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**Promotion and protection of all human rights, civil,
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including the right to development**

Report of the Special Rapporteur on the adverse effects of the movement and dumping of toxic and dangerous products and wastes on the enjoyment of human rights, Okechukwu Ibeanu*

Addendum

Mission to India**

Summary

At the invitation of the Government, the Special Rapporteur on the adverse effects of the movement and dumping of toxic and dangerous products and wastes on the enjoyment of human rights conducted a country visit to India from 11 to 21 January 2010. The purpose of the mission was to examine the adverse effects that hazardous activities, such as shipbreaking and the recycling of electrical and electronic waste (e-waste), have on the enjoyment of human rights of countless individuals working in these sectors or living close to the places where these activities take place. During the mission, the Special Rapporteur met with a wide range of Government representatives and non-State actors, and visited an e-waste recycling facility in Roorkee, informal small-scale laboratories for the dismantling and recycling of electronic products at Shastri Park in the suburb of the capital, a facility for the treatment, storage and disposal of hazardous wastes in Ankleshwar, and a number of shipbreaking yards in Alang and Mumbai.

The Special Rapporteur welcomes the significant progress the country has made in the area of the management and disposal of hazardous products and wastes. India has developed a comprehensive legal framework to protect human rights and ensure the

* Late submission.

** The summary is being circulated in all official languages. The report itself, contained in the annex to the summary, is being circulated in the language of submission only.

environmentally sound management of hazardous products and wastes throughout their life cycle. With specific regard to shipbreaking, the Special Rapporteur notes with satisfaction the improvement of the health and safety conditions in Alang/Sosiya, as well as the efforts made by the regulatory authority and the industry to improve the health and quality of life of workers and their families. With regard to e-waste, the Special Rapporteur welcomes the various initiatives undertaken by Indian authorities to address the e-waste problem in India, and in particular the elaboration of the draft rules on the environmentally sound management and disposal of e-waste.

Despite the progress made, the Special Rapporteur identifies a number of key challenges. National legislation on waste management and health and safety at work is not effectively implemented, and the current institutional framework appears inadequate to respond to the health and environmental challenges posed by the generation, management, handling, transport and disposal of toxic and dangerous products and wastes. The health and safety situation prevailing at the shipbreaking yards continues to remain critical, especially in Mumbai, where the working conditions and the quality of facilities remain highly inadequate for guaranteeing health and safety at work and an adequate standard of living for those employed in the shipbreaking sector. The Special Rapporteur notes that at present, the existing legal framework is not sufficient to ensure the environmentally sound management and disposal of e-waste and expresses his concerns about the extremely dangerous recovery processes and techniques used in the informal e-waste recycling sector, as well as about the widespread contamination caused by the unsound disposal of e-waste into the environment.

The Special Rapporteur concludes with a series of recommendations aimed to assist the Government in its efforts to promote the effective enjoyment of human rights by those individuals and communities who may be adversely affected by the unsound management and disposal of hazardous products and wastes.

Annex

Report of the Special Rapporteur on the adverse effects of the movement and dumping of toxic and dangerous products and wastes on the enjoyment of human rights on his mission to India (11 to 21 January 2010)

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I. Introduction

1. The Special Rapporteur on the adverse effects of the movement and dumping of toxic and dangerous products and wastes on the enjoyment of human rights conducted a country visit to India from 11 to 21 January 2010. He would like to express his gratitude to the Government of India for the invitation, as well as for the support provided to him throughout the visit. The Special Rapporteur also wishes to thank representatives of the United Nations Development Programme (UNDP) in India for their valuable cooperation and assistance in arranging the agenda for the mission.

2. The purpose of the visit was to examine the progress made, and the difficulties encountered, by the country in implementing its obligations under human rights and environmental law to ensure the sound management and disposal of hazardous products and wastes. In particular, the aim of the mission was to gather first-hand information on the adverse effects that hazardous activities, such as shipbreaking and the recycling of electrical and electronic waste (e-waste), have on the enjoyment of human rights of the countless individuals working in these sectors or living close to the places where these activities take place.

3. During his visit, the Special Rapporteur met with senior representatives of the following: the Ministry of External Affairs; the Ministry of Environment and Forests; the Ministry of Labour and Employment; the Ministry of Steel; the Ministry of Shipping; the Ministry of Agriculture; the Central Pollution Control Board; and the State Pollution Control Boards in Gujarat and Maharashtra. The Special Rapporteur also met representatives of several United Nations specialized agencies, programmes and bodies, representatives of the donor community, academics, and members of civil society organizations, trade unions and the private sector.

4. The Special Rapporteur had the opportunity to visit an e-waste recycling facility in Roorkee, Uttarakhand, and a number of informal small-scale laboratories for the dismantling and recycling of electrical and electronic products at Shastri Park, in the suburbs of Delhi. He also visited a facility for the treatment, storage and disposal of hazardous wastes in Ankleshwar, Gujarat, and a number of shipbreaking yards in Alang/Sosiya, Gujarat, and Mumbai, Maharashtra.

II. Legal and institutional framework

A. International obligations

5. India is a party to a number of international human rights treaties, including the International Covenant on Economic, Social and Cultural Rights and the International Covenant on Civil and Political Rights. Pursuant to these treaties, the country has undertaken an obligation to protect individuals and communities within its jurisdiction by eliminating, or reducing to a minimum, the risks that hazardous products and wastes may pose to the enjoyment of human rights, including the right to life, the right to the enjoyment of the highest attainable standard of physical and mental health, the right to safe and healthy working conditions, the right to food and safe drinking water, the right to adequate housing, the right to information and public participation and other human rights enshrined in the Covenants and the Universal Declaration of Human Rights.

6. India has ratified some multilateral environmental agreements regulating the sound management and disposal of toxic and dangerous products and wastes, including the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and

their Disposal, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade and the Stockholm Convention on Persistent Organic Pollutants.

7. India is a party to the International Convention for the Prevention of Pollution from Ships (1973), as modified by the Protocol of 1978 relating thereto (MARPOL 73/78), but has not ratified other conventions negotiated under the auspices of the International Maritime Organization to regulate pollution from ships, such as the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1972) (the “London Convention”) and its 1996 Protocol.

8. Similarly, India is not a party to several conventions developed under the guidance of the International Labour Organization to protect workers from health and safety hazards associated with dangerous working activities, including the Convention concerning Prevention and Control of Occupational Hazards caused by Carcinogenic Substances and Agents, 1974 (No. 139), the Convention concerning the Protection of Workers against Occupational Hazards in the Working Environment Due to Air Pollution, Noise and Vibration, 1977 (No. 148), the Convention concerning Occupational Safety and Health and the Working Environment, 1981 (No. 155), the Convention concerning Safety in the Use of Asbestos, 1986 (No. 162) and the Convention concerning Safety in the Use of Chemicals at Work, 1990 (No. 170).

9. As in other common-law jurisdictions, international treaties are not self-executing in India. Since the two Covenants have not been incorporated into Indian law, they do not have force of law in India, and cannot be enforced in Indian courts. Some, but not all, the human rights enshrined in the two Covenants have been incorporated in the Constitution or implemented through existing domestic legislation, amendments to existing legislation or new legislation, as appropriate. Furthermore, treaties that have not been incorporated can still have an indirect impact on the interpretation and application of domestic legislation, since statutes should be interpreted in a manner consistent with international law.

B. Constitutional and legislative framework

10. Part III of the Constitution of India incorporates “fundamental rights”, which are justiciable under articles 32 and 226 of the Constitution. They include, among others, equality before the law, prohibition of discrimination, and protection of personal liberty and life. Part IV of the Constitution, which lays down the “directive principles of State policy”, includes some economic and social rights that could not be guaranteed at the time the Constitution was enacted, but were expected to be fulfilled in succeeding years, such as the right to work, the right to just and favourable conditions of work, the right to an adequate standard of living and the right to health. Although they cannot be enforced in national courts, the directive principles are increasingly being used by judges as tools to guide interpretation of fundamental rights, including the right to life protected by article 21 of the Constitution.

11. Environmental protection has been given a constitutional status in India. The Constitution, as originally enacted, did not contain any specific provision to deal with environmental pollution, though article 47 made indirect reference to improvement of public health as one of the primary duties of the State. The Constitution (Forty-second Amendment) Act, 1976, however, incorporated a new article 48-A in the Constitution, according to which the State “shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country”. The Amendment also inserted a new provision in the article 51-A, providing that “it shall be duty of every citizen of India to... protect and improve the natural environment...”.

12. The Supreme Court has contributed significantly to broaden the content of some of the basic rights set out in part III of the Constitution. It has stated that “(the) right to life guaranteed in any civilised society implies the right to food, water, decent environment, education, medical care and shelter”.¹ It has also affirmed that a right to a healthy environment can be derived from a combined reading of articles 48-A and 51-A of the Constitution. According to the Supreme Court, environmental pollution which spoils the atmosphere and thereby affects the life and health of the person has to be regarded as amounting to a violation of article 21 of the Constitution, since a safe and healthy environment represents a necessary precondition for the effective enjoyment of the right to life.²

13. The Protection of Human Rights Act, 1993, provides for the establishment of the National Human Rights Commission, as well as State Human Rights Commissions, as autonomous statutory bodies for the promotion and protection of human rights. It also provides for the creation of Human Rights Courts at the state level for the purpose of providing speedy trial of offences arising out of violations of human rights. It defines human rights as “the rights relating to life, liberty, equality and dignity of the individual guaranteed by the Constitution or embodied in the International Covenants and enforceable by courts in India”.

14. India has developed a number of legislative and regulatory acts for the protection of the environment and natural resources.

15. The Water (Prevention and Control of Pollution) Act, 1974, provides for the prevention and control of water pollution and the maintenance or restoration of wholesomeness of water. As such, all human activities that may adversely affect water quality are covered by the Act. Pollution is defined in a comprehensive way, and includes any contamination or alteration of the physical, chemical or biological properties of water which may, or is likely to, create a nuisance or render such water harmful or injurious to public health and the environment. The Act establishes central and state pollution control boards to perform the functions as laid down under the Act.

16. The purpose of the Air (Prevention and Control of Pollution) Act, 1981, is to prevent, control and abate air pollution. Under the Act, which covers any human activities susceptible to emit air pollutants into the atmosphere, air pollution is defined as the presence in the atmosphere of any solid, liquid or gaseous substance in such concentration as may be or tend to be injurious to human beings or the environment. The existing pollution control boards created under the Water Act were given additional duties to prevent air pollution.

17. The Environment (Protection) Act, 1986, passed in the wake of the Bhopal tragedy, constitutes an “umbrella” legislation to provide a framework for coordination between the central Government and the various central and state authorities established under the Water Act and the Air Act. Pursuant to the Environment Act, a number of notifications, rules and regulations dealing with the sound management and disposal of hazardous products and wastes have been adopted.

18. The objective of the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008, is to control the generation, collection, treatment, transportation, storage and handling of hazardous wastes. Hazardous waste is defined as “any waste which by reason of its physical, chemical, reactive, toxic, flammable, explosive or corrosive characteristics causes danger or is likely to cause danger to health or

¹ *Chameli Singh & Others v. State of Uttar Pradesh*, 1996.

² *Maneka Gandhi v. Union of India*, 1978.

environment". Certain types of hazardous wastes, such as radioactive wastes, biomedical wastes and municipal solid wastes, fall outside the scope of these Rules.

19. The person who has control over the affairs of the factory or the premises is responsible for the safe and environmentally sound handling of hazardous wastes generated in his or her establishment, and must obtain an authorization from the State Pollution Control Board. The Rules establish detailed procedures for recycling, reprocessing and reuse of hazardous wastes and for their import and export. The import of hazardous wastes to India for disposal is not permitted under the Rules, as import can be authorized only for the recycling, recovery or reuse of such wastes. The export of hazardous wastes from India is subject to the prior informed consent of the importing country.

20. The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989, apply to any industrial activity relating to the handling or storage of hazardous chemicals. Industries have to identify the major accident hazards, and are required to take adequate steps to prevent such major accidents and/or limit their consequences to persons and the environment. They are also required to provide workers with information, training and protective equipment necessary to ensure their safety. On-site and off-site emergency plans detailing how major accidents will be dealt with are to be prepared before initiating any activity. In the event a major accident occurs, industries have a duty to inform relevant authorities and provide adequate information to persons living close to the plant on the nature of the accident and the safety measures to be adopted.

21. The Bio-medical Waste (Management and Handling) Rules, 1998, regulate the collection, management, storage, treatment and disposal of biomedical waste, such as human and animal anatomical wastes, items contaminated with blood or body fluids, medicines and chemical wastes. It is the responsibility of the generators of biomedical waste (health-care institutions, hospitals and clinics providing treatment to more than 1,000 patients per month) to segregate, pack, store, transport, treat and dispose of the biomedical waste in an environmentally sound manner. Biomedical waste is to be segregated into containers/bags at the point of generation, and treated and disposed of in appropriate biomedical waste treatment facilities.

22. The Municipal Solid Wastes (Management and Handling) Rules, 2000, apply to any municipal authority responsible for collection, segregation, storage, transportation, processing and disposal of municipal solid wastes. Municipal authorities must set up adequate waste processing and disposal facilities. Municipal solid wastes are to be disposed of through landfills, and in accordance with specifications and standards laid down in the Rules with regard to the protection of ground water, ambient air, leachate quality and compost quality.

23. The Right to Information Act, 2005, provides that all citizens have the right of access to information under the control of public authorities. Public authorities are required to reply as expeditiously as possible, and in any case within 30 days of the receipt of the request. A request for information may be refused only in the circumstances set out in section 8, for example, if the disclosure would prejudicially affect the sovereignty and integrity of the State or endanger the life or physical safety of any person. The Act also requires public authorities to promote timely dissemination of accurate information to the public, train public officers and develop training materials.

C. Institutional framework

24. The Ministry of Environment and Forests is the nodal agency in the administrative structure of the central Government for the protection of the environment and natural resources of India. Under the Environment (Protection) Act, 1986, the Ministry has been

entrusted with the responsibility to set new national standards for the quality of the environment as well as standards for controlling emission and effluent discharges, to regulate industrial locations, to prescribe procedures for managing hazardous substances, to establish safeguards for preventing accidents and to collect and disseminate information regarding environmental pollution. The Ministry is also responsible for the implementation of legislation, policies and programmes relating to the conservation of the country's natural resources and the prevention, control and abatement of pollution.

25. Other ministries are responsible for policymaking and/or for the implementation of legislation and policies in areas of concern to the mandate of the Special Rapporteur. They include: the Ministry of External Affairs, the Ministry of Health and Family Welfare, the Ministry of Labour and Employment, the Ministry of Law and Justice, the Ministry of Chemicals and Fertilizers, the Ministry of Steel, the Ministry of Heavy Industries and Public Enterprises, the Ministry of Mines and the Ministry of Petroleum and Natural Gas.

26. The Central Pollution Control Board (CPCB) is an autonomous organization that has been established to perform the functions laid down in the Water Act, 1974, and has been entrusted with additional powers and responsibilities by the Air Act, 1981. CPCB advises the central Government on any matter concerning prevention and control of water and air pollution and improvement of the quality of air; plans and executes comprehensive nationwide programmes for the prevention and control of water and air pollution; provides technical assistance to, and coordinates the activities of, State Pollution Control Boards/Pollution Control Committees; and organizes trainings and awareness-raising programmes on the prevention, control or abatement of water and air pollution.

27. A number of inter-ministerial commissions have been established to facilitate coordination and cooperation between different ministries and State agencies with responsibilities in the field of environmental protection, public health and hazardous wastes/chemicals management. For example, an inter-ministerial committee comprising representatives of the Ministry of Steel, the Ministry of Labour and Employment, CPCB and representatives of the shipbreaking industry has been established under the leadership of the Ministry of Steel to coordinate efforts aimed at improving the working conditions in the shipbreaking yards.

28. In a recent paper, the Ministry of Environment and Forests proposed to create an autonomous national environment protection authority.³ The agency would be established by law as an independent statutory body with the mandate of monitoring and ensuring compliance with environmental legislation. It would cover such areas as industrial monitoring, water, air and soil pollution, and hazardous substance and waste management. The agency would take over responsibilities for granting environmental clearances, a regulatory function currently discharged by the Ministry of Environment and Forests, and carry out some of the monitoring functions currently attributed to CPCB. The latter would either be absorbed by the new agency or have its institutional structure reviewed to ensure its effective coordination with the new agency.

³ India, "Towards effective environmental governance: proposal for a national environment protection agency (Ministry of Environment and Forests, September 2009).

III. Issues in focus

A. Shipbreaking

29. Shipbreaking is an important industry for India. It represents an important source of raw material supply and provides jobs to tens of thousands of people. The practice is inherently sustainable, given that over 95 per cent of a ship can be recycled: steel is re-rolled and used in construction; machinery and equipment are reused; and oils and fuels are reused or recycled. In principle the recycling of vessels constitutes the best option for ships that have reached the end of their operating life.

30. Nevertheless, shipbreaking also represents one of the most hazardous occupations in the world. During the dismantling process, workers are exposed to a wide range of hazardous workplace activities, such as entry into confined, enclosed or other dangerous atmospheres, paint removal, oil/fuel removal and tank cleaning, which may cause death, permanent or temporary disabilities, and injuries. Furthermore, long-term exposure to toxic and hazardous substances and materials which may be present on ships sent for dismantling, such as asbestos, polychlorinated biphenyls (PCBs), heavy metals in paints, oils and oil sludge, may lead to serious or irreversible work-related illnesses and diseases, including lung diseases, several forms of cancer and asbestos-related illnesses.⁴

31. Thanks to the large intertidal zone areas existing on its coasts, in India ships are dismantled on beaches, a method commonly referred to as “beaching”.⁵ This method of ship dismantling fails to comply with generally accepted norms and standards on environmental protection. Although very little work has been carried out to assess its environmental impact, the dismantling of ships on sandy beaches without any containment other than the hull of the ship itself appears to have caused high levels of contamination of soil, air, and marine and freshwater resources in many South Asian countries, and to have adversely affected the livelihood of local communities surrounding the shipbreaking facilities, which often rely on agriculture and fishing for their subsistence.⁶

1. Overview of the shipbreaking industry

32. Alang/Sosiya is the world’s largest scrapping site for ocean-going vessels. The yards are located on the Gulf of Khambat, 50 kilometres south-east of Bhavnagar, in the State of Gujarat. There are currently 173 plots, which have been developed on the 10-kilometre-long coast. The plots have a breaking capacity of 350 ships a year, about four million tons per annum, and produce about 2.5 million tons of re-rollable steel.

33. The Gujarat Maritime Board (GMB), a semi-public institution running all ports in Gujarat, is the main regulatory authority of the shipbreaking yards of Alang/Sosiya. As a nodal agency, GMB provides links between central and local government agencies, such as the Gujarat Pollution Control Board, the Custom Department, and the Directorate of Industrial Safety and Health, and the shipbreaking industry. As a landlord, GMB leases out a shipbreaking plot to the shipbreakers on a 10-year lease basis, and maintains basic infrastructures.

34. According to figures provided by GMB, 5,052 vessels have been dismantled in Alang since 1982, when the first yards were set up. In the last four years alone, more than

⁴ See the report of the Special Rapporteur on the adverse effects of the movement and dumping of toxic and dangerous products and wastes on the enjoyment of human rights (A/HRC/12/26), paras. 19-22.

⁵ Ibid, para. 16.

⁶ Ibid, paras. 31-36.

784 end-of-life ships arrived in Alang – 248 in 2009. Some 60,000 workers are employed in the yards when the industry works at full force. At the time of the Special Rapporteur's visit, the 128 yards which were operational provided employment to about 30,000 workers. In addition, over 500,000 workers are employed in associated downstream industries, such as re-rolling mills, foundries, scrap-handling yards, local goods stores and other small businesses. On the road to Alang, the Special Rapporteur saw a large number of retailers selling items of every sort recycled from the ships, including engines, boilers, furniture, electronics, first-aid equipment and kitchenware.

35. The scale of operations in Mumbai is much smaller than those in Alang/Sosiya. The 19 plots are located in a waterfront area known as Darukhana, very close to the city. The land belongs to the Mumbai Port Trust, a public sector undertaking under the control of the Ministry of Shipping. The plots are rented out on a very short-term basis, about three to four months. In view of the small scale of shipbreaking activities in Mumbai, the regulatory authority reportedly plays a relatively less active role than its counterpart in Alang/Sosiya,⁷ especially with regard to the enforcement of national legislation on health and safety at work and environmental protection.

36. When working at full capacity, the yards provide employment to about 6,000 workers. The total number of workers directly or indirectly employed in the shipbreaking industry is about 20,000, which include the downstream industries generated by the shipbreaking yards. During the visit of the Special Rapporteur, it was estimated that some 2,500 workers (1,700, according to the industry) were employed in the 17 plots that were operational.

37. Most of the shipbreaking workers at Alang/Sosiya and Mumbai are migrant workers coming from poorer, less industrialized states of the Union, such as Uttar Pradesh, Orissa and Bihar. Many workers go back to their villages for three to four months a year, usually during the monsoon season, to work in agriculture. It is a largely uneducated workforce, relatively young (19-45 years old) and mostly male. The majority of the workforce speaks Hindi, followed by Oriya and Bhojpuri. Most of the workers are either illiterate or have attended primary levels of schooling. A large percentage of workers are married, but only 20 per cent of them live with their families.⁸

2. Legal framework

38. The Special Rapporteur notes that the laws and regulations on the protection of human health and the environment from the threats associated with the unsound management and disposal of hazardous products and wastes, such as the Water Act, 1974, the Air Act, 1981, and the Hazardous Wastes Rules, 2008, apply to shipbreaking activities. General labour laws and health and safety legislation, including the Factories Act, 1948, also apply to this industry.

39. Various authorities have developed regulations and guidelines on the sound management and disposal of end-of-life vessels. The environmental guidelines for shipbreaking industries, adopted in 1997 by CPCB, aim at minimizing the adverse impact of shipbreaking on the surrounding environment. The guidelines provide for the development of a comprehensive environment management plan comprising pollution control measures regarding solid waste, air pollution, water pollution and noise. In 2003, GMB adopted a set of regulations for the safety and welfare of workers and protection of the environment during recycling activity in the shipyard. GMB also issued specific

⁷ International Metalworkers' Federation, *Status of Shipbreaking Workers in India: A Survey* (New Delhi, 2006), p. 6.

⁸ *Ibid.*, pp. 14-18.

regulations concerning the prevention of fire and accidents (2000) and gas free for hot work conditions (2001).

40. The Supreme Court has also contributed to developing the rules and procedures applicable to the shipbreaking industry. In its order of 6 September 2007, the Court identified the procedures to be followed for anchoring, beaching and dismantling end-of-life ships, as well as the agencies responsible for ensuring compliance with these regulations. Insofar as possible, the ship should be properly decontaminated by the ship owner prior to the breaking. Wastes generated during the process should be disposed of in a proper manner, and special care must be taken in the handling of hazardous substances, such as asbestos.

41. The Court also requested that the Government of India formulate a comprehensive code incorporating these recommendations. Until this code is adopted, the recommendations are operative by virtue of the Court order, and officials of GMB, the State Pollution Control Boards, Custom Departments, the National Institute of Occupational Health and, where relevant, the Atomic Energy Regulatory Board, oversee these arrangements.

3. Positive developments

42. The Special Rapporteur wishes to commend GMB and the yard owners in Alang/Sosiya for the progress made in recent years in the improvement of health and safety conditions in the shipbreaking industry. According to information provided by GMB, the number of fatal accidents dropped from 28 in 1998 to zero in 2008, and work-related injuries resulting permanent or temporary disabilities have also decreased significantly. He would also like to express his deep appreciation to national and local trade unions and NGOs for their tireless efforts aimed at improving the working and living conditions of those employed in the yards.

43. The Special Rapporteur is pleased to note that the achievement of this important result is directly related to the development of appropriate training opportunities for workers. The Safety Training and Labour Welfare Institute, established in 2003 in Alang, provides a number of training programmes, seminars and workshop aimed at raising awareness on the risks associated with ship-dismantling activities and on the measures to adopt to minimize such risks. From 2003 to 2009, some 49,000 workers participated in training activities at the Institute.

44. The “basic safety for all” programme is compulsory for all workers in the yards. It lasts for three days, and covers such issues as main hazards on ships, fire prevention, personal protective equipments (PPEs) and first aid. Other regular training programmes organized by the Institute include the cutter men training, a two-day programme organized once a week for workers employed as gas cutters, and the basic firemen training, which is organized for all literate young workers and lasts for two days. Special trainings on such issues as hazardous waste management, safe removal and handling of asbestos and disaster management can also be organized at the request of the industry.

45. The Special Rapporteur also notes with satisfaction that the progressive introduction and use of basic PPEs, such as helmets, gloves and goggles, have also contributed to the significant reduction in the number of serious accidents resulting in death or disabilities. During his visit to Alang/Sosiya, he observed that the vast majority of workers had been provided with PPEs by their employers, and wore them at all times while working. The Special Rapporteur was informed that appropriate PPEs for working in specialized areas, such as respiratory protective equipment for work in conditions where there is a risk of oxygen deficiency, are also generally available.

46. The Special Rapporteur welcomes the efforts made by GMB and the shipbreaking industry to improve the health and quality of life of workers and their families in Alang/Sosiya. Such efforts include the provision of financial support for the setting up of a local Red Cross hospital and a mobile hospital van to provide first aid and emergency treatment, the increased availability of safe drinking water in and outside the yards and the organization of medical camps to provide free medical check-ups and medicines to workers and their families. The Special Rapporteur has also been informed that a full-fledged 30-bed hospital would be operational shortly.

47. The Special Rapporteur also welcomes the progress made with regard to the sound management of hazardous substances and the safe disposal of toxic wastes. Before starting the recycling process, the yard owner should prepare a ship-specific dismantling plan, which is to include information on, inter alia, the hazardous-waste handling and disposal plan, based on the type and amount of materials present on board and in the structure of the ship, the gas-free and fit-for-hot-work certificates, and the identification and marking of all places containing or likely to contain hazardous substances or toxic wastes. The plan should also include specific arrangements for the handling and disposal of asbestos and asbestos-containing materials.

48. GMB has outsourced the collection, transport, treatment and disposal of hazardous wastes to Gujarat Environment Protection Infrastructure Ltd. (GEPIL), a private-sector enterprise authorized by the Gujarat Pollution Control Board. The secured landfill for hazardous wastes was built in 2005 for the environmentally sound disposal of asbestos, glass wool wastes and other hazardous wastes generated during ship dismantling (paint chips, PCB-containing wastes, oily sludge, materials contaminated with oil and chemicals, among others). GEPIL also manages municipal solid wastes generated from the shipbreaking yards. From January 2006 to December 2009, GEPIL handled 7,600 tons of asbestos and glass wool, 4,800 tons of industrial and chemical solid waste and 3,100 tons of municipal solid waste. The enterprise is planning to build a new landfill for the disposal of asbestos and other hazardous/non-hazardous wastes, an incinerator, and mobile facilities for asbestos waste management and oil reception.

49. Lastly, the Special Rapporteur welcomes the conclusion of a Memorandum of Understanding between Japan and the government of Gujarat to upgrade the existing shipbreaking facilities in Alang/Sosiya to international standards. The purpose of the Memorandum of Understanding is to provide technology transfer and financial assistance to assist the government of Gujarat in addressing the adverse impact that shipbreaking activities have on the surrounding environment. It includes the construction and operation of a common hazardous waste removal pre-treatment facility, modernization of the recyclable goods market and development of human resources.⁹

4. Major concerns

50. Notwithstanding these positive developments, the health and safety situation prevailing at the shipbreaking yards continues to remain critical, as witnessed by the 12 fatal accidents that occurred in Alang/Sosiya during the course of 2009, and there are a number of identifiable shortcomings which need to be addressed. The Special Rapporteur is particularly concerned about the quality of infrastructure facilities in Mumbai, which continue to be highly inadequate for guaranteeing health and safety at work and an adequate standard of living for those employed in the shipbreaking sector.

⁹ "Gujarat, Japan ink MOU to upgrade Alang shipyard", Gujarat Money, 7 February 2010. Available from <http://gujaratmoney.com/2010/02/07/gujarat-japan-ink-mou-to-upgrade-alang-shipyard/>.

51. The informal nature of shipbreaking activities hampers the effective implementation of national labour standards aimed at guaranteeing job security and just and favourable conditions of work. There is no written contract of employment. Workers are hired either on a monthly basis or for a specific task on a vessel. They regularly change plots, depending on the arrival of ships and workload. Workers are paid monthly, usually at the daily rate. The average daily rate is 250 rupees a day (about US\$ 5). Working hours are from 8 a.m. to 5 p.m., but reportedly there is a two-hour compulsory overtime every day until 7 p.m. in most yards.¹⁰ Workers can be fired at any time with no prior notice and with no reasonable ground.

52. The right to work is a fundamental right, recognized in several international legal instruments to which India is a party, including the International Covenant on Economic, Social and Cultural Rights. Work as specified in article 6 of the Covenant must be “decent work”, that is, “work that respects the fundamental rights of the human person as well as the rights of workers in terms of conditions of work safety and remuneration”.¹¹ The Special Rapporteur considers that the absence of a written contract of employment, and the possibility of dismissal overnight, are at the core of the vulnerability of shipbreaking workers, and de facto prevent the full and effective enjoyment of the core labour rights enshrined in articles 6, 7 and 8 of the Covenant.

53. Information on the hazards and risks to health and safety relating to the specific work activities, access to training opportunities, regular exercises in emergency prevention, preparedness and response procedures, and proper PPEs constitute essential preconditions for the enjoyment of safe and healthy working conditions, which are a component of the right to just and favourable conditions of work set out in article 7 of the Covenant.

54. With a few exceptions, the vast majority of the workforce in Mumbai do not receive any information on the hazards or risks to health and safety, nor do they receive any training on how to avoid or minimize them. With regard to safety training, the Special Rapporteur is of the view that existing training opportunities in Alang/Sosiya should be improved, considering the magnitude of the risks associated with shipbreaking activities and the hazardous substances workers are potentially exposed to. In Mumbai, workers do not receive any formal training from their employers, which makes them more prone to serious accidents and injuries. As far as PPEs are concerned, the Special Rapporteur regrets that not all the workers in Mumbai receive helmets, gloves and goggles, and that only a fraction of them actually use them during work.

55. Due to the informal nature of working arrangements, workers are not covered by social protection schemes, and do not receive any benefit in case of work-related injuries or diseases. The compulsory insurance that the industry is required to have covers only death and permanent disabilities. In cases of minor accidents, employers usually pay for first aid and immediate medical expenses, but not for long-term medical treatment or for expenses linked to chronic work-related illnesses. Workers do not usually receive any wages or benefits when absent from work on medical grounds.

56. Much more remains to be done to ensure the effective enjoyment of the right to the highest attainable standard of health, as defined in article 12 of the Covenant. The Special Rapporteur observes that this right extends not only to timely and appropriate health care, but also to “the underlying determinants of health, such as access to safe and potable water and adequate sanitation, an adequate supply of safe food, nutrition and

¹⁰ International Metalworkers' Federation, *Status* (see footnote 7 above), p. 8.

¹¹ See Committee on Economic, Social and Cultural Rights, general comment No. 18 (2005) on the right to work, para. 7.

housing, healthy occupational and environmental conditions, and access to health-related education and information”.¹²

57. Health facilities in Alang/Sosiya do not possess sufficient human, technical and financial resources to provide any treatment other than first aid for minor injuries. The nearest hospital equipped to deal with life-threatening conditions is in Bhavnagar, more than 50 kilometres away. The Red Cross hospital in Alang, which the Special Rapporteur visited, can count on only four medical doctors and nine beds to provide health care not only to some 30,000 workers in the yards, but also to the neighbouring villages of Alang (which has a population of about 18,000 people) and Sosiya (4,000 people). In Mumbai the situation is even worse, with no permanent facilities except first aid and ambulance services.

58. The Special Rapporteur notes with concern that most workers, but reportedly also a number of yard owners, are not aware of the serious life-threatening work-related diseases which may result from long-term exposure to toxic and hazardous substances and materials present on end-of-life ships. In particular, it appears that the majority of the workforce and the local population do not know the adverse consequences of prolonged exposure to asbestos dusts and fibres and are not familiar with the precautions that need to be taken to handle asbestos-containing materials.

59. While the Special Rapporteur acknowledges that the existence of slums constitutes a much larger problem in the country, he cannot but note with great concern the extremely poor conditions in which most shipbreaking workers live, especially in Mumbai. The majority of the workforce lives in overcrowded makeshift facilities just outside the yards. Most accommodations lack basic amenities such as kitchens, toilet facilities, electricity and running water.¹³

60. The water and sanitation facilities available in Alang/Sosiya remain grossly inadequate to deal with the consumption, cooking, and personal and domestic hygienic requirements of the 30,000 workers who work and live there. In Mumbai, the situation is even worse, with no safe drinking water available in the yards.

61. The Special Rapporteur is concerned about the availability and the quality of education available for the children of those employed in the yards. There are no schools in Alang/Sosiya, so children have to travel long distances to attend school in nearby villages. The shipbreaking industry has sponsored the construction of four primary schools in the surrounding region and has set up an informal education facility for the children of workers in Alang.¹⁴ In Mumbai, workers have set up an informal education facility for their children with the help of local trade unions.

62. The Special Rapporteur notes that the actual impact of shipbreaking activities on the surrounding environment continues to be debated (A/HRC/12/26, paras. 31-36). GMB and the shipbreaking industry claim that ship dismantling has only a limited adverse impact on the environment. A study commissioned by GMB to a State-owned laboratory found only “low” to “moderate” levels of hazardous substances in soil and sediment samples. However, other sources, including a recent report published by the United Nations Environment Programme (UNEP),¹⁵ found high levels of contamination of coastal soil, sea water and groundwater resources. The Special Rapporteur regrets not having received any

¹² Committee on Economic, Social and Cultural Rights, general comment No. 14 (2000) on the right to the highest attainable standard of health, para. 11.

¹³ International Metalworkers’ Federation, *Status* (see footnote 7 above), p. 4.

¹⁴ See www.sriaindia.com/activities.html.

¹⁵ UNEP, *Marine Litter: A Global Challenge* (2009).

updated scientific data from the regulatory authorities concerned and the State Pollution Control Boards with regard to the actual impact of shipbreaking activities in Alang/Sosiya and Mumbai on environmental media.

63. He also notes with concern that according to information provided by the International Metalworkers' Federation, unscrupulous yards owners at times circumvent the costs associated with the environmentally sound disposal of asbestos and other hazardous wastes generated during the dismantling process by illegally dumping these toxic wastes in neighbouring villages.

B. E-waste

64. The term "e-waste" is generally used to describe obsolete, broken or discarded appliances using electricity, such as computers, mobile phones and household appliances. Electrical and electronic equipment (EEE) are made of a large number of different substances and materials. Metals (including iron, copper, aluminium and gold) account for 60 per cent of e-waste, while plastics account for 20 per cent. E-waste also contains a number of hazardous substances, which can be released in the workplace and in the surrounding environment during the separation and recovery process. Three levels of toxic emissions can be distinguished, namely:

(a) Primary emissions: hazardous substances that are contained in e-waste (for example, lead, mercury, arsenic and PCBs);

(b) Secondary emissions: hazardous reaction products of e-waste substances as a result of improper treatment (for example, dioxins or furans formed by incineration/inappropriate smelting of plastics with halogenated flame retardants);

(c) Tertiary emissions: hazardous substances or reagents that are used during recycling (for example, cyanide or other leaching agents, mercury for gold amalgamation) and that are released because of inappropriate handling and treatment.

65. The adverse effects that these hazardous substances may have on human health and the environment have already been considered in previous reports of the Special Rapporteur.¹⁶

1. E-waste in India: facts and figures

66. UNEP estimates that 20 to 50 million tons of e-waste are generated worldwide on an annual basis. This volume is expected to increase at 3 to 5 per cent a year, that is, at a rate nearly three times faster than the growth in municipal waste streams.¹⁷ In comparison to the European and American markets, the increase in e-waste generation is slower in India, due to the late technological surge in the country and the tendency to use products for longer periods. However, in the first quarter of 2010, India's personal computer sales touched 2.2 million, a growth of 33 per cent from the same period in 2009,¹⁸ and worldwide mobile phone sales increased by 17 per cent, thanks in part to the growth of emerging markets, including India.¹⁹

¹⁶ See for example A/HRC/15/22, paras. 43-44 (lead) and 38-40 (mercury), and A/HRC/12/26, para. 19 (PCBs, polyvinyl chloride and heavy metals).

¹⁷ UNEP, "E-waste: the hidden side of IT equipment's manufacturing and use", Environment Alert Bulletin No. 5 (January 2005), p. 1.

¹⁸ "India's computer sales up 33 per cent in first quarter", *Economic Times*, 23 May 2010.

¹⁹ "Mobile phone sales grows 17 pc in Q1 2010", *Voice of India*, 20 May 2010.

67. The ongoing technological modernization of Indian society has increased the replacement frequency of electronic products, and has in turn led to a dramatic growth in the generation of e-waste. It has been estimated that 330,000 tons of e-waste are generated annually in India. By 2012, India is expected to cross the 800,000-ton mark.²⁰ The generation of e-waste appears to be unevenly distributed, with the west and the south of India generating 65 per cent of this waste. Mumbai alone generates around 19,000 tons of e-waste per annum, and a substantial part of it is sent to recycling markets located in other parts of the country.²¹ The Government, banking and financial institutions and the industrial sector account for some 70 per cent of the e-waste produced.

68. In addition to locally generated e-waste, it appears that an additional 50,000 tons of end-of-life or obsolete EEE, especially computers, are illegally imported from countries where more restrictive legislation makes it more expensive to recycle locally.²² Such countries include the United States of America and European Union members.

69. At present, it appears that only 3 to 5 per cent of e-waste is recycled in authorized recycling facilities. The vast majority of EEE is currently collected, dismantled and processed in the informal sector by some 80,000 workers, including women and children, who earn their livelihood by breaking down old computers and other high-tech devices to recover precious metals such as gold, copper and silver. The work is done largely by hand, using rudimentary techniques. Workers recovering glass by hammering cathode ray tubes or heating PCBs to remove capacitors are a common sight in most workshops dismantling e-waste. Workers do not use any protective gear to guard against hazardous substances released during the breaking of obsolete EEE.

70. The Delhi area is the main hub for informal recycling of e-waste in India, with about 25,000 workers engaged in the various stages of the process. The recycling business is based on a network of collectors, traders and recyclers. Each phase of the process adds value to the materials and creates job opportunities for a great number of people. The e-waste market is not centred in one main area, but is spread around different zones, each handling a specific stage of the process (for example storage, component separation, plastic shredding, acid processing/leaching, open burning and residue dumping).

2. Legal framework

71. So far, India has not adopted any specific environmental laws or regulations on e-waste. Existing laws and regulations on waste management do not contain any direct reference to e-waste nor do they provide any guidance on its sound management and disposal. However, since e-waste, or its constituents, fall under the category of “hazardous” and “non-hazardous waste”, they are covered under the purview of existing legislation, such as the Hazardous Wastes Rules, 2008, and the Municipal Solid Waste Rules, 2000.

72. In 2008, the Ministry of Environment and Forests issued the “Guidelines for the Environmentally Sound Management of E-waste”. Although not legally binding, the Guidelines contain a set of recommendations for all those who handle e-waste, including generators, collectors, transporters, dismantlers, and recyclers, irrespective of their scale of operation, to ensure the environmentally sound management of e-waste. The Guidelines incorporate the notion of extended producer responsibility, an environmental policy

²⁰ Nivi Shrivastava, “E-waste on the rise”, *Asian Age*.

²¹ Toxics Link, *Mumbai: Choking on E-waste: A Study on the Status of E-waste in Mumbai* (2007), p. 12.

²² For example, it has been estimated that recycling a computer in the United States of America costs about US\$ 20 whereas the same operation in India costs US\$ 2. See www.mait.com/admin/press_images/press77-try.htm.

approach in which a producer's responsibility for a product is extended to the post-consumer stage of a product's life cycle, and the reduction of hazardous substances principle, which aims at reducing the use of hazardous substances for which safe substitutes have been found.

73. In May 2010, the Ministry finalized the draft e-waste (management and handling) rules, 2010. The draft rules have been developed in close consultation with civil society and the industry, and are expected to enter into force before the end of 2010. They apply to any person or enterprise involved in the manufacture, sale, purchase and processing of EEE or components. The rules contain detailed provisions on the responsibilities of producers, dealers, collection centres, dismantlers and recyclers of e-waste, and on the procedure to obtain authorization from the concerned State Pollution Control Board to handle e-waste.

3. Positive developments

74. The Special Rapporteur welcomes the efforts made by Indian authorities to strengthen the existing legal and institutional framework for the environmentally sound management, handling and disposal of e-waste. These efforts include the launching of a nationwide awareness-raising campaign on the e-waste problem in India, especially in the large cities, and the creation of a National e-Waste Strategy Group under the leadership of the Ministry of Environment and Forests.

75. The Special Rapporteur notes with satisfaction the steps taken by the Government to prohibit the illegal import of e-waste to India, including appropriate training for custom authorities on the effective implementation of the Hazardous Waste Rules, 2008, and the establishment of an inter-ministerial coordination committee to coordinate the activities of the different central and local government agencies with responsibilities in the field of e-waste.

76. The Special Rapporteur wishes to congratulate the Ministry of Environment and Forests for elaborating the first legally binding instrument devoted to the environmentally sound management and disposal of e-waste. He also welcomes the fact that the draft rules have been made available for public comment on the website of the Ministry.

77. The Special Rapporteur notes with appreciation that in line with the extended producer responsibility principle, producers of EEE are made responsible under the new draft rules to collect the e-waste generated for their end-of-life products and to ensure that such e-waste is channelled through registered dismantlers or recyclers. He also welcomes the fact that, in accordance with the reduction of hazardous substances principle, the rules require producers of EEE to comply, within a period of three years, with the threshold limits for the use of certain hazardous substances as prescribed in schedule III.

78. The Special Rapporteur welcomes the efforts made by the Government to encourage the establishment of e-waste recycling facilities through a Public Private Partnership model. He welcomes, in particular, the establishment in Roorkee of Attero Recycling, the first e-waste recycling facility certified by the Ministry of Environment and Forests to collect, dismantle, segregate, reuse and recycle the various components of obsolete EEE.

4. Major concerns

79. The Special Rapporteur cannot but notice that at present, India does not have any law or regulation dealing specifically with e-waste, and that the existing legal framework is not sufficient to ensure that e-waste is managed and disposed of in such a way to ensure the protection of the human rights of individuals and communities who may be adversely affected by the unsound management and disposal of the hazardous substances contained in obsolete EEE.

80. So far, legislation on waste management has not proved effective in prohibiting the illegal import of e-waste from developed countries. Loopholes in the Hazardous Wastes Rules, 2008, have facilitated the import of obsolete EEE – computers, in particular – as second-hand products just before they reach the end of their operating life (10 years). Illegal import to India of obsolete EEE can also be disguised as a donation or as a sale of scrap metal. Since the United States of America has not ratified the Basel Convention, the import of e-waste from the United States is expressly prohibited by article 4, paragraph 5, of the Convention, according to which a party “shall not permit hazardous wastes or other wastes (...) to be imported from a non-Party”.

81. The Special Rapporteur notes with concern that the new draft rules fail to recognize the reality of e-waste recycling in the country, where at least 95 per cent of e-waste is dismantled and recycled by the informal sector. He considers that the new legislation does not provide sufficient protection for the estimated 80,000 persons working in the informal e-waste recycling sector and their families. The failure to incorporate the informal sector into Government strategies on the sound management and disposal of e-waste constitutes, in the Special Rapporteur’s view, a violation of the obligations undertaken by the State under articles 6, 7 and 11 of the International Covenant on Economic, Social and Cultural Rights.

82. The Special Rapporteur is concerned about the extremely dangerous recovery processes and techniques used in the informal e-waste recycling sector and their adverse effects on the right to health of those employed in small-scale informal workshops. Such health-threatening practices include the physical breaking of hazardous components, open-air incineration and acid leaching to extract gold and copper, and the melting of lead. Most of these activities involve physical dismantling by bare hands and basic tools. Workers do not use any protective gear to prevent exposure to the hazardous substances contained in EEE; indeed, most of them possess very little or no knowledge of the risks associated with the handling of these hazardous substances or the precautions to use to minimize their adverse health effects.

83. The Special Rapporteur is also concerned by the long-lasting and widespread contamination caused by the unsound disposal of e-waste into the environment. Unusable parts of obsolete EEE are usually disposed of in landfills or burned. E-waste disposed in landfills can leach heavy metals and other toxins into the soil and contaminate groundwater resources used for drinking or domestic purposes by local populations. Open-air burning of e-waste can release dioxins and furans – two persistent organic pollutants resulting from the burning of flame retardants found in plastics – into the air. Local communities living close to the areas where e-waste is dismantled and recycled do not appear to be aware of these risks.

IV. Conclusions and recommendations

A. International obligations

84. **The Special Rapporteur recommends that the Government take all appropriate measures to give full effect to international human rights treaties to which India is a party, and notably the International Covenant on Economic, Social and Cultural Rights and the International Covenant on Civil and Political Rights, in domestic law.**

85. **The Special Rapporteur notes that India is not a party to several International Labour Organization conventions on health and safety at work, and calls on the Government to consider ratifying these conventions, in particular the**

Convention concerning Occupational Safety and Health and the Working Environment, 1981 (No. 155) and the Convention concerning Safety in the Use of Chemicals at Work, 1990 (No. 170).

B. Constitutional and legal framework

86. The Special Rapporteur notes with appreciation that India has developed a comprehensive constitutional and legal framework for the promotion and protection of human rights. India is one of the few countries in the world that has included specific provisions on the protection and promotion of a safe and healthy environment in its Constitution.

87. The Special Rapporteur welcomes in particular the significant role played by national courts in strengthening the justiciability of economic, social and cultural rights laid down in part IV of the Constitution. He also notes with satisfaction that the Supreme Court has on a number of occasions recognized the right to a safe and healthy environment as being implicit in the fundamental right to life.

88. India has developed a comprehensive legal framework to ensure the sound management and disposal of hazardous products and wastes. However, the Special Rapporteur notes with concern that this legislation is not effectively implemented. He is also concerned about the insufficient enforcement of existing labour legislation at the federal and the state levels, as well as the lack of awareness among employers on the existing rules and standards.

C. Institutional framework

89. The Special Rapporteur is of the view that the current institutional framework is inadequate for responding to the emerging health and environmental challenges posed by the generation, management, handling, transport and disposal of toxic and dangerous products and wastes. He shares the view expressed by the Supreme Court Monitoring Committee on Management of Hazardous Wastes that institutional failure at different levels has to be regarded as the main cause for weak application of existing laws for pollution control and environmental protection.²³

90. The Special Rapporteur recommends that the role and functions of the central and state government institutions responsible for the implementation and enforcement of national legislation on hazardous substances and toxic waste management be better defined, and that appropriate mechanisms be developed to ensure better coordination and cooperation among these institutions.

Enforcement and monitoring

91. The Special Rapporteur recommends that the Government take all appropriate measures to provide adequate human, technical and financial resources to the Central Pollution Control Board (CPCB) and the State Pollution Control Boards, in order to improve their capacity to effectively enforce, and monitor compliance with, the existing legal framework on hazardous substances and waste management. He also recommends that the Government consider establishing a new

²³ Report of the Supreme Court Monitoring Committee on Management of Hazardous Wastes, vol. I (November 2006), p. 58.

national environment protection authority to carry out some of the functions currently discharged by the Ministry of Environment and Forests and CPCB.

92. The Special Rapporteur further recommends that India adopt all appropriate measures to curb illegal import of hazardous waste. Such measures should include the allocation of adequate human and financial resources to customs authorities, the provision of adequate training opportunities for customs officials and the upgrade of laboratory facilities in the major ports of the country. The country should also strengthen its capacity to prosecute and punish environmental crimes by, inter alia, organizing appropriate training opportunities for judges and prosecutors.

D. Shipbreaking

93. The Special Rapporteur finds that national legislation on health and safety in the workplace and environmental protection has not been properly implemented by the shipbreaking industry or enforced by the Gujarat Maritime Board (GMB), the Mumbai Port Trust (MPT) and the State Pollution Control Boards. He also notes that the Supreme Court order of 6 September 2007 has not been fully complied with by the responsible agencies. He urges the yard owners to comply with their obligations under national legislation, and encourages central and local government authorities, including GMB, MPT, the State Pollution Control Boards and the National Institute of Occupational Health, to enforce relevant legislation and apply the sanctions provided for by the law in case of non-compliance.

94. The Special Rapporteur wishes to stress that the informal nature or the seasonal character of shipbreaking activities, which depend on the demand for recycled steel and on the cost of recycling operations, cannot – and must not – be invoked as a reason to justify the non-implementation of national labour standards. All workers, including semi-skilled and unskilled workers, should be provided with a written contract of employment, which constitutes an essential precondition for ensuring job security and the effective exercise of core labour rights. Such a contract should indicate, at the very least, the job duties, the duration of employment, compensation and benefits, and should be terminated only in the circumstances provided for by the law.

95. Regulatory authorities in Alang/Sosiya and the shipbreaking industry should step up their efforts to improve health and safety in the yards. Such measures should include the provision of appropriate personal protective equipments (PPEs) for those who work in specialized areas, the creation of additional training opportunities and safety workshops, and regular exercises in emergency prevention, preparedness and response procedures. With regard to Mumbai, the Special Rapporteur urges MPT and the shipbreaking industry to adopt all appropriate measures, without further delay, to ensure that all workers in the yards receive and use appropriate PPEs and have access to formal training opportunities.

96. Regulatory authorities and the industry should also organize training opportunities and awareness-raising initiatives to provide workers and the local population with adequate information on the health risks arising from long-term exposure to hazardous substances and materials present on end-of-life ships.

97. The Special Rapporteur recommends that the Government take steps, to the maximum of its available resources, to remove the obstacles that currently prevent those working in the informal economy to have access to social security on an equal basis with other workers. Regulatory authorities in Alang/Sosiya and Mumbai should, in consultation with the shipbreaking industry and workers' associations, consider

developing informal social security schemes to ensure a minimum level of coverage of risks and contingencies for all workers in the yards.

98. The Special Rapporteur urges regulatory authorities in Alang/Sosiya and the industry to allocate additional human, technical and financial resources to existing health facilities in Alang/Sosiya. Since no facilities of a permanent nature, except first-aid and ambulance services, exist in Mumbai, the Special Rapporteur urges MPT and the shipbreaking industry to establish such facilities with no further delay.

99. The Special Rapporteur is seriously concerned at the poor conditions in which most workers live, especially in Mumbai. He calls on GMB and MPT to provide appropriate plots of lands, and to facilitate – with the financial help of the shipbreaking industry – the construction of adequate housing facilities for those who work in the yards. Adequate access to safe drinking water and sanitation facilities should also be provided within and outside the yards. Taking into account that about 20 per cent of workers are accompanied by their families, the Special Rapporteur also calls on the Government of India and regulatory authorities to establish and maintain schools or formal education facilities for the children of those employed in the yards.

100. Finally, the Special Rapporteur recommends that an independent study be carried out to assess the actual and potential adverse effects caused by the discharge of hazardous substances and materials into the natural environment. Such a study should also assess the steps that need to be taken for the gradual phasing out of “beaching” in favour of more environmentally friendly methods of shipbreaking.

E. E-waste

101. The Special Rapporteur calls on the Ministry of Environment and Forests to finalize, as a matter of priority and in close consultation with civil society organizations and the e-waste informal recycling sector, the adoption of the e-waste (management and handling) rules, 2010.

102. The Special Rapporteur also recommends that India develop a national implementation plan to ensure the sound management and disposal of e-waste. Such a plan should identify appropriate incentives to ensure that obsolete electrical and electronic equipment (EEE) be dismantled and recycled only in authorized recycling facilities, and facilitate the integration of the informal sector – which at present recycles at least 95 per cent of e-waste generated or imported into the country – in the new Government policies on the sound management and disposal of e-waste.

103. The Special Rapporteur urges Indian authorities to adopt all appropriate measures to improve health and safety working conditions in small-scale informal workshops. Such measures should include the organization of safety trainings for workers and awareness-raising campaigns on the risks associated with the improper handling and disposal of hazardous substances contained in obsolete EEE, as well as on the precautions to adopt in order to minimize any adverse effects on health and the environment.

104. Lastly, the Special Rapporteur considers that the new draft rules might be ineffective in controlling illegal trade, since they prohibit only the import of EEE in India for charity. He recommends that the current draft be reviewed to include specific provisions to prohibit the import of obsolete EEE – in particular computers – as scrap metal or second-hand products.