

# Child labour in the municipality of Sana'a: An overview

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WORKING DRAFT -- NOT FOR CITATION

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## 1. BACKGROUND AND RATIONALE

1. As part of broader efforts towards durable solutions to child labour, ILO, UNICEF and the World Bank launched the joint interagency research project, Understanding Children's Work (UCW), in December 2000. The project is guided by the Oslo Agenda for Action, unanimously adopted at the 1997 International Conference on Child Labour, which laid out the priorities for the international community to address child labour. The Agenda specifically identified the crucial need for better information on the child labour phenomenon. The UCW project also responds to the need articulated at the Oslo Conference to strengthen co-operation and co-ordination among the three partner agencies in the child labour field.

2. The Child Protection Initiative (CPI) was established in response to a recommendation made at the 2002 Amman Children and the City Conference for "building the capacities of municipal authorities and establishing a regional fund to respond rapidly to the risks faced by vulnerable and disadvantaged children in the MENA region." CPI, supported by the World Bank and the Arab Urban Development Institute (AUDI), is broadly aimed at improving the ability of local authorities to ensure well being of children, and at enhancing knowledge of effective policies and programs that address critical children's issues in the region.

3. The research on child labour in Sana'a forms part of part of broader UCW- and CPI-supported efforts to improve understanding of vulnerable children in the Yemeni context.<sup>1</sup> While urban child labourers constitute only a minority of total Yemeni child labourers, they typically face the most serious work-related threats to their health and well-being, and therefore constitute a particular policy concern. Many of the so-called worst forms of child labour, including children working and/or living on the street and children in hazardous manufacturing, are found primarily in urban settings.

4. But while these general facts are clear, relatively little is known about the specific extent and nature of urban child labour. There is therefore limited empirical basis for formulating policies and designing programmes addressing this especially vulnerable group of child labourers. The current study is aimed at beginning to fill this gap by establishing baseline data on child labour in Sana'a. A set of indicators of child labour in Sana'a are presented using data from the 1999 National Poverty Survey (NPS 1999) and the 2004 Population Census (Census 2004). Studies based on other methodologies and sources are reviewed to provide information on forms of urban child labour that are beyond the scope of household surveys. Key data gaps are identified and possible research approaches for filling these gaps are discussed.

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<sup>1</sup> A detailed Inter-Agency Report on Child Labour in Yemen was developed under the aegis of the UCW Project and presented to the Government by the three agencies in 2003. The Inter-Agency Report provides an overview of work done by children in the country – its extent and nature, its determinants, and its consequences on health and education. The report also looks at national responses to child labour and policy priorities for accelerating national action in the area of child labour.

## 2. CHILDREN'S INVOLVEMENT IN WORK

**A relatively small proportion of Sana'a children appear to work in economic activity.** An estimated two percent of Sana'a children aged 6-14 years<sup>2</sup> – 7,400 in absolute terms – was engaged in economic activity in 1999.<sup>3</sup> But this estimate, based on the National Poverty Survey, likely understates children's total involvement in work in Sana'a in the 1999 reference year. There are two main reasons for this. First, household surveys such as NPS 1999 are ill-suited to capture so-called unconditional worst forms of child labour found in urban settings,<sup>4</sup> because of the unlikelihood that these morally repugnant or dangerous activities are reported by a household member to a survey interviewer, even if the child in question is still part of the household. Indeed, households may not even be aware that their children are involved in these activities. Unconditional worst forms of child labour are discussed further in Section 3 of this report. Second, NPS 1999 did not examine children's involvement in household chores, a form of work often associated in particular with girls. The work situation of children in the Sana'a municipality has also undoubtedly changed since the 1999 reference year, another reason that the estimates from the National Poverty Survey should be interpreted with caution.<sup>5</sup>

Table 1. Involvement in economic activity and schooling, children aged 6-14 years, by sex, Sana'a municipality

| Type of Activity  | Male |                    | Female |                    | Total <sup>(2)</sup> |                    |
|---|------|--------------------|--------|--------------------|----------------------|--------------------|
|   | %    | No. <sup>(1)</sup> | %      | No. <sup>(1)</sup> | %                    | No. <sup>(1)</sup> |
| Only involved in economic activity <sup>(3)</sup>                         | 1.0  | 2015               | 0.2    | 408                | 0.6                  | 2423               |
| Only attending school   | 82.9 | 159903             | 79.9   | 156077             | 81.4                 | 315980             |
| Both attending school and involved in economic activity                   | 2.2  | 4194               | 0.4    | 778                | 1.3                  | 4973               |
| Neither attending school nor involved in economic activity <sup>(3)</sup> | 13.9 | 26736              | 19.5   | 38143              | 16.7                 | 64879              |
| Total involved in economic activity <sup>(4)</sup>                        | 2.2  | 6209               | 0.6    | 1186               | 1.9                  | 7395               |
| Total attending school <sup>(5)</sup>                                     | 85.1 | 164097             | 80.3   | 156855             | 82.7                 | 320953             |

Notes: (1) Numbers expressed in thousands; (2) Totals may not add up due to rounding; (3) A child is considered to be economically active if he or she spent at least one hour at work in economic activity during the reference week. (4) 'Total involved in economic activity' refers to both students and non-students in economic activity; (5) 'Total attending school' refers to both working and non-working students.

Source: UCW calculations based on *National Poverty Survey, 1999*.

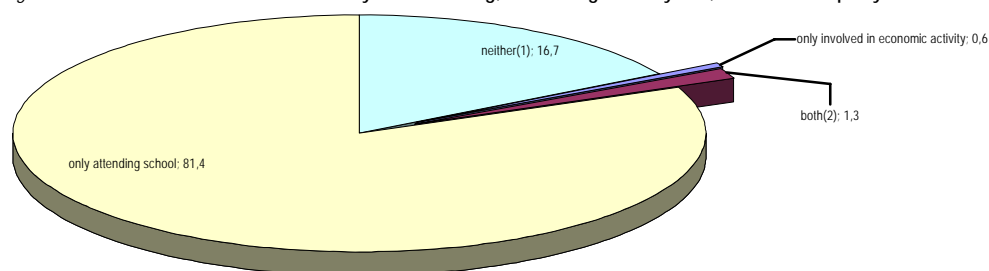
<sup>2</sup> Unless otherwise indicated, the discussion on children's work refers to the 6-14 years age group. The upper bound of 14 years is consistent with consistent with the ILO Convention No. 138 on Minimum Age, which states that the minimum age for admission to employment or work should not be less than 15 years (Art. 2.3). Fourteen years is also the age at which the nine-year basic schooling cycle ends, and can be considered the threshold age after which children begin to exercise a degree of control over their time allocations, i.e., the age at which children begin to become "free agents". The lower bound of six years coincides with the age at which children start formal schooling.

<sup>3</sup> Economic activity, as defined by the UN System of National Accounts (1993 Rev. 3), is a broad concept that encompasses most productive activities by children, including unpaid and illegal work, work in the informal sector, and production of goods for own use. This operational definition of work by children does *not* include household chores, which are non-economic activities, and therefore outside the 'production boundary', according the UN System of National Accounts (1993 Rev. 3). NPS 1999 unfortunately did not collect information concerning involvement in household chores, and therefore household chores are not dealt with in this report.

<sup>4</sup> Unconditional worst forms targeted by ILO Convention No. 182 include: (a) all forms of slavery or practices similar to slavery, such as the sale and trafficking of children, debt bondage and serfdom and forced or compulsory labour, including forced or compulsory recruitment of children for use in armed conflict; (b) the use, procuring or offering of a child for prostitution, for the production of pornography or for pornographic performances; (c) the use, procuring or offering of a child for illicit activities, in particular for the production and trafficking of drugs as defined in the relevant international treaties, and (d) any activity or occupation which, by its nature or type has, or leads to, adverse effects on the child's safety, health (physical or mental), and moral development.

<sup>5</sup> More recent data from the 2004 Population Census puts the total number of 10-14 year-old working children in Sana'a at 639, but this figure does not appear to include the group of working children also attending school. Population censuses are generally instruments ill-suited to the measurement of child labour incidence, and for this reason the child labour estimates from the 2004 census are not cited in the main body of this report. The census data are, however, used in examining the characteristics of the working children population in Sana'a.

Figure 1. Involvement in economic activity and schooling, children aged 6-14 years, Sana'a municipality



Notes: (1) "Neither" refers to children neither attending school nor in economic activity; and (2) "Both" refers to children both attending school and in economic activity

Source: UCW calculations based on *National Poverty Survey, 1999*.

**5. A larger portion of the Sana'a children (17 percent) was involved in neither school nor economic activity in the 1999 reference year.** About one in five "inactive" children was actively looking for a job, and another 14 percent suffered from a health problem.<sup>6</sup> The remaining children in the inactive group require further investigation, but it stands to reason that many were in reality performing functions that contributed in some way to household welfare (i.e., either working or doing household chores) not captured by the survey. Parents may falsely report their children as being inactive instead of as working because (at best) work by children is forbidden or (at worst) because their children are engaged in illegal or dangerous activities. Alternatively, parents may misinterpret the survey question, and report a child as inactive because he or she was not working at the time of the interview, although he or she may work during other periods. The children from this group who are indeed inactive can be even more disadvantaged than their working counterparts, benefiting neither from schooling nor from the learning-by-doing that some forms of work offer. Research elsewhere suggests that this is also the group that is most at risk of entering work should a household be faced with a sudden loss of income or other type of shock.<sup>7</sup>

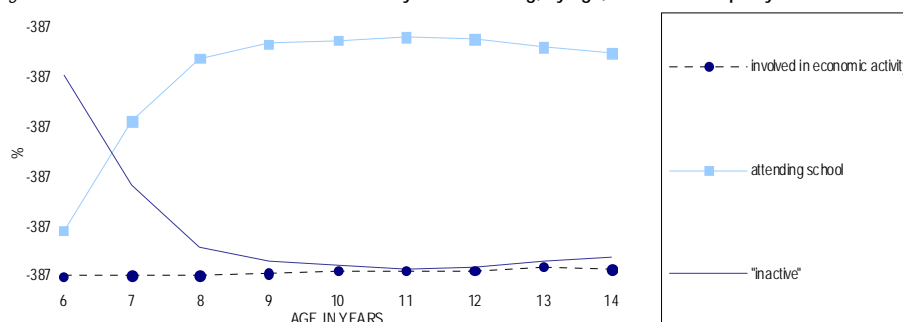
**6. Boys' involvement in economic activity was slightly higher than girls' in 1999, though economic activity levels were low for both sexes.** Girls were more likely than boys to be "inactive" (20 percent versus 14 percent), a category which also likely captures unreported work or involvement in household chores (see above). Overall levels of work involvement (i.e., considering both economic activity and household chores) were therefore likely at least as high for girls as for their male counterparts. Boys enjoyed a slight advantage in terms of school attendance in 1999; 85 percent of 6-14 year-old boys were enrolled in school in this reference year against 80 percent of similarly-aged girls.

**7. The time-use transition across the 6-14 years age range appears primarily to be between "inactivity" and school.** At age six, the first year of primary schooling, only 19 percent of children were enrolled in school in 1999. This was primarily a product of late school entry; most children do eventually enter school. School attendance rose (i.e., late entrants exceeded early drop-outs) for subsequent age cohorts, peaking at 94 percent at age 11 years, one year prior to the formal end of the primary cycle. Reported "inactivity" followed the opposite pattern, falling from 80 percent at age six years to three percent at age 11 years before beginning to rise again (presumably as children began to take on full-time responsibility for chores in the household). Involvement in economic activity rose slowly from almost zero at age six years to three percent at age 13 years.

<sup>6</sup> UCW calculations based on NPS 1999.

<sup>7</sup> For example, UCW project, *Understanding Child Work in Guatemala, 2002*.

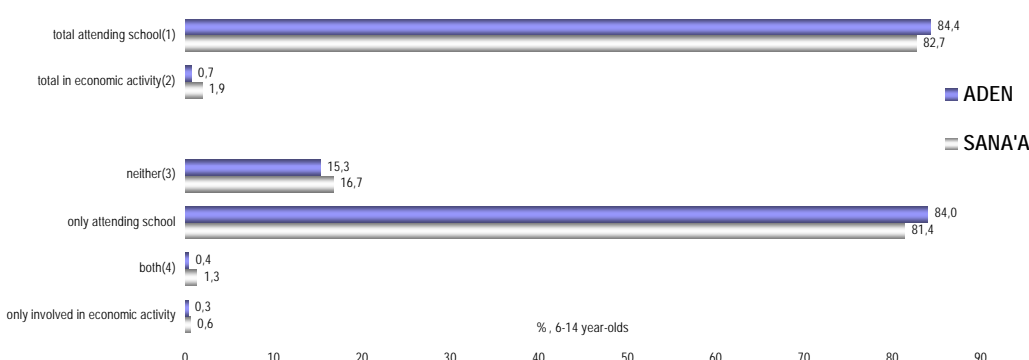
Figure 2. Child involvement in economic activity and schooling, by age, Sana'a municipality



Source: UCW calculations based on *National Poverty Survey, 1999*.

**8. Levels of child involvement in economic activity are similar in Yemen's other major urban centre, Aden.** This suggests that the children's work situation in Sana'a is not unique, but rather characteristic of Yemen's large urban centres generally. As shown in Figure 2, the proportions of children attending school, working, doing neither or doing both, differ very little between Aden and Sana'a.

Figure 3. Involvement in economic activity and schooling, children aged 6-14 years, Sana'a and Aden municipalities



Notes: (1) Refers to both working and non-working students; (2) Refers to both student and non-student children in economic activity; (3) "Neither" refers to children neither in economic activity nor attending school; and (4) "Both" refers to children both attending school and in economic activity.

Source: UCW calculations based on *National Poverty Survey, 1999*.

**9. There is a considerable degree of specialisation by sex in the economic activities performed by Sana'a children.** According to 2004 census figures, 40 percent of working boys aged 10-18 years are found in "sales and maintenance", followed by "recycling" (15 percent), "construction" (10 percent), "hotels and restaurants" (eight percent) and "general administration" (eight percent). Among similarly-aged working girls, on the other hand, work in "recycling" is most common (24 percent), followed by "general administration", "farming and hunting", "sales and maintenance", "health and social work" and "education" (each accounting for about 10 percent of working girls) (Table 2). But these categories relate to standard industrial classifications designed to measure adult work and offer little information about the actual nature of the work performed by children.

Table 2. Distribution of working children by sector of activity, children aged 10-18 years, by sex

| Economic Activity                      | Male        |            | Female     |            | Total       |            |
|--|-------------|------------|------------|------------|-------------|------------|
|  | No.         | %          | No.        | %          | No.         | %          |
| Farming and hunting                    | 117         | 4.76       | 15         | 10.20      | 132         | 5.04       |
| Mining                                 | 7           | 0.28       | 0          | 0.00       | 7           | 0.27       |
| Recycling                              | 378         | 15.37      | 35         | 23.81      | 413         | 15.78      |
| Electricity, gas and water             | 3           | 0.12       | 1          | 0.68       | 4           | 0.15       |
| Construction                           | 247         | 10.04      | 4          | 2.72       | 251         | 9.59       |
| Whole and retail sales and maintenance | 982         | 39.93      | 14         | 9.52       | 996         | 38.06      |
| Hotels and restaurants                 | 201         | 8.17       | 2          | 1.36       | 203         | 7.76       |
| Transport, storing and communication   | 127         | 5.16       | 6          | 4.08       | 144         | 5.50       |
| Broker                                 | 4           | 0.16       | 0          | 0.00       | 4           | 0.15       |
| Real estate                            | 28          | 1.14       | 1          | 0.68       | 29          | 1.11       |
| General administration                 | 196         | 7.97       | 15         | 10.20      | 211         | 8.06       |
| Education                              | 12          | 0.49       | 14         | 9.52       | 26          | 0.99       |
| Health and social work                 | 13          | 0.53       | 15         | 10.20      | 28          | 1.07       |
| Social services                        | 110         | 4.47       | 13         | 8.84       | 123         | 4.70       |
| Household work                         | 31          | 1.26       | 12         | 8.16       | 43          | 1.64       |
| NGOs                                   | 3           | 0.12       | 0          | 0.00       | 3           | 0.11       |
| <b>Total</b>                           | <b>2459</b> | <b>100</b> | <b>147</b> | <b>100</b> | <b>2617</b> | <b>100</b> |

Source: Central Office of Statistics, 2004 Population Census, Sana'a, Yemen.

**10. Census data on work modality, place of work and occupation help provide a more complete profile of children's work in Sana'a**, although these generic indicators too are designed primarily with the adult workforce in mind. Work for cash payment is the most common work modality for both sexes, followed by self employment (for girls) and family work (for boys) (Table 3). Work for cash increases in importance for both sexes as they approach adulthood; patterns by age for other work modalities are more difficult to discern. Very few children of either sex appear to benefit from any form of apprenticeship or on-the-job training. It is worth noting that much of the information on work modality, particularly among young children and girls, unfortunately lies in the residual category "not stated". Indeed, the modality of work was not stated for more than four out of five young working girls, constituting an important information gap that will need to be addressed in future surveys on children's work.

Table 3. Distribution of working children by work modality, age and sex

| Age in years | Work modality            |     |               |     |                     |      |                     |     |                     |     |                   |     | Total |      |            |       |
|--------------|--------------------------|-----|---------------|-----|---------------------|------|---------------------|-----|---------------------|-----|-------------------|-----|-------|------|------------|-------|
|              | Working for own business |     | Self employed |     | Paid worker in cash |      | Paid worker in kind |     | Work for his family |     | Volunteer trainee |     |       |      | Not stated |       |
|              | M                        | F   | M             | F   | M                   | F    | M                   | F   | M                   | F   | M                 | F   | M     | F    | M          | F     |
| 10           | 0,0                      | 1,3 | 6,6           | 0,0 | 8,5                 | 0,0  | 0,9                 | 0,0 | 6,6                 | 1,3 | 0,0               | 0,0 | 77,4  | 97,5 | 100,0      | 100,0 |
| 11           | 0,0                      | 0,0 | 7,5           | 0,0 | 16,3                | 0,0  | 0,0                 | 0,0 | 11,3                | 7,0 | 0,0               | 0,0 | 65,0  | 93,0 | 100,0      | 100,0 |
| 12           | 1,9                      | 0,0 | 10,7          | 1,8 | 25,2                | 1,8  | 1,0                 | 0,0 | 12,6                | 3,6 | 0,0               | 0,0 | 48,5  | 92,7 | 100,0      | 100,0 |
| 13           | 0,8                      | 0,0 | 11,4          | 0,0 | 32,6                | 12,2 | 1,5                 | 0,0 | 18,9                | 0,0 | 0,0               | 0,0 | 34,8  | 87,8 | 100,0      | 100,0 |
| 14           | 3,3                      | 0,0 | 8,4           | 4,2 | 39,7                | 14,6 | 3,7                 | 0,0 | 20,1                | 6,3 | 0,9               | 0,0 | 23,8  | 75,0 | 100,0      | 100,0 |
| 15           | 3,3                      | 0,0 | 13,0          | 3,6 | 45,9                | 14,5 | 3,3                 | 0,0 | 18,1                | 1,8 | 0,6               | 1,8 | 15,7  | 78,2 | 100,0      | 100,0 |
| 16           | 1,6                      | 0,0 | 16,8          | 5,9 | 57,0                | 25,5 | 3,8                 | 0,0 | 13,2                | 9,8 | 0,8               | 2,0 | 6,8   | 56,9 | 100,0      | 100,0 |
| 17           | 2,7                      | 3,8 | 14,7          | 5,1 | 56,9                | 25,3 | 1,8                 | 2,5 | 14,8                | 5,1 | 0,9               | 2,5 | 8,2   | 55,7 | 100,0      | 100,0 |
| 18           | 3,6                      | 1,0 | 13,4          | 7,3 | 61,8                | 39,6 | 2,3                 | 0,0 | 12,4                | 7,3 | 0,6               | 2,1 | 5,8   | 42,7 | 100,0      | 100,0 |
| Total        | 2,7                      | 0,9 | 13,1          | 3,5 | 51,1                | 16,8 | 2,4                 | 0,4 | 14,2                | 4,8 | 0,6               | 1,1 | 15,8  | 72,6 | 100,0      | 100,0 |

Source: Central Office of Statistics, 2004 Population Census, Sana'a, Yemen.

**11. Girls are most likely to work "companies and establishments"** (accounting for around 37 percent of total working girls), while workshops are by far the most common workplaces for boys (accounting 39 percent of total working boys) (Table 4). Working girls are much more likely than their male counterparts to work inside their own home, but the proportion of working children in family-based work is low for both sexes relative to other countries where similar data are available. The fact that most children work outside the protective environment of the home gives rise to concern that they face greater exposure to work-related hazards and risks, though data are insufficient to draw concrete conclusions concerning hazardousness. About one in ten working boys are "mobile sellers", presumably at risk of exposure to the various well-known dangers associated with street work.

Table 4. Distribution of working children by workplace, children aged 10-18 years, by sex

| Place of work                | Male        |            | Female     |            | Total       |            |
|------------------------------|-------------|------------|------------|------------|-------------|------------|
|                              | No.         | %          | No.        | %          | No.         | %          |
| Companies and establishments | 244         | 9.92       | 29         | 19.59      | 273         | 10.47      |
| Private establishments       | 167         | 6.79       | 25         | 16.89      | 192         | 7.36       |
| Workshop                     | 947         | 38.51      | 20         | 13.51      | 967         | 37.09      |
| Working inside the house     | 94          | 3.82       | 31         | 20.95      | 125         | 4.79       |
| Selling goods in corridors   | 112         | 4.55       | 0          | 0.00       | 112         | 4.30       |
| Mobile sellers               | 234         | 9.52       | 4          | 2.70       | 238         | 9.13       |
| Incomplete buildings         | 203         | 8.26       | 2          | 1.35       | 205         | 7.86       |
| Farm                         | 116         | 4.72       | 15         | 10.14      | 131         | 5.02       |
| Means of transport           | 65          | 2.64       | 0          | 0.00       | 65          | 2.49       |
| Not stated                   | 277         | 11.26      | 22         | 14.86      | 299         | 11.47      |
| <b>Total</b>                 | <b>2459</b> | <b>100</b> | <b>148</b> | <b>100</b> | <b>2607</b> | <b>100</b> |

Source: Central Office of Statistics, 2004 Population Census, Sana'a, Yemen.

12. "Services and sales labour", "handcrafts and related activities" and "unskilled work" are the most common occupational categories for boys, together accounting for about 80 percent of total working boys (Table 5). Working girls are distributed across a wider range of occupations, with "unskilled work", "handcrafts and related activities", "services and sales labour", "technicians and assistants", "skilled labour in farming and related activities" and "clerks" all accounting for important proportions of the working girl population. But like industrial sector presented above (Table 2), the standard occupational categories used in censuses and labour force surveys are often ill-suited to measuring children's work, and offer relatively little information about the actual work tasks performed by children. Again, follow-up research, specifically targeting children's work, is needed for a more complete picture of the nature and composition of the work performed by children.

Table 5. Distribution of working children by main occupation, 10-18 years age group, by sex

| Main Occupation                               | Male        |            | Female     |            | Total       |            |
|---|-------------|------------|------------|------------|-------------|------------|
|   | No.         | %          | No.        | %          | No.         | %          |
| Arm Forces and security                       | 96          | 3.90       | 3          | 2.04       | 99          | 3.80       |
| Legislation and management                    | 8           | 0.33       | 3          | 2.04       | 11          | 0.42       |
| Specialists                                   | 1           | 0.04       | 1          | 0.68       | 2           | 0.08       |
| Technicians and assistants                    | 26          | 1.06       | 23         | 15.65      | 49          | 1.88       |
| Clerks  | 93          | 3.78       | 12         | 8.16       | 105         | 4.03       |
| Service and sales labor                       | 845         | 34.35      | 24         | 16.33      | 869         | 33.33      |
| Skilled labor in farming & related activities | 84          | 3.41       | 15         | 10.20      | 99          | 3.80       |
| Handcrafts and related activities             | 572         | 23.25      | 31         | 21.09      | 603         | 23.13      |
| Assembling worker                             | 188         | 7.64       | 4          | 2.72       | 192         | 7.36       |
| Unskilled workers                             | 547         | 22.24      | 31         | 21.09      | 578         | 22.17      |
| <b>Total</b>                                  | <b>2460</b> | <b>100</b> | <b>147</b> | <b>100</b> | <b>2607</b> | <b>100</b> |

Source: Central Office of Statistics, 2004 Population Census, Sana'a, Yemen.

13. **Working children in Sana'a put in very long hours, greatly restricting their time for study and leisure.** Non-student working children logged an average of over 45 hours per week in 1999, more even than adult workers in the industrialised world. Thirteen and 14 year-old working children put in the longest hours (48 hours per week for non-students) on economic activity, but even six year-old working children put in a 25 -hour workweek on average. Children combining work and school worked an average of almost 33 hour per week during the same reference year, with obvious consequences for their time and energy for study. It is also worth remembering that these estimates from NPS 1999 do not include any additional time spent performing household chores. More recent data from the 2004 census indicate that 62 percent of 10-18 year-old working children works full-time, while the remainder works part-time, seasonally or irregularly (Table 6).

Table 6. Distribution of working children by work schedule, 10-18 years age group, by sex

| Work schedule | Male        |            | Female     |            | Total       |            |
|---------------|-------------|------------|------------|------------|-------------|------------|
|               | No.         | %          | No.        | %          | No.         | %          |
| Full-time     | 1534        | 62.31      | 96         | 55.81      | 1630        | 61.88      |
| Part-time     | 256         | 10.40      | 40         | 23.26      | 296         | 11.24      |
| Seasonal      | 106         | 4.31       | 9          | 5.23       | 115         | 4.37       |
| Irregular     | 566         | 22.99      | 27         | 15.70      | 593         | 22.51      |
| <b>Total</b>  | <b>2462</b> | <b>100</b> | <b>172</b> | <b>100</b> | <b>2634</b> | <b>100</b> |

Source: Central Office of Statistics, 2004 Population Census, Sana'a, Yemen

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14. **Available evidence also suggests that children can face hazardous conditions<sup>8</sup> in many of the sectors in which they work.** NPS 1999 did not look at work tasks and workplace conditions in sufficient detail to permit an assessment of the hazardousness of the various forms of work that children perform. However, preliminary findings from an ILO/IPEC rapid assessment points to a variety of work-related hazards encountered by children.<sup>9</sup> These include:

- *agriculture*: chemicals from use of pesticides, lengthy exposure to extreme cold and heat, handling heavy agricultural equipment and carrying heavy loads;
- *construction*: chemical toxins, handling paints;
- *car repair workshops*: respiratory problems from inhaling fumes, physical injuries, burns, electrocution;
- *machine welding*: lead poisoning, extreme heat; and
- *restaurants*: abuse.

15. **Available evidence suggests that working children also face other forms of exploitation in their workplaces.** The preliminary findings of the ILO/IPEC rapid assessment indicate that working children are paid very low wages, and work without written contracts between the children (and/or their parents) and employers. They typically do not benefit from health insurance, and therefore receive no compensation in the event of injury or illness. Working hours are typically very long (see above), and holidays are few.

### 3. STREET CHILDREN AND OTHER CHILDREN IN “UNCONDITIONAL WORST FORMS” OF CHILD LABOUR

16. Street children, i.e., children who regard the street to be the usual place where they live, work, or both, without any care or guidance from adults, constitute the most vulnerable segment of the child population in Sana’a. Children forced to eke out an existence on the street are largely absent from the estimates of working children presented in the previous section, because household surveys such as NPS 1999 are ill-suited for capturing this group. They are therefore discussed separately in the paragraphs below.

17. **The total extent of the street children phenomenon in the city is not known.** In reality, numbers undoubtedly fluctuate with season (see below), economic climate and other factors. Accordingly, published estimates vary widely. A 2000 UNICEF-sponsored study states that there could be as many as 29,000 street children in Sana’a, although this figure stems from the unlikely assumption that all urban children reported as neither working nor attending school are on the street.<sup>10</sup> A 1993 report estimated that there were some 7,000 children begging on the streets of Sana’a, but the methodology upon which this estimate was based is not clear.<sup>11</sup> A third estimate, based on the 1999 poverty mapping, put the number of children working on the streets at 35,000 nationwide. The most recent attempt to quantify the street children population, part of a broader study by *Enfants du Monde* in 2005-2006, put the number at around 4,000 in 11 quarters of Sana’a.<sup>12</sup>

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<sup>8</sup> ILO Convention No. 182 targets as hazardous work any activity or occupation which, by its nature or type has, or leads to, adverse effects on the child’s safety, health (physical or mental), and moral development. (International Labour Office, *Every Child Counts: New Global Estimates on Child Labour*, International Programme on the Elimination of Child Labour, Geneva, April 2002.)

<sup>9</sup> ILO/IPEC, *Rapid Assessment of Working Children in Yemen*, preliminary unpublished findings. Sana’a, November 2002.

<sup>10</sup> Othman, Ali, *Social and Economic Situation of Street Children in Sana’a City*. UNICEF, 2000.

<sup>11</sup> Azo’ebi, Mohammed and Ali Hummad, Noria “Child Begging phenomenon in Yemen”, *Dirasat Yamania*, No. 50, 1993, as cited in Yemeni NGO Coalition for Children’s Rights, *Alternative report on the implementation of the CRC*, submitted to the UN Committee on the Rights of the Child, January 1996.

<sup>12</sup> The estimate is based on a quantitative identification of street children in “strategic places” in each quarter during the morning during a specific reference week, and then extrapolated to include also children on the street in the afternoon. The study authors stress that the estimate should be treated with caution.

Table 7. Key features of the Sana'a street children population

| Survey question                               | Response                                   | %  |
|---|--|----|
| Place where child sleeps                      | With family                                | 49 |
|   | With relatives, in hotel room, or in store | 49 |
|   | On street                                  | 1  |
|   | Alone on the street                        | 1  |
| Family status                                 | Both parents                               | 84 |
|   | Mother only                                | 9  |
|   | Father only                                | 5  |
|   | Orphan                                     | 2  |
| School enrolment                              | Enrolled                                   | 82 |
|   | Not enrolled                               | 18 |
| Main activity                                 | Selling                                    | 82 |
|   | Car washing                                | 4  |
|   | Begging                                    | 1  |
|   | Bus accountant                             | 2  |
|   | Playing                                    | 2  |
|   | Other work                                 | 8  |
| Work intensity (hours per day)                | 1 to 4 hours                               | 13 |
|   | 5 to 9 hours                               | 44 |
|   | More than 10 hours                         | 43 |
| Negative thoughts and feelings <sup>(1)</sup> | Sadness                                    | 60 |
|   | Worries                                    | 60 |
|   | Nervousness                                | 60 |

Notes: (1) More than one response possible.

Source : *Enfants du Monde*, 2006

18. **The *Enfant du Monde* study<sup>13</sup> underscores that Sana'a street children, whatever their exact number, face many difficulties.** As shown in Table 3, of the 347 street children included in the sample, almost one-third live away from their parents, many in hotel rooms or in stores; 43 percent spend more than 10 hours on the street each day; one-half suffer regularly from hunger and a similar proportion must procure their own food; 60 percent indicate often feeling "sad", "worried and "nervous"; and two-thirds express their dislike of street life, with violence being the main reason cited. A disproportionate number of the children came from homes with only the mother (nine percent) or the father (five percent) present, while two percent are orphans. Most of the sampled street children (82 percent), indicated being enrolled in school, though cases of irregular attendance were identified, particularly in Bab-el-Yemen, Hassaba and among children from female-headed households. Among the activities carried out by street children, selling is by far the most common, accounting for 287 of the 347 children, followed by "other work" (29 children), "car washing" (13 children), playing (eight children), "bus accountant" (seven children), and "begging" (three children).

19. **There appear to be substantial seasonal changes in the size and make-up of the street children population.** A comparison of the quantitative information collected by *Enfants du Monde* at different points during the year hints at the following general patterns: children found on the streets in the autumn and winter months are primarily from Sana'a, and constitute the hard-core of the street children population; older children are sent from the villages to work on the streets in the spring and summer; and younger children from the villages arrive to work on the streets during the summer months when school is in recess.

20. **Press reports indicate that the phenomenon of child trafficking also exists in Yemen, albeit to an unknown extent.** The official newspaper of the Ministry of Interior in 2002 reported the arrest of a band of traffickers with 22 trafficked children en route to Saudi Arabia, and indicated that this was not the first such arrest.<sup>14</sup> The official newspaper *Al-Thawra* also reported in 2002 the existence of organised gangs for trafficking children to Saudi Arabia.<sup>15</sup> Taking in consideration the weak capacity of Yemeni border officials

<sup>13</sup> *Enfants du Monde*, Street children in Sana'a: Analysis of baseline survey, unpublished draft report, May 2006.

<sup>14</sup> *Al-Hares* No. 412 on 20/8/2002

<sup>15</sup> *Al-Thawra* No.13763 on 18/7/2002

to detect child trafficking, arrests likely represent only a very small proportion of the children trafficked every year to Saudi Arabia and other countries in the region. There are other reports of increasing numbers of disabled and disfigured Yemen children being smuggled into Saudi Arabia for use in begging, particularly during the period of Ramadan.

#### 4. CONSEQUENCES OF WORK ON CHILD WELFARE

**21. NPS 1999 generated data on two dimensions of child welfare – schooling and health.** Beyond these two areas, however, little information is available regarding the impact of child work on child welfare in the Yemeni context. Further information is needed regarding the influence of work on (1) the material aspects of child welfare, e.g., nutritional status, consumption (on food and clothes as well as on medical care), lifetime health prospects, and future earning capacity, as well as on (2) the non-material aspects of child welfare, e.g. parental attention, freedom to play, and moral and social development. Many of these issues pose large measurement problems, and have only scarcely begun to be investigated by researchers, in Yemen or elsewhere.

**22. Working children do not report significantly more health problems than children attending school or children in no activities.** Around 10 percent on non-student working children in Sana'a reportedly experienced health problems in the month prior to the 1999 National Poverty Survey, compared to 12 percent of full-time students and 13 percent of children involved in no activities. It is worth noting that reported ill-health was much higher for female (non-student) working children compared to their male counterparts, perhaps suggesting differences in the hazardousness of the work tasks assigned to boys and girls.

Table 8. Reported health problems, children aged 6-14 years, by activity status and sex

| Activity   | Female | Male | Total |
|--|--------|------|-------|
| Only involved in economic activity                         | 19,4   | 8,2  | 10,0  |
| Only attending school                                      | 12,4   | 10,6 | 11,5  |
| Both attending school and involved in economic activity    | 0,0    | 6,1  | 5,1   |
| Neither attending school nor involved in economic activity | 11,9   | 13,5 | 12,6  |
| Total  | 12,2   | 10,9 | 11,6  |

Source: UCW calculations based on *National Poverty Survey, 1999*.

23. But the health effects of work are difficult to measure, and these figures should be interpreted with caution. The health consequences of work, for example, may be obscured by the selection of the healthiest children for work, or by the fact these health consequences may not become apparent until a later stage in a child's life. It may also be that is it not work *per se* that is damaging to health, but certain kinds of work, a fact that is concealed when looking at prevalence of health problems averaged across all categories of child workers. Finally, it must also be recalled that NPS 1999 did not capture unconditional worst forms of child labour, whose health consequences for children are undoubtedly most severe.

**24. Data from the 2004 census suggest that children's ability to combine work and schooling depends considerably on their work sector and work schedule.** Children in unskilled labour appear to face a particularly high risk of being denied education. Almost 14 percent of child unskilled labourers had never enrolled in school at the time of the census, while only 18 percent of children from this group were currently enrolled. The current enrolment levels of children working in assembling, handicrafts and as technicians were also low relative to other working children at the time of the 2004 census (Table 9). Children in part-time work, not surprisingly, were more likely to be enrolled in school compared to their counterparts in full-time work in 2004; the enrolment levels of children in seasonal and irregular work were also low relative to children working part-time (Table 10).

Table 9. Enrolment status of working children by work sector, children aged 10-18 years

| Economic Activity                      | Currently enrolled | Previously enrolled | Never enrolled | Total |
|--|--------------------|---------------------|----------------|-------|
| Arm forces and security                | 34,3               | 64,6                | 1,0            | 100,0 |
| Legislation and management             | 54,5               | 45,5                | 0,0            | 100,0 |
| Specialist                             | 50,0               | 50,0                | 0,0            | 100,0 |
| Technicians and assistants             | 18,4               | 73,5                | 8,2            | 100,0 |
| Clerks                                 | 37,1               | 61,9                | 1,0            | 100,0 |
| Services and sale labor                | 29,5               | 64,5                | 6,0            | 100,0 |
| Skilled labor in farming and finishing | 26,3               | 63,6                | 10,1           | 100,0 |
| Handicrafts and related activities     | 18,5               | 73,7                | 7,8            | 100,0 |
| Assembling workers                     | 16,9               | 76,2                | 6,9            | 100,0 |
| Unskilled labor                        | 17,5               | 68,8                | 13,7           | 100,0 |
| Total                                  | 23,7               | 68,3                | 8,0            | 100,0 |

Source: Central Office of Statistics, 2004 Population Census, Sana'a, Yemen

Table 10. Enrolment status of working children by work schedule, children aged 10-18 years

| Work schedule  | Currently enrolled | Previously enrolled | Never enrolled | Total |
|----------------|--------------------|---------------------|----------------|-------|
| Full-time work | 23,9               | 69,5                | 6,7            | 100,0 |
| Part-time work | 38,2               | 55,4                | 6,4            | 100,0 |
| Seasonal work  | 25,2               | 67,8                | 7,0            | 100,0 |
| Irregular work | 20,1               | 67,5                | 12,4           | 100,0 |
| Total          | 24,7               | 67,4                | 7,9            | 100,0 |

Source: Central Office of Statistics, 2004 Population Census, Sana'a, Yemen

## 5. DETERMINANTS OF CHILDREN'S WORK AND SCHOOLING

25. As most children (excluding those that live on their own) exercise little control over their time allocations, determining why children work requires investigating why parents choose to engage their children in work rather than sending them to school or leaving them idle. A regression analysis<sup>16</sup> using the NPS 1999 dataset points to some of the factors influencing parents' choices. The estimated regression coefficients are presented in Annex A.<sup>17</sup> Some of the major qualitative inferences from this analysis are presented below:

- **Gender:** gender considerations appear especially important in decisions concerning school enrolment; being a girl reduces for likelihood of benefiting from schooling by eight percentage points. The sex of the child does not appear to significantly effect decisions concerning involvement in economic activity, but girls are significantly more likely to be "inactive", a category that can reflect unreported work or involvement in household chores.
- **Age:** The analysis shows that the probability of a child working increases with age. The available information is insufficient to provide a precise idea of the relative importance of the two most probable reasons for this, i.e., the rising opportunity cost

<sup>16</sup> A bivariate probit model was used to jointly determine the correlated decisions on child schooling and work.

<sup>17</sup> The analysis carried out in this section is, obviously, conditioned by the information available. Notwithstanding the extensiveness of the survey utilized, potentially important variables are missing. In particular, information on the relative price of work by children is difficult to capture: indicators for returns to education, work and household chores are not easily available (for a discussion of the role played by unobservables refer to Deb and Rosati, *Determinants of Child Labour and School Attendance: The Role of Household Observables*, December 2002). The only variable available in the data set used to proxy returns to education and to household chores is the household structure (for a more detailed discussion, please refer to Cigno, Rosati and Tzannatos, *Child Labour Handbook*, May 2002). Different approaches have been employed to deal with the potential endogeneity of some of the variables. As it is not possible to calculate household income net of children's contribution, this variable has been instrumented using information on the sector of employment of the parents, local labour market information, etc. In the case of the infrastructure (school and water availability, etc.) the validity of the estimates is supported by tests based on propensity scores (for details see Guarcello, Mealli and Rosati, *Household Vulnerability and Child Labour: the effect of shocks, credit rationing and insurance*, November 2002) Finally, the "small" income effect discussed below is consistent with estimates in several other countries and is robust to the treatment of unobservables (for details see Deb and Rosati, December 2002). However, caution is nonetheless necessary in interpreting these results, as the lack of control for most of the relative prices might bias the estimates.

of schooling with age of the child, or the lack of access to schooling at the post-primary level.

- **Household size.** Children from large families are less likely to attend school and more likely to remain "inactive" at home, though the effect is relatively small in both cases. The household age composition, i.e., the number of dependants vis-à-vis the number of breadwinners, does not appear to significantly effect time-use decisions.
- **Parents' educational status.** Work prevalence is negatively related to the education of the household head, though the effect is relatively weak. Parents' education levels appear to have a much stronger effect on decisions concerning school enrolment. Children of educated parents are three to four percentage points more likely to benefit from schooling compared to children of uneducated parents. One explanation is that more educated parents might have a better knowledge of the returns to education, and/or are in a better position to help their children exploit the earning potential acquired through education.
- **Household income.** Household income has a very strong positive relationship with school attendance, but no significant relationship with work. This suggests that interventions aimed at reducing children's work based on income transfers alone are not likely to produce relevant changes.

Table 11. Marginal effects after bivariate probit regression

| Variable                                     | Only in economic activity |       | Only attending school |        | Both attending school and in economic activity |       | Inactive (neither in economic activity nor attending school) |        |
|--|---------------------------|-------|-----------------------|--------|--|-------|--|--------|
|  | dy/dx                     | z     | dy/dx                 | z      | dy/dx  | z     | dy/dx  | z      |
| Female                                       | -0.0025                   | -0.99 | -0.0877               | -3.85  | -0.0066  | -1.89 | 0.0968   | 4.41   |
| age  | -0.0028                   | -1.04 | 0.4118                | 21.48  | 0.0129   | 4.20  | -0.4219  | -22.30 |
| Age squared                                  | 0.0002                    | 1.27  | -0.0185               | -19.97 | -0.0005  | -4.00 | 0.0189   | 20.69  |
| Household size                               | 0.0006                    | 1.73  | -0.0148               | -5.04  | 0.0001   | 0.16  | 0.0142   | 4.93   |
| Education level of the HH head               | -0.0041                   | -2.20 | 0.0348                | 2.67   | -0.0026  | -1.56 | -0.0281  | -2.23  |
| Education level of the spouse of the HH head | -0.0012                   | -1.02 | 0.0407                | 4.00   | 0.0004   | 0.33  | -0.0399  | -4.03  |
| No. of siblings aged 0-5 years               | -0.0005                   | -0.95 | -0.0023               | -0.39  | -0.0006  | -1.21 | 0.0034   | 0.60   |
| No. of adults aged 65 years or over          | -0.0013                   | -1.00 | 0.0064                | 0.56   | -0.0011  | -0.87 | -0.0040  | -0.36  |
| Ln of expenditure                            | -0.0052                   | -1.08 | 0.2605                | 6.19   | 0.0047   | 1.05  | -0.2600  | -6.33  |
| HH head employed in public sector            | -0.0015                   | -0.94 | 0.0310                | 2.39   | -0.0003  | -0.22 | -0.0292  | -2.30  |
| HH head employed in private sector           | 0.0047                    | 2.49  | -0.0124               | -0.96  | 0.0045   | 2.22  | 0.0032   | 0.25   |
| HH head in mixed sector                      | 0.0016                    | 0.22  | 0.0413                | 0.91   | 0.0072   | 0.46  | -0.0500  | -1.25  |
| HH access to public water network            | -0.0021                   | -1.09 | 0.0516                | 2.44   | -0.0001  | -0.06 | -0.0494  | -2.38  |
| Female-water                                 | -0.0017                   | -0.69 | 0.0420                | 2.00   | -0.0001  | -0.05 | -0.0402  | -1.97  |
| Female-child 0-5                             | -0.0019                   | -1.77 | 0.0052                | 0.74   | -0.0018  | -1.71 | -0.0014  | -0.21  |

Notes: Statistically-signification results are denoted by shaded boxes.

Source: UCW calculations based on *National Poverty Survey*, 1999.

- **Water availability:** Access to a public water network has an important effect on schooling, increasing the likelihood of enrolment by over five percentage points. This is not surprising in view of studies showing that children, and particularly girls, from areas without access to a public water network must spend a considerable amount of time each day fetching water, limiting the time and energy they have for attending school.<sup>18</sup>

**26. But children's work is a complex phenomenon and the factors mentioned above clearly represent only a partial list of determinants.** Better data and more in-depth analysis are needed for a more complete understanding of why children become involved in work. Information on availability of infrastructure, school quality, and access to credit markets and social protection schemes, is especially needed. Better qualitative analyses of factors such as parental attitudes and cultural traditions are also necessary. The demand for child workers, not looked at by household surveys, is another area that needs to be better understood. The unique circumstances causing children's involvement in unconditional worst forms of child labour, also not captured by traditional household surveys, is an area requiring particular research attention in the Sana'a context.

<sup>18</sup> UNICEF, ABP/CDP Baseline survey 2001, Final Report

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## 6. THE RESPONSE TO CHILD LABOUR IN SANA'A

**27. The new Yemeni Child Rights Law, issued on 19 November 2002, updates and extends legal protections accorded to child workers, but still excludes children working for their families.** The Republic of Yemen ratified ILO Convention No. 182 (worst forms) and Convention No. 138 (minimum age) on 15 June 2000.<sup>19</sup> The country ratified the UN Convention on the Rights of the Child (CRC) in May 1991. The new Yemeni Child Rights Law, issued on 19 November 2002, brings child labour legislation closer into line with these international child labour norms. The law sets a general minimum working age of 14 years, and minimum working age of 15 years in industrial work (Article 133). It also requires employers hiring children above these age thresholds to sign contracts with them (Article 134) and to pay salaries and medical expenses in the case of an accident (Article 135). The law states that children should not work more than six hours per day (Article 137), should not work more than four hours continuously, and should not work at night (after 19:00) (Article 137). The law does not apply, however, to children who work within the family environment, a category that accounts for the overwhelming majority (87 percent) of working children.

**28. The government by its own admission lacks the resources to adequately enforce laws relating to child labour.** The Ministry of Social Affairs and Labour (MOSAL) occasionally inspects conditions in factories in major urban centres, but labour inspectors are limited in number and investigative powers, meaning that such visits are rare and inadequately followed up. Legal sanctions for child labour violations, including fines and imprisonment, are rarely applied. Available information suggests that compliance with the child labour laws is very low. One study of a limited sample of child workers found that only one percent had written consent from their parents to work as required by the law. The same study found that only percent of employers of children had applied for permission in line with the law, and that children earned only half of what adults did for the performing the same job, again in violation with the law. The study also found that “many legal points pertaining to contracts, medical examinations, treatment costs, leave, official holidays, transport expenses for those who live away of the workplace etc. were being ignored.”<sup>20</sup>

**29. Little systematic information is available on local action against child labour.** More information on municipal-level policies and plans in the area of child labour, municipal structures addressing child labour, local monitoring/inspection mechanisms and allocations in the municipal budget to child labour-related areas are all needed in order for complete picture of the local response. Also important in this context is better information on the large number of NGOs and community groups active in Sana’a, and the nature and reach of their actions against child labour (see below).

## 7. CONCLUSIONS AND NEXT STEPS

30. The preceding sections have provided a brief statistical profile of child labour in Sana’a. Evidence presented indicates that while the share of Sana’a children at work is small, the number of child workers is by no means negligible. Indeed, children in economic activity numbered 7,400 in absolute terms in 1999, one third of whom were out of school. And to this total must be added “inactive” children actually in unreported work, as well as children in worst forms of child labour beyond the scope of household surveys. Evidence presented also indicates that children’s work in Sana’a is frequently hazardous and performed for very long hours each week.

31. But the picture of child labour drawn by current data is unfortunately partial at best. A number of important information gaps remain, affecting understanding of the child labour

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<sup>19</sup> ILO ([www.ilo.org/ilolex/english/newratframeE.htm](http://www.ilo.org/ilolex/english/newratframeE.htm)). The minimum age specified by Yemen in ratifying Convention No. 138 was 14 years.

<sup>20</sup> Shaikh K.R., Pasch P., and al-Khouri R., *Child Labour in Yemen*, Yemeni General Federation of Workers’ Trade Union (YGFWTU) and Friedrich Ebert Stiftung, Sana’a, 2001.

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phenomenon and the ability of policy-makers to address it. Some of the priority areas requiring further, targeted research efforts are listed below.

- *Street children*: In order to effectively address the needs of street children, better information is needed both on the size of this hard-to-reach population and on the factors driving children onto the streets. Collecting information on the perceptions of street children will also be important to planning for their rehabilitation and mainstreaming in the society. Research on street children conducted in other urban contexts (e.g., a UCW-supported study currently underway in Dakar, Senegal) could offer methodological guidance;
- “*Street work*”: The nature of children’s work on the street is an important related question. Much attention has been given to children working on the streets, but little is known about the nature of their work, and, specifically, whether this work poses a greater threat than work in other less visible urban settings (e.g., restaurants, car repair garages, machine shops, etc.).
- *NGO mapping*: There are an estimated 150 NGOs active in Sana’a, but little systematic information is available about the nature and reach of their programmes. A detailed mapping of NGOs would help promote coordination and information-sharing among NGOs and help identify gaps in assistance to urban working children.
- *Working students*: Two-thirds of economically-active children attend school, but little is known about whether working students are disadvantaged academically vis-à-vis their non-working counterparts. A small-scale school-based survey is one possible tool for addressing this question. School-based surveys have been employed elsewhere to look at variables such as attendance regularity, test scores, classroom alertness, homework completion and academic aspirations, and how these variables differ by whether or not a child is economically active. Establishing that working children are disadvantaged would provide grounds for school-based actions to support these children (see below).
- “*Inactive*” children: More information is needed concerning the large residual group of inactive children in Sana’a (14 percent of all 6-14 year-olds, and one in five 6-14 year-old girls were “inactive” in the 1999 reference year). In particular, it is important to know (a) the extent to which this group reflects unreported work and (b) the factors preventing these children from enrolling in school.

32. **Policy experimentation.** In parallel to the targeted research efforts outlined above, there is scope for the development and testing of different policy approaches for combating child labour in Sana’a. Four possible policy initiatives are listed below.

- *Remedial education or “second chance” education schemes*: These schemes would aim at reaching former working children and other out-of-school children with educational opportunities, as part of broader efforts towards their social reintegration. Policy experience elsewhere points to two main options in this context: (i) mainstreaming, providing returning children and working children with special remedial support within the regular classroom context; and (ii) non-formal “bridging” education, involving intensive non-formal courses designed to raise academic proficiency
- *School attendance incentive schemes*: Such schemes could involve cash or in-kind subsidies to poor children conditional on school attendance. Provision of school meals is another possible option. These demand incentives can increase schooling directly by providing poor families with additional resources (i.e. income effect), as well as indirectly by compensating parents for the foregone economic product from their children’s labour and thus reducing child work (i.e. substitution effect).
- *Community-based assessment and monitoring*: Development of a pilot training/diagnostic tool for use with municipal officials and other local-level actors. Such a tool would be designed to promote bottom-up identification of causes of child labour. It would also permit collection of information on forms of child labour not captured in household surveys, and in particular on unconditional worst forms of child labour. The training tool would focus on providing trainees with the ability to

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carry out simple diagnostic exercises at the grassroots level, report abuses to the appropriate institutions, and identify locally-based interventions to prevent or curb child labour.

- *Income generation:* Development of schemes helping vulnerable families to compensate for the opportunity cost of placing their children in school rather than in work.

## REGRESSION RESULTS

### Bivariate probit regression

Number of obs = 4764  
Wald chi2(30) = 1261.63  
Log likelihood = -1746.0242 Prob > chi2 = 0.0000

|                            | Employment |       | School enrolment |        |
|----------------------------|------------|-------|------------------|--------|
|                            | Coef.      | z     | Coef.            | z      |
| Female                     | -0.433     | -1.8  | -0.534           | -4.21  |
| age                        | 0.501      | 2.37  | 2.416            | 25.25  |
| age2                       | -0.019     | -1.93 | -0.109           | -22.84 |
| Household size             | 0.033      | 1.03  | -0.084           | -5.01  |
| Education of the hh head   | -0.278     | -2.47 | 0.173            | 2.61   |
| Education of the spouse    | -0.038     | -0.32 | 0.248            | 3.8    |
| n. siblings aged 0-5       | -0.055     | -1.12 | -0.017           | -0.49  |
| adult65                    | -0.121     | -0.97 | 0.030            | 0.46   |
| Ln of expenditure          | -0.024     | -0.05 | 1.509            | 6.27   |
| HH head employed in Govern | -0.093     | -0.58 | 0.179            | 2.29   |
| Hh head in Private         | 0.411      | 3.03  | -0.045           | -0.61  |
| Hh head in Mixed           | 0.302      | 0.55  | 0.346            | 0.86   |
| Public water network       | -0.100     | -0.74 | 0.265            | 2.65   |
| Female-water               | -0.092     | -0.37 | 0.246            | 1.94   |
| Female-child 0-5           | -0.186     | -1.72 | 0.019            | 0.48   |
| _cons                      | -4.836     | -1.06 | -26.904          | -10.77 |
| /athrho                    |            |       | -0.587           | -6.85  |

Source: UCW calculation based on Yemen NPS 1999

### Marginal effects after bivariate probit regression

y = Only involved in economic activity

| variable  | dy/d    | z     |
|-----------|---------|-------|
| sex1*     | -0.0025 | -0.99 |
| age       | -0.0028 | -1.04 |
| age2      | 0.0002  | 1.27  |
| hhsize    | 0.0006  | 1.73  |
| mal_edu2* | -0.0041 | -2.20 |
| fem_edu2* | -0.0012 | -1.02 |
| child_~5  | -0.0005 | -0.95 |
| adult65   | -0.0013 | -1.00 |
| lnfitt~1  | -0.0052 | -1.08 |
| govern*   | -0.0015 | -0.94 |
| private*  | 0.0047  | 2.49  |
| mixed*    | 0.0016  | 0.22  |
| public~r* | -0.0021 | -1.09 |
| fem_wa~r* | -0.0017 | -0.69 |
| fem_ch~d  | -0.0019 | -1.77 |

Source: UCW calculation based on Yemen NPS 1999

### Marginal effects after bivariate probit regression

y = Only attending school

| variable  | dy/dx   | z      |
|-----------|---------|--------|
| sex1*     | -0.0877 | -3.85  |
| age       | 0.4118  | 21.48  |
| age2      | -0.0185 | -19.97 |
| hhsize    | -0.0148 | -5.04  |
| mal_edu2* | 0.0348  | 2.67   |
| fem_edu2* | 0.0407  | 4.00   |
| child_~5  | -0.0023 | -0.39  |
| adult65   | 0.0064  | 0.56   |
| lnfitt~1  | 0.2605  | 6.19   |
| govern*   | 0.0310  | 2.39   |
| private*  | -0.0124 | -0.96  |
| mixed*    | 0.0413  | 0.91   |
| public~r* | 0.0516  | 2.44   |
| fem_wa~r* | 0.0420  | 2.00   |
| fem_ch~d  | 0.0052  | 0.74   |

Source: UCW calculation based on Yemen NPS 1999

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Marginal effects after bivariate probit regression

**y = Both attending school and involved in economic Activity**

| variable  | dy/dx   | z     |
|-----------|---------|-------|
| sex1*     | -0.0066 | -1.89 |
| age       | 0.0129  | 4.20  |
| age2      | -0.0005 | -4.00 |
| hhsiz     | 0.0001  | 0.16  |
| mal_edu2* | -0.0026 | -1.56 |
| fem_edu2* | 0.0004  | 0.33  |
| child_~5  | -0.0006 | -1.21 |
| adult65   | -0.0011 | -0.87 |
| lnfitt-1  | 0.0047  | 1.05  |
| govern*   | -0.0003 | -0.22 |
| private*  | 0.0045  | 2.22  |
| mixed*    | 0.0072  | 0.46  |
| public~r* | -0.0001 | -0.06 |
| fem_wa~r* | -0.0001 | -0.05 |
| fem_ch-d  | -0.0018 | -1.71 |

Source: UCW calculation based on Yemen NPS 1999

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Marginal effects after bivariate probit regression

**y = Neither attending school nor involved in economic activity**

| variable  | dy/dx  | z      |
|-----------|--------|--------|
| sex1*     | 0.097  | 4.41   |
| age       | -0.422 | -22.30 |
| age2      | 0.019  | 20.69  |
| hhsiz     | 0.014  | 4.93   |
| mal_edu2* | -0.028 | -2.23  |
| fem_edu2* | -0.040 | -4.03  |
| child_~5  | 0.003  | 0.60   |
| adult65   | -0.004 | -0.36  |
| lnfitt-1  | -0.260 | -6.33  |
| govern*   | -0.029 | -2.30  |
| private*  | 0.003  | 0.25   |
| mixed*    | -0.050 | -1.25  |
| public~r* | -0.049 | -2.38  |
| fem_wa~r* | -0.040 | -1.97  |
| fem_ch-d  | -0.001 | -0.21  |

Source: UCW calculation based on Yemen NPS 1999

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