicable to all workplaces in the country should be enacted. The enforcement of the provisions of this legislation will be carried out by existing machinery available at Central/State Governments.
- **Apex Body on Occupational Safety & Health**

Apex Body on Occupational Safety and Health should be constituted under Ministry of Labour for ensuring effective coordination amongst various enforcement agencies as appointed under General Legislation.
- **National Accrediation Agency**

There is also strong need for creation of an independent national level accreditation agency of eminent professionals for establishment of national standards on OSH and development of an audit mechanism for assessing effectiveness of OSH in industries, ports and mines by external safety audits.
- **Competence Enhancement for Enforcement Officials**

In order to take up HRD activity in DGMS, DGFASLI, CIFs and State Agriculture Departments, there is need to enhance their technical skill and exposure to latest techniques in the field of OSH, by strengthening the

existing bodies. These academy/Institute may be given autonomy to become self sufficient by generating their revenue.

- **Training for Industry**

- a) In order to improve the existing occupational safety and health scenario in mines, factories, ports and other unorganized sectors of economy, the Government, enforcement agencies and the managements should jointly undertake substantial strengthening of the following areas-
- b) The important step to be taken is development of Standard Work Procedure or Safe Work Procedure (SWP) for every recognized, repetitive task that the mineworkers perform, code of best practices, do's and don'ts, prevention of identified hazards by way of model demonstration for industry and ports.
- c) Public awareness about safety, health and environment should be created by way of training and awareness campaigns.
- d) Participation of organizations specialized in the field of safety, health and environment should also be sought in these efforts.
- e) Short-term courses on occupational health should be organized for medical practitioners employed in government, semi-government hospitals.
- f) The National Literacy Mission may be consulted to include this element (OHS) also in their literacy mission as dissemination could be faster.
- g) Professional and independent bodies/organizations such as Central Board for Workers Education (CBWE), National Safety Council, State Agriculture Departments, identified NGOs etc., should be involved in conducting training and developing material for awareness campaigns. As part of this activity, organizing National, Regional and Subject-wise Seminars and Development of Training Schemes are suggested to bring in the expected level of awareness.
- h) The syllabus of Engineering and Medical Courses at College/University level should be modified to include occupational safety and health as a compulsory subject.
- i) All companies, mines and Port Trusts should include a statement on status of occupational safety and health in their Annual Reports.

Mining Sector

- a) Improvement in productivity with enhanced safety as a consequence, as an objective and as a balance through **safety auditing** should be the safety policy of the industry. In this context, considering the Government policies regarding

downsizing and optimum utilization of existing manpower, and understanding the fact that expansion of the Mines Inspectorate can only be upto a certain degree, it will be a necessity to consider external third party safety audit systems for assessing status of safety in Indian mines.

- b) It is essential that the **Internal Safety Organisations (ISOs)** are suitably strengthened with adequate responsibility coupled with required authority to make it effective.
- c) Introduction of **risk management** as a tool for development of a good health and safety management system is a break through in the traditional strategy. The system is an effective tool for improvement of health and safety scenario.
- d) With liberalization of economy and need for the Government to generate revenue, the concept of '**user pays**' should be introduced for services rendered. Suitable schemes need to be drawn up for the purpose.
- e) **Strengthening of existing legal set up** to effectively offset the present problems of following up a case in the Courts of Law. Special Courts/designated Courts may be set up to deal with all court cases for its expeditious disposal.
- f) Restructuring and rationalization of functioning of DGMS for optimal utilization of the existing resources, replacement of human efforts through automation and planning and prioritization of inspection before proposing the bare minimum increase in strength of the inspectorate.
- g) The following four (4) plan schemes of DGMS from the IX plan may be continued into the X plan period,
 - a. Survey of mine accidents and development of mine safety information systems (SOMA);
 - b. Science & Technology support, human resource development & development of mine rescue services (S&T);
 - c. Providing infrastructure facilities in DGMS (PIF) and
 - d. Strengthening of machinery for conduct of statutory examination systems (SSEX).
- h) Two new plan schemes to be implemented during the Xth plan period are:
 - a. "Capacity building of DGMS for improving safety of the mining industry through e-Governance" &
 - b. Modernization of survey capabilities in DGMS through digitization of mine plans and automated survey systems"
- i) With the present strength of enforcement agency it is not possible to undertake regular inspection of the mines registered with DGMS,

therefore, it was considered that inspection of small mines may be delegated to the State Government and the Mines Act may be amended accordingly. The State Governments while granting lease for the small mines may include as a part of the lease document, safe work procedures, best practices, do's and don'ts, cancellation of lease in case of serious violation and inspection procedure to ensure implementation of relevant statutes in order to improve safety and health condition of workers employed therein. DGMS in collaboration with NIOH may take up **demonstration of models of the best practices in small mines aimed at generating awareness.** ESI involvement may be considered to mitigate health problems in small mines.

Factories and Docks

- a) In order that the Labour Institutes under the DGFASLI are able to meet the challenges posed by latest technology effectively, they need to be granted autonomy in its functioning. They should be generating their own resources under the principle of 'user pays'.
- b) Codes of practices, standard procedures, checklists and Inspection manual for OSH inspection of factories and ports should be prepared and distributed for ensuring uniformity.
- c) Various forms and registers prescribed under the Factories Act and Rules should be brought down to minimum. Submission of information by Chief Inspector of Factories in FAS forms should be made statutory.
- d) The Dock Workers (Safety, Health & Welfare) Rules and Regulations should be notified by Central Government on behalf of State Governments. One of the enforcement agencies available in the States.
- e) The scope of existing Dock Safety Advisory Committee under the Chairmanship of DG. FASLI should be extended to cover intermediate/minor and private ports.
- f) Following amendments should be made-

A) Factories Act

- i) Factories employing 500 and above workers should appoint safety officer.
- ii) Independent safety audit of the facilities by factories involving hazardous processes as defined under Section 2(cb) should be conducted.

(iii) To ensure compulsory health insurance of workers employed in hazardous processes.

B) Dock Workers (Safety, Health & Welfare)Act

a) Inland container Depots should be brought under its purview.

- g) All offices of the Inspectorates of Dock Safety as well as State Factory Inspectorates should be strengthened in terms of infrastructure facilities such as transport, electronic networking etc.
- h) Chief Inspector of Factories should be selected from amongst the cadre of Inspectors of Factories and be given the status of Head of Department directly reporting to Labour Secretary. This will increase his **functional autonomy**.
- i) Medical Inspectors of Factories and Certifying Surgeons should be appointed in all Inspectorates of Factories in the country.
- j) A **National Committee on Control of Occupational Diseases** under the Apex Body on OSH may be constituted. This Committee would facilitate close coordination and exchange of information amongst various agencies.
- k) A **data base** containing information on handling of containers and dangerous goods, hazardous installations, Inland Container Depots, minor and intermediate ports, competent persons, panel of medical doctors, etc., for various ports should be created for the benefit of the port users.
- l) **Training of crane operators** should be undertaken by respective owners of the equipment. This will help in addressing the problem of accidents due to transport equipments in port areas.
- m) The following 4 (four) Plan Schemes of the DGFASLI from the IX Plan may be continued during the X Plan period in modified form taking into consideration the new developments –
 - a. Strengthening of occupational safety and health strategies in priority hazardous chemical process.
 - b. Improvement and strengthening of enforcement and implementation system for safety and health of workers in major ports.
 - c. Establishment of Regional Labour Institute at Faridabad.
 - d. Establishment of action resource centers and development of national inventory of OSH information for dissemination.

- n) Following 2(Two) new Plan Schemes are formulated by the DGFASLI for the X Plan period-
 - a) Formation and functioning of an Apex Body on Occupational Safety and Health.
 - b) Capacity building of the officers of DGFASLI and State Factory Inspectorates for improving occupational safety and health.

Unorganized Sector

- a) The common recommendations for improving OSH standard in the selected seven segments of the unorganized sector are summarized below:
- b) Research/Surveys/Studies will be organized by the Ministry of Labour through professional bodies/organizations such as DGFASLI, Agricultural Universities, Social Sciences Institutions and NSC to identify type of hazards and accidents and to bring out documents for drawing action plans in the sectors concerned. Sector-wise surveys will be conducted to identify the hazards and type of accidents which will be of immense use in developing the material for training and awareness campaigns. These organizations can jointly work with DGFASLI, NIOH and NSC in carrying out the proposed surveys and in identifying the safety and health hazards associated with them and assist in bringing in awareness with low-cost solutions.
- c) Material for awareness on OHS aspects will be developed in joint collaboration with all the professional bodies/agencies concerned. The material thus developed in national and regional languages will be telecast on T.V channels and broadcast on radio for creating mass awareness on occupational safety and health to the persons involved in all the segments.
- d) Video films, leaflets, safety posters etc., should be prepared as publicity material for dissemination of occupational safety and health message.
- e) In order to spread the message of occupational safety and health, among the persons involved in this sector, five mobile exhibition vans will be developed/designed with appropriate audio visual exhibits.
- f) To overcome the weaknesses in the enforcement of the statutes, wherever applicable, a comprehensive enforcement strategy and guidelines on OHS aspects should be developed at the national level.
- g) OSH awareness campaigns with do's and don'ts and codes of best practices will be developed through professional bodies/organizations and be launched at the national level.
- h) Besides the above mentioned common recommendations, sectoral-specific recommendations are suggested below:

Agriculture Sector

- (a) Amendments to the Dangerous Machines (Regulation) Act, 1983 in the form of a notification in the Gazette, the scope suitably to cover more machinery being used in the agricultural sector. Suitable amendments on the matters relating to safety and health aspect may be considered.
- (b) Amendment to section 36 of the Insecticides Act, 1968, which would include the use and provision suitable Personal Protective Equipment while applying the substance by spray, etc. is suggested.
- (C) Notifications to the Plantation Labour Act, 1951 and Rules framed there under, for enlarging its scope to cover lesser land holdings and fewer number of persons employed may be considered. Also occupational safety and health aspects may be included

Construction Sector

- (a) The scope of the Building & Other Construction Workers (Regulation of Employment and Conditions of Service) Act be enlarged by suitably reducing the existing eligibility criteria to 5 workers and making appointment of safety officers by the employers of establishments employing 100 workers and above as a statutory obligation.
- (b) The Act applicable to the construction sector is presently overseen by non-technical department. In order to supplement their efforts in inspection, the existing professional bodies/organizations, may be associated to oversee technical inspections and investigation of accidents.
- (C) DGFASLI and professional independent bodies/organizations should organize trainers' training programme for education officers Central Board of Workers Education and Supervisory and Management personnel from industry.
- (d) The Central Board of Workers Education under the Ministry of Labour may be given the task of training of construction workers in collaboration with professional independent institutes involved in construction safety.

Beedi & Cigar Manufacturing Sector

- (a) Amendment may be carried out to the Beedi and Cigar Workers Act, 1966 (Conditions of Employment and Health) incorporating safety, in case of any mechanized work activity that is carried on. A provision on ventilation, lighting and fire safety can be also made to ensure better and safe working conditions. Furthermore, in addition to the existing provisions, suitable provision may be incorporated in the Act and Rules making it mandatory to carry out periodical health check-up of the workers (as provided under Sec.44).

Shops And Establishment Sector

- (a) To protect the workers from electrical/mechanical hazards, an amendment may be made to the Shops and Establishment Acts of the State Governments. Similarly, for operation and maintenance of lifts, as well as maintenance of building for carrying out additional construction, white-washing etc. adequate safety provisions should be incorporated in the Rules. In short, there is a need to amend the existing provisions under the Act and Rules to be amended suitably to cover the safety, health and welfare of large number of workers employed in this sector.
- (b) The shops and establishments carrying out electrical and mechanical repair work, small garages, air conditioner/refrigerator repair shops, small jobbing workshops, etc., may be brought under the purview of the Factories Act.
- (c) The enforcement officials from the enforcement agencies of Agriculture Departments may be trained on OHS aspects and inspection strategy and guidelines on OHS may be developed.

Home Work Sector

After assessing the problem through studies and surveys simple booklets and training material may be prepared. For disseminating information on occupational safety, health and environmental awareness campaigns conducted for the benefit of those who are engaged.

Eating Places Sector

All the eating places, which are beyond the Notified Areas and not covered by any statute, may be brought under the Shops and Establishments Acts of the State Governments or the Factories Act through an amendment/notification.

Waste Management Sector

Citizens active participation and effective coordination with all agencies concerned and NGOs is suggested. Safety Awareness Programmes may be **organized** for NGOs and waste collectors.

Plan Schemes

In order to improve OSH in the unorganized sector and to create awareness the following two plan schemes are proposed for implementation during the Xth Plan period

- Competence Building in Enforcement Agencies and Development of Enforcement Strategies and Guidelines.
- Design and Execution of National Level Awareness Campaigns in The Identified Seven Segments of Unorganised Sector

ANNEXURE - I

SETTING UP OF WORKING GROUP ON OCCUPATIONAL SAFETY AND HEALTH

In the context of preparation of the 10th five year plan, the Planning Commission had set up a working group under the chairmanship of the Secretary, Ministry of Labour, Government of India on Occupational Safety and Health vide their order no. M-13015/9/2000-LEM/LP dated 27.04.2001.

Composition of the SUB-working group – MINING SECTOR

- | | | |
|------|---|------------|
| i. | Shri A K Rudra, Chief Inspector of Mines,
Directorate General of Mines Safety, Dhanbad | : Chairman |
| ii. | Chairman, National Mineral Development Corporation,
Kahnij Bhavan, Masab Tank, Hyderabad | : Member |
| iii. | Chairman-cum-Managing Director, Bharat Coking Coal Ltd.
Koyla Nagar, Dhanbad | : Member |
| iv. | Chairman, Coal India Ltd., 10, Netaji Subhas Road, Kolkata | : Member |
| v. | Director, Indian Institute of Miners' Health, KGF
Dist. Kolar, Karnataka | : Member |
| vi. | Commissioner, Dept. of Mines, Govt. of Jharkhand, Ranchi | : Member |
| vii. | Secretary, Dept. of Mines, Govt. of Rajasthan, Jaipur | : Member |

Composition of the sub-working group – Industry & Port Sector

- | | | |
|------|---|------------|
| i. | Shri S.K. Saxena, Director General
Directorate General, FASLI, Mumbai | : Chairman |
| ii. | Director General
National Safety Council
Plot No.98A, Sector 15,
CBD Belapur, Navi Mumbai – 400 614. | : Member |
| iii. | Director
National Institutes of Occupational Health, Ahmedabad | : Member |
| iv. | Ministry of Environment & Forests | : Member |
| v. | Ministry of Surface Transport (Ports Division) | : Member |
| vi. | Labour Secretary, Government of Maharashtra, Mumbai | : Member |

- | | | |
|-------|---|----------|
| vii. | Labour Secretary, Government of Tamil Nadu, Chennai | : Member |
| viii. | Labour Secretary, Government of Gujarat
(Gujarat Maritime Board), Gandhinagar | : Member |
| ix. | President, Confederation of Indian Industries,
23, Institutional Area, Lodhi Road, New Delhi | : Member |

Composition of the sub-working group – Unorganised Sector

- | | | |
|------|---|------------|
| i. | Shri K. Chandramouli, Joint Secretary,
Ministry of Labour | : Chairman |
| ii. | Director General, national Safety Council
Plot No.98A, Sector 15,
CBD Belapur, Navi Mumbai – 400 614 | : Member |
| iii. | Director General, Directorate General Factory Advice
Service & Labour Institutes, CLI building
N.S. Mankikar Marg, Sion, Mumbai – 400 022 | : Member |
| iv. | Ministry of Agriculture | : Member |
| v. | Labour Secretary, Government of Madhya Pradesh
Bhopal | : Member |
| vi. | Labour Secretary, Government of Karnataka, Bangalore | : Member |
| vii. | Secretary, Government of Tamil Nadu, Chennai | : Member |

ANNEXURE – II

MINUTES OF THE MEETING OF THE WORKING GROUP ON OCCUPATIONAL SAFETY AND HEALTH (OSH) HELD ON 4.6.2001 UNDER THE CHAIRMANSHIP OF SECRETARY (LABOUR).

Secretary (Labour) welcomed the members and emphasized that the Government has to play a major role to improve the occupational safety and health (OSH) of the workers in the industries, ports, mines and in the unorganized sectors. There should not be any compromise and laxity in overseeing the rules and regulations already framed under various Acts to take care of OSH at the national level, state level and at organizational level. It was also pointed out that there should be proper utilization of the funds made available under the plan schemes for improvement in health and safety of the workers. He also advised that modern techniques may be introduced to improve the OSH at organizational level with special emphasis on training of the workers and management which in turn will improve the occupational safety and health management system. List of the Participants is at Annexure-I.

Secretary(L) also stated that there is a need for integration of the existing resources in the area of OSH by focusing more attention on the protection of the workers from the hazards as well as for the elimination of work related injuries, ill health, diseases, incidents and deaths. Further in view of present scenario of OSH there is need for formulating, implementing and for periodical review of the coherent occupational health and safety management policy at the national level for the establishment and promotion of OSH management system in the organization.

Dr. Bela Shah pointed out that in future the meeting of this working group shall be attended by Dr. H.N. Saiyed, Director (NIOH) who will be in a better position to make significant contribution in this area.

Thereafter the terms of reference of the working group were gone through carefully and it was decided to set up three sub working groups to prepare a paper for the 10th Five Year Plan on OSH. The Sub Working groups are as under:-

- **Mines**: This sub-working group will be headed by Director General of Mines Safety associating Members from Coal India Ltd. & BCCL representing Ministry of Coal, Ministry of Mines, Indian Institute of Miners Health, National Mining Development Corporation and Commissioner, Deptt. of Mines, State Government of Jharkhand.
- **Industry and Port**: This sub group will be headed by Director General of Factory Advice Service and Labour Institute. Members from Directorate General, National Safety Council, Ministry of Surface Transport, Ministry of Environment & Forests, National Institutes of Occupational Health, Labour

Secretary of Govt. of Maharashtra , Tamil Nadu and Gujarat are to be associated.

- **Unorganised sector:** This sector include occupations such as agriculture, construction, beedi workers, fish processing and cashew cracking. This sub group will be headed by JS(ISH). Members from Ministry of Agriculture, DGNSC, DGFASLI and Labour Secretary of Govt. of Madhya Pradesh, Karnataka and Tamil Nadu are to be associated.

These sub working groups can also co-opt any other person as Member of Sub Working Group. These sub groups will meet and prepare a paper in respect of OSH, keeping in view the present scenario, existing plan schemes, identify the gaps, ways and means to improve the achievement, reasons for continuation of the existing Plan Schemes, and to identify 10th plan schemes to improve OSH.

Thereafter Secretary (L) requested Shri Rudra to present his views on the existing OSH system in the mines and proposed techniques to strengthen the existing system.

Shri Rudra gave a brief description about his organization and existing mines in the area of coal, metalliferous and oil projects viz-a-viz strength of DGMS. It was explained that the Mines Act, 1952 and the rules and regulations framed thereunder takes care of occupational health and safety of the workers in the mines and these objectives are achieved by way of legislative measures such as submission of reports by mine managements to DGMS, periodic physical inspection of mines by the inspecting officers, inquiry of fatal accidents, statutory occupational health and safety service to evaluate status of occupational health of mine workers, to grant specific permission, exemption and relaxation in certain matters connecting with OSH, approval of safety equipments etc. DGMS have also evolved non statutory measures for monitoring safety and health provisions in mines by way of previewing all project reports and mining plans, by promotional initiatives such as Conference on safety in mines, National Safety Awards, Mines vocational training and by organizing safety week. DGMS also act as advisory body by issuing circulars for dissemination of information, development of guidelines and standards by way of inter action in different bipartite and tripartite forums. It was also explained that the existing system may be strengthened by way of training and education of workers, strengthening the legal set up, strengthening mine safety enforcement machinery, making Internal Safety Organization (ISO) more effective, introducing third party auditing, risk management and introduction of new schemes relating to capacity building of DGMS and modernization of survey capabilities in DGMS in the 10th plan.

Secretary (L) emphasized that the system may be modernized without asking for additional manpower by way of better training, introducing third party audit and increase of inspections based on risk management by prioritizing the mines depending upon their level of risk. It was also advised that instead of developing new training centers and R&D organizations, it will be better to strengthen the existing organizations by way of funding by the Government and by generation of its own

resources. Research work may as far as possible be given to CMRI who are already in the field of mines related research. It was however, apprehended that these institutions may not take up the research project for the social cause of the workers.

It was also suggested that in addition to safety in mines the health of the workers may also be integrated in the third party auditing. Shri K.C. Gupta at this stage pointed out that in order to maintain the credibility of the Auditing Board, it should be independent, comprise of eminent persons from various institutions, should not be under the control of the enforcement agency and the auditors should be accountable to the Board. As regards imparting training to the workers and for opening of new training facilities, it was emphasized that keeping in view the Government policy for reducing its burden on capital investment, the existing training institute may be strengthened and training may be given to the workers as well as to the trainers for further dissemination. It was also emphasized that the training modules may be updated as per the requirement.

Shri R.C. Vaish requested that in order to check the environmental management and occupational diseases in the mines located in Bihar, the services of their Medical Inspectors may be utilized and inspection of small mines may be delegated to the State Governments

Thereafter Shri Saxena made presentation on the existing set up of occupational safety and health in factories and ports, its weaknesses and ways and means to strengthen the system. It was stated that although the Factory Act has been enacted by the Centre but this subject being in the concurrent list, enforcement is done by the State Government through its Factory Inspectors. As regards ports, the enforcement is done by DGFASLI in the case of major ports and in the case of small ports, the responsibility rests with the State Governments. It was highlighted that although the occupational safety and health norms are followed in the large ports but in the case of minor ports, no norms are followed by the State Governments and working conditions are quite unsafe. Even the State Governments have not notified the rules as framed and given to them by the DGFASLI. As regards factories, it was stated that of late there has been a lot of mechanisation and introduction of sophisticated machinery in the industry but the qualification for Factory Inspector has not yet been laid down. In the case of Safety Officer although their qualification has been laid down but the competent and qualified persons are not being appointed and their reporting is also at a very low level, thereby making their position ineffective.

Secretary (L) suggested that in order to improve the safety of the workers in the factories and ports, it may be made obligatory on the part of the management to disclose the safety aspects as a part of the Annual Report as is being done in the case of Environment and Energy Conservation.

Sh. L.R. Sailo emphasized that there should be uniform standards of OSH in all the industries and in all the states which is lacking. This will help the management for uniform enforcement of OSH all over the country. Secretary (L) also stated that

more emphasis may be given on safety and health of workers in the hazardous industries in specific and all other industries in general. Shri K.C. Gupta suggested that in this regard a manual of guidelines for hazardous industries may be prepared on same pattern as in U.K. This manual should include prioritization of hazards, degree of inspections, do's and don'ts and code of best practices etc. This will definitely give a supportive system to upgrade the efficiency of the state factory inspectors.

Secretary(L) suggested that the Central Labour Institute and other labour institutes who are imparting training to the workers and the management should generate their resources by charging fee from the industries and State Governments. CLI may also develop composite training schemes and organize the training in different states or on zonal basis so as to reduce the financial burden on the State Government.

It was identified during discussion that in the Unorganized Sector the major share is that of agricultural workers followed by construction, beedi workers, fish processing, cashew cracking, tobacco grading etc. Shri Chandramouli pointed out that a lot of work has been done for the safety, health and welfare of the agricultural workers and ILO have also drafted a Convention on agricultural workers. It was discussed that in general there is hardly any awareness of health, safety and welfare of the workers in the unorganized sectors and unlike organized sectors, there is hardly any guidelines for best practices, do's and don'ts and proper training institutes. It was emphasized that the institutes imparting training in the above sectors may be identified and strengthened. This sub group was advised to prepare a detailed paper on the subject and the role Central Government can play to upgrade the skill of the workers and to ensure minimum standards of OSH.

While concluding Secretary(L) again emphasized that the sub working groups may study the existing occupational safety and health standards in the various sectors, identify the gaps with respect to the existing rules and regulations, ways and means to strengthen the existing system to ensure minimum OSH standards. It was decided that the next meeting of the Working Group would be held on 10th July, 2001 during which each of the groups would make their presentation.

**MINUTES OF THE MEETING OF THE WORKING GROUP ON
OCCUPATIONAL SAFETY AND HEALTH (OSH) HELD ON 10.7.2001
UNDER THE CHAIRMANSHIP OF SECRETARY (LABOUR).**

Secretary (L) while welcoming the Members emphasized that their paper should focus on the terms of reference given by the Planning Commission. Shri K. Chandramouli briefly explained the decisions taken in the last meeting held on 4.6.2001 and invited Shri A.K. Rudra to present his paper on Mines Safety.

Shri Rudra briefly explained about the DGMS organization and the existing plan schemes as well as the two new schemes proposed to be introduced in the 10th Plan. While discussing the gaps between the existing system, it was highlighted that there is inadequacy of Inspection Officers, absence of external auditing specifically in the selected thrust area, problem due to grant of lease by the State Government to the small mines resulting in health and safety problem as well as hazards due to dust. Shri Sayed also pointed out that there are about 30% injuries in the stone mines resulting in loss of man hours and production of several crores of rupees. In these mines, the workers are generally suffering from respiratory diseases and silicosis for which no treatment is available. Although preventive actions are taken like separation of dust, statutory medical examination of the miners but evaluation of these reports are not properly done and data is not analysed. Chairman considered that DG, Mines should come out with new plan schemes for the miners suffering from silicosis and also means to prevent silicosis in the mines. It was also emphasized that they should focus on the working standards to be imposed in the stone minings and new techniques to reduce the dust may be adopted such as water spraying. The Trade Union and worker should also be activated by creating awareness to prevent the miners from suffering on account of this disease.

As regard small mines, it was suggested that standard guidelines and code of best practices for stone mining may be formulated and given to the State Government to make it a part of the lease so that the dust level is reduced within permissible limit. Stringent actions should be taken by the State Government as well as DGMS in case the guidelines are not followed and the penalty in such cases may be enhanced to the extent that the lease may be cancelled. It was also proposed that DGMS should arrange training for the administrators granting these leases so that they may take due care while awarding lease in their states to prevent occupational diseases. DGMS was also told to have better liaison with the local doctors and ESI in such areas to collect details about the occupational diseases. It was suggested that a Mines Safety and Health Academy may be set up as an autonomous institution for sustaining and generating its own resources preferably by strengthening the existing institution and by providing one time financial assistance through the Govt. Although One time assistance may be given by the Government to start this institute

Thereafter Shri Saxena made presentation regarding Ports and Industries and discussed the existing legislation, its weaknesses, existing plan schemes its justification

and the proposed plan schemes to strengthen the OSH in factories and ports. Chairman advised DGFASLI to devise standard single format for filing cases under the Factories Act and also to create a data base to facilitate future planning. It was also advised that training of the factory inspectors, creation of OSH awareness among workers, specific hazard based survey and Manual on inspection procedure and norms should also be included. The specific job which DGFASLI is not in a position to undertake may be entrusted to the accredited private bodies or NGOs.

Thereafter Shri K. Chandramouli, Joint Secretary made presentation regarding the Unorganised sectors where actually no work has been done in the area of Occupational Health and Safety. To start with, it was decided to take up the sectors like Agriculture, Construction, Beedi workers, Home Work, Shops and Establishments and Eating Places. These sectors cover majority of the workers suffering due to occupational hazards. It was explained that in order to start with we should have a national policy on Occupational Safety and Health, general legislation on OSH, enforcement strategies, training and awareness campaigns. It was suggested that some schemes may be prepared to implement these programmes.

While concluding the meeting, the Chairman emphasized that the report should focus on the existing set up of the organization, important works being done by these organizations, weakness of the existing system and the gap areas, various options to fill up the gaps, existing schemes and its justification to continue new schemes proposed to be introduced to strengthen OSH. The Chairman also suggested that more emphasis may be laid on creating awareness among the workers for Occupational Safety and Health by generating the resources by charging the fees and by involving the industry and should not be dependent upon the Government. The Chairman also suggested that the new schemes should be based on the detailed analysis to take care of the gap or based on low cost solutions with minimum burden on the exchequer by utilizing the existing facilities/institutions. To organize the various activities, funds may be given to the expert organizations for specific studies. Chairman advised that the final paper for 10th Plan may be prepared by each sub-group based on today's discussion.

**MINUTES OF THE MEETING OF THE WORKING GROUP ON
OCCUPATIONAL SAFETY AND HEALTH (OSH) HELD ON 1.08.2001
UNDER THE CHAIRMANSHIP OF SECRETARY (LABOUR).**

While welcoming the Members, Secretary(L) appreciated the efforts made by the three sub-groups in preparing the report on Occupational Safety and Health in the field of mining, factories, ports and unorganized sector. However, he emphasized that the Occupational Safety and Health are essential milestones for the Indian economy and have a definite role to play to safeguard the health and safety of large segment of workers and the Government do not want to leave it to the market forces. The sub groups were advised to evolve the ways and means to improve safety and health of the workers by involving owners, management, third party auditing, enhancing competence of enforcement agencies, by preparing industry based do's and don'ts and code of best practices. It was also emphasized that low cost solution may be preferred and the concept of "User Pays" should be introduced for the services rendered.

JS(KCM) explained the major decisions taken in the last meeting to formulate the report on OSH by the sub groups. There-after the Chairmen of the three sub groups explained the main features of their report. After detailed deliberation on the presentation made by each of the group, the following points emerged to be taken care of while preparing the final report:-

1. Although the responsibility of OSH for workers has been assigned to Ministry of Labour as per Allocation of Business Rules, but, safety and health of the workers is being looked into by the respective Ministries such as Ministry of Coal, Ministry of Mines, Ministry of Environment & Forests and Ministry of Health etc. In order to have proper coordination and to eliminate the duplication of activities, a core group on OSH at workplace may be constituted under the Ministry of Labour for inter-ministerial coordination.
2. Due to proliferation and increasing severity of hazards in different walks of economic activity and Governments declared objective to keep pace with international trends, it is appropriate that a 'National Policy' on OSH is formulated and declared by the Government.
3. There being a large body of OSH legislation, fragmented and developed in a piecemeal manner resulting in duplication in some areas and gaps in others. There is no single unified legislation which can take care even of basic responsibilities for the OSH in all the sectors as is the practice adopted by most of the developed countries and many of the developing countries recently. In order to eliminate the multiplicity of enforcement agencies and to have proper co-ordination among the enforcement agencies, a General (Umbrella) legislation on OSH may be enacted.

4. DGFASLI suggested that a National Board on Occupational Safety and Health may be created to deal with the matters of OSH and desired that CLI and RLIs should be made more autonomous. Secretary (L) was of the view that this may be considered provided there is no creation of post and infrastructure. However, representative of the NSC was of the view that a National Board will get automatically constituted under the General Legislation on Occupational Safety and Health. It was however, impressed upon that an independent national level accreditation agency of eminent professionals may be set up for the purpose of external auditing.
5. To enhance the competence of the enforcement agencies and industry, training programmes may be arranged through the existing government agencies with the assistance of NGOs. The existing training institutes/laboratories may be strengthened.
6. DGFASLI should prepare model guidelines on health and safety for the minor and inter mediate ports. State Government may be advised to introduce these model guidelines for Occupational Safety and Health of the port workers.
7. The problems relating to OSH in the small mines specifically stone mines in the Rajasthan were discussed at length and it was considered that the State Government while contracting lease for the small mines should include as a part of the lease document, safe work procedures, best practices, do's and don'ts, cancellation of lease in case of serious violations and inspection procedure to ensure implementation of relevant statutes in order to improve safety and health conditions of the workers employed therein. DGMS in collaboration with NIOH may take demonstration of models of the best practices in small mines aimed at generating awareness. ESI involvement may also be considered to mitigate health problems in small mines. With the present strength of enforcement agency it is not possible to undertake regular inspection of the mines registered with DGMS, therefore, it was considered that inspection of small mines may be delegated to the State Governments and the Mines Act may be amended accordingly.
8. The syllabus of Engineering and Medical Courses at College/University level should be modified to include Occupational Safety and Health as compulsory subject. The Factories Act may be amended to update the list of industries involving hazardous processes and list of notifiable diseases.
9. In order to achieve strategic output at the national level for strengthening the OSH education and training and improving their quality, it was considered that the new plan schemes for the industry sector should include:
 - a) Development of Model Guidelines for Approval of Training Centers/Institutes by the CIFs as required under the Factories Act.

- b) Development of Model Curricula and Manuals of Training Courses for key category of workers (such as those employed in hazardous processes and dangerous operations).
 - c) Development of Educational Modules on OSH for inclusion in the syllabi of the Engineering College.
10. It was also considered that in the unorganized sector in addition to the six sectors already identified, waste handling may also be included. In the case of unorganized sector, the critical hazards involved are to be identified since no work has been done in this area uptill now, therefore, the help of expert institutions may be availed by setting up a task group to identify these hazards and to launch awareness campaign.
11. The report should also include the OSH relating to implementation of Explosive Act and Boiler Act etc.

Thereafter, Secretary(L) explained the manner in which the report is to be prepared and a Drafting Committee was constituted to accomplish this job.

Thereafter the meeting ended with a vote of thanks to the Chair.

ANNEXURE – III

STATISTICS OF ACCIDENTS IN COAL MINES

Trend of accidents and rates in Coal mines (1951-2000)								
Year	No. of Fatal Acc.	No. of Ser. Acc.	No. Killed	No. Injured	D. Rate/ 1000 Pers.	S. Rate/ 1000 Pers.	D. Rate/ Mill. Tn.	S. Rate/ Mill. Tn.
1951	278	1893	319	1931	0.91	5.69	9.3	57.2
1961	222	3515	268	3569	0.65	8.77	4.81	64.71
1971	199	1460	231	1542	0.6	4.03	3.05	20.39
1981	165	1151	184	1213	0.36	2.36	1.45	9.53
1991	138	803	143	854	0.26	1.54	0.6	3.59
1992	165	810	183	894	0.33	1.62	0.73	3.58
1993	156	854	176	903	0.32	1.65	0.68	3.46
1994	156	717	241	775	0.46	1.59	0.92	2.97
1995	137	757	219	813	0.43	1.58	0.77	3.15
1996	143	607	159	644	0.31	1.25	0.55	2.95
1999	127	537	138	593	0.28	1.21	0.43	1.89
2000	107	396	134	441	0.27	0.90	0.42	-

- **Year 2000 figures are provisional**

STATISTICS OF ACCIDENTS IN NON-COAL MINES

Trend of accidents and rates in Non-Coal mines (1951-2000)						
Year	No. of Fatal Acc.	No. of Ser. Acc.	No. Killed	No. Injured	D. Rate/ 1000 Pers.	S. Rate/ 1000 Pers.
1951	81	596	106	669	0.53	3.23
1961	67	1523	76	1618	0.29	6.04
1971	65	784	73	804	0.29	3.24
1981	63	808	70	833	0.3	3.53
1991	84	291	102	322	0.44	1.37
1992	68	282	78	309	0.33	1.29
1993	58	315	73	330	0.31	1.42
1994	57	225	80	239	0.42	1.25
1995	58	250	66	260	0.35	1.38
1996	63	235	73	255	0.41	1.45
1997	68	246	75	262	0.43	1.49
1998	50	234	58	252	0.36	1.55
1999	59	203	70	225	0.43	1.38
2000*	38	128	41	136	0.25	0.84

TREND IN FATALITIES AND FATALITY RATES IN MINES, 10-YEARLY AVERAGE

Trend in Fatal accidents & Fatality rates per 1000 persons employed (Ten Year Average)								
Year	Coal Mines				Non-Coal Mines			
	Av. No. of acc.	Acc. rate	Av. No. of fatality	Fatality rate	Av. No. of acc.	Acc. rate	Av. No. of fatality	Fatality rate
1901-10	74	0.77	92	0.94	16	0.52	23	0.76
1911-20	138	0.94	176	1.29	29	0.57	37	0.73
1921-30	174	0.99	219	1.24	42	0.54	50	0.66
1931-40	172	0.98	228	1.33	35	0.41	43	0.51
1941-50	236	0.87	273	1.01	26	0.24	31	0.29
1951-60	222	0.61	295	0.82	64	0.27	81	0.34
1961-70	202	0.48	260	0.62	72	0.28	85	0.33
1971-80	187	0.46	264	0.55	66	0.27	74	0.30
1981-90	162	0.30	185	0.34	65	0.27	73	0.31
1991-00	139	0.27	169	0.33	64	0.30	75	0.35

ANNEXURE- IV**STATE-WISE INDUSTRIAL INJURIES IN FACTORIES DURING 1994 – 1998**

SL.No .	States/Uts	1994		1995		1996		1997		1998	
		Non-Fatal	Fatal	Non-Fatal	Fatal	Non-Fatal	Fatal	Non-Fatal	Fatal	Non-Fatal	Fatal
1	Andhra Pradesh	4388	100	9812	94	4252	134	4298	199	3649	104
2	Assam	353	6	278	13	206	13	165	8	100	5
3	Bihar	1160	44	1380	51	1287	56	873	32	1018	46
4	Goa	295	4	382	4	243	3	193	4	197	7
5	Gujarat	15489	195	10642	192	11615	200	11824	246	11611	214
6	Haryana	771	28	704	35	468	35	416	34	400	32
7	Himachal Pradesh	319	4	308	5	87	25	52	5	28	12
8	Karnataka	4283	23	4283	23	3552	49	3896	37	3644	68
9	Kerala (A)	1805	10	1805	10	1773	23	1304	13	1356	37
10	Madhya Pradesh	9027	71	8416	83	9620	62	7543	69	7071	53
11	Maharashtra	24046	157	20629	195	17557	180	15120	198	16739	163
12	Orissa	3083	29	3249	42	2267	32	2067	41	1888	20
13	Punjab	788	24	517	34	468	35	416	34	308	28
14	Rajasthan	6190	40	2818	58	1986	64	2698	68	2891	61
15	Tamil Nadu (B)	9218	43	7014	37	7014	37	4063	49	3720	46
16	Tripura	5	0	1	0	2	0	3	0	3	0
17	Chandigarh	30	0			4	0	21	0	13	1
18	Delhi	561	9	495	13	306	18	102	12	183	91
19	Pondichery	1045	3	584	2	723	3	880	6	917	2
	TOTAL:	82856	790	73317	891	63430	969	55934	1055	55736	990

A. Statistics of 1995 repeated for 1994

B. Statistics of 1995 repeated for 1996

ANNEXURE- V**FREQUENCY AND INCIDENCE RATES OF INDUSTRIAL INJURIES IN FACTORIES (STATE-WISE) DURING 1993 TO 1997 (PROVISIONAL)**

Sl. No.	State/Union Territory	1993		1994		1995		1996*		1997*(P)	
		F.R.	I.R.	F.R.	I.R.	F.R.	I.R.	F.R.	I.R.	F.R.	I.R.
1	2	5	6		7		8	9	10	11	12
1.	Andhra Pradesh	1.51 (0.03)	16.03 (0.31)	1.79 (0.04)	10.45 (0.23)	20.92 (0.20)	23.08 (0.22)	1.29 (0.01)	10.40 (1.24)	1.12 (0.03)	6.10 (0.17)
2.	Assam	2.47 (0.09)	6.23 (0.24)	1.58 (0.03)	4.76 (0.08)	1.28 (0.06)	3.73 (0.17)	1.22 (0.07)	3.63 (0.22)	0.92 (0.04)	2.69 (0.12)
3.	Bihar	1.56 (0.03)	4.71 (0.09)	NA	NA	0.94 (0.03)	2.83 (0.10)	0.88 (0.04)	2.61 (0.11)	0.76 (0.04)	2.24 (0.11)
4.	Goa	6.42 (0.05)	19.84 (0.15)	5.01 (0.20)	15.09 (0.59)	5.80 (0.06)	17.06 (0.18)	3.54 (0.04)	10.62 (0.13)	2.99 (0.04)	9.08 (0.12)
5.	Gujarat	14.03 (0.14)	42.93 (0.42)	14.20 (0.18)	43.50 (0.54)	12.62 (0.22)	37.39 (0.66)	13.19 (0.21)	41.75 (0.71)	9.01 (0.18)	27.45 (0.56)
6.	Haryana	2.41 (0.06)	7.75 (0.18)	NA NA	21.82 (0.27)	2.73 (0.13)	6.81 (0.32)	NA	NA	NA	NA
7.	Himachal Pradesh	8.72 (0.05)	28.11 (0.16)	6.40 (0.08)	21.82 (0.27)	4.46 (0.07)	18.68 (0.30)	4.21 (0.16)	13.75 (0.52)	NA	NA
8.	Jammu & Kashmir	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9.	Karnataka	10.27 (0.08)	31.13 (0.24)	NA	NA	5.77 (0.03)	17.50 (0.09)	6.13 (0.07)	NA	4.14 (0.06)	12.50 (0.17)
10.	Kerala	369.29 (0.96)	18.84 (0.04)	NA	NA	5.70 (0.30)	16.36 (0.09)	NA	NA	2.67 (0.03)	6.36 (0.06)
11.	Madhya Pradesh	17.57 (0.12)	55.80 (0.38)	13.98 (0.11)	45.80 (0.36)	13.17 (0.13)	42.99 (0.43)	13.93 (0.08)	44.46 (0.28)	16.96 (0.15)	57.02 (0.50)
12.	Maharashtra	8.93 (0.04)	28.19 (0.13)	7.83 (0.05)	23.33 (0.15)	6.64 (0.06)	19.99 (0.19)	5.19 (0.05)	15.67 (0.16)	4.50 (0.05)	13.59 (0.16)
13.	Manipur	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14.	Meghalaya	1.81 (-)	5.26 (-)	4.65 (0.54)	13.61 (1.57)	NA	NA	NA	NA	NA	NA

Contd.. ANNEXURE - V

1	2	3	4	5	6	7	8	9	10	11	12
15.	Orissa	8.80 (0.11)	28.62 (0.34)	8.64 (0.08)	28.22 (0.26)	8.67 (0.11)	28.24 (0.36)	5.79 (0.08)	19.11 (0.27)	5.36 (0.10)	17.76 (0.35)
16.	Punjab	3.48 (0.09)	11.12 (0.29)	2.68 (0.08)	8.26 (0.24)	1.62 (0.10)	5.28 (0.33)	2.53 (0.00)	2.99 (0.00)	NA	NA
17.	Rajasthan	10.66 (0.04)	37.63 (0.15)	15.66 (0.10)	50.52 (0.32)	7.47 (0.15)	24.37 (0.49)	5.10 (0.14)	16.61 (0.52)	3.06 (0.13)	13.74 (0.58)
18.	Tamil Nadu	5.01 (0.03)	13.02 (0.08)	3.51 (0.02)	10.17 (0.05)	2.47 (0.01)	7.31 (0.04)	NA	NA	1.37 (0.04)	4.02 (0.05)
19.	Tripura	0.37 (-)	1.01 (-)	0.33 (-)	0.88 (-)	0.12 (0.00)	0.30 (-)	0.14 (0.00)	0.37 (0.00)	0.19 (0.00)	0.47 (0.00)
20.	Uttar Pradesh	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
21.	West Bengal	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
22.	Andaman & Nicobar Island	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
23.	Chandigarh	0.04 (-)	6.22 (-)	1.54 (-)	4.91 (-)	0.20 (0.00)	0.77 (-)	0.16 (0.00)	0.51 (0.00)	1.69 (0.00)	5.01 (0.00)
24.	Dadra Nagar Haveli	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
25.	Delhi	3.39 (0.02)	10.60 (0.06)	2.94 (0.05)	8.67 (0.14)	3.18 (0.08)	9.66 (0.25)	3.38 (0.15)	8.40 (0.47)	0.95 (0.07)	2.96 (0.21)
26.	Daman & Diu	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
27.	Pondicherry	19.44 (0.05)	66.64 (0.17)	14.62 (0.04)	46.24 (0.13)	8.49 (0.03)	27.79 (0.09)	8.10 (0.03)	25.83 (0.11)	7.67 (0.04)	33.16 (0.19)
	Total:	5.85 (0.05)	21.85 (0.18)	15.42 (0.14)	21.71 (0.20)	5.90 (0.07)	16.70 (0.20)	3.93 (0.06)	16.61 (0.38)	3.37 (0.06)	11.32 (0.19)

Note: (i) F.R. = Frequency Rate per lakh man-days worked, (ii) I.R. = Incidence Rate per thousand workers employed, (iii) NA = Not Available, (iv) (-) =

Nil or Negligible, (v) Figures in bracket pertain to “Fatalities” and are included in the total, (vi) * As per the correspondence received from Labour

Bureau, Chandigarh, (vii) P = Provisional,

SOURCE: Labour Bureau, Chandigarh & Shimla.

ANNEXURE-VI

**STATE-WISE DETAILS OF OCCUPATIONAL DISEASES REPORTED IN
FACTORIES - 1998**

Sl.No.	STATES/UTs	Occupational Diseases
1.	Assam	-Nil-
2.	Gujarat	52
3.	Haryana	-Nil-
4.	Himachal Pradesh	-Nil-
5.	Madhya Pradesh	-Nil-
6.	Orissa	1888
7.	Punjab	-Nil-
8.	Rajasthan	-Nil-
9.	West Bengal	23
10.	Chandigarh	-Nil-
11.	Delhi	-Nil-
	TOTAL:	1963

Note : Information in respect of other Stats/Uts is not available.

ANNEXURE- VII

**TREND OF REPORTABLE ACCIDENTS IN THE MAJOR PORTS
FROM 1956 TO 1999-2000**

Year	Total no. of Reportable Accidents	Total no. of Fatal Accidents
1956	4709	22
1966	4576	23
1976	2089	19
1986	1022	13
1991	817	18
1992	773	20
1993	571	21
1994	513	26
1995-96	402	15
1996-97	358	18
1997-98	346	21
1998-99	284	24
1999-2000	250	25

ANNEXURE – VIII

NUMBER OF MEDICAL INSPECTORS OF FACTORIES DURING 1998 (P)

Sl.No .	State/Union	Medical Inspectors of Factories
1	2	7

1.	Andhra Pradesh	-
2.	Assam	2
3.	Bihar	1
4.	Goa	1
5.	Gujarat	2
6.	Haryana	-
7.	Himachal Pradesh	-
8.	Jammu & Kashmir	-
9.	Karnataka	1
10.	Kerala	1
11.	Madhya Pradesh	1
12.	Maharashtra ++	3
13.	Manipur +	-
14.	Meghalaya +	-
15.	Orissa	1
16.	Punjab	3
17.	Rajasthan ++	1
18.	Tamil Nadu	-
19.	Tripura	-
20.	Uttar Pradesh +	2
21.	West Bengal	6
22.	Andaman & Nicobar Island +	-
23.	Chandigarh	-
24.	Dadra Nagar & Haveli +	-
25.	Delhi ++	1
26.	Pondicherry	1

Total:	27
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Note: P = Provisional

Source: (i) Latest information made available DGFASLI by CIFs

(ii) + Figures pertaining to 1996

(iii) ++ Figure pertaining to 1997 as received from Labour Bureau Chandigarh.

.....contd. ANNEXURE – VIII(Contd.)

ANNEX VIII (Contd.)**STATE-WISE CERTIFYING SURGEONS IN THE FACTORIES, 1998**

Sl.N o.	States/Uts	No. of certify surgeon
1.	Andhra Pradesh	Nil
2.	Assam 1998	2
3.	Arnachal Pradesh	NA
4.	Bihar	NA
5.	Goa 1996	Nil
6.	Gujarat	NA
7.	Harayana 1998	1
8.	Himachal Pradesh 1996	1
9.	Jammu & Kashmir	NA
10.	Karnataka	NA
11.	Kerala	NA
12.	Madhya Pradesh	NA
13.	Maharashtra	NA
14.	Manipur	NA
15.	Meghalaya 1999	Nil
16.	Mizoram	NA
17.	Nagaland	NA
18.	Orissa 2000	20
19.	Punjab	NA
20.	Rajasthan 1996	Nil
21.	Sikkim	BA
22.	Tamil Nadu 1998	8
23.	Tripura 1996	* 10
24.	Uttar Pradesh	NA
25.	West Bengal	NA
26.	Andman & Nicobar 2000	* 4
27.	Chandigarh	NA
28.	Dadra, Nagar & Haveli	NA
29.	Diu Daman	NA
30.	Lakshweep	NA
31.	Delhi 1998	1
32.	Pondichery 1998	1
	TOTAL:	48

NOTE: NA = Not Available

* = Notified certified Surgeon.

ANNEXURE – IX

STATE-WISE DETAILS OF INSPECTION OF FACTORIES – 1998

Sl.No .	STATES/UTs	No. of Registered Factories	No. of inspections
1.	Andhra Pradesh	32081	10140
2.	Assam	2209	1077
3.	Bihar	61228	15521
4.	Goa	527	227
5.	Gujarat	25214	17222
6.	Karnataka	9056	6381
7.	Kerala	17124	14819
8.	Madhya Pradesh	14718	9025
9.	Orissa	2477	2227
10.	Punjab	13549	8714
11.	Tamil Nadu	26767	17388
12.	Tripura	1298	675
13.	West Bengal	11441	4427
14.	Chandigarh	539	146
15.	Delhi	6350	1037
	TOTAL:	224578	109026

Note : Information in respect of other States/Uts is not available

ANNEXURE – X

**LEGISLATIONS RELATING TO OCCUPATIONAL SAFETY AND HEALTH IN
INDIA**

1. The Factories Act, 1948 and the State Rules notified thereunder
2. The Dock Workers (Safety, Health & Welfare) Act, 1986 and the Regulations framed thereunder
3. The Mines Act, 1952 and the Rules framed thereunder
4. The Plantation Labour Act, 1951
5. The Shop & Establishments Act
6. The Explosives Act, 1884 and the Rules framed thereunder
7. The Petroleum Act, 1934 and the Rules framed thereunder
8. The Insecticides Act, 1968 and the Rules framed thereunder
9. The Indian Electricity Act, 1910 and the Indian Electricity Rules, 1956
10. The Indian Boilers Act, 1923 and the Indian Boilers Regulations
11. The Dangerous Machines (Regulation) Act, 1983
12. The Environment (Protection) Act, 1986 and the Manufacture, Storage & Import of Hazardous Chemicals Rules, 1989 and other Rules framed thereunder
13. The Indian Atomic Energy Act, 1962 and the Factories Rules framed thereunder.