

EGYPT

UNDERAGE AND UNPROTECTED: Child Labor in Egypt's Cotton Fields

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I. SUMMARY

Each year over one million children between the ages of seven and twelve are hired by Egypt's agricultural cooperatives to take part in cotton pest management. Employed under the authority of Egypt's agriculture ministry, most are well below Egypt's minimum age of twelve for seasonal agricultural work. They work eleven hours a day, including a one to two hour break, seven days a week—far in excess of limits set by the Egyptian Child Law.¹ They also face routine beatings by their foremen, as well as exposure to heat and pesticides. These conditions violate Egypt's obligations under the Convention on the Rights of the Child to protect children from ill-treatment and hazardous employment. They are also tantamount to the worst forms of child labor, as defined in the International Labour Organization's Convention 182, which Egypt has not yet ratified. Children were forcibly recruited to take part in pest management as recently as ten years ago, and some farmers continue to believe that they will be fined if they resist their children's recruitment. However, most children today are compelled to work by the driving force of poverty.

The children's task for the cooperatives is to aid in controlling cotton leafworm infestations by manually removing and destroying infected portions of leaves. The work—mostly performed during the summer recess from school—plays an important part in protecting Egypt's major cash crop from one of the two main pests that perennially threaten it, and significantly reduces the volume of pesticides used to control infestations. But in the four years since the adoption of the Child Law, the ministry has taken no apparent steps to ensure that the cooperatives comply with the law's provisions governing child labor. Without enforcement of the Child Law by the state and its subordinate institutions, compliance by private actors in Egypt can hardly be expected to follow. By drawing attention to the abuses experienced by children engaged in leafworm control work, Human Rights Watch hopes to promote the adoption of affirmative measures by the government, including those recommended in this report.

Manual control of leafworm infestations forms an integral part of the agriculture ministry's pest management program for cotton, and is carried out under the direction of agricultural engineers assigned by the ministry to each cooperative. An agricultural engineer interviewed by Human Rights Watch said that children were exclusively recruited for this work because it was more economical than hiring adults, the children were more obedient, and had the appropriate height for removing damaged leaves. Although the Child Law sets the minimum age for seasonal agricultural employment at twelve years, our research indicated that a majority of children engaged in leafworm control operations were below the age of twelve, with a significant proportion employed from the age of seven or eight.

A 1965 ministerial decree requires farmers to provide at least one child to the cooperative for remunerated leafworm control work, a requirement that appears to have been enforced in some areas until the early 1990s. Today, however, cooperatives appear to have little difficulty in recruiting children. Growing rural poverty, coupled with a steady decline in the percentage of farm land allocated to cotton, has given rise to an ample supply of child wage labor in much of rural Egypt. Both of these economic developments may be linked to economic liberalization policies aimed at moving Egypt from a centrally planned economy to one shaped by market forces. While Human Rights Watch does not take issue with the merits of economic restructuring as such, the government needs to take account of the impact of rising land rents on household consumption and the participation of children in wage labor. In our field research, Human Rights Watch found that it was children from the poorest rural families who were most likely to take part in leafworm control work, and who were consequently the most vulnerable to overwork, pesticide exposure, and maltreatment by foremen.

¹ Under Egypt's Child Law, a child is one "who has not completed eighteen full years of age." Law No. 12/ 1996, Enacting the Child Law, article 2. English translation published by Compilation of the Egyptian Legislations, Cairo (Dr. Essam A. Mohamed, Counselor). The Convention on the Rights of the Child defines the term "child" as "every human being below the age of eighteen years unless under the law applicable to the child, majority is attained earlier." U.N. Convention on the Rights of the Child, G.A. res. 44/25, annex, 44 U.N. GAOR Supp. (No. 49) at 167, U.N. Doc. A/44/49 (1989), article 1.

Human Rights Watch conducted field interviews in two villages in the central Nile delta governorates of Daqahliya and Gharbiya, where we interviewed ten children who had recently taken part in leafworm control work, as well as agricultural engineers, foremen, and local farmers. The names of the two villages, as well as those of the children and adults whom we interviewed there, have been changed in this report to ensure their security. While time constraints limited our sample, we were able to corroborate many of our findings with rural development specialists and with the Land Center for Human Rights, an Egyptian nongovernmental organization (NGO) that has conducted independent research on leafworm control work in the same governorates. Because leafworm control work is a centrally organized activity, the conditions of employment appear to be broadly consistent throughout cotton-farming regions of Egypt, although as we found, observance of health and safety precautions may vary by village.

Children in the villages we visited earned an average of E£3 (US\$0.81) per day, and worked from 7 a.m. to 6 p.m. daily, with a one to two hour mid-day break, seven days a week. These hours exceed considerably the maximum period for which children may be employed under the Child Law: six hours per day, up to six days a week. The children work in groups of fifteen to thirty, each of which is supervised by a foreman hired by the local cooperative. Nearly all of the children we interviewed recounted routine beatings with wooden switches, inflicted by foremen whenever a child was perceived to be slowing down or overlooking leaves.

Several organophosphate and carbamate pesticides are registered for use in Egypt to counter cotton leafworm and bollworm infestations during the middle of the growing season. Exposure to these chemicals may result in pesticide poisoning that is both acute—with effects such as dizziness, vomiting, or diarrhea—and chronic, including disruption of the nervous, endocrine, or reproductive systems. Children are especially susceptible to pesticide intoxication, due to physiological differences from adults that facilitate pesticide absorption and retention, as well as their greater sensitivity to specific toxic chemicals at given concentrations.

The precautions taken against pesticide exposure varied between the villages that we visited. Children resumed work on cotton fields either immediately after spraying or following a twenty-four to forty-eight hour hiatus, a period that still falls short of the recommended intervals for reentry after the use of certain registered pesticides. Although the agriculture ministry has adopted an integrated pest management program aimed at reducing pesticide use, farmers have attempted to address a perceived shortfall in pesticide application with additional spraying of their own. The health hazards presented by such excessive usage have been exacerbated by the ready availability to farmers of pesticides identified as highly hazardous by the World Health Organization.

Measures to protect working children from heat-related illnesses are also inconsistent and often inadequate. Children in one village told us that they had to bear the cost of purchasing protective caps as well as a pail for storing water. Requests for water were granted at the discretion of their foremen; some foremen only permitted children to drink during a single fifteen-minute break in a six-hour morning work period.

The cooperatives' disregard of Egyptian laws governing the minimum age for seasonal agricultural employment and the hours and conditions of children's work; their economic exploitation of children; subjection of children to physical maltreatment; and failure to protect children from known health hazards contravene articles 32 and 37 of the Convention on the Rights of the Child. That the cooperatives continue to perpetrate these abuses with the authority of the Agriculture Ministry calls into question Egypt's commitment to implementing and enforcing the Child Law, which was adopted in 1996 to carry out its obligations as a party to the Convention on the Rights of the Child. Human Rights Watch therefore recommends the measures specified below to bring the ministry's manual leafworm control operations into compliance with the convention and the Child Law.

II. RECOMMENDATIONS

To the Government of Egypt:

Regarding the Use of Child Labor in Cotton Pest Management

- Agricultural cooperative societies must adhere to the provisions of the Child Law governing the minimum age for seasonal agricultural employment and working hours for children.
- Cooperative pest management staff should, on a daily basis, monitor the treatment of children engaged in leafworm control operations. Each cooperative should also establish a mechanism for receiving and investigating complaints of mistreatment lodged by children and their families. Immediate disciplinary action should be taken in cases where foremen are found to have mistreated children in their care.
- Cooperatives must ensure that children in leafworm control teams are provided 200 grams of milk daily, as required by article 145 of the Executive Statutes of the Child Law.
- Cooperatives must ensure that children in leafworm control teams have an adequate supply of pure water, as required by article 146 of the Executive Statutes of the Child Law. Water should be available to children on request.
- Cooperatives must provide children such articles as are necessary to protect them from incurring heat-related illnesses while working, as required by article 142 of the Executive Statutes of the Child Law. At a minimum, this should include visors and vessels for storing water.
- Cooperatives must guarantee that children receive medical treatment free of charge for work accidents and occupational illnesses, as required by article 147 of the Executive Statutes of the Child Law.
- The schedule of occupational diseases annexed to the Social Insurance Law should be amended to include pesticide poisoning, heat-related illnesses, and other diseases related to agricultural work, and the law itself made applicable to agricultural workers.
- Rural families should receive education about occupational illnesses related to agricultural work, including exposure to heat and pesticides or other environmental toxins, and instruction on ways to minimize the risk of contracting such illnesses.
- The 1965 agriculture ministry decree requiring each farmer to provide at least one child to the local cooperative for paid leafworm control work should be repealed immediately, and notice of its revocation should be disseminated through cooperatives and media accessible to rural communities. The decree has a potentially coercive effect, even if it is not presently enforced, and is inherently incompatible with the prohibitions on forced or compulsory labor under article 8 of the International Covenant on Civil and Political Rights and article 3 of ILO Convention 182 (Worst Forms of Child Labour Convention).
- The education ministry should initiate a program to identify children in each rural community who are not in school. Concerted efforts should be made to ascertain the reasons for their withdrawal from school, and to ensure their enrollment and regular attendance. Such children should not be selectively targeted for recruitment by cooperatives in the event of a labor shortage.
- The government of Egypt should promptly ratify ILO Convention 182, and bring Egyptian law and practice into full conformity with its requirements.

Regarding Pesticide Use

- Reentry intervals specific to children should be established, taking into account children's greater susceptibility to pesticide absorption and retention, as well as their heightened sensitivity to toxic chemicals. Reentry intervals are designed to prohibit entry into an area for specified periods of time following the application of pesticides, and vary in duration according to the concentration and toxicity of the chemicals involved.
- Spraying by farmers should be monitored by the agricultural engineer and the cooperative pest control staff in each village. Additional, suitably trained staff should be designated for this purpose as necessary. Staff should be authorized to intervene and prohibit further spraying when there are indications that chemicals prohibited for application by farmers are being used, or when inappropriate spraying equipment or techniques are being utilized. Farmers should be required to notify the agricultural engineer before they commence spraying, and arrangements must be made to prevent the presence of children on the field until the appropriate reentry interval has passed.
- A minimum age of eighteen should be imposed for all pesticide handlers. Agricultural engineers and cooperative pest control staff should ensure that children are not involved in pesticide application, or in any support function that brings them into direct contact with pesticides. Sanctions should be imposed on farmers and cooperative employees who engage children in these activities.
- Pesticides identified as Class Ib, or "highly hazardous" by the World Health Organization, should be made available only to professionally qualified personnel who are certified by the agriculture ministry. Class II pesticides should be evaluated for their toxicity to children, and registered as restricted use products where appropriate.
- The learning groups that the agriculture ministry has established to inform farmers about integrated pest management (IPM) principles and methods represent a welcome measure that should be expanded as soon possible to cover all farmers. IPM methods used for cotton include the adoption of more efficient means of applying pesticides, the establishment of action thresholds, based on infestation levels, to initiate spraying; and the use of nontoxic pheromones—attractants secreted by insects—to disrupt mating cycles.
- Extension services should be developed to assist farmers in choosing appropriate pest control materials, selecting, handling and maintaining suitable spraying equipment, correct spraying concentrations and application rates, and proper spraying techniques.
- Alternatives to pesticide application, such as the use of pheromones, should be fully utilized.

III. STATE CONTROL AND LIBERALIZATION OF COTTON PRODUCTION

Although it has lost ground in recent years, Egyptian cotton still commands over one-third of the world market for long-staple and extra-long staple cotton, and is Egypt's most lucrative export commodity after oil.² The value of Egyptian cotton lies in its strength and elasticity, which allows it to be woven much more tightly than other strains. It is also the most time consuming and labor intensive cotton strain to cultivate, requiring seven to eight months to grow and manual harvesting.³

² World-trade in long staple and extra-long staple cotton during the 1999-2000 season stood at about one million bales, of which Egyptian exports accounted for an estimated 370,000. Terry Townsend, Executive Director, International Cotton Advisory Committee, "World Extra-Fine Cotton Outlook," paper presented to the Fourth U.S. Pima Industry Seminar, February 24-25, 2000, San Diego, California, <<http://www.icac.org/icac/cottoninfo/speeches/speeches.html>> (19 January 2001), p. 3.

³ Ben Faulks, "Just a cotton pickin' minute, thar: Egypt's cotton industry has great potential but is held back by state interference," *Cairo Times*, May 1, 1997, vol. 1, no. 5.

Egypt's cotton crop is overwhelmingly the product of small farms. A 1997 government study found that nearly 70 percent of farmers cultivated an area of less than one acre each and just over 20 percent cultivated between one and three acres.⁴ Until the mid-1990s, however, the Egyptian state played a formidable role in cotton production: it determined the amount of land that would be allocated for cotton farming, monopolized the supply of seeds, pesticides, and other inputs, fixed the prices farmers were paid for their crop as well as its export price, and had exclusive control over the marketing of cotton. This authority was exercised at the local level through agricultural cooperatives, village-level institutions that were established through the First Agrarian Reform of 1952 and which continue to play a significant, albeit reduced, role in cotton production.⁵

Formally participatory institutions, in which membership is mandatory for most farmers, the cooperatives are in effect local arms of the agriculture ministry. The ministry designates the director of each cooperative, and assigns one or more agricultural engineers to the cooperative council.⁶ Market reforms have removed the cooperatives' former monopoly over the provision of most inputs and the marketing of major crops. However, the cooperatives continue to provide machinery services to farmers and remain the channel through which subsidized inputs are sold, giving them a substantial advantage over private traders. The cooperatives also implement, under the direction of the agricultural engineer, the ministry's pest management program for cotton.

Although liberalization has returned control over key elements of cotton production to farmers, it has also removed certain incentives for production and thereby accelerated the erosion of Egypt's share of the world market for long-staple and extra long-staple cotton. There are several commonly-cited reasons for that decline. Advances in technology have allowed textile mills to produce fabric of nearly comparable quality from U.S. pima cotton, which in 1989 cost less than half of what the Egyptian government was charging for certain varieties.⁷

To boost the competitiveness of Egyptian cotton, the government in 1999 reduced the export prices of its cotton varieties by as much as thirty-two percent.⁸ And in an effort to avoid the massive losses incurred in 1997, when the amount paid to farmers exceeded the international market price, it began tying purchase prices to export prices. The procurement price of certain varieties fell dramatically—in the case of Giza 45, an extra-long staple variety, from E£781 (US\$211.65) per 100 pounds in 1998 to E£532 (US\$144.17) in 1999.⁹ The withdrawal of floor prices, coupled with the rising cost of inputs and land rents, has led many farmers—particularly tenants—to conclude that cotton is either unprofitable or even loss-incurring.¹⁰ As farmers have turned to other cash crops, the amount of land allocated to cotton has declined from 923,208 acres in 1997 to 520,000 acres in 2000.¹¹

⁴ Study conducted for the Government of Egypt, 1997, on file at Human Rights Watch.

⁵ The 1952 reform curtailed the size of landholdings, fixed land rents according to the amount of land tax paid, and prohibited the eviction of tenants. Farmers who benefited from the redistribution of land were required to form cooperatives that would organize cultivation, provide credit and other inputs, and market produce. By the mid-1960s, that system had been extended throughout the countryside and membership was made mandatory for all farmers with reasonable access to a cooperative. Samir Radwan and Eddy Lee, *Agrarian Change in Egypt: An Anatomy of Rural Poverty* (London: Croom Helm, 1986), pp. 9-10. See also United Nations Food and Agriculture Organization Investment Center (FAO/IC), "Egypt: Socio-Economic and Production Systems (Sohag Governorate)," FAO/IC, 1995, <<http://www.fao.org/gender/static/tci/egypt.htm>> (19 January 2001).

⁶ Ibid.

⁷ Kim Murphy, "White Gold turns to dross in government hands: Egypt's legendary cotton industry has fallen on hard times," *Los Angeles Times*, January 28, 1992.

⁸ U.S. Department of Agriculture Foreign Agricultural Service, Global Agriculture Information Network (GAIN) Report No. EG9032, "Egypt: Cotton Outlook 1999," September 23, 1999, p. 1.

⁹ Ibid., p. 2.

¹⁰ Human Rights Watch interviews with farmers in El Samra, October 25, 1999.

¹¹ U.S. Department of Agriculture, "Egypt: Cotton Outlook 1999," p. 2; Human Rights Watch interview with a development specialist, Cairo, January 23, 2001.

IV. CHILD WAGE LABOR AND RURAL POVERTY

Children form a particularly high proportion of the wage labor force for cotton cultivation, accounting for about a quarter of the total wage labor days in one Nile Delta governorate and nearly 60 percent in parts of Upper Egypt.¹² Children take part in most activities related to cotton cultivation, but are conspicuous in two phases that involve intensive manual labor: collection of leafworm egg masses and harvesting. Adult female and child wage labor together account for about half of the total labor involved in cotton harvesting.¹³ Egg mass collection forms part of the agriculture ministry's pest management program for cotton, and is carried out almost entirely by children working for their villages' agricultural cooperatives.

Casual wage labor in Egypt is most often a function of poverty. A 1997 survey of 2,500 rural and urban households by the International Food Policy Research Institute (IFPRI) found that the poor were more likely to be employed as casual wage labor than the nonpoor, a distinction that proved consistent across rural and urban sectors as well as gender.¹⁴ And there is compelling evidence that household consumption, an important variable in measuring poverty levels, is declining; in 1999, IFPRI revisited 348 of the households examined in its original study and found a pervasive decrease in per capita consumption. This decline was especially pronounced in rural Upper Egypt, where half of all the households surveyed "could not match even 77 percent of their consumption levels in 1997...."¹⁵

According to IFPRI's analysis of the 1997 survey, agricultural landholdings were key determinants of the economic health of rural families. The survey found a markedly lower incidence of poverty among landholders (23 percent) than among those without landholdings (35 percent),¹⁶ and progressively higher levels of consumption as the size of per capita landholdings increased.¹⁷ Although a positive correlation has not yet been drawn by social scientists, the decline in rural consumption between 1997 and 1999 coincided with a sharp increase in land rents.

The agrarian reform adopted in 1952 allowed tenancies to be passed on by inheritance and maintained rents below market levels. But in October 1997, a new land law—passed by parliament in 1992, but subject to a five-year transitional period—went into effect. The law abolished inheritable tenancies and removed rent controls, leading to a rapid doubling and even tripling of rents. Interviews conducted in Beni Suef governorate immediately after the law became operative revealed that over 40 percent of randomly selected households had lost all or part of the land that they had been cultivating due to the sudden increase in rents.¹⁸ During field visits to Beni Suef a year later, government researchers found that income losses were partly compensated through unskilled wage labor in the agricultural and construction sectors.¹⁹

¹² Data collected by the Government of Egypt, 1997, on file at Human Rights Watch.

¹³ Ibid.

¹⁴ Gaurav Datt, Dean Jolliffe, Manohar Sharma, "A Profile of Poverty in Egypt: 1997 (Final Draft Report)," International Food Policy Research Institute (IFPRI), March 31, 1998, p. 26. The key measure of individual welfare used in constructing the poverty profile was per capita consumption, representing "the sum of total food consumption, total nonfood nondurable good expenses, estimated use value of durable goods, and an actual or imputed rental value of housing." Region-specific poverty lines were then drawn to reflect variations in food and nonfood prices. Ibid., pp. ix, 3, 4.

¹⁵ Lawrence Haddad and Akhter U. Ahmed, "Poverty Dynamics in Egypt: 1997-1999 (Final Draft Report)," International Food Policy Research Institute (IFPRI), September 1999, p. 16.

¹⁶ Ibid., p. 33.

¹⁷ Ibid., p. 63.

¹⁸ Study conducted for the Government of Egypt, 1997, on file at Human Rights Watch. The high rate of dispossession reported in Beni Suef may reflect the prevalence of tenant farming in that governorate.

¹⁹ Study conducted for the Government of Egypt, 1999, on file at Human Rights Watch.

V. LEGAL PROTECTIONS FOR CHILD LABOR

Child labor in Egypt is governed by the Convention on the Rights of the Child, to which Egypt is a party, and the Egyptian Child Law, which was adopted in furtherance of its obligations under the convention. Both legal systems provide a framework for the protection of working children that encompasses civil and political rights, such as protection from ill-treatment, as well as economic and social rights, including those relating to the health and education of the child. The two sets of standards provide for the regulation of children's hours and conditions of employment and include rights to medical treatment for occupational injuries or illnesses and protection from hazardous employment.

Egyptian Law

Egypt's Child Law was debated and adopted by the parliament in 1996, following recommendations by Egyptian social scientists and children's rights advocates aimed at bringing the country's domestic legislation into conformity with the Convention on the Rights of the Child.²⁰ The Child Law prohibits the employment of children below the age of fourteen, but allows children between the ages of twelve and fourteen to receive vocational training from employers and to take part in seasonal agricultural work, provided that the work "is not hazardous to their health and growth, and does not interfere with their studies."²¹ The law limits the work-day for children to six hours, only four of which may be consecutive, and requires the provision of one or more breaks totaling no less than one hour per day. The law further prohibits children from working during their weekly day[s] off, official holidays, and between the hours of 8:00 p.m. and 7:00 a.m.²²

The implementation of the Child Law is governed by the law's executive statutes. Promulgated in 1997 by decree of the prime minister, the statutes impose several additional obligations upon employers. These include providing children with articles of personal protection and instruction in their use, as well as ensuring the child's compliance with such instruction.²³ Employers are further enjoined to treat children in their employ well, to provide them pure water and 200 grams of milk per day, and to guarantee medical treatment for job-related accidents and occupational diseases.²⁴ Business owners are required to conduct medical examinations of children before engaging them in work, to ensure that they are fit for the type of work to which they are entrusted. Business owners are further obligated to take necessary steps to ensure that medical examinations of children in their employ are conducted at least once a year, and at the termination of the child's employment, "to make sure he/she is free of vocational diseases or work accidents."²⁵ Children between the age of twelve and fourteen may not be engaged in seasonal work if their physical condition, as recorded in their health cards, "stands against his/her possible employment..."²⁶

Neither the Child Law nor its executive statutes define or otherwise limit vocational diseases for the purpose of the law. In interpreting this provision, however, it is possible that courts will refer to the schedule of occupational diseases annexed to Egypt's Social Insurance Law of 1975. The 1975 law establishes a system of insurance coverage that includes medical care and treatment and insurance against work-related accidents, disability, and death.²⁷ It applies to employees of the civil administration, public authorities, "general organizations," and public sector companies, as well as to "regular" employees subject to the Labor Law, aged

²⁰ See generally Dr. Adel Azer and Dr. Maha El Adawy, *Towards the Implementation of the Convention on the Rights of the Child*, (Cairo: UNICEF, July 1994).

²¹ Child Law, article 64.

²² Ibid., article 66.

²³ Prime Minister's Decree No. 3452/1997, Promulgating the Executive Statutes of the Child Law as Enacted by Law No. 12/1996, article 142. English translation published by the Middle East Library for Economic Services, Cairo.

²⁴ Ibid., articles 144-147.

²⁵ Ibid., article 138.

²⁶ Ibid., article 137.

²⁷ Law No. 79/1975, Promulgating the Social Insurance Law, article 1. English translation published by the Middle East Library for Economic Services, Cairo.

eighteen years and older.²⁸ The twenty-nine diseases listed on the schedule correspondingly include very few of the occupational illnesses that are typically contracted by agricultural workers.²⁹ An employee whose disease does not appear on the schedule has to prove the causal relationship between his or her occupation and the disease contracted.³⁰

A revised schedule was proposed in 1991 by a committee consisting of representatives of Egyptian universities, the national Health Insurance Organization, the Ministry of Health, the National Institute of Occupational Safety and Health, and the military industries. The committee's proposals, which were never adopted, included adding to the schedule poisoning by organic and inorganic pesticides, diseases caused by heat and other physical agents, and occupational musculoskeletal disorders.³¹

International Law

The Convention on the Rights of the Child, which Egypt ratified on July 6, 1990, recognizes in article 32 the right of the child "to be protected from economic exploitation and from performing any work that is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral or social development." The convention requires states parties to take legislative and administrative measures to ensure article 32's implementation, including "appropriate regulation of the hours and conditions of employment" and "appropriate penalties or other sanctions."³² Several other provisions of the convention bear on the treatment of working children, including the right, guaranteed by the state, to "facilities for the treatment of illness and the rehabilitation of health," free and compulsory primary education, and rest and leisure.³³ The convention prohibits the use of "torture or other cruel, inhuman or degrading treatment or punishment," as does the International Covenant on Civil and Political Rights, ratified by Egypt on January 12, 1982.³⁴

The International Labour Organization (ILO) in June 1999 adopted Convention 182, the Worst Forms of Child Labour Convention, which obligates states parties to "take immediate and effective measures to secure the prohibition and elimination of the worst forms of child labour as a matter of urgency."³⁵ Although Convention 182 has not yet been ratified by Egypt, it provides an aid in interpreting Egypt's obligation under the Convention on the Rights of the Child to protect children from work that is likely to be hazardous or harmful to their health or development.

Under the convention, "the worst forms of child labour" include, among others, "forced or compulsory labour" and "work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children."³⁶ The types of work encompassed by the latter category are to be determined by states parties in consultation with employer and worker organizations and in consideration of international standards, particularly ILO Recommendation 190, the Worst Forms of Child Labour Recommendation.³⁷ The recommendation, adopted in 1999 in conjunction with Convention 182, states that consideration should be given

²⁸ Ibid., article 2. Employees under the age of eighteen are entitled under the law to insurance coverage for work-related accidents only. Social Insurance Law, article 3.

²⁹ Mohamed Farid Emara, "Agricultural Occupational Health Problems Not Included in the Schedule," *Egyptian Journal of Occupational Medicine*, 15, 1 (Supplement), "Modification of the Schedule of Occupational Diseases in Egypt," 1991, p. 91.

³⁰ Mohamed M. Abdel Latif, "Historical Review of the Egyptian Schedule of Occupational Diseases," *Egyptian Journal of Occupational Medicine*, 15, 1 (Supplement), "Modification of the Schedule of Occupational Diseases in Egypt," 1991, p. 2.

³¹ Ahmad M. Emara, "New Diseases to be Added to the Schedule," *Egyptian Journal of Occupational Medicine*, 15, 1 (Supplement), "Modification of the Schedule of Occupational Diseases in Egypt," 1991, pp. 11-20.

³² Convention on the Rights of the Child, article 32.

³³ Ibid., articles 24, 28, and 31.

³⁴ Ibid., article 37(a), and International Covenant on Civil and Political Rights, G.A. res. 2200A (XXI), 21 U.N. GAOR Supp. (No. 16) at 52, U.N. Doc. A/6316 (1966), 999 U.N.T.S. 171, article 7.

³⁵ ILO Convention 182 (Worst Forms of Child Labour Convention, 1999), article 1.

³⁶ ILO Convention 182, article 3.

³⁷ Ibid., article 4(1).

to work that exposes children to physical abuse; “work in an unhealthy environment which may, for example, expose children to hazardous substances, agents or processes, or to temperatures, noise levels, or vibrations damaging to their health”; and “work under particularly difficult conditions such as work for long hours or work which does not allow the possibility of returning home each day.”³⁸ Convention 182 further calls on states parties to prevent children from engaging in the worst forms of child labor, provide direct assistance for the removal of children already engaged in the worst forms of child labor, and to identify and reach out to children at risk.³⁹

The failure by Egypt’s agricultural cooperatives to protect children in their employ from exposure to pesticides and heat, and the enforcement of long, and illegal work hours, as documented in this report, rises in our view to the level of the worst forms of child labor. Not only has the state failed to prevent children from engaging in work under such conditions, but it is directly responsible for perpetuating those conditions through its direction of the cooperatives and Egypt’s cotton pest management program.

VI. CHILD LABOR IN COTTON PEST MANAGEMENT

Cotton pest management in Egypt was substantially transformed by the introduction of integrated pest management (IPM) practices in 1991. Aimed at reducing reliance on pesticides, IPM incorporates, among other measures, regular monitoring of infestation levels, defining action thresholds for pesticide use based on infestation levels and the costs of treatment, minimizing risks to human health and the environment, and evaluating the outcome of treatment.⁴⁰ Its development and implementation in Egypt is the responsibility of the Central Administration for Pest Control (CAPC), a division of the agriculture ministry that has had authority over cotton pest management since the 1950s.

One practice that has been retained from the CAPC’s pre-1991 approach to cotton pest management is leafworm egg mass collection, an activity that entails the manual removal of leafworm egg masses, and in later stages, live worms. An agriculture ministry official reported in 1980 that about two million children were employed annually in this capacity;⁴¹ a more recent NGO estimate places that figure at 1.2 million,⁴² likely reflecting the overall decline in Egyptian cotton production during the past two decades.

To investigate the working conditions of these children, Human Rights Watch visited the central Nile delta villages of Zikrin and El Samra. Both villages are characterized by a mixed agricultural economy, in which cotton, as elsewhere in Egypt, plays an important but diminished role. Zikrin, situated in Gharbiya governorate, had thirty-six acres allocated to cotton in 1999; cotton was the third most widely cultivated crop in the village, after rice and maize.⁴³ In El Samra, located in Daqahliya governorate, 130 acres were allocated to cotton in 1999, a sharp drop from the 600 acres that were farmed just a few years earlier.⁴⁴

Human Rights Watch interviewed ten children who had recently taken part in egg mass collection, foremen who had supervised them, and agricultural engineers assigned to the cooperative societies. We also

³⁸ ILO Recommendation 190 (Worst Forms of Child Labour Recommendation, 1999), article 3.

³⁹ ILO Convention 182, article 7.

⁴⁰ Bio-Integral Resource Center, Berkeley, California, “Integrated Pest Management,” <www.keyed.com/birc/IPM.htm> (19 January 2001); Ohio Pest Management and Survey Program, Field Crops Pest Management Circular #1: “Integrated Pest Management,” (Columbus: Ohio State University, 1993), <www.ag.ohio-state.edu/~ohioline/icm-fact/fc-01.html> (19 January 2001).

⁴¹ Abd el Latif Isa, First Undersecretary, Ministry of Agriculture, “Pesticide Regulations in Egypt to Avoid Hazards to the Environment and Human Health,” *Journal of Environmental Science and Health*, vol. 15, no. 6, 1980, p. 619.

⁴² Land Center for Human Rights, “Child Workers in the Cotton Worm Manual Control Operations: A Journey of Hardship,” (Cairo: Land Center for Human Rights, July 1999), chapter 2. The Land Center based its figures on an observed average of 1.5 to two child workers per acre of cotton cultivated.

⁴³ Human Rights Watch interview with Hisham Dafallah, Agricultural Engineer, Zikrin, October 20, 1999.

⁴⁴ Human Rights Watch interview with Mohammad Madani, Agricultural Engineer, El Samra, October 25, 1999.

discussed the children's work with a few farmers and landowners in each community. Although the interviews represented a very limited sample and were conducted after the resumption of the school year, the children's accounts largely confirmed independent findings made by an Egyptian NGO, the Land Center for Human Rights. The Land Center's findings, published in a July 1999 report, were based on extensive research conducted in villages in Gharbiya and Daqahliya governorates. Center researchers closely observed the children's working conditions, and conducted interviews with working children, their families, and agricultural engineers. The report noted that children engaged in leafworm control operations worked from 6 a.m. to sunset daily, with two hour mid-day breaks; were routinely beaten by foremen; worked under conditions of extreme heat; and were denied medical treatment by the cooperatives when they incurred heat-related illnesses.⁴⁵ Human Rights Watch also confirmed accounts of the ill-treatment of children by foremen and children's exposure to pesticide spraying with development specialists in Egypt who frequently visit cotton-farming areas.

Leafworm Egg Mass Collection

The Egyptian cotton leafworm, *spodoptera littoralis*, is one of two major pests encountered by cotton farmers in Egypt.⁴⁶ Adults of the species emerge in early spring, largely at night, and lay eggs in clusters on the leaves of cotton plants. Upon hatching from the eggs, which occurs optimally at temperatures of 28 to 30 degrees centigrade (82.4 to 86 degrees fahrenheit), the larvae begin to feed on the leaves of the plant. In their later stages, larvae may also attack young buds and cotton bolls, weakening the plants and exposing them to further damage by bollworms. Roughly ten generations of the leafworm occur each year.⁴⁷

Between 50 and 80 percent of the deposited egg masses are removed manually by child workers, according to the agriculture ministry.⁴⁸ Egg mass collection is carried out by children working in teams of fifteen to thirty, each of which is supervised by a foreman (known locally as a *khouli*).⁴⁹ The teams are assigned areas of fifteen to thirty acres each, which are further subdivided into three plots. Each team rotates between the three plots, covering one during the course of a day.⁵⁰ The children tear off the infected portions of the leaves, identified by white or yellow blotches, and store them in sacks. Twice daily, before the children's lunch break and at the end of the day, the damaged leaves are deposited in a pit and burned. An older boy is normally chosen to burn the leaves, under the foreman's supervision.⁵¹

The commencement date for egg mass collection in each governorate is determined by the agriculture ministry, following the submission of reports on infestation levels by agricultural extension agents.⁵² During 1999, egg mass collection in El Samra began on May 1 and continued into early July, while in Zikrin, the period of activity extended from May 25 to July 7. The number of children retained by the cooperatives varied over the course of the season. Mohammad Madani, the agricultural engineer in El Samra, said that a ratio of one worker per acre is usually sufficient during the first two weeks of the egg mass collection season, but thereafter two to

⁴⁵ See generally Land Center for Human Rights, "Child Workers..."

⁴⁶ Isa, "Pesticide Regulations in Egypt", p. 618. The other major cotton pest in Egypt is the pink bollworm, *pectinophora gossypiella*.

⁴⁷ See Center for Environmental and Regulatory Information Systems (CERIS), Department of Entomology, Purdue University, "Fact Sheet for Exotic Pest Detection Survey Recommendations," July 1993, <<http://ceris.purdue.edu/napis/pests/misc/fexotic.txt>> (19 January 2001) and Institut National de la Recherche Agronomique, "African Cotton Leafworm," <<http://www.inra.fr/Internet/Produits/HYPPEZ/RAVAGEUR/6spolit.htm>> (19 January 2001). Mohammad Madani, an agricultural engineer in El Samra, reported a slightly lower figure of six leafworm generations per crop cycle. Human Rights Watch interview with Mohammad Madani, Agricultural Engineer, El Samra, October 25, 1999.

⁴⁸ Isa, "Pesticide Regulations in Egypt," p. 619.

⁴⁹ Human Rights Watch interviews with child workers and foremen, Zikrin and El Samra, October 20-25, 1999.

⁵⁰ Land Center for Human Rights, "Child Workers...", chapter 2.

⁵¹ Human Rights Watch interviews with child workers and farmers, Zikrin and El Samra, October 20-25, 1999. None of the children whom we asked could recall a case in which the burning of leaves had resulted in an injury.

⁵² Land Center for Human Rights, "Child Workers...", chapter 2.

three workers are needed to cover one acre.⁵³ In Zikrin, about 70 percent of the children hired work continuously through the egg mass collection period.⁵⁴

Recruitment

As noted earlier, nearly 90 percent of Egypt's cotton is grown on farms of three acres or less. Small farmers typically consolidate their holdings or rented land with those of other small farmers to form larger plots of about twenty acres, which they farm collectively. Egg mass collection for these consolidated plots is organized by the agricultural cooperatives. Large farms, on the other hand, often rely on independent contractors to hire labor for egg mass collection.⁵⁵

Labor recruitment efforts in either setting are directed almost exclusively at children. Hisham Dafallah, the agricultural engineer in Zikrin, offered a commonly cited justification for this practice: the relatively short height—50 to 75 centimeters (20 to 30 inches)—of cotton plants during the months of May and June, which allegedly make children better suited to remove damaged leaves. He also identified two other factors. “Generally, the child is more easygoing and obedient,” he told Human Rights Watch, “and more economical.”⁵⁶

Children working for the cooperative in Zikrin receive a flat rate of E£3 (US\$0.81) per day. Wages in El Samra vary slightly over the course of the season, but average E£3 daily for children who work throughout the egg mass collection period.⁵⁷ “During the first stage, the cotton stem is short and we have to bend over steeply, so we earn E£3.50 (US\$0.95) a day,” said ten-year-old Nabil Abdel Sattar. “After a month, it grows longer, so we get E£2.50 (US\$0.68).”⁵⁸ Although adults are not ordinarily hired for egg mass collection, wages for cotton harvesting provide an indication of the income differential between adult and child laborers. During the 1997 harvest, adult men in Daqahliya governorate earned E£6 (US\$1.63) per day, adult women E£5 (US\$1.36), and children E£4 (US\$1.08).⁵⁹

Children report to the cooperative in their respective villages to collect their wages (once every ten days in Zikrin and once every fifteen days in El Samra). Most said that they turned over the entire amount to their parents, occasionally receiving a small allowance for their own consumption.⁶⁰ One ten-year-old girl in El Samra said that her brother, who worked as a foreman, collected her payment for her and that she herself neither saw the money she had earned nor knew how much she had been paid.⁶¹ In all other cases, however, children told us that they were paid directly by the cooperative administration.

Egypt's Child Law sets the minimum age for seasonal agricultural employment at twelve years, but cooperatives typically hire children well below this threshold. The ten children we interviewed began working for the cooperatives before they had reached the age of twelve, with an average starting age of 8.6 years. The children's ages at the time of our interviews ranged from eight to thirteen years.⁶² Zikrin's agricultural engineer told us that children who were hired by the local cooperative ranged in age from nine to fourteen years—a figure

⁵³ Human Rights Watch interviews with agricultural engineers Mohammad Madani, El Samra, October 25, 1999, and Hisham Dafallah, Zikrin, October 20, 1999.

⁵⁴ Human Rights Watch interview with Hisham Dafallah, Agricultural Engineer, Zikrin, October 20, 1999.

⁵⁵ Human Rights Watch interview with an official in the Ministry of Agriculture and Land Reclamation, Cairo, October 19, 1999.

⁵⁶ Human Rights Watch interview with Hisham Dafallah, Agricultural Engineer, Zikrin, October 20, 1999.

⁵⁷ Human Rights Watch interviews with agricultural engineers and children in El Samra and Zikrin, October 20-25, 1999.

⁵⁸ Human Rights Watch interview with Nabil Abdel Sattar, El Samra, October 25, 1999.

⁵⁹ Study conducted for the Government of Egypt, 1997, on file at Human Rights Watch.

⁶⁰ Human Rights Watch interviews with agricultural engineers and child workers, El Samra and Zikrin, October 20-25, 1999.

⁶¹ Human Rights Watch interview with Maryam Abdel Aziz, El Samra, October 25, 1999.

⁶² Human Rights Watch interviews with child workers, Zikrin and El Samra, October 20-25, 1999. Citing his own field research, a staff member of the Land Center for Human Rights told us that about 70 percent of the children engaged in egg mass collection were six to eight years old. Human Rights Watch interview with Adel William, Researcher, Land Center for Human Rights, Egypt, October 20, 1999.

that he revised a moment later to ten to fifteen years, although neither figure was in compliance with the requirements of the Child Law.⁶³

Cooperatives recruit children through printed and oral announcements in village mosques and cooperative buildings, as well as through loudspeaker broadcasts.⁶⁴ Several of the children whom Human Rights Watch interviewed joined egg mass collection teams in response to appeals from older siblings who were already working or from foremen whom they knew. In two cases, children told us that they worked at their parents' request. "My father told me that I'm working to get school clothes and a bag," explained Said Isa Ahmad, an eight-year-old boy in Zikrin.⁶⁵

A large majority of the children whom we interviewed came from the villages' poorer families, suggesting a correlation between their families' economic circumstances and their own willingness to accept seasonal work. We asked six children about their families' sources of income. Of the five whose families relied wholly or partly on farming, three cultivated less than one acre of land each, while the family of another cultivated 1.5 acres. Only one child indicated that he belonged to a relatively prosperous rural family, which farmed four acres. The responses of two other children suggested that their families had very limited income; one child was the daughter of a shoe-polisher, while the father of another was deceased. "Over the last four years, there has been a surplus of children available," said Dafallah, the agricultural engineer in Zikrin. Egg mass collection, he explained, "takes place during a period in which there is no school, and [at a time when] there is growing economic distress."⁶⁶ The disproportionate employment by cooperatives of the poorest rural children means that the latter are especially vulnerable to the ill-treatment, long hours, and health hazards associated with leafworm control operations.

Until about ten years ago, cooperatives frequently used coercion to secure a workforce for egg mass collection.⁶⁷ They were guided by a 1965 agriculture ministry decree that required cotton farmers to provide at least one child to the cooperative for paid egg mass collection and imposed fines on farmers for noncompliance.⁶⁸ As El Samra's agricultural engineer, Madani, recounted,

We submitted reports against anyone who had cotton land in cultivation and who had children but didn't bring them to the cooperative society. We brought them to the prosecution office. Money had to be paid about E£5 (US\$1.36). We could do this [with the same farmer] every day.⁶⁹

According to a farmer in Zikrin, cooperatives also employed more onerous means of ensuring compliance. "The police used to take children [to the cooperative] by force," he said.⁷⁰

Human Rights Watch was unable to identify recent cases of forcible, albeit remunerated child labor. However, a continued fear of prosecution under the 1965 decree may nevertheless compel some farmers to permit their children to work for the cooperatives. The farmer in Zikrin cited above told us that he owned four acres of land, and therefore did not need the income that his son might earn from egg mass collection. But when asked why his son nevertheless took part in the work, he replied that the law required one of his sons to do so, and that if he refused permission, a lawsuit could be filed against him.⁷¹

⁶³ Human Rights Watch interview with Hisham Dafallah, Agricultural Engineer, Zikrin, October 20, 1999.

⁶⁴ Human Rights Watch interview with Mohammad Madani, Agricultural Engineer, El Samra, October 25, 1999.

⁶⁵ Human Rights Watch interview with Said Isa Ahmad, Zikrin, October 20, 1999.

⁶⁶ Human Rights Watch interview with Hisham Dafallah, Agricultural Engineer, Zikrin, October 20, 1999.

⁶⁷ Human Rights Watch interviews with agricultural engineers and farmers in El Samra and Zikrin, October 20-25, 1999.

⁶⁸ Land Center for Human Rights, "Child Workers...", chapter 2.

⁶⁹ Human Rights Watch interview with Mohammad Madani, Agricultural Engineer, El Samra, October 25, 1999.

⁷⁰ Human Rights Watch interview with Abbas Hamdi, Zikrin, October 20, 1999.

⁷¹ Human Rights Watch interview with Abbas Hamdi, Zikrin, October 20, 1999.

Because egg mass collection takes place during the summer months, it ordinarily poses less of a conflict with education than other activities involving child agricultural labor, such as harvesting. During 1999, however, the examinations that conclude the school year were delayed by one month. Faced with a shortage of available labor, Zikrin's cooperative directed its recruitment efforts toward children who were not attending school.⁷² But in doing so, cooperative authorities undermined the government's obligation, under Egypt's education laws of 1981 and 1988, to provide compulsory pre-secondary education.⁷³

We encountered one case in which a child was recruited over the objections of his mother, a single parent who believed that her son's time could have been devoted more profitably to study. According to Nabil Abdel Sattar, who was eight years old at the time of his recruitment:

I was standing in the street, and Wali [a foreman] walked by and said he wanted me to join a group of fifteen the next day. I said yes. I asked my mother and she said no because it's better to stay at home and study, but I said the work ends at 6 p.m. and then I'd study. I wanted to because that was the first time and I was excited about it.⁷⁴

Working Conditions

The Child Law, as noted earlier, prohibits children from working for more than six hours per day, and entitles them to a weekly day off.⁷⁵ These provisions were entirely disregarded in the two villages that we visited; children in Zikrin and El Samra worked from 7 a.m. to 6 p.m., seven days a week. The Child Law further entitles children to one or more breaks totaling at least one hour,⁷⁶ a requirement that appeared to be complied with in both villages. Children in Zikrin received a break from 1 p.m. to 3 p.m. daily, during which they would eat meals brought from home and play. In El Samra, children had a fifteen-minute break at 10 a.m., followed by a mid-day break for lunch that was variously reported as being one or two hours in duration.⁷⁷

The foremen who supervise the children are hired by the agricultural engineer responsible for cotton in each village, and paid by the cooperative at the rate of E£6 (US\$1.63) per day. By law, they must be at least twenty years of age, although in Zikrin we met a nineteen-year-old foreman who had already been working for two years.⁷⁸

⁷² Human Rights Watch interview with Hisham Dafallah, Agricultural Engineer, Zikrin, October 20, 1999. Foremen also attempt to address localized labor shortages by recruiting children from other villages. Human Rights Watch interview with Shawqi Hatem, Foreman, Zikrin, October 20, 1999.

⁷³ There are two phases of compulsory education in Egypt: primary, covering ages six to eleven, and preparatory, covering ages eleven to fourteen. Enrollment rates in rural Lower Egypt, according to an independent survey, are about 50 percent for children aged six, and at or near 90 percent for children aged to seven to eleven. A significant attrition in enrollment begins with noncompulsory secondary school, and less than 60 percent of children are enrolled at the age of seventeen. Enrollment levels for girls are about 10 percentage points lower than for boys at all ages, and school entry for girls is particularly sensitive to economic fluctuations. Barbara Ibrahim et al, *Transitions to Adulthood: A National Survey of Egyptian Adolescents*, (New York: The Population Council, 1999), pp. 61-66 and Fig. 5.4.

⁷⁴ Human Rights Watch interview with Nabil Abdel Sattar, El Samra, October 25, 1999.

⁷⁵ Child Law, article 66.

⁷⁶ Ibid.

⁷⁷ Human Rights Watch interviews with agricultural engineers and child workers, El Samra and Zikrin, October 20-25, 1999. The agricultural engineer in El Samra told us that the second break extended from 1 to 3 p.m., as did one child whom we interviewed. However, two other children who had worked for El Samra's cooperative—including one who had worked throughout the egg mass collection periods during the preceding three seasons—maintained that their lunch break was only one hour in duration. An exception, they said, was made on Friday, when they were allowed a three-hour break for a meal and prayers.

⁷⁸ Human Rights Watch interview with Shawqi Hatem, Foreman, Zikrin, October 20, 1999.

The foreman in Zikrin said at the time of his hire he was “told to treat the children well.”⁷⁹ However, physical abuse by foremen is routine, with children typically gauging the leniency of a foreman by the severity and frequency of the beatings that he administers. According to Nabil Abdel Sattar,

Our foreman is lenient with us.... If a kid intentionally left a mark [egg mass] out on purpose, he would be beaten, but not for mistakes. He asks someone to extend his hand, and strikes it with a stick. If our work is good, he makes us comfortable and tells us he won't hit us; he throws the stick away.⁸⁰

That perspective was shared by Fuad Yunus, a ten-year old-boy who had worked under two different foremen. “One of them I hate; the other one I like,” he said. “The one I hate used to beat and kick me whenever I missed a leaf. The other one beats and kicks me lightly.”⁸¹

In cases of particularly severe maltreatment, children may either quit work entirely—if their families do not rely on the additional income that they contribute—or seek employment under the supervision of a different foreman. The father of one child in Zikrin told us that his son quit after just ten days in 1999 because of the repeated beatings he experienced.⁸² Zahra Osman, a nine-year-old girl in El Samra, described a steady process of attrition from her work group. “The last group I was in started with twenty-two [children],” she said, “but you know, children don't like to be hit, so they turn up in another foreman's group. Our group ended up with twelve.”⁸³

The fields are inspected daily by the cooperative's pest control staff and periodically by the agricultural engineer,⁸⁴ but there appears to be no systematic monitoring of the foremen's treatment of children in their care. The visits are instead limited to assessing the infestation levels in each field, with foremen held accountable for the performance of their respective teams. “An agricultural engineer supervises my work, and would punish me if there was something wrong with the work of the child,” said a foreman in El Samra.⁸⁵ “There are some supervisors who are higher than foremen,” said a child in the same village. “They inspect our work, and yell at the foremen.”⁸⁶

Physical exertion in a hot environment presents the risk of incurring heat-related illnesses.⁸⁷ These include heat exhaustion, a condition in which excessive fluid loss leads to fatigue, low blood pressure, and circulatory collapse, and heatstroke, a condition in which dehydration leads to the failure of the body's thermoregulatory system. Heatstroke is potentially fatal, and can also result in permanent brain damage.⁸⁸

The Child Law, as noted earlier, requires employers to provide children with items of personal protection and instruction in their use, as well as pure water. However, the cooperative in El Samra did not appear to provide

⁷⁹ Ibid.

⁸⁰ Human Rights Watch interview with Nabil Abdel Sattar, El Samra, October 25, 1999.

⁸¹ Human Rights Watch interview with Fuad Yunus, Zikrin, October 20, 1999.

⁸² Human Rights Watch interview with Abbas Hamdi, Zikrin, October 20, 1999.

⁸³ Human Rights Watch interview with Zahra Osman, El Samra, October 25, 1999.

⁸⁴ Human Rights Watch interviews with child workers, foremen, and agricultural engineers in Zikrin and El Samra, October 20-25, 1999.

⁸⁵ Human Rights Watch interview with a foreman, El Samra, October 25, 1999.

⁸⁶ Human Rights Watch interview with Nabil Abdel Sattar, El Samra, October 25, 1999. The word that he used for “supervisor” was *muroor*, literally “those who pass by.”

⁸⁷ An Egyptian NGO, the Land Center for Human Rights, has documented two cases in which heat exposure necessitated medical care for child leafworm control workers. In both cases, the cost of the children's treatment was sustained by their families. Land Center for Human Rights, “Child Workers...,” chapter 4, citing the cases of Marilyn Sabry Ibrahim, seven, and Mohssen El-Sayed Deyab, eight.

⁸⁸ Mark H. Beers and Robert Berkow (eds.), *The Merck Manual of Diagnosis and Therapy*, Seventeenth Edition, (Whitehouse Station, NJ: Merck & Co., 1999), section 20, chapter 279.

children with protective clothing or a vessel to store drinking water. Children whom we interviewed in the village told us that they bought caps at the beginning of the egg mass collection season, and pooled their resources to purchase a bucket. An older girl in the group, chosen by the foreman, would periodically fill the bucket with water from the nearest pump on the field.⁸⁹

Requests for water appeared to be granted at the discretion of the foreman, with conditions varying widely between different work teams. "One of the good things about our foreman was that he brought us water when we asked," said Zahra Osman.⁹⁰ Some children in Zikrin told us that they were only permitted to drink water during a fifteen-minute break, while others said that they were allowed to drink whenever they wished.⁹¹

Exposure to Pesticides

Cases of acute pesticide poisoning are often associated with exposure to organophosphate or carbamate pesticides, several of which have been registered for mid-season use against cotton leafworms and bollworms by the Egyptian agriculture ministry. Initial symptoms of intoxication by these chemicals include fatigue, headaches, dizziness or blurred vision, cramps, nausea, vomiting, and diarrhea. Exposure may also lead to heart rate changes and breathing difficulty, and in advanced cases, convulsions, coma, or death.⁹² Sustained exposure to certain pesticides can result in disruption of the nervous, endocrine, and reproductive systems, and have other chronic effects.⁹³

The health hazards posed by pesticide exposure are especially pronounced for children, who may come into contact with pesticide residue through agricultural employment, pesticide drift, or contaminated groundwater, produce, or soil. Children have a heightened susceptibility to pesticide intoxication. Their relatively thin dermis and epidermis facilitate the absorption of hazardous chemicals, while their significantly higher ratio of body surface area to body volume allows proportionately greater dermal absorption. Children's immature organ systems can also lead to the increased absorption of toxic chemicals, while their high metabolic rates and oxygen consumption cause high rates of air flow into the lungs, facilitating inhalation of pesticides. At the same time, the ability of the child's kidneys and liver to metabolize and excrete toxins may be reduced in relation to adults.⁹⁴

Several children whom we interviewed in Zikrin stated that cotton fields in the village were sprayed with pesticides while they were engaged in egg mass collection.⁹⁵ A local farmer confirmed their accounts, saying that children working on a field would be moved to an adjacent area before spraying, but would return immediately thereafter.⁹⁶ Hisham Dafallah, the local agricultural engineer for cotton, refused to discuss pesticide use in Zikrin with Human Rights Watch, except to say that it was conducted after the period of manual leafworm control work was over and in accordance with a "legally coded process for the application of pesticides."⁹⁷

The measures taken to protect child agricultural workers from pesticide exposure may differ significantly between villages; children in El Samra told us that they were kept away from cotton fields where spraying was

⁸⁹ Human Rights Watch interview with Karim Abu Amir and Nabil Abdel Sattar, El Samra, October 25, 1999.

⁹⁰ Human Rights Watch interview with Zahra Osman, El Samra, October 25, 1999.

⁹¹ Human Rights Watch interview with child workers, Zikrin, October 20, 1999.

⁹² Pennsylvania State University College of Agricultural Sciences, "Agrichemical Fact Sheet #7: Toxicity and Potential Health Effects of Pesticides," <<http://www.pested.psu.edu/fact7.html>> (19 January 2001), and Natural Resources Defense Council, "Trouble on the Farm: Growing Up with Pesticides in Agricultural Communities," (New York: Natural Resources Defense Council, 1998), chapter 1.

⁹³ Pennsylvania State University College of Agricultural Sciences, "Agrichemical Fact Sheet #7"

⁹⁴ See M.A. Belsey, "Toxic Disasters with Crude Chemicals: An Approach to Identifying Risks in Infants and Children," in P.L. Chambers (ed.), *Attitudes to Toxicology in the European Economic Community* (Chichester: John Wiley & Sons, 1987), p. 50, and Lawrence R. Berger, Mark Belsey, and P.M. Shah, "Medical Aspects of Child Labor in Developing Countries (Editorial)," *American Journal of Industrial Medicine*, vol. 19., nos. 697-699 (1991), p. 698.

⁹⁵ Human Rights Watch interviews with children in Zikrin, October 20, 1999.

⁹⁶ Human Rights Watch interview with Abbas Hamdi, Zikrin, October 20, 1999.

⁹⁷ Human Rights Watch interview with Hisham Dafallah, Agricultural Engineer, Zikrin, October 20, 1999.

underway, and would return to those fields either the following day or the day after.⁹⁸ Degradation periods vary according to the pesticide used, however, and intervals of twenty-four to forty-eight hours after spraying are in some cases insufficient to protect agricultural workers from contact with residue.⁹⁹

Aside from egg mass collection, there are a number of other activities related to cotton pest management in which children may be exposed to toxic chemicals. At present, the most commonly used types of pesticide applicators in Egypt are a motorized, backpack-mounted sprayer and a hand-pumped drip applicator that offers an inexpensive and efficient method of applying pesticides.¹⁰⁰ However, children are sometimes involved in an older delivery method: a motorized pump, whose hose is equipped with a wide-aperture nozzle that saturates the cotton crop with pesticides. The motorized pump is enjoying a modest resurgence in popularity, according to a Cairo-based development specialist who frequently visits rural areas. Children between the ages of fourteen and sixteen at times assist in the pump's use; roughly half a dozen children may be hired to carry its 200 to 300 meter (219 to 328 yard) hose, becoming heavily contaminated with pesticides in the process.¹⁰¹ Children are also reportedly involved in preparing pesticide applicators for use, and cleaning them following application.¹⁰²

Spraying for leafworm infestations is carried out both by the cooperatives' pest control staff and by individual farmers on land that they cultivate. If scouting reveals that the infestation level has passed a predetermined threshold, the agricultural engineer may direct the pest control staff to apply pesticides that the agriculture ministry has registered for use against leafworms. The ministry recommended five pesticides for use in leafworm control operations during 1995.¹⁰³ Two of these are categorized by the World Health Organization (WHO) as Class Ib, or "highly hazardous" pesticides, and the remaining three as Class II, or "moderately hazardous," based on the oral and dermal toxicity of their active ingredients to laboratory rats.¹⁰⁴

The agriculture engineer also supervises a concurrent program of pesticide spraying to combat the cotton bollworm. The agriculture ministry approved thirty-nine pesticides for use against bollworms infestations during 1995, including nine Class Ib, fifteen Class II, and two Class III, or "slightly hazardous" pesticides.¹⁰⁵ Farmers are not permitted to apply pesticides themselves against bollworms, but the active ingredients of several bollworm pesticides are registered for use on other crops or for public health applications, and are applied by farmers against bollworms.¹⁰⁶

⁹⁸ Human Rights Watch interviews with Karim Abu Amir and Zahra Osman, El Samra, October 25, 1999. Adel William, who has conducted field research on manual leafworm control operations in the same governorate for the Land Center for Human Rights, said that children returned to the fields on the third day after spraying. Human Rights Watch interview with Adel William, Land Center for Human Rights, October 25, 1999.

⁹⁹ An example is the carbamate methomyl, which was approved for application against leafworms and bollworms by the agriculture ministry in 1995, and which remains in use, according to a farmer in Zikrin interviewed by Human Rights Watch. Classified by the World Health Organization (WHO) as a Class Ib or "highly hazardous" pesticide, methomyl is subject under United States Environmental Protection Agency (EPA) guidelines to a reentry interval of three days when applied to cotton. Central Administration for Pest Control, List of Recommended Cotton Insecticides 1995; EPA, "Pesticide Fact Sheet 4/89: Methomyl (Lannate, Nudrin)"; Human Rights Watch interview with Abbas Hamdi, Zikrin, October 20, 1999.

¹⁰⁰ Human Rights Watch interviews with a development specialist, Cairo, October 19, 1999; Abbas Hamdi, Zikrin, October 20, 1999; and Mohammad Madani, Agricultural Engineer, El Samra, October 25, 1999.

¹⁰¹ Human Rights Watch interview with a development specialist, Cairo, October 19, 1999.

¹⁰² Human Rights Watch interview with Mahmoud Mortada, Alternative Development Studies Center, Cairo, October 10, 1999.

¹⁰³ Central Administration for Pest Control, List of Recommended Cotton Insecticides 1995.

¹⁰⁴ The WHO makes a distinction between the toxicity of the technical compound and that of the commercial product's formulation, with the critical variables including the physical state of the formulation and the concentration of the active ingredient(s). When assessed on the basis of formulation, only one of the five pesticides on the 1995 list is grouped in Class Ib, while two are grouped in Class II, and the remainder in Class III, or "slightly hazardous" pesticides. World Health Organization, *The WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification 1998-99* (Geneva: World Health Organization, 1998), WHO/PCS/98.21/ Rev.1, pp. 2, 30.

¹⁰⁵ Central Administration for Pest Control, List of Recommended Cotton Insecticides 1995.

¹⁰⁶ Human Rights Watch correspondence with a development specialist, Cairo, February 2000.

Viewed against the backdrop of cotton pesticides that were used in Egypt between 1971 and 1992, the agriculture ministry's list of recommended pesticides for 1995 reflects significant strides: the use of methyl parathion and other Class Ia, or "extremely hazardous," pesticides were no longer sanctioned, and there had been a significant reduction in the number of approved Class Ib pesticides. Pesticide usage itself declined by over 40 percent between 1991 and 1996, a development that is attributable to the introduction of IPM and more efficient delivery methods during the same period.¹⁰⁷ At the time of Human Rights Watch's visit, however, there were indications that some of these achievements were being undermined or reversed.

Having received little instruction in IPM strategies, cotton farmers compensated for what they saw as a shortfall in pesticide application with additional spraying of their own. Between 1991 and 1996, the amount spent by cotton farmers on pesticides rose from E£26 (US\$7.05) per acre to E£178 (US\$48.24) per acre;¹⁰⁸ state subsidies of at least forty percent for pesticides cushioned the financial blow, ironically undermining the effectiveness of the agriculture ministry's own IPM program. Subsidies were reduced by forty percent in 1999, according to an Egyptian toxicologist who has campaigned for curbs on pesticide use.¹⁰⁹ However, agricultural cooperatives—until late 1997, the sole distribution points for pesticides—continue to sell pesticides at rates far below market value. A farmer in Zikrin cited the example of Dursban, a Dow Chemical Company trade name for the organophosphate pesticide chlorpyrifos, which he said was available through the local cooperative for just over half the price that private traders charged.¹¹⁰ Pesticides that farmers are not permitted to apply against cotton, including pyrethroids and some Class Ib pesticides, are readily available through private traders.¹¹¹

The agriculture ministry has recently begun to address the previous shortcomings in its implementation of IPM by establishing learning groups to educate cotton farmers about IPM. The learning groups, according to a source who is familiar their operation, have been in place since the 1998-1999 season and currently embrace 40,000 farmers. Plans are underway to expand them over a period of three to four years, so as to eventually cover all cotton farmers.

The availability of Class Ib pesticides to farmers, coupled with inadequate supervision and unnecessary or excessive usage, poses serious health risks to agricultural workers of any age. There is also evidence that certain Class II pesticides are particularly hazardous to children. In addition to absorbing and retaining greater concentrations of environmental toxins than adults, children may exhibit greater sensitivity to specific toxic chemicals at given concentrations.¹¹² An illustrative example is the pesticide chlorpyrifos, which Egypt's agriculture ministry has recommended to combat both leafworm and bollworm infestations.¹¹³ Categorized by the World Health Organization as a Class II, or "moderately hazardous" pesticide, chlorpyrifos—like other organophosphates—inhibits the activity of cholinesterase, an enzyme necessary for the proper functioning of the nervous system.¹¹⁴ On June 8, 2000, the United States Environmental Protection Agency (EPA) issued a revised risk assessment of chlorpyrifos that found "greater sensitivity of young compared to adult rats to the neurotoxic effects of chlorpyrifos and for the susceptibility of the developing brain to chlorpyrifos." With respect to cholinesterase inhibition, the study found that the difference in response between young and adult rats to a relatively low dose of chlorpyrifos was two to five-fold, and after repeated dosing, up to nine-fold.¹¹⁵ On the

¹⁰⁷ Study conducted for the Government of Egypt, 1998, on file at Human Rights Watch.

¹⁰⁸ *Ibid.*

¹⁰⁹ Human Rights Watch interview with Dr. Mahmoud Amr, Chairman, Industrial Medicine and Occupational Diseases Department, Cairo University, and Director, National Egyptian Center for Toxicological Research, Cairo, October 18, 1999.

¹¹⁰ Human Rights Watch interview with Abbas Hamdi, Zikrin, October 20, 1999.

¹¹¹ Human Rights Watch correspondence with a development specialist, Cairo, February 2000.

¹¹² M.A. Belsey, "Toxic Disasters with Crude Chemicals" p. 50.

¹¹³ Central Administration for Pest Control, List of Recommended Cotton Insecticides 1995.

¹¹⁴ Deborah C. Smegal, Risk Assessor, "Human Health Risk Assessment: Chlorpyrifos," Health Effects Division (7509C), Office of Pesticide Programs, U.S. Environmental Protection Agency, June 8, 2000, p.2.

¹¹⁵ Smegal, "Human Health Risk Assessment: Chlorpyrifos," p. 131.

basis of its findings, the EPA banned most non-agricultural uses of chlorpyrifos, restricted its agricultural uses, and ordered the implementation of revised restricted-entry intervals for all agricultural crops.¹¹⁶

Although organophosphates have been subjected to greater scrutiny for their impact on children's health, other families of pesticides may also act disparately on children. According to a recent study, certain pyrethroids "exert hormonal activity that may alter early neurological and reproductive development."¹¹⁷

VII. CONCLUSION

Egypt's adoption of the Child Law in 1996 represented an important step toward the fulfillment of its obligations as a party to the Convention on the Rights of the Child. But the government of Egypt has undermined its commitment to the Child Law's enforcement by permitting cooperatives to employ children well below the minimum age for seasonal agricultural employment and without regard for the law's provisions governing the days and hours of children's work. The cooperatives have further subjected children in their employ to routine ill-treatment and failed to provide them adequate protection from occupational hazards, in violation of both the Convention and the Child Law. Our research also indicates that the poorest rural children now account for a disproportionate share of the workforce for leafworm control operations, a development that may be related to the government's implementation of the 1992 Land Law without concurrent measures to forestall the entry of children into the wage labor force. While Egypt's recent commencement of farmer learning programs may in time significantly reduce the health hazards faced by children, additional measures addressing both the cooperative's employment practices and the underlying economic factors contributing to the children's employment are necessary if these children are to enjoy their rights under the Child Law and the Convention.

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¹¹⁶ Smegal, "Human Health Risk Assessment: Chlorpyrifos," Background.

¹¹⁷ Philip J. Landrigan et al., "Pesticides and Inner-City Children: Exposures, Risks, and Prevention (Abstract)" *Environmental Health Perspectives*, vol. 107, supp. 3, June 1999, <<http://ehpnet1.niehs.nih.gov/docs/1999/suppl-3/431-437/landrigan/abstract.html>> (19 January 2001).