



Myanmar

Environmental Health Country Profile

World Health Organization

As of November 18, 2004



1 Development, Environment and Health Status

1.1 Development Pattern of the Country

1.1.1 Maps / geography / demography / urban-rural trends

Myanmar is the largest country in South East Asia with a total land area of 676, 578 kms². It is bounded on the north by China, on the east by Lao PDR and Thailand, on the west by India, Bangladesh and the Bay of Bengal and on the south by the Andaman Sea. The biggest city and capital is Yangon with the second major city Mandalay. It experiences a tropical climate with three distinct seasons: the monsoon from June to October, the cold season from November to February and the hot season from March to May.

In 2003, the estimated population in the country is 53, 224, 000 million with an annual growth rate of 2.02 percent. Approximately 70 percent reside in the rural areas and 30 percent are in urban areas. The densest area is in the Yangon Division where about 390 people live per km², while the least dense is in Chin State, where the population density is only 10 per km². About 32.67 percent of the population is between 1 and 14 years old, and 5.42 percent is 65 years old and above. The average national adult literacy is relatively high at 93.3 percent with a higher percentage among the male population than in the females. Child mortality indicators have been gradually improving in recent years. The infant mortality rate in 2002 was 77 per 1,000 live births while the under-five mortality rate in 2001 was 78 per 1,000 live births.

1.1.2 General economy of the country

Myanmar, like most Asian countries, is primarily an agriculture-based economy. However, efforts have been made by the government to develop the industrial sector and during the last decade, this sector has seen tremendous growth. About 18 industrial zones have been established to support these growing industries.

The country is endowed with rich natural resources such as timber, tin, antimony, zinc, copper, tungsten, lead, coal, limestone, precious stones, natural gas, hydropower, and some petroleum. It is a leading source of jade and gems. Its agricultural products are rice, beans, sesame, groundnuts, sugarcane, hardwood, fish and fish products. The manufacturing industries consist of agricultural processing, knit and woven apparel, wood and wood products, copper, tin, tungsten, iron, construction materials, pharmaceuticals, and fertilizer.

Since the Asian financial crisis, Myanmar's GDP has been increasing steadily. In 2002, at current prices, the annual per capita GDP was \$1,700. Expenditure for health has also risen considerably. In 2001, total health expenditure was 2.1 percent of the GDP. About 13.6 percent of this came from the government, 0.36 percent from social security, 0.54 percent from community contributions, 73.4 percent from private households and 12.1 percent from international assistance.

1.1.3 Development priorities

The State Peace and Development Council (SPDC) laid down the following economic and social objectives. The economic objective identifies development of agriculture as the base and emphasizes the overall development of other sectors of the economy as well as the adoption of a market economy. The social objective is the upliftment of health, fitness and education standards of the entire nation, as well as safeguarding the cultural heritage and national character. The government formed a National Health Committee (NHC) at the highest level chaired by the Prime Minister.

1.1.4 Human Development Index

This is a composite index developed by the United Nations Development Programme (UNDP) based on three indicators: longevity, as measured by life expectancy at birth; educational attainment, as measured by adult literacy and total primary, secondary and tertiary enrolment ratio; and standard of living, as measured by GDP per capita. The Human Development Index (HDI) is an indicator of a country's quality of life. Myanmar is in the medium HDI level with an HDI of 0.55 as of 2002 and is ranked 132 out of 177 countries.

1.2 Existing Service Levels

1.2.1 Proportion of population (national) with existing utilities (water supply, sanitation, solid waste collection, drainage, sewerage, electricity)

In 2003, 78.8 percent of the population had access to safe water while 76.1 percent had adequate excreta disposal facilities. In both instances, a higher percentage is found in the urban areas. Of the total solid waste volume generated, about 60.65 percent were collected in 2004.

1.2.2 Proportion of urban population served by piped water, sewers, electricity, municipal solid waste collection

Only a small percentage of the urban population (about 7.3 percent), is served by sewerage system.

1.2.3 Presence of other basic services such as fire fighting and emergency management (flood, earthquake, chemical emergency, etc.)

The National Poison Control Center was established by the Ministry of Health with the objective of protecting the people and the environment from toxic hazards.

1.2.4 Housing: presence of building regulations, proportion of people living in informal settlements

There are building regulations in place. Building inspections are also being conducted.

1.2.5 Transport related: number of vehicles registered, number of motorcycles registered, rate (number per 100,000 population)

1.2.6 Capacity for monitoring environmental quality (drinking water, water resources, ambient air, noise, radiation, etc)

Several government and private laboratories are equipped to monitor various environmental quality parameters for drinking water and water resources. The Ministry of Health has planned to extend laboratory services to all states and divisions to perform microbiological examination and chemical characterization of water.

1.2.7 Capacity for data collection and processing

There is some capacity within government agencies to collect and process environmental quality data but there is no adequate process for utilization of data for decision making or planning purposes.

1.3 Environmental Quality

1.3.1 Air pollution (percentage of population using solid fuels, proportion of vehicles using diesel and unleaded gasoline, frequency of exceeding national air quality standards)

In 2000, more than 95 percent of the population used solid or biomass fuels for cooking or heating.

1.3.2 Water pollution (frequency of exceeding national water quality standards, drinking water quality standards)

1.3.3 Solid waste (generation of municipal solid waste, proportion of recyclables)

The current solid waste generation rate is 0.53 kg per capita per day. In 2003, it was estimated that 1, 095, 000 tons were generated in terms of annual volume. Of this, six percent were recyclable waste.

1.3.4 Hazardous waste (generation of toxic chemicals, hazardous materials, health-care waste, nuclear waste)

Health-care waste generated from hospitals and health institutions reached 228.125 tons in 2004. There is no information on the hazardous waste generation but since the level of industrialization of Myanmar is still low, it could be assumed that the volume is still limited.

1.4 Public Health Statistics

1.4.1 Ten leading causes of mortality and morbidity

The top ten leading causes of mortality are malaria, respiratory tuberculosis, stroke (not specified as hemorrhage or infarction), other injuries of specified, unspecified and multiple body regions, other diseases of the respiratory system, heart failure, other diseases of liver, septicaemia, toxic effects of substance chiefly non medical as to source, other viral diseases.

The top ten leading causes of mortality are malaria, other injuries of specified, unspecified and multiple body regions, single spontaneous delivery, diarrhea and gastroenteritis of presumed infectious origin, other complications of pregnancy and delivery, other pregnancies with abortive outcome, other diseases of the respiratory system, respiratory tuberculosis, toxic effects of substance chiefly non medical as to source and pneumonia.

1.4.2 Diseases associated with agricultural and irrigation development (proportion of undernourished people, schistosomiasis, pesticide poisoning)

In 2003, there were about 413 cases of pesticide poisoning. This number however could be higher due to unreported cases. Nutritional problems are still present particularly among children. As of 2000, it was reported that six percent of the population was undernourished. About 31.8 percent of children under the age of five were underweight in 2003.

1.4.3 Respiratory diseases related to outdoor air pollution from energy, transport and industry sectors

1.4.4 Traffic crashes (mortality due to traffic accidents, rate: deaths /100,000 population, injuries due to traffic accidents, rate: injuries/100,000 population)

1.4.5 Diseases relating to poor housing (including pulmonary diseases, tuberculosis)

Tuberculosis and pneumonia are two of the leading causes of morbidity in the country. According to recent estimates, about 1.5 percent of the population become infected with tuberculosis every year. Mainly affected are those between 15 and 54 years old. There were 77,231 cases of tuberculosis in 2003. About 2,491 resulted in death.

1.4.6 Water supply and sanitation-related diseases (such as diarrheal diseases, hepatitis, cholera, typhoid)

Due to inadequate facilities, the number illnesses due to lack of water supply and sanitation has been increasing in years. In 2003, there were 45,095 reported cases of diarrhea, 4,255 cases of hepatitis, 84 cases of cholera, and 3,162 cases of typhoid fever. There is a direct relationship between the incidence of diarrhea, parasitic diseases and malnutrition and the status of safe water, hygiene practices and sanitation in households. All of these water-borne diseases are preventable with proper hygiene, clean and adequate water and sanitary facilities.

1.4.7 Vector-borne diseases (such as malaria, plague, dengue fever and dengue hemorrhagic fever)

Malaria is the main cause of morbidity and mortality in Myanmar. It is a re-emerging public health problem due to climate changes, uncontrolled population migration, ecological changes, and existence of multi-drug resistant *P. falciparum* parasites and appearance of insecticide resistant vector. Total malaria cases recorded in 2003, were 98, 584 with 2,243 resulting in death. About 11,534 dengue/dengue hemorrhagic fever cases were also recorded in 2003 with 111 deaths.

2 Legal, Policy, and Institutional Structure

2.1 Legislative and Policy Framework

2.1.1 National policies, plans or strategies for environmental health

The Environmental Health Programme in Myanmar has been included in part 9 of the National Health Policy (1993): *To intensify and expand environmental health activities including prevention and control of air and water pollution*. It is also integrated into the National Health Plan (2000-2006) based on the attainment of the objectives and targets of Health For All 2000, along with the principles of 'healthy settings'. The environmental health programme consists of 5 projects:

- a) Environmental Health Risk Assessment and Control
- b) Community Water Supply and Sanitation
- c) Occupational Health
- d) Air and Water Pollution Control
- e) Food and Drug Control

The National Environment Policy of 1994 was gazetted in accordance with Notification No. 26/94 dated 5 December 1994 of the Government of the Union of Myanmar. It stipulates the direction for environmental protection and conservation. Myanmar has also prepared programs and strategies as part of its Agenda 21.

There is an active Myanmar Tobacco Free Initiative. With guidelines from the National Health Committee, the National Tobacco Control Programme was launched in 2000 and the national tobacco control committee was formed in 2002. Tobacco advertisement was banned on television, radio and billboards.

2.1.2 Relevant legislation addressing environmental health issues

There are 15 legislations pertinent to environmental health exist in place in Myanmar such as:

- a) Forestry Law 1992
- b) Protection of wildlife and Wild Plants and Conservation of Natural Areas Law 1994
- c) Public Health Law 1972
- d) Factory Act 1951
- e) Territorial Sea and maritime Zone Law 1977
- f) National Environment Policy 1994
- g) Draft Environment Law 2000

- h) Mines Law 1994
- i) Plant Pest Quarantine Law 1993
- j) Freshwater Fisheries Law 1991
- k) Marine Fisheries Law 1990
- l) Pesticide Law 1990
- m) Law on Aquaculture 1989
- n) Law on Fishing Rights of Foreign Fishing Vessels 1989
- o) Irrigation Laws and Regulations 1982

The law on environmental impact assessment is being drafted in 2004. Despite the absence of regulation, health risk assessment is already included as part of the environmental health programme.

2.1.3 Decentralization and / or privatization policies dealing with environmental health

There is no policy on decentralization or privatization of environmental health services in Myanmar.

2.2 *Institutional Structure for Environmental Health*

2.2.1 Administrative / organizational set-up of the country

The environmental health functions in Myanmar rest with the Department of Health under the Ministry of Health. Although the relevant division is presently named Occupational Health Division, its mandate includes aspects of environmental health. This division has about 85 staff distributed among the occupational and health promotion unit, laboratory unit, and toxic vigilance and prevention of poisoning. This division also deals with prevention of adverse health effects due to air and water pollution, toxic and hazardous wastes and chemical safety.

Also under the Department of Health is the Environmental Sanitation Division, which is responsible for water supply systems for health and institutions such as dispensaries, rural health centers, station hospitals and schools. It is also in charge of rural sanitation for community as well as health and educational institutions.

2.2.2 Role of other agencies and partners other than government

There is a Forest Resource and Environment Development Association (FREDA) and at least 10 national NGOs, which are active in Myanmar. About 27 international NGOs are involved in health development activities in the country. UN agencies such as WHO, UNICEF, UNDP, UNFPA, and UNHCR have been supporting the government in their respective areas.

2.2.3 Relevant agencies involved and their respective functions

Aside from the Department of Health, there are at least 15 other government agencies whose functions are supportive of environmental health. These are the following:

- a) National Commission on Environmental Affairs

- b) Ministry of Industry
- c) Department of Irrigation
- d) Ministry of Transportation
- e) Factories and General Labour Laws Inspection Department
- f) Yangon City Development Committee
- g) Department of Meteorology and Hydrology
- h) Department of Population
- i) Department of Forestry
- j) Department of Health Planning
- k) Department of Human Settlement and Housing Development
- l) Department of Water Resources Utilization
- m) Department of Agriculture
- n) Department of Medical Research
- o) Department of Development Affairs

2.3 *Relevant International Conventions and Agreements Ratified or Signed*

Myanmar is a party to a number of international agreements related to environment and environmental health such as:

Accession:

- International Convention for the Prevention of Pollution from Ships, London 1993
- Protocol of 1978 Relating to the International Convention for the Prevention of Pollution from Ships, London 1973
- Vienna Convention for the Protection of the Ozone Layer, Vienna 1985
- Montreal Protocol on Substances that Deplete the Ozone Layer, Montreal 1987
- London Amendment to the Montreal Protocol, London 1990
- ICAO Annex 16 Annex to the Convention on International Civil Aviation Environmental Protection Vol. I Aircraft Noise
- ICAO Annex 16 Annex to the Convention on International Civil Aviation Environmental Protection Vol. II Aircraft Engine Emission
- United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, Paris, 1994
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Washington 1973 and this Convention as amended in Bonn, Germany 1979

Signed:

- Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons, and their Destruction, London, Moscow, Washington 1972
- Convention on the Prohibition of the Development Production, Stockpiling and Use of Chemical Weapons and their Destruction, Paris 1994

Ratification:

- United Nations Convention on the Law of the Sea, Montego Bay, 1982
- United Nations Framework Convention on Climate Change, New York, 1992
- Convention on Biological Diversity, Rio de Janeiro, 1992

3 Human Resources Development Programs

3.1 Environmental health workforce, professionals and their skills

According to the Department of Health, there are 85 staff within the Occupational Division, of which 23 are officers and 62 are technical and administrative personnel. The National Commission for Environmental Affairs is a young and small secretariat consisting of 25 staff, of which 10 are technical and 15 are administrative support.

3.2 Formal and informal training programs for environmental health

There are related degrees on environmental health (medical, engineering and sciences) at the Institute of Medicine, Yangon University and Yangon Technological University. The YTU is also offering short training programs on various areas of environmental health.

3.3 Government certification

3.4 Professional associations

There are professional associations in Myanmar such as the Myanmar Engineering Society and various Myanmar Health Associations.

4 Priority Environmental Health Issues

The following concerns were raised as priority environment and health issues:

- Deforestation
- Inland Water Pollution
- Urban Pollution
- Waste Management
- Soil Erosion

4.1 Agriculture Sector

As Myanmar is still an agricultural country (2,113,000 ha is irrigated agricultural area), this sector is expected to grow over the years as part of the government's intensive development programs. In 2002, the fertilizer consumption has been estimated to be about 132,300 metric tons per year but the application is still comparably low at 17 kg/ha. There is no information on pesticides consumption in Myanmar.

4.2 Energy Sector

4.3 Industry Sector

4.4 Transport Sector

4.5 Urban /Rural Development Sector

4.6 *Cross-cutting issues*

5 Areas Requiring Improvement

The national government recognizes the tasks ahead as it stated the following policy:

“Health, environment and sustainable development programmes should be integrated to build a modern and developed nation. The Ministry of Health and its partner agencies will ensure the reduction of traditional hazards and at the same time establish health and environmental safeguards to prevent the modern hazards of environmental pollution and uncontrolled consumption of national resources resulting in environmental degradation”.

5.1 *Specific policies and legislation for environmental health (where absent in the country)*

5.2 *Institutional development and intersectoral collaboration (strategies forging partnerships)*

5.2 *Human resources development (especially preparedness and response)*

5.4 *Monitoring and surveillance (including management of information)*

5.5 *Integration of health and environment in international/regional agreements*

5.6 *Others*

References

Appendix

MYANMAR
Environmental Health Data Sheet
As of November 18, 2004

	INDICATORS	DATA	Year	Source
1	Development, Environment and Health			
1.1.1	Area (1000 km ²)	676.55	2003	4
1.1.1	Estimated population ('000)			
	- Total	53.224	2003	11
	- Male	26.467		
	- Female	26.757		
1.1.1	Annual population growth rate (%)	2.02	2003	11
	Percentage of population			
	- 0-14 years			
	> Total	32.67	2003	11
	> Male	33.17		
	> Female	32.18		
	- 65+ years			
	> Total	5.42	2003	11
	> Male	4.91		
	> Female	5.93		
1.1.1	Urban population (%)	29.99	2003	11
1.1.1	Adult literacy rate (%)			
	- Both sexes	93.3	2004	17
	- Male	91.4	2000	1
	- Female	90.6	2000	1
1.1.1	Under-five mortality rate (per 1000 live births)	77.77	2001	3
1.1.1	Newborn infants weighing at least 2500g at birth (%)	15	2000	1
1.1.2	General economy: narrative report (separate sheet)	...		
1.1.2	Per capita GDP at current market prices (US\$)	1,700	2002 est	4
1.1.2	Total expenditure on health as % of GDP	2.1	2001	10
1.1.3	Development priorities: narrative report (separate sheet)			
1.1.3	Land area for agriculture (as percentage of total land area)	16.6	2001	9
1.1.4	Human development index (Highest = 1)	0.55	2003	7
	Human development index Rank (out of 175 countries)	131	2003	7
1.2.1	Population with access to safe water (%)			
	- Total	78.8	2003	5

	INDICATORS	DATA	Year	Source
	- Urban	92.1	2003	5
	- Rural	74.4	2003	5
1.2.1	Population with adequate excreta disposal facilities (%)			
	- Total	76.1	2003	5
	- Urban	92.6	2003	5
	- Rural	70.8	2003	5
1.2.1	Solid waste collection (% of total waste generated)	60.6	2004	12
1.2.1	Proportion of urban population served by municipal solid waste collection (%)			
1.2.2	Proportion of urban population served by sewerage system (%) National or major city	7.3	2003	12
1.2.1	Proportion of population with electricity (%)	---		
1.2.2	Total			
	Urban			
	Rural			
1.2.3	Poison center service (Y/N list, year)	Y	2003	18
1.2.3	Chemical emergency preparedness (Y/N list, year)	---		
1.2.4	Proportion of population living in informal settlements (%)			
1.2.4	Presence of building regulations and inspection (Y/N list, year)	Y		12
1.2.5	Number of registered vehicles	---		
	Rate (number per 100,000 population)			
	Number of registered motorcycles	---		
	Rate (number per 100,000 population)			
1.2.6	Presence of government/private laboratories and equipment for monitoring			
	Drinking water (Y/N; G/P)	Y(G/P)		
	Water resources (Y/N ; G/P)	Y(G/P)		
	Ambient air (Y/N ; G/P)	---		
	Noise (Y/N ; G/P)	---		
	Radiation (Y/N ; G/P)	---		
1.2.7	Presence of government/private system for data collection and processing (Y/N; G/P)	Y(G)		
1.3.1	Proportion of population using solid/biomass fuels for cooking or heating (%)	>95	2000	10
1.3.1	Proportion of vehicles using diesel (%)	---		
1.3.1	Proportion of vehicles using unleaded gasoline (%)	---		
1.3.1	Average number of times national air quality standards are exceeded in a year: a. short-term (1-hour average) frequency of exceedance b. long-term (8-hour average) frequency of exceedance	---		

	INDICATORS	DATA		Year	Source
1.3.2	Average number of times national water quality standards are exceeded in a year a. In three major rivers b. In major drinking water supplies	---			
1.3.2	Industries generating wastewater (number)	---			
1.3.3	Solid waste generated (kg/per capita/day)	0.53		2004	12
1.3.3	Solid waste generated (tons per year)	1,095,000		2003	12
1.3.3	Proportion of recyclable solid waste (%)	6		2003	12
1.3.4	Toxic and hazardous wastes generated (tons/year)	---			
1.3.4	Industries generating toxic and hazardous wastes (number)	---			
1.3.4	Health-care waste generation (tons per year)	228.125		2004	12
1.3.4	Nuclear waste generation (tons per year)	---			
1.4.2	Cases of pesticide poisoning (number)	413		2003	13
1.4.2	Proportion of undernourished population (%)	6		2000	7
1.4.2	Prevalence of underweight children under five years of age (%)	31.8		2003	5
1.4.4	Motor and other vehicle injuries (number)	---			
1.4.4	Road traffic crashes:	---			
	Number of accidents (within a year)	---			
	Rate (Accident per 100,000 population)				
	Rate (Accident per 10,000 vehicle registration)				
	Rate (Injuries per 10,000 vehicle registration)				
	Rate (deaths per 100,000 population)				
1.4.1- 1.4.7	Ten leading causes of morbidity	Number	Rate per 100 000 population		
	1. Malaria	98584		2003	18
	2. Other injuries of specified, unspecified and multiple body regions	92034		2003	18
	3. Single spontaneous delivery	81186		2003	18
	4. Diarrhoea and gastroenteritis of presumed infectious origin	45093		2003	18
	5. Other complications of pregnancy & delivery	44650		2003	18
	6. Other pregnancies with abortive outcome	37674		2003	18
	7. Other diseases of the respiratory system	32415		2003	18
	8. Respiratory tuberculosis	21910		2003	18
	9. Toxic effects of substance chiefly non-medical as to source	21195		2003	18
	10. Pneumonia	20524		2003	18
1.4.1- 1.4.7	Ten leading causes of mortality Chiefly non medical as to source	Number	Rate per 100 000 population		
	1. Malaria	2243		2003	18
	2. Respiratory tuberculosis	1140		2003	18
	3. Stroke, not specified as haemorrhage or infarction	1070		2003	18
	4. Other injuries of specified, unspecified and multiple body regions	893		2003	18

	INDICATORS	DATA		Year	Source
	5. Other diseases of the respiratory system	804		2003	18
	6. Heart failure	651		2003	18
	7. Other diseases of liver	554		2003	18
	8. Septicaemia	527		2003	18
	9. Toxic effects of substance chiefly non- medical as to source	522		2003	18
	10. Other viral diseases	513		2003	18
		Number of cases	Number of deaths		
1.4.5	Tuberculosis (All types)	77231	2491	2003	19
1.4.5	Rheumatic fever and rheumatic heart diseases	1494	41	2003	18
1.4.6	Acute respiratory infections	55642	1206	2003	18
1.4.6	Hepatitis viral	4255	83	2003	18
1.4.6	Cholera	84	0	2003	18
1.4.6	Typhoid fever (and paratyphoid fever)	3162	42	2003	18
1.4.6	Encephalitis	358	19	2003	18
1.4.6	Diarrhoeal diseases	45095	261	2003	18
1.4.7	Plague	nil	nil	2003	18
1.4.7	Malaria	98584	2243	2003	18
1.4.7	Dengue/DHF	11534	111	2003	18
2	Legal, Policy, and Institutional Structure				
2.1.1	National environmental health policy (Y/N list, year) <ul style="list-style-type: none"> National Health Policy 1993- "to intensify and expand environmental health activities including prevention and control of air and water pollution" 	Y		1993	6
2.1.1	National environmental policy (Y/N list, year) <ul style="list-style-type: none"> National Environment Policy 1994 Gazette in accordance with Notification No. 26/94 dated 5 December 1994 of the Government of the Union of Myanmar. Myanmar's Agenda 21 	Y		1994	4
2.1.1	Policies/legislation to reduce exposure to environmental tobacco smoke (Y/N list, year) <ul style="list-style-type: none"> Signatory to Framework Convention for Tobacco Control 2004 	Y			3
2.1.1	National policies for healthy settings (such as healthy cities) (Y/N list, year) <ul style="list-style-type: none"> National Health Plan (2000-2006) 	Y			
2.1.2	Environmental/Health Acts promulgated: (Y/N list, year) <ol style="list-style-type: none"> Water Air Solid Waste Toxic chemicals/Hazardous Waste Others Forestry Law 1992	Y			

	INDICATORS	DATA	Year	Source
	Protection of wildlife and Wild Plants and Conservation of Natural Areas Law 1994 Public Health Law 1972 Factory Act 1951 Territorial Sea and maritime Zone Law 1977 National Environment Policy 1994 Draft Environment Law 2000 Mines Law 1994 Plan Pest Quarantine Law 1993 Freshwater Fisheries Law 1991 Marine Fisheries Law 1990 Pesticide Law 1990 Law on Aquaculture 1989 Law on Fishing Rights of Foreign Fishing Vessels 1989 Irrigation Laws and Regulations 1982			
2.1.2	Environmental impact assessment as an official requirement (Y/N list, year) • The drafting of EIA Law in process.	N	2004	4
2.1.2	Health impact assessment as part of EIA (Y/N list, year)	N		
2.1.3	Policies for decentralization such as for environmental health and monitoring (Y/N list, year)	N		
2.1.3	Policies for privatization such as for environmental health and monitoring (Y/N list, year)	N		
2.2.1	Organizational structure for environmental health (separate sheet)			
2.2.2	List of agencies and partners for environmental health other than government • Forest Resource and Environment Development Association (FREDA) • WHO, UNICEF, UNDP, UNFPA, UNHCR	Y	2004	3
2.2.3	List of relevant government agencies and their functions: a) National Commission on Environmental Affairs b) Ministry of Industry c) Department of Irrigation d) Ministry of Transportation e) Factories and General Labour Laws Inspection Department f) Yangon City Development Committee g) Department of Meteorology and Hydrology h) Department of Population i) Department of Forestry j) Department of Health Planning k) Department of Human Settlement and Housing Development l) Department of Water Resources Utilization m) Department of Agriculture	Y	2004	

	INDICATORS	DATA	Year	Source
	n) Department of Medical Research			
2.3	<p>Relevant international conventions/agreements (List, year signed/ratified)</p> <p>Accession:</p> <ul style="list-style-type: none"> - International Convention for the Prevention of Pollution from Ships, London 1993 - Protocol of 1978 Relating to the International Convention for the Prevention of Pollution from Ships, London 1973 - Vienna Convention for the Protection of the Ozone Layer, Vienna 1985 - Montreal Protocol on Substances that Deplete the Ozone Layer, Montreal 1987 - London Amendment to the Montreal Protocol, London 1990 - ICAO Annex 16 Annex to the Convention on International Civil Aviation Environmental Protection Vol. I Aircraft Noise - ICAO Annex 16 Annex to the Convention on International Civil Aviation Environmental Protection Vol. II Aircraft Engine Emission - United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, Paris, 1994 - Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Washington 1973 and this Convention as amended in Bonn, Germany 1979 <p>Signed:</p> <ul style="list-style-type: none"> - Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons, and their Destruction, London, Moscow, Washington 1972 - Convention on the Prohibition of the Development Production, Stockpiling and Use of Chemical Weapons and their Destruction, Paris 1994 <p>Ratification:</p> <ul style="list-style-type: none"> - United Nations Convention on the Law of the Sea, Montego Bay, 1982 - United Nations Framework Convention on Climate Change, New York, 1992 - Convention on Biological Diversity, Rio de Janeiro, 1992 	Y	2004	4
3	Human Resources Development Programs			
3.1	Environmental Health workforce			

	INDICATORS	DATA	Year	Source
	- environmental health officers			
	- health/sanitary inspectors			
	- assistant sanitarians			
	- environmental staff	25	2004	15
	- sanitary engineers			
	- pollution control officers			
	- environmental health staff	85	2004	13
3.2	Tertiary degrees related to environmental health (Y/N list)	Y		16
3.2	Short courses and duration related to environmental health (Y/N list)	Y		16
3.3	Government certification for environmental workforce (Y/N list)	Y		16
3.4	Professional associations related to environmental health (Y/N list, memberships) <ul style="list-style-type: none"> • Myanmar Engineering Society 	Y		16
3.4	International associations' local affiliates (Y/N list, memberships)	N		
4	Priority Environmental Health Issues			
4.1	Soil erosion (mm/year)	---		
4.1	Fertilizer consumption (metric tons/year)	132, 300	2002	9
4.1	Pesticide consumption (metric tons/year)			
4.1	Banned pesticides used (number)			
4.1	Water resources withdrawal for irrigation (annual withdrawal as percentage of total water resources)	3.113		14
4.1	Irrigated agricultural area (1000 ha)	2113	2004	14
4.2 - 4.6	Inputs from Chapter 1			
4.6	Carbon dioxide emissions (per capita metric tons)	0.0086	1990	15
4.6	Consumption of ozone-depleting CFCs (ODP metric tons)	43.52	2002	15

Notes:

- ... Data not available.
- est. Estimate
- NR Not relevant
- C Cases
- D Deaths
- p Preliminary

Sources:

- 1 Country reported figures for the draft of the brochure of basic indicators 2000 on health situation in the South-East Asia Region, August 2001
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