

# Child Labour and Health Hazards



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V.V. Giri National Labour Institute

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**V.V. Giri National Labour Institute**

**ISBN: 978-93-82902-10-2**

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**No. of Copies : 800**

**Year of Publication : 2013**

**This document can be downloaded from the Institute's website at [www.vvgnli.org](http://www.vvgnli.org)**

Opinions expressed in the study are solely of the authors and do not necessarily reflect the views of the Institute.

Printed and Published by V.V. Giri National Labour Institute,  
Sector - 24, NOIDA - 201301, U.P.

Printed at: Chandu Press, D-97, Shakarpur, Delhi -110092

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# Foreword

Child Labour is an evil that impedes physical growth and overall development and well being of children. Engaged in Hazardous occupations at a tender age children are at a great risk of loss of life and limb. Hazardous work is defined by Article 3 (d) of ILO Convention No. 182 on the worst forms of child labour, which says that no child under the age of 18 years should be employed in “Work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children.” Though the issues relating to child labour in the context of magnitude, incidence, trends, patterns, causes, geographical spread, policies and legislation are widely discussed and deliberated, the effect of child labour on the health of the child has not received adequate attention. The grim reality is that children across the globe work in sub-human and life threatening conditions and are exposed to situations wherein they are also mentally and morally affected. There is an urgent need to make people aware of such conditions and situations so that concerted and coordinated efforts are mobilized towards ending child labour.

The document titled “Child Labour and Health Hazards” has been prepared with the objective to generate awareness on the dangers faced by children at the workplace through various training and other interventions leading to sensitization of different sections of populace. It covers the agriculture sector, manufacturing sector and the service sector and attempts to highlight working conditions and the associated health hazards and risks for select occupations in these sectors where there is concentration of child labour. Occupations such as the Coal mining where children work in rat holes and suffer risk of death by inundation, or suffocation. In Automobile workshops children are exposed to toxic fumes. In Brick Kilns where children are made to carry excessive loads resulting in muscular pain. Occupational hazards at the ground-level, underground and under water have formed a part of this document.

I congratulate Dr. Helen R. Sekar and her team for their efforts to collect and compile useful information on health hazards of child labour and classifying them under each occupation and providing medical terminologies for better understanding of the health risks. Most of the health hazards mentioned in the document are outcome of a number of empirical studies carried out by Dr. Helen R. Sekar on child labour in various hazardous occupations over a period of time. These studies involved extensive fieldwork undertaken in the areas of concentration of child labour and extensive interaction with medical practitioners.

‘Child Labour and Health Hazards’ has been prepared as a part of the project ‘Establishment of National Knowledge Centre on Child Labour at the V.V. Giri National Labour Institute’ a component of ILO-Convergence Child Labour Project. I have no doubt that this document will be useful for Government Functionaries, NGOs and other Civil Society Organizations, Youth Groups, Local Governments, Trade Unions, Training and Academic Institutions, Labour Activists, Students of Social work, Resident Welfare Associations and all other individuals and groups who are involved in sensitizing different sections of population on the health risks of children who are at work thereby discouraging employment of children.

V.P. Yajurvedi  
Director General



# Automobile Workshops and Garages

## ➔ Work Processes

Cleaning and Polishing Vehicles, Loosening and Tightening Nuts and Bolts, Oiling, Fitting etc.

## ➔ Working Conditions

- Children are made to work for long hours for low wages.
- Unhygienic work place. Children are exposed to Dirt, Grease and Toxic Welding sparks.
- Vulnerable to verbal and physical abuse by employers, adult mechanics, customers and co-workers.



## ➔ Health Hazards

- **Cuts and Bruises**  
During the course of work, children suffer injuries which are ignored due to lack of medical care. Working with toxic materials such as grease and coolants infect their wounds further. Cuts by sharp rusty metal increases the risk of Tetanus.
- **Bacterial Infections**  
Due to lack of personal hygiene and the absence of proper sanitation or potable water, children become susceptible to infectious diseases like Diarrhoea, Cholera and Dysentery.
- **Skin Disorders**  
Mobile Dermatitis and Scabies are common among children working in Automobile Workshops and Garages as they lack personal hygiene and are in direct contact with Toxic Materials.



# Banana Plantation

## ➔ Work Processes

Packaging, Storage, Chemical Treatment, Loading and Transportation.

## ➔ Working Conditions

- Children are exposed to harmful pesticides in the Banana Plantations.
- Children work with sharp cutting tools without any protective gear
- They are made to carry excessive loads
- Absence of Toilet and sanitation facilities in the Plantation.

## ➔ Health Hazard

- Headache, Vomiting and Nausea due to Pesticide Exposure  
Frequent Exposure to Pesticide causes Migraines. Certain chemicals in the pesticides cause damage to the nervous system, which is often permanent.
- Accidents  
Children have to attach harnesses to themselves, hook themselves to pulleys on cables from which banana stalks are hung, and use this pulley system to drag banana-laden stalks over a kilometer distance from the fields to the packing plants five or six times a day. At times, the iron pulleys become loose and fall causing serious injuries.
- Fatigue and Aching Bones  
Carrying out different work processes which are tedious in nature for hours together with little or no rest causes fatigue and severe body pain.
- Cuts and Bruises  
Children are prone to get injuries using sharp tools such as knives, machetes, and short curved blades while at work in Banana Plantations.



Photo: [http://www.sustainabledish.com/wpcontent/uploads/2012/07/44212347\\_bananas\\_afp416.jpg](http://www.sustainabledish.com/wpcontent/uploads/2012/07/44212347_bananas_afp416.jpg)

# Brassware Industry

## ➔ Processes

*Dhalai* (Rotating the cycle wheel that fans the furnace), *Chhilai* (scrapping), *Chitai and Ulchhai* (Engraving and Ornamentation), *Jhalai* (Welding), *Ragdai* (Washing and Polishing), *Moti* (stone grafting), *Rangai* (Coloring) and *Jali* (Perforating).

## ➔ Working Conditions

- In the absence of exhaust fans or chimneys, children work in an environment filled with toxic fumes, dangerous and corrosive chemicals. The temperatures is as high as 1100 Degrees Celsius in the moulding furnaces
- Children work without any protective gear and handle corrosive acids by hand during processes such as electroplating and Lacquering.
- Absence of potable Drinking water or Sanitation facilities.

## ➔ Health Hazards

- **Burns**  
In the casting process the child has to stand in front of the furnace with a temperature of 1100 Celsius and manually lift the crucible of molten brass and pour it into the moulds. During this process the child is at a high risk of severe burn injuries and skin craters.
- **Vision Impairment**  
Chemicals used in the casting process such as Isocyanates, Formaldehyde and Tertiary Amines such as Dimethylamine cause Itchy, Watery Eyes and Hazy or blurred (Blue Green) Vision.
- **Toxicity**  
The metal fumes produced by the Plasma Torch are toxic in nature and cause toxicity and Metal Fever in children. In addition, a considerable amount of Ozone, Nitrogen Oxide and Ultra Violet radiation is emitted.
- **Respiratory Disorders**  
In the Polishing process items are washed in acid and then dried during which small amounts of acid particles are inhaled and over a period of time their continuous accumulation leads to diseases such as Asthma, Chronic Bronchitis and Tuberculosis.
- **Orthopedic Disorders**  
Children sit for prolonged periods of time with bent knees and virtually sit on their toes for hours together. This posture restricts blood circulation and causes pain in legs and joints. As a result disorders such as Ankylosis, Spondilitis, and permanent Spinal Deformities are common among such children.

- **Skin Diseases**

In the Electroplating process articles are manually immersed in a solution of Potassium Cyanide and Silver Nitrate while an electric current is passed through. During this process, children are at a risk of Contact Dermatitis, Chemical Burns and a risk of Skin cancer in the long run.

- **Malnutrition and Fatigue**

Children work for long hours in conditions of extreme heat and toxicity without adequate food or clean drinking water with little or no rest. These factors together cause severe Fatigue and Malnutrition and adversely affects the overall well-being of the child.

# Brick Kilns

## ➔ Processes

Clay-mixing, Brick-making, Pre-heating, Burning, Cooling, Stacking, Drying, Loading and Unloading

## ➔ Working Conditions

- Children are exposed to silicate, lead and carbon monoxide; lift heavy loads, work for long hours with constant exposure to solar radiation.
- Children work in conditions of extreme heat and dust and are surrounded by ash and fumes.
- The terrain of the Brick-Kiln is usually uneven and children are made to carry excessive loads and walk for long distances for drying.

## ➔ Health Hazards

- **Burns**  
Children work in close proximity of furnaces and suffer the risk of sustaining burn injuries ranging from mild to severe. These burns usually get infected due to unhygienic conditions prevalent at the site.
- **Poisoning**  
Carbon Monoxide fumes are inhaled by the children working in the brick furnaces which cause Carbon Monoxide poisoning. The common symptoms of Carbon Monoxide poisoning are headache, nausea, malaise, fatigue, light-headedness, depression, confusion and memory loss. Chronic carbon monoxide exposure might increase the risk of developing atherosclerosis, a condition in which an artery wall thickens as a result of the accumulation of fatty materials such as cholesterol and triglyceride.
- **Other Ailments**  
Children working in brick factories tend to suffer mostly from watery eyes, itching in eyes because of smoke and flying ashes. Other health problems reported are stomach ache.
- **Accidents**  
Injuries are also common among these children due to bricks falling on, being cut with bricks while loading/unloading or carrying them, and cutting foot by sharp objects. Minor burn is also common due to unloading bricks while they are hot.



# Carpet-Weaving

## ➔ Processes

Making balls from wool, knotting and cutting, packing the knots in right position, bleaching, drying, shearing, and removing unwanted material from the carpet.

## ➔ Working Conditions

- Children work for long hours in workplace with poor ventilation, extremely congested and with low illumination.
- The work is tediously repetitive in nature wherein the eyes and hands need to be completely synchronized.

## ➔ Health Hazards

- **Back Problems**

Weaving is done sitting on a wooden plank continuously in a crouched position which leads to deformities in the development of the spine and can cause severe lower back problems and increase the risk of arthritis and affects the development of joints.

- **Respiratory Problems**

The workers sit in an ill-ventilated room and the wool fluff from the carpets is inhaled by them which cause serious respiratory diseases like Asthma, Bronchitis, Chronic Cough, Tuberculosis and Sleep Apnea.

- **Allergies**

Allergic reactions to treated wool are a common problem among children in the Carpet Industry.

- **Cuts and Bruises**

Knots in threads have to be cut by Sharp curved Knives increasing the risk of cuts ranging from mild to severe.

- **Chemical Burns**

In the Mashing process, certain chemicals and acids are used which affect the tender skin of the children adversely.



Photos:NRCCCL, VVGNI



# Child Domestic Workers

## ➔ Processes

Sweeping, Mopping, Washing Utensils, Taking care of infants, Outdoor Chores, Gardening, Washing Cars, Cooking, taking care of pets and any other household-related activities.

## ➔ Working Conditions

- Children are made to work for long hours with low wages or any other form of compensation.
- Children are treated like second class citizens and sometime face physical, verbal and/ or sexual abuse.
- Child Domestic workers are poorly fed and usually stay in unhygienic conditions. Children are given tasks that are almost impossible considering their age such as waking up at dawn and cooking for the entire family and then wash the cars and clean the entire house.
- Girl Children who are employed as domestics are at the risk of verbal, physical and sexual abuse. Employers are seldom sensitive to the special needs of the girl child.

## ➔ Health Hazards

- **Fatigue and exhaustion**  
Due to the informal nature of Domestic Work, the hours of work are not specified and children are made to work for long hours a day with little sleep. This causes extreme Fatigue, Exhaustion and Dehydration.
- **Cuts and Burns**  
One of the main tasks of Child Domestic Workers is to cook or help in cooking food. Children suffer cuts and bruises while cutting vegetables or get burns while handling hot utensils. The consequences are worse when children are made to carry out these activities when they are extremely tired, weary, and Fatigue.
- **Psychological Impairment**  
Child Domestic workers are at the mercy of the employers and have no free will which make them anxious and frightened individuals when they grow up. Ill-treatment meted out by the Employers severely damages their confidence and their overall Psychological and Social Development.
- **Malnutrition**  
Children working as Domestic Help are usually over-worked and under-fed. Malnutrition severely affects the physical and mental growth of the child and also overall well-being. This is especially a serious concern if the Child is in its pre-pubertal years.
- **Verbal and Physical Abuse**  
Child Domestic workers are often treated as just another property of the household and are shown no love or concern or sensitivity to their feelings. When these children perform well they

are rarely rewarded. When they fail to comply with an order or complete a task they are severely reprimanded.

- **Sexual Abuse**

Child Domestic workers are mostly single migrants far away from their home and family. They are required to reside in the employer's premises. This in particular, exposes girl child domestic workers to the risk of sexual abuse. This risk is heightened in cases where the employers are Alcoholics or addicted.

- **Respiratory Disorders and other Illness**

During the course of Domestic Work, child workers encounter many hazards such as toxic cleaning chemicals which can burn the skin and cause irritation in the eyes of the child. In households where the Employer(s) smoke, children inhale cancerous passive smoke. Inadequate bedding exposes them to mosquito-bites, cold, bronchial asthma, tuberculosis, fever and other diseases.



Photos: <http://www.show.me.uk>

# Children in Armed Conflict

## ➔ **Activities /Work**

Foot Soldiers, Grenadiers, Light artillery firing

## ➔ **Working Conditions**

- These children experience Abduction and are frequently exposed to Extreme Violence and Destruction
- The environment is one of high tension and risk. Explosions and Mine fields surround these children.
- These child soldiers walk for miles carrying heavy gear and are often ill fed.

## ➔ **Health Hazards**

- **Extreme Psychological Damage**  
Children trapped in armed conflict are exposed to blood, gore and violence from a tender impressionable age. This has an adverse effect on the psychology of the children who grow up to become wild, insensitive and extremely violent individuals.
- **Deafness**  
Explosions and constantly being surrounded by gunshots being fired, children experience deafness and other hearing impairments.
- **Mutilation and Death**  
A majority of children in armed conflict end up dying as they are not able to keep up with their adult counterparts and get captured by the enemy and are mutilated and killed.
- **Loss of Limbs**  
Children lose their limbs as a result of mine or grenade explosions or gangrene due to unhygienic living conditions.
- **Depression**  
Frequent exposure to death and destruction cause severe mental disorders in the children such as Anxiety, Depression and overall anti-social behavior.
- **Fatigue and Dehydration**  
Many times children have to walk long distances carrying guns and other heavy gear without food or water.





Photos: <http://www.childreninneed.com>

# Coal Mines (Rat-Hole Mining)

## ➔ Processes

Coal-breaking, Cart-pulling, Coal-cutting, Digging, Extracting, Carrying coal from under-ground to surface, Cleaning and Segregating, Loading and Unloading.

## ➔ Working Conditions

- In illegal coal-mining, Children descend into the coal fields which are several feet in depth using precarious makeshift bamboo ladders.
- In some geographical regions mining of coal is done in 'Rat holes' which are small narrow gaps between rock faces deep under the surface.
- Poor Water Sanitation and No Safety equipment.
- Low lighting, Lack of Oxygen, Dampness and Extreme Heat.

## ➔ Health Hazards

- **Malaria**  
Stagnant water and generally dark and humid conditions in the rat holes is a perfect breeding ground for malaria and dengue causing mosquitoes
- **Diarrhea**  
Absence of potable water and sanitation facilities in and around the mines forces children to consume contaminated water and suffer from diseases such as Diarrhea, Cholera and Jaundice. Lack of proper and timely medical treatment, at times, result in death.
- **Tuberculosis**  
The unregulated working hours and lack of proper food, water, unhygienic working and living conditions lead to general ill-health and prone to Tuberculosis.
- **Chronic Cough**  
The fine coal dust inhaled by the children for prolonged period of time lead to sooty lungs and cause breathing disorders such as Chronic Cough, Bronchitis, Asthma and Sleep Apnea.
- **Skin Diseases**  
Constant handling of rocky coal severely damages the tender skin of the children. The once smooth hands of the child become black rough and scaly. The rocky coal causes small cuts in skin and further infections result in skin diseases such as scabies and psoriasis.
- **Fatal Accidents**  
Children are at a constant risk of severe injuries and death due to the poorly designed entry and exit mechanisms into the mines.



Photo: <http://farm3.staticflickr.com>

# Coal Mining

## ➔ Processes

Surface Mining, Area Mining, Contour Mining, Mountain Top Removal Mining, Underground Mining

## ➔ Working Conditions

- Children work for long hours in unhygienic conditions in hazardous processes involved in mining.
- In processes such as surface and contour mining, children work with high intensity explosives and are at a constant risk of loss of life and limb.
- Children working in any of the processes of mining usually work in hot, humid and ill-ventilated places.

## ➔ Health Hazards

### Area Mining

- In the Area Mining or strip mining process the coal is exposed by removing the overburden (earth) in long cuts or strips. The strips are then drilled and blasted using explosives and the coal is removed.
- Children working in area mining process are in close proximity of high intensity explosives and usually have no protective gear. The rock fragments that are dispersed at the time of explosions may hit them causing serious injury in addition to deafness caused by the noise of the explosion.
- The overburden (earth) is removed using shovels and power tools which are not designed for use by children and they often injure themselves while using these tools. Many trucks and heavy vehicles are used to transport the coal and excess mud and children working at these sites are at a risk of being crushed or severely hurt.
- Strip mining is a dangerous process as it may accidentally expose toxic gases under the surface which may lead to poisoning among children and may also cause respiratory disorders such as Pulmonary Tuberculosis, Sinusitis and Asthma.

### Contour Mining

- The contour mining method consists of removing overburden from the seam in a pattern following the contours along a ridge or around a hillside. This method is most commonly used in areas with rolling and steep terrain and is a very dangerous form of mining.
- Children working in the Contour Mining process may be struck by cranes and draglines that are used to strip away excess earth to expose the coal beneath.
- Contour Mining weakens the structure from where the coal is being extracted and may lead to landslides thus putting children at risk of injury and death.

### Mountaintop Removal Mining

- In this process the mountain tops are removed in order to expose the coal seams underneath.
- Children working in this process are vulnerable to landslides, Death by explosions and being struck by moving objects.
- Mountain top removal mining is carried out on very steep and mountainous terrain. Children may slip and fall from heights or be crushed by falling rocks. There is an additional risk of children being attacked by wild animals.

### Retreat Mining

- Retreat Mining is one of the most dangerous forms of mining as in this process pillars or coal ribs used to hold up the mine roof are extracted; allowing the mine roof to collapse as the mining works back towards the entrance.
- Children working in the retreat mining process not as skilled or alert as their adult counterparts and may not realize when the ceiling is about to collapse and may get crushed to death or get trapped beneath the collapsed mine roof.





# Commercial Fishing and Aquaculture

## ➔ Processes

Farming of Fish, Net-Making and Boat-making, Fish-Harvesting, Segregating, De-scaling, Processing, Marketing

## ➔ Working Conditions

- Children involved in Fishing are out in the Oceans, Seas and Rivers for prolonged period of time during which they have limited or no access to food or clean drinking water.
- Fishing in the Oceans and seas is one of the most dangerous occupations in the world. Accidents occur due to weather conditions, poor judgment during fishing operations and pressure to achieve increased catch.

## ➔ Health Hazards

- **Accidents**  
While out at sea children are prone to a variety of dangers that may lead to serious injuries and even death. Some of the common accidents are falling over board, being struck by lightning during storms, death by capsizing of boat and being struck by an object.
- **Fatigue and Over-exertion**  
Life at sea is tough even for mature seasoned adult fishermen, for children it is excruciating. Children suffer from acute sea sickness and dehydration which when combined with lifting and casting heavy nets can result in extreme Fatigue and over-exertion.
- **Attacks by Marine Life**  
Children, in addition to exertion are at a risk of being attacked or bitten by Carnivorous Marine life such as Sharks and Piranhas. Children may also be stung by poisonous marine life such as the Praying Mantis or Jelly Fish while fishing in shallow waters. Such attacks can be fatal.
- **Diseases and Illnesses specific to Fishermen**  
Diseases typically associated with fishers such as saltwater boils, allergic reactions to cuttlefish and weeds, fish erysipeloid (a bacterial infection also called “fish handler’s disease”), acute tenosynovitis of the wrist (“fisher’s tenosynovitis”) and conjunctivitis.



Photos: [http://www.thejakartapost.com/files/images/sp03-a\\_6.img\\_assist\\_custom-512x341.jpg](http://www.thejakartapost.com/files/images/sp03-a_6.img_assist_custom-512x341.jpg)

# Construction Industry

## ➔ Processes

Digging earth, Preparing Mud and Mortar, Carrying Head Loads of Mud, Mortar and Bricks, Watering Bricks and Newly Plastered Walls, Assisting Adult Workers in Straightening, Cutting and Bending Iron Rods, etc.

## ➔ Working Conditions

- Absence of basic amenities like toilets, bathroom, drinking water, child care facilities at the construction site.
- Exposure to heat, cold, and dust is highly prevalent and children are highly vulnerable to accidents due to falling objects or sharp objects; and musculoskeletal diseases.
- Children work without skill or experience as opposed to their adult counterparts who are seasoned construction workers and thus put themselves at a greater risk of injury, loss of life and limb.

## ➔ Health Hazards

### ● Accidents

Accidents occur at construction sites which include tripping over equipment, Amputations by cutting tools, Falling from heights, Electrocution, Piercing Wounds, injury by falling objects and in some cases Drowning.

### ● Respiratory Disorders

Construction sites are usually extremely dusty and children inhale this dust for prolonged periods of time which increases their risk of respiratory disorders such as Asthma, Bronchitis, Chronic Cough and Sleep Apnea.

### ● Fatigue and Dehydration

Children work for hours together lifting heavy loads and performing other forms of manual labour with little or no rest which causes fatigue. The work carried out by them is tedious in nature which in addition to Fatigue causes aching bones and body pain.

### ● Infections and Water-borne diseases

Construction sites lack proper sanitation and clean drinking water facility and children consume contaminated water which causes diseases such as Cholera, Jaundice and Gastroenteritis.



Photos: [www.flickr.com/construction](http://www.flickr.com/construction)

# Cotton Fields

## ➔ Processes

Sowing, Inter-Row Cultivation, Spraying Pesticides, Cotton-picking, loading and unloading Sacks of Cotton

## ➔ Working Conditions

- Children are exposed to Dangerous Nerve Agents found in Pesticides such as Endosulphan, Monocrotophos, Cypermethrin, and Methomyl for prolonged periods.
- Children are forced to work in unbearable conditions and in some cases stay in filthy, unheated field barracks.

## ➔ Health Hazards

- **Exhaustion**  
Unregulated long working hours
- **Heat Stroke**  
Work is done during the day under scorching sun without adequate water intake leading to dehydration and heat stroke
- **Arthritis and Spinal Problems**  
Children lift loads sometimes twice their body weight. Children carry cotton sacks for long distance to be loaded in vehicles
- **Blurred Vision**  
The white color of the cotton buds reflects sunlight which puts strain on the children's eyes.
- **Respiratory Problems**  
Children inhale the microscopic cotton fibers that cause chronic cough and Acute Respiratory Disorders.
- **Insect Bites and Ticks**  
Cotton Fields are infested with a variety of insects, both poisonous and non-poisonous which pose a threat to the children who work bare feet and are usually scantily clothed due to the extreme heat.
- **Nerve Disorders**  
Pesticides used in cotton farming such as Endosulphan, Monocrotophos, Cypermethrin, and Methomyl are dangerous nerve agents that can cause severe and irreversible damage to children's nervous system leading to mental and physical impairments.
- **Physical and Verbal Abuse**  
Verbal and physical abuse by the employers and co-workers has a serious effect on the confidence and renders the child anxious and depressed.

- **Cuts and Amputations**

Sharp implements used in cotton farming are crude and heavy which are not designed for handling by children. When children use these implements without the skill or required-training, they put themselves at a great risk of cuts, both mild and severe.



Photo: [http://www.worldvision.com.au/Libraries/Child\\_labour\\_in\\_the\\_cotton\\_industry/Cotton\\_industry.jpg](http://www.worldvision.com.au/Libraries/Child_labour_in_the_cotton_industry/Cotton_industry.jpg)



# Diamond Cutting

## ➔ Processes

Cleaning, Bottom Polishing, Facet Polishing, Table Polishing and Top Polishing

## ➔ Working Conditions

- Children work in congested areas in poorly lit and ill ventilated rooms.
- Children work for 7 to 10 hours a day and start as early as 7 o'clock in the morning.

## ➔ Health Hazards

- **Respiratory Disorders**  
Chronic Obstructive Disorder is caused by diamond particles which enter through the nose and affect the child's delicate lungs. The Dust from grinding and polishing diamonds also cause Asthma Chronic Cough and scarring of lung tissue.
- **Cuts and burns**  
Diamonds are one of the hardest and sharpest substances known to mankind. Therefore children are at a risk of friction burns and cuts while grinding and Polishing Diamonds.
- **Joint Pain**  
Children suffer from Joint Pain and lower back disorders due to constantly sitting in a crouching position.

# Match and Fireworks Industry

## ➔ Processes

Frame-Filling, Box Filling, Box Making, Band Rolling, Chemical Dipping, Side painting and Chemical Mixing

## ➔ Working Conditions

- Children are in direct contact with poisonous chemicals and explosive substances.
- They are made to work in dark and dingy work sheds which are congested and have no cross ventilation.
- Children work for hours together in unhygienic and unsafe surroundings.

## ➔ Health Hazards

- Hazards due to Toxic Chemicals

Health of the Children working in the Match and fireworks is affected due to various toxic chemicals like Chlorates and Sulphur. Chlorate salts are highly combustible and are strong oxidising agents. They form explosive mixtures with organic matter, sulphur, sulphides, powdered materials ammonium compounds. Certain materials such as cloth, paper, wood, leather etc. become highly flammable when impregnated by chlorates. Ingestion or inhalation of chlorate dust is equally harmful. It can cause coughing, sore throat, methamoglobinaemia (a bluish skin), faintness, dizziness and anaemia. Sulphur Inhalation of high concentration of sulphur dust has harmful effects on the respiratory system. The acute effects of sulphur inhalations include catarrhal inflammation of nasal mucosae which may lead to hyperplasia with abundant nasal secretion. Tracheobronchitis is a frequent occurrence with dyspnoea, a persistent cough and expectoration which may sometimes be streaked with blood. There may also be irritation of eyes with lacrimation, photophobia, conjunctivitis and blepharconjunctivitis. Cases of damage to the crystalline lens with the formation of opacities and even cataract and focal chorioretinitis have also taken place.

- Skin Disorders

The skin may be subject to erythematous and eczematous lesions and signs of ulceration especially in the case of workers whose hands are in prolonged or repeated contact with powdered sulphur or sulphur compounds. The chronic effects consist mainly of bronchopulmonary disease which, after several years, may be complicated by emphysema and bronchiectasis. The maxillary and frontal sinuses may be affected and asthma is a frequent complication.

- Burns

There is a high risk of fire and explosion in raw materials stores, paste-making, match-head coating and box-filling processes. In box-filling processes, the worker has to gather sticks from each framed scale quickly and put them into a box. Here, the friction of match sticks

quite often leads to fire. Also in the case of labelling, where the worker is required to put labels and bandrolls on filled boxes, even slight friction can lead to fire.

- **Respiratory Disorders**

Children inhale sulphur fumes and gunpowder which settles in their lungs and causes severe respiratory diseases such as Asthma, Tuberculosis and other breathing disorders.

- **Back Problems** Children constantly sit for prolonged periods of time in a crouched position without any rest which causes Arthritis, Spontilitis and other spinal disorders.

- **Fatigue** Due to long hours and the repetitive nature of work Children suffer from extreme Fatigue and Exhaustion.

- **Water-borne Diseases**

The Children usually consume contaminated water as there is no proper sanitation or provision for clean drinking water. This makes them susceptible to water-borne infections such as Cholera, Dysentery and Malaria.



Photos: M.Elamurugan for NRCCL, VVGNI

# Mercury and Artisanal Gold Mining

## ➔ Processes

Digging Shafts, Sifting, Crush and Carry Ore and Underground Work

## ➔ Working Conditions

- Children working in these mines work almost continuously from early morning till late at night, only taking breaks at the verge of collapse.
- There are no proper sanitation facilities or clean drinking water available at the mining site.
- Children are paid very low wages

## ➔ Health Hazards

- **Mercury Poisoning**

One of the biggest hazard of Artisanal Gold Mining is Mercury Poisoning. Mercury is mixed with gold and then the amalgam is removed in order to extract gold. Mercury has dangerous long term and short term effects such as coordination problems (ataxia), tremors, and memory problems. The main cause for this is the exposure to mercury vapors when burning the amalgam to recover the gold.

- **Respiratory Diseases**

Children in mining areas suffer from respiratory diseases, ranging from bronchitis to pneumonia and tuberculosis (TB). In the mining areas, respiratory diseases are partly caused by the dust emanating from artisanal mines during the work process, and can affect child laborers as well as other children living in the vicinity.

- **Musculoskeletal Problems**

Back Pain, Neck Pain, Headaches, or Pains in Their Arms, Hands or Joints. Digging, Pulling, Lifting, and Carrying heavy ore caused such pain.

- **Injuries from Accidents**

Children in mining areas risk injury from sharp tools, flying and falling rock, and frequently collapsing shafts.



Photos:<http://www.hrw.org/sites/default/files/imagecache/crop300x200/media/images/photographs/e12251.JPG>

# Ship-breaking Industry

## ➔ Processes

Cutting of Iron, Feeding of Gas Torch and Cleaning

## ➔ Working Conditions

- Children carry heavy steel plates and other pieces of the ship and load them on to Trucks.
- Children are made to work bare-foot on rusted iron surfaces for long periods of time.
- Children are regularly sick because of the toxic environment in which they have to work.

## ➔ Health Hazards

- **Headache**  
Children work in a high noise environment and are surrounded by sounds of mechanical cutting, grinding, filing and drilling. Prolonged exposure to such noise cause severe headaches and migraines in the child.
- **Chest pain and Cough**  
Fumes generated from cutting metal is inhaled by the children. This causes difficulty in breathing, Chest Pains and other respiratory disorders.
- **Skin Diseases**  
Children work in conditions of extreme heat and are surrounded by sharp metal. They are at a risk of skin cancer due to constant exposure to heat and also infections through open cuts and wounds.
- **Dizziness**  
Extreme heat and lack of drinking water coupled with tedious labour causes fatigue and exhaustion.
- **Skin Infections and Tetanus**  
Cuts and wounds caused by sharp and rusted metal leads to Tetanus and other bacterial infections.
- **Death due to Explosions**  
Gas cutters are used for cutting metal. Children are used as helpers to feed the cutter with gas. Due to lack of proper equipment or protective gear, the gas leaks out and may cause explosions resulting in death of the children.



- **Death by Floor Caving-in**

Old Ships are rust infested and decayed. The floors of the ship are weak and children working on the ships surface get severely injured and may die when the floor of the ships cave in.

- **Nausea**

Toxic gas fumes emitted during cutting and welding cause Nausea and vomiting and overall ill-health.



Photos:<http://theiwt.com/wp-content/uploads/2010/01/Child-labor-2.jpg>

# Tobacco Plantations

## ➔ Processes

Making Ditches, Making Dikes, Clearing Garbage, Stones and Roots, Planting, Seed Removal, Water Collection.

## ➔ Working Conditions

- Children experience hazardous manual labor, physical strain, dangerous environments, and long hours.
- The children carry out a number of tasks such as clearing the land, building tobacco drying sheds, weeding and plucking tobacco.

## ➔ Health Hazards

- **Accidents**  
Accidents mostly result from the use of sharp equipment they use in their work or from sharp objects strewn around the plantation area. Hoes are used to plough and level the land, make ditches or channels, dig wells, dig waste product channels, make planting holes for planting the tobacco seeds, etc. Axes or pickaxes are used to clear the grass and other weeds that grow around the tobacco plant. The needles are used to pierce the leaves for hanging in the drying sheds. There is also the likelihood of being wounded by thorns, wood and *jugil* (hard and sharp splinters of soil).
- **Addiction**  
When cutting and bundling tobacco leaves, nicotine gets absorbed through the child's fingers which leads to addiction to nicotine at a very young age.
- **Insect Bites**  
Children are at a risk of being bitten by poisonous centipedes or snakes, such as cobras. They are also exposed to bloodsucking creatures common to the area such as leeches.
- **Infections**  
The aerial spraying of pesticides also often leads to an influenza infection among child workers and their families, as well as headaches, dizziness and coughing, poisoning and lung diseases.



Photos: <http://www.philja.com/bbs/pds/philphoto/13565985477.jpg>

# Lock Making

## ➔ Processes

Electroplating, Buff Polishing, Drum Polishing, Making Springs, Filing different components of lock

## ➔ Working Conditions

- Children perform dangerous operations like cutting, grinding and buffing in very close and congested spaces thereby increasing the risk of accidents.
- The rooms wherein buffing, polishing and electroplating processes are carried out are poorly ventilated and act as potential gas chambers with toxic chemical vapors present in the room.

## ➔ Health Hazards

### ● Injuries

In galvanic baths there is exposure of chronic acids and its salts as well as nickel compounds. These compounds cause burns, ulceration and eczematization of the skin and mucosa, perforation of the nasal septum etc. Bronchial asthma may also occur. Chromium and nickel are carcinogenic in nature.

### ● Toxicity

Exposure to solution of irritant and toxic chemicals, concentrated acids and alkalis as well as the vapour in the galvanisation process is dangerous for children particularly when the workplace is poorly-ventilated. In addition, there is exposure to dust from work material and gases and vapours of organic solvents used in the cleaning procedure and children are at risk to Electric hazard also.

### ● Allergies

During the mechanical cleaning of the metal pieces, there is exposure for example with polishing and grinding pastes or grinding wheels, metallic or oxide dust. In the case of persons involved in the mechanical processing rheumatic complaints frequently arise owing to the static working posture and often as a result of the additional effect of draught. Furthermore, mechanical injuries to the hands and eyes as well as toxic-irritating or allergic effects on the skin are to be expected.

### ● Poisoning and Skin Problems

In the degreasing of the metal pieces, in part with heated organic solvents (eg. chlorinated hydrocarbons), there is the danger of poisoning through inspiration of vapours, skin contact or





oral intake. Cumulative effects in the body are particularly dangerous. In the case of acute poisoning, primary narcotic effects occur that in the final stage lead to respiratory paralysis. In chronic poisoning central nervous system effects and injuries to the liver are in the foreground. Use of benzene can lead to serious danger especially leukemia.

## ➔ Other Hazards

- In the pickling process the chief danger is corrosive effect of concentrated acids and alkalis on the skin and mucosa.
- After latent periods of several hours' nitrous gases from nitric acid can lead to serious poisoning with bronchitis, pneumonia and pulmonary oedema.
- Dangerous effect of hydrofluoric acid on the skin and the mucosa which often does not make itself felt until hours after the contact and can result in very serious injury.



Photos: NRCL, VGNLI

# Leather and Tanning Industry

## ➔ Processes

Tackling, Folding, Dying of Skin, Pasting, Checking and Cutting

## ➔ Working Conditions

- Children work in extremely unhygienic conditions surrounded by carcasses of dead animals and overall unpleasant working conditions.
- Children work for long hours and perform hard manual labour without food or water or proper sanitation.



## ➔ Health Hazards

- **Respiratory Problems**  
Children work with toxic chemicals such as formaldehyde which when inhaled for prolonged periods of time may cause serious respiratory disorders.
- **Skin Related Problems**  
Children involved with treating the raw hides work with wet or dry salt for long hours which make their fingers cramped and they are at a risk of skin disorders such as dermatitis.
- **Orthopedic problems**  
In the tanning process children work in soaking pits that are 3-4 feet deep and they have to constantly bend and lift the skin out and then soak a fresh batch. This constant bending causes lower back problems and spinal disorders and leads to overall bad posture.
- **Injuries**  
Children get seriously injured while using sharp tools for de-hairing and skinning.

# Ragpicking and Scavenging

## ➔ Processes

Collecting garbage, Sorting, Picking industrial, medical and other harmful wastes



## ➔ Working Conditions

- Children working as scavengers and ragpickers work in the most hazardous and unhygienic conditions imaginable. The little children are mostly knee deep in rotten garbage, rarely wearing footwear or any other form of protection.
- Children spend hours in garbage dumps sifting through waste looking for material that can be scavenged. Children are surrounded by toxic and bio-hazardous waste for long periods of time.
- The children's working conditions dictate their own personal hygiene and thus such children are usually covered in dirt which deteriorates their overall well-being.

## ➔ Health Hazards

- **Carbon Monoxide Poisoning**  
One of the serious hazards of ragpicking and scavenging is carbon monoxide poisoning. Rotting garbage and vegetable and plant waste gives out dangerous carbon monoxide fumes which are inhaled by the children in large quantities. The effects of carbon monoxide poisoning are delirium, hallucinations, dizziness, unsteady gait, confusion, seizures, central nervous system depression, unconsciousness, respiratory arrest and death.
- **Bacterial Infections**  
Children working with medical waste are surrounded by used syringes, sharp needles, empty urine and stool sample containers, blood covered gauze and discarded medicines. These conditions put children at a serious risk of acquiring serious bacterial infections such as Tetanus, Hepatitis A and B, and AIDS if the children have cuts and wounds.
- **Skin Diseases**  
Children are surrounded by filth, human and animal excrement and household waste. They are constantly in direct contact with toxic materials which can cause serious skin ailments such as Contact Dermatitis, Scabies, Sores, Itching, Psoriasis and severe rash.





- **Injuries**

Most of the children go to Dumpsites barefoot or inadequately covered feet. Garbage consists of all kinds of dangerous materials including broken glass, sharp knives, Toothpicks, rusted nails and pins. Children get pierced in their limbs and injured in their body that at times lead to tetanus. Children die without medical treatment or improper medication.

- **Explosions and Fire**

Pressurized gas containers such as empty deodorant cans and mosquito repellants are a part of Garbage. During winters ragpicking children burn garbage to keep them warm. Children get severely burnt and injured when these cans catch fire and explode.



Photos: NRCCCL, VVGNI

# Slaughter Houses

## ➔ Processes

Watching over animals, Cutting Tail Hair, washing and Cleaning animal, Slaughtering, Skinning, Cleaning Intestines of Slaughtered Animals, Chopping, Selling

## ➔ Working Conditions

- Children work in a very terrifying environment surrounded by shrieking animals, carcasses of dead animals, severed heads, blood and animal insides.
- Children work with very sharp knives and instruments used for cutting and skinning.
- The working conditions are extremely unhygienic and are a breeding ground for parasites, bacteria and rodents.

## ➔ Health Hazards

- **Injuries**  
Children working in slaughter houses work with very sharp cutting tools and often injure themselves badly while working with such tools.
- **Psychological effects**  
Children are constantly exposed to the process of killing which frightens them initially but over a period of time they lose their childish innocence and grow up to become hardened violent human beings.
- **Respiratory Disorders**  
Due to the stench of decaying flesh and stagnant blood, children often hold their breath and only take in small amounts of oxygen at a time leading to irregular and shallow breathing patterns. This may develop into asthma, Bronchitis and Sleep Apnea.
- **Viral infections**  
Children working at slaughterhouses are prone to communicable diseases such as swine flu, bird flu and other viral infections.



Photos: NRCCL, VVGNI

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“The child is a soul with a being, a nature and capacities of its own, who must be helped to find them, to grow into their maturity, into a fullness of physical and vital energy and the utmost breadth, depth and height of its emotional, intellectual and spiritual being; otherwise there cannot be a healthy growth of the nation”.

Justice P.N. Bhagwati  
(Former Chief Justice of India)



**V.V. Giri National Labour Institute**