

YOUNG LIVES COUNTRY REPORT

Young Lives Round 2 Survey Report Initial Findings: Andhra Pradesh, India

September 2008

S. Galab

P. Prudhvikar Reddy

Rozana Himaz



Young Lives Round 2 Survey Report Initial Findings: Andhra Pradesh, India

August 2008

S. Galab

P. Prudhvikar Reddy

Rozana Himaz

Young Lives Round 2 Survey Report – Initial Findings: Andhra Pradesh, India

S. Galab, P. Prudhvikar Reddy, Rozana Himaz

First published by Young Lives in December 2008

© Young Lives 2008

ISBN: 9780-1-904427-41-4

A catalogue record for this publication is available from the British Library. All rights reserved. Reproduction, copy, transmission, or translation of any part of this publication may be made only under the following conditions:

- with the prior permission of the publisher; or
- with a licence from the Copyright Licensing Agency Ltd., 90 Tottenham Court Road, London W1P 9HE, UK, or from another national licensing agency; or
- under the terms set out below.

This publication is copyright, but may be reproduced by any method without fee for teaching or non-profit purposes, but not for resale. Formal permission is required for all such uses, but normally will be granted immediately. For copying in any other circumstances, or for re-use in other publications, or for translation or adaptation, prior written permission must be obtained from the publisher and a fee may be payable.

Available from:

Young Lives

Department of International Development

University of Oxford

3 Mansfield Road

Oxford OX1 3TB, UK

Tel: +44 (0)1865 289966

E-mail: younglives@younglives.org.uk

Web: www.younglives.org.uk

Contents

Acknowledgements	ii
The Authors	ii
Summary	iii
1. Introduction	1
About Young Lives	1
About this report	2
Report structure	2
2. Childhood Poverty in Andhra Pradesh	3
2.1 Political, social and economic context	3
2.2 Poverty	4
2.3 Issues of current policy interest	5
3. Methodology	6
3.1 Young Lives sampling strategy	6
3.2 Attrition and tracking	9
3.3 Round 2 data collection	9
3.4 Piloting, translation and fieldworker training	12
3.5 Round 2 data collection and quality assurance	12
3.6 Challenges in data collection	13
4. Aspects of well-being for Young Lives children in Andhra Pradesh	14
4.1 Trends in Household Poverty: Wealth, Consumption, Poverty	15
4.2. Nutrition	21
4.3 Enrolment	23
4.4 Child work	25
4.5 Perceptions of well-being	26
5. The impact public policy has on children	27
5.1 Agrarian crisis	27
5.2 Midday Meal Scheme	28
5.3 National Rural Employment Guarantee Scheme	28
6. Concluding remarks	29
Appendix A. Regression Tables	30
Appendix B: Definitions of key outcome variables	35
References	38

Acknowledgements

The authors would like to thank the many people who have helped make this study possible.

First and foremost, we wish to thank the Young Lives children and their families for generously giving us their time and cooperation, and allowing us a glimpse into their lives. Further, we thank the presidents of the village *panchayats*, other local government officials, school teachers, *anganwadi* teachers and other respondents for their welcome cooperation during the field surveys.

We would especially like to thank our dedicated field staff who laboured in often trying circumstances to administer the surveys in the field; without their zeal neither the tracking, nor the collection of extensive data this study called for, would have been possible.

We would like to thank several individuals who helped in the preparation of the Round 2 survey questionnaires, and indeed, at various points through the study: Bridget Fenn, Professor Stefan Dercon, the then Young Lives Policy Coordinators K. Mayuri and Madhuri Mukherjee, M. Gopinatha Reddy, C. Ravi, D.S.R. Raju at CESS, and researchers at the University of Oxford. In addition to these individuals, we would also like to thank our Field Supervisors – T. Mahender Reddy, K. Prasada Rao, V. Malla Reddy, B. Narasaiah, M. Bhaskar Reddy, K. Prabhavathi and T. Dastagiri – who actively participated in the preparation of the questionnaires and their administering in the field.

This report benefited from the comments of Young Lives colleagues, two external reviewers, and the efforts of Abhijeet Singh and Caroline Knowles of the Young Lives team in Oxford. We wish to thank all of them for their inputs.

The Authors

S. Galab is a Senior Research Fellow and Principle Investigator of the Young Lives project at the Centre for Economic and Social Studies in Hyderabad, India.

P. Prudhvikar Reddy is Research Manager of the Young Lives project at the Centre for Economic and Social Studies in Hyderabad, India.

Rozana Himaz is a Qualitative Research Officer for the Young Lives project in Oxford, UK.

Young Lives is core-funded by the UK Department for International Development (DFID) for the benefit of developing countries, with sub-studies funded by International Development Research Centre (IDRC) in Ethiopia, UNICEF in India, Irish Aid in Vietnam and the Bernard van Leer Foundation.

The views expressed here are those of the author(s). They are not necessarily those of the Young Lives project, the University of Oxford, DFID or other funders.

Summary

Young Lives is a long-term international research project investigating the changing nature of childhood poverty in four developing countries – Ethiopia, Peru, India (in the state of Andhra Pradesh) and Vietnam – over 15 years. This is the timeframe set by the UN to assess progress towards the Millennium Development Goals. Through interviews, group work and case studies with children in the study countries, their parents, teachers, community representatives and others, we are collecting a wealth of information not only about their material and social circumstances, but also their perspectives on their lives and aspirations for the futures, set against the environmental and social realities of their communities.

We are following two groups of children in each country: 2000 children who were born in 2001-02 and 1000 children who were born in 1994-95. These groups provide insights into every phase of childhood. The younger children are being tracked from infancy to their mid-teens and the older children through into adulthood, when some will become parents themselves. When this is matched with information gathered about their parents, we will be able to reveal much about the intergenerational transfer of poverty, how families on the margins move in and out of poverty, and the policies that can make a real difference to their lives.

This report presents initial findings from the second round of quantitative data collection which was carried out in Andhra Pradesh in late 2006 to early 2007. It does not aim to give a comprehensive overview of all the findings from Young Lives. Rather, it gives a broad outline of some of the key indicators of childhood poverty and changes that have taken place in the children's lives between the first round of data collection in 2002 and this second round. Data are mainly presented for the entire age group cohort, in most cases separated into wealth groups or by rural/urban location. The full richness of the data is not reflected in this preliminary report, but we hope that it contains enough information to prompt other researchers, policymakers and other stakeholders to start to engage with the data. Between the two rounds, the attrition rate across the whole sample was only 0.9 per cent, which is very low for a study of this size.

Andhra Pradesh (AP) is the fifth-largest state in India, and like the rest of India has been undergoing growth and rapid change in recent years. While Andhra Pradesh continues to be largely rural with only 27 per cent of the population living in urban areas, the state capital, Hyderabad, is one of the leading centres of the IT revolution. Consequently, the state is witnessing a shift away from agriculture (which remains important at 30 per cent of state domestic produce) towards the service sector, which is expanding rapidly. It is striking that poverty estimates for rural Andhra Pradesh are low (11.2 per cent compared to the national average of 28 per cent), although per capita expenditure in rural areas is only about 5 per cent more than the national average – starkly illustrating the debate that exists about poverty measurement in India. Rural poverty is much lower than urban poverty, which is at 28 per cent.

Andhra Pradesh has achieved considerable progress on child development indicators since the mid-1990s. But despite this growth, significant disparities remain, based on class, caste, gender and geography. The discussion and analysis presented in this report, although preliminary, give important insights into trends between the two rounds of research, key factors affecting children in Andhra Pradesh and the extent of inequalities between children of different groups. The analysis enables us to pinpoint policy implications for tackling childhood poverty in India as well as important and interesting avenues for future research.

The data reflect the growth and poverty reduction witnessed in recent years and there is evidence that the Young Lives households have become better off over the four years of the survey. However, inequalities in wealth and consumption expenditure between castes and ethnic groups, and the incidence of poverty between urban and rural areas, and between different regions of AP, are reflected in the Young Lives sample. These disparities fell slightly between the two rounds but remained prominent in 2006. Parental education, caste and household size were important determinants of poverty. Households afflicted by drought before Round 1 data collection were also more likely to be worse off by the time of Round 2 data collection.

Levels of absolute and relative poverty

Overall, the households in our sample have improved in terms of wealth. Using data for consumption expenditure by households (based on food and non-food items, adjusted for community-level price differences), we find that overall urban monthly consumption is over 20 per cent higher than rural consumption at Rs785.43 and Rs643.45 respectively. Consumption levels for households from scheduled tribes are the lowest at Rs541 compared to those from other castes who are the best off, who have consumption levels of Rs837 a month.¹

Two measures of poverty were calculated for this report. Absolute poverty is defined as spending below Rs617.8 in urban areas and below Rs332.1 in rural areas, including food and non-food expenditure, not adjusted for price differences. These thresholds are based on the National Sample Survey Organisation (NSSO) poverty line estimates for 2002. Relative poverty is defined as the proportion of households with per capita consumption below 50 per cent of median consumption.

Using these measures, we found that 12.67 per cent of children in the younger cohort and 7.95 per cent of children in the older cohort live in households below the absolute poverty line. In both cohorts, the proportion of households below the poverty line is much higher in urban than rural areas (in keeping with national trends). Again, children from scheduled tribes are severely disadvantaged: 29.2 per cent of the younger children and 18 per cent of the older children from these groups live in absolute poverty. The urban-rural gap is not so stark in terms of relative poverty, where it is 11.2 per cent in rural areas and 10.55 per cent in urban areas, but again it is strongly related to caste and geography: among scheduled tribes, 34.92 per cent of the younger cohort and 22.68 per cent of the older children live in the households with expenditure less than half of the median.

Household factors that contribute to poverty

The report presents analysis that is used to construct a profile of child poverty showing who and where the poor children are and the factors which help keep them in poverty or those that may offer a route out for some children. We found that household and community characteristics are important factors that contribute to poverty, particularly ethnicity, the rural-urban divide (which affects access to services), parents' levels of education and community-level effects.

1 Scheduled tribes (STs) are the indigenous people, living in and dependent on forests. Different groups of tribes live in different parts of Andhra Pradesh and vary in their culture, language, lifestyles. Though a good number of them are mainstreamed and live in plain areas, a considerable population continues to live in isolated hill tops and have little access to services.

Household wealth is an important determinant of child outcomes. Children from poorer households are significantly more likely to be stunted. Primary enrolment is high among the poorest families (perhaps due to the Government's midday meal scheme) but quality of education in the poorest areas remains an issue. Finally, material well-being is a strong determinant of child and household subjective well-being. However, the findings demonstrate that household resources are not the only, and perhaps not even the most important, determinant of subjective well-being.

The importance of parental education

For example, our analysis reveals that a child's parents' level of education significantly affects nutritional outcomes and enrolment in school. Furthermore, the education of both parents significantly affects the child's subjective well-being and sense of optimism for the future.

The significance of parental education as a factor in the intergenerational transmission of poverty is clearly demonstrated, with deprivations experienced by parents during childhood impacting upon the Young Lives children. The resulting deprivations are likely to continue to have an impact on the next generation. Even if economic growth allows households to escape from income poverty, poor parental education will continue to have a negative impact on other child outcomes, such as nutrition.

Drought and other shocks

A finding of particular importance is that short-term 'shocks', such as illness or natural disasters, can have a devastating effect on household resources in the long term. Over a third of households in rural areas report having experienced drought in the four years between 2002 and 2006, and the data show the vulnerability of children in drought-affected households, especially in the younger cohort, where children were found to have significantly lower height-for-age scores (an indicator of chronic malnutrition), indicating long-term deprivation. Drought also had an impact on the older children, making it much more likely that they would seek paid work. Over 23 per cent of households reporting using credit as their main response to drought, and when drought follows several years in a row (as it did in parts of India including Andhra Pradesh), this is the making of a classic debt-trap.

Access to services

We have seen that the community a child is born into is one of the most important determinants of their subsequent well-being. The greatest division is between rural and urban areas. Inequalities between urban and rural sectors are significant, and persistent in nearly all the major child-poverty related indicators. Lower material wealth in rural areas is compounded by poorer access to electricity, safe water and sanitation.

These factors impact on child welfare. Rural children suffer from significantly poorer nutritional outcomes, even when levels of household resources are taken into account. This indicates that access to services, such as sanitation and safe water, and other community-level characteristics strongly influence child health. Access to sanitation is also a contributing factor to child malnutrition.

Access to services seems to have improved, especially with regard to access to electricity and sanitation in rural areas. The figures suggest that though it has narrowed since 2002, the urban-rural gap is still stark, with 86 per cent of urban households having access to sanitation in Round 2 compared to just 13.9 per cent of rural households.

For both cohorts, there is a large difference in access to electricity and sanitation between different wealth quartiles, with the access of the poorest quartile being much worse than the richest. In Round 2, only 9.3 per cent of children in the poorest quartile had access to sanitation compared to 81.3 per cent in the richest. So despite some improvement in overall access, great disparities remain.

Nutrition

Stunting, or low height-for-age, is a measure of chronic malnutrition, and the rate of stunting is high among all Young Lives children. In Andhra Pradesh, stunting in the younger cohort increased from 31 per cent in 2002 to 35 per cent in 2006 (but remained level between 33 and 34 per cent for the older children). This pattern of stunting, which increases after children stop breastfeeding and are less likely to receive sufficient and regular nutrition, is present in most countries around the world, but the Young Lives data allows us some insights into the factors that may contribute to, or alleviate, stunting.

The incidence of stunting is once again strongly related to household resources, residential location and ethnicity. Poorer children, scheduled caste, and rural children are more likely to become stunted during the critical period after they finish breastfeeding: stunting among rural children increased from 36 per cent in Round 1 to over 41 per cent in Round 2.² Regression analysis demonstrates that maternal education has a major positive effect on child nutrition even when we control for the significant effect of household resources. Although the evidence that access to services is related to nutrition is weak, there is strong evidence that urban children have better nutritional outcomes. Part of the explanation for this finding could be that urban children have superior access to services such as water and sanitation.

Education

School enrolment rates in the Young Lives sample are relatively high compared to national levels of approximately 84 per cent. However, although almost 99 per cent of the 12-year-olds report having ever been enrolled in school, only 88.3 per cent were still in school in 2006, with about 10 per cent having dropped out. Drop-out rates are higher in rural areas (10 per cent) than in urban areas (3 per cent), among the poorest quartile (16 per cent), among scheduled tribes children (possibly because of distance to school), and among girls (11 per cent). Interestingly, there are no significant differences in enrolment between boys and girls, although initial analysis of data gathered by the Young Lives qualitative team shows possible gender discrimination in spending, with boys more likely to be sent to private schools.

An interesting finding was that over 86 per cent of the younger children are reported to have attended a pre-school and 44 per cent also claim to be already enrolled in primary school, despite being under the official starting age. Almost 50 per cent of children from the poorest households are already in school, while 40 per cent of children are sent well below the formal starting age.

2 Scheduled castes (SCs) are the lowest in the traditional caste structure. They were formerly known as the 'untouchables' and now call themselves *Dalit*. In rural Andhra Pradesh, SC colonies are located separately, and in most cases away from the main villages. These colonies are named after the caste and even in the official records are often called *harijana wada*. They have been subjected to discrimination for years and therefore had no access to basic services, including education. National legislation aims to prohibit untouchability and discrimination.

Child labour

In the older cohort, paid child work emerges as an important issue in Round 2, despite national legislation against child labour. Over a fifth of the children in our sample reportedly engage in paid work. Most of these children are in rural areas where the incidence of child labour (25.76 per cent) is much higher than in urban areas (3.73 per cent). Breaking down these aggregates also reveals some clear patterns: child labour is highest among the scheduled tribes (30.84 per cent) and lowest among the 'other castes', who are predominantly the upper castes, at 9.3 per cent. It is also worth mentioning that children from households which had been affected by drought are much more likely to work.

Subjective well-being

An important and innovative element of the Young Lives study is the data it captures on children's perceptions of well-being. The qualitative research with smaller groups of children goes into much greater detail on this, but questions asked of both children and their caregivers in the survey throw up some interesting results, especially when combined with the other data about livelihoods and absolute levels of poverty.

In Andhra Pradesh, although household wealth is a strong determinant of well-being, it is not the only factor of importance. In fact urban children, who are better off in terms of material goods, have lower subjective well-being than rural children. Parental education, even controlling for household resources, also increases child well-being. Other important factors include caste and primary household occupation: children from scheduled castes, from large families or from households where casual labour is the primary occupation, have lower perceptions of well-being or expectations for their future.

The fact that rural children have higher levels of subjective well-being despite their lower material well-being suggests that focussing on material indicators of poverty alone may not be sufficient to fully understand child well-being.

Looking to the future and policy implications

Research for Young Lives to date has already established the importance of household characteristics and parental education in determining children's nutritional and educational outcomes. It has also highlighted key regional and urban/rural differences. Young Lives will be able to evaluate what drives these factors and these differences. Developing an understanding of these trends is important not just for policy purposes but also to achieve a fuller understanding of childhood poverty and well-being.

Young Lives research has also been able to provide insights into the effects on children and childhood poverty of the agrarian crisis, the Government's Midday Meal Scheme and the National Rural Employment Guarantee Scheme.

Agriculture is clearly affected by drought and other agricultural shocks like pests, crop disease or the illness/death of livestock, economic shocks like rise in input/output prices, crime and violence, migration and forced resettlement and illness or death of household members. Analysis on each of these shocks, and household responses to them, are possible with the Young Lives data. An understanding of what shocks affect households, and how households respond, is crucial to designing social safety nets and insurance schemes to mitigate the harm that such shocks, arising from factors beyond the household's control, inflict upon farmers. Young Lives data will be able to fill in some gaps in knowledge that enable this to be carried out more effectively in future.

The Midday Meal Scheme has attracted much attention from policy researchers ever since it was introduced by the Supreme Court and there is now a vast number of evaluations of the scheme using survey and case-study based evidence. Most of these studies, though illuminating, can, due to constraints on data availability and collection, only focus on a few aspects of the scheme and has neglected some key questions, such as:

- What effect do midday meals have on the health outcomes of children?
- What effect do they have on their learning skills?
- Do these benefits vary by the caste or the gender of the child?
- Can midday meals compensate adequately for a deficiency in food intake at home caused, say, by a negative shock?

Since the introduction of the Midday Meal Scheme in Andhra Pradesh falls neatly between the two rounds of the Young Lives survey, we can look at all the above questions and speak authoritatively on them. A recent paper commissioned by Young Lives (Singh, forthcoming) does, in fact, look at exactly the above issues and provides some very interesting and policy-relevant results.

Young Lives can also provide some insights into the Government's National Rural Employment Guarantee Scheme. We can supplement the current understanding of the implementation of the NREGS in several ways: because of its sampling strategy, the findings from the Young Lives study on NREGS will have broad applicability and be representative at least for Andhra Pradesh, unlike some studies that only look at a few villages/communities and whose findings cannot be generalised. Further, using the detailed data on household characteristics, we can construct profiles of who accesses the scheme both in terms of registering for it and accessing work. Finally, we can eventually attempt to look at the effect of the NREGS on different outcomes like child well-being or household incomes.

Any such insights that may emerge in the future out of Young Lives data will be of great policy relevance and general interest both for policy makers in India and possibly as a template for application elsewhere

1. Introduction

About Young Lives

Young Lives is a long-term international research project investigating the changing nature of childhood poverty in four developing countries – Ethiopia, Peru, India (in the state of Andhra Pradesh) and Vietnam – over 15 years. This is the timeframe set by the UN to assess progress towards the Millennium Development Goals. Through interviews, group work and case studies with the children, their parents, teachers, community representatives and others, we are collecting a wealth of information not only about their material and social circumstances, but also their perspectives on their lives and aspirations for the futures, set against the environmental and social realities of their communities.

We are following two groups of children in each country: 2000 children who were born in 2001-02 and 1000 children who were born in 1994-95. These groups provide insights into every phase of childhood. The younger children are being tracked from infancy to their mid-teens and the older children through into adulthood, when some will become parents themselves. When this is matched with information gathered about their parents, we will be able to reveal much about the intergenerational transfer of poverty, how families on the margins move in and out of poverty, and the policies that can make a real difference to their lives.

The longitudinal nature of the survey and our multidimensional conceptualisation of poverty are key features of Young Lives. Much existing knowledge about childhood poverty is based on cross-sectional data that reflects a specific point in children's lives, or relates to only one dimension of children's welfare. Children's own views on poverty and well-being are seldom explored. Research is rarely tied in a systematic way to investigation of broader societal trends or policy changes.

The potential of the project lies in its focus on tracking children's progress throughout childhood – over 15 years. We collect quantitative data and qualitative data at the individual, household and community level. Quantitative data is gathered through comprehensive surveys that include interviews with the children themselves as soon as they are old enough to participate directly, with their parents and caregivers, and with key community members (such as teachers, village elders or elected council representatives). Data is collected in each round on households' economic circumstances, livelihoods, assets and social capital. The questionnaires also collect evidence relating to coping strategies such as migration, parental education and other experiences, child outcomes and the extent to which children and their parents and carers use services (e.g. health-care, pre-school care or education programmes). In this way we can create a detailed picture of children's experiences and well-being linked to information about their households and communities and set within the national context. This provides us with data suitable for in-depth analysis of children's poverty and the effectiveness of government policies that concern their lives and well-being.

Young Lives is a collaboration between key government and research institutions in each of the study countries with the University of Oxford, the Open University, and the Institute of Education (London) in the UK, alongside the international NGO, Save the Children-UK. The partners in India are the Centre for Economic and Social Sciences (CESS) in Hyderabad, responsible for data gathering, data management and quantitative research. A team from Sri Padmavathi Mahila Visvavidyalayam (SPMVV, the Women's University) in Tirupati led the

first round of qualitative research in 2007, and a team based in Save the Children-BRB carry out the policy research and policy influencing.

About this report

This report presents initial findings from the second round of data collection which was carried out in late 2006 to early 2007. It does not aim to be a comprehensive overview of all the findings from Young Lives. Rather, it gives a broad overview of some of the key indicators of childhood poverty and changes that have taken place in the children's lives between the first round of data collection in 2002 and this second round. Data are mainly presented for the entire age group cohort, in most cases separated into wealth groups or by rural/urban location. The full richness of the data is not reflected in this preliminary report, but we hope that it contains enough information to prompt researchers, policymakers and other stakeholders to start to engage with the data.

The report also gives an overview of further work in progress by the Young Lives team. These all serve to highlight various aspects of the broad research questions that Young Lives seeks to answer:

1. What are the factors that act on children's lives to either increase or reduce poverty and its effects?
2. What effects does poverty have on children, during childhood and into adulthood?
3. To what extent are current international and national policies effective in reducing childhood poverty in the study countries?

Young Lives uses an innovative methodology, with multi- and interdisciplinary research and a mix of qualitative and quantitative methods. While this report focuses on the quantitative data from the second survey round, it is important to note that its interpretation will be strengthened and complemented by analysis of the qualitative data.

Report structure

The first section of the report introduces the socio-economic context of Andhra Pradesh and some of the issues and policies that have affected children and childhood poverty over the past 15 years. The second section gives an overview of the methodology used by Young Lives to collect quantitative data for Round 1 and Round 2 respectively. Greater detail is provided on the preparation and implementation of the Round 2 data collection. Post-fieldwork operations such as data entering, cleaning, and archiving are also outlined.

The next section presents some preliminary analysis of data from the two survey rounds – both descriptive statistics and regression analysis – on several issues of interest. Indicators of child well-being including household wealth and consumption, health, education and subjective well-being are examined. The factors behind these outcomes include a range of child, household and commune characteristics.

Although the analysis is preliminary it gives important insights into trends between the two rounds, key factors affecting children in Andhra Pradesh and the extent of inequalities between children of different groups. The analysis enables us to pinpoint policy implications for tackling childhood poverty in Andhra Pradesh as well as important and interesting avenues for future research.

2. Childhood Poverty in Andhra Pradesh

2.1 Political, social and economic context³

Andhra Pradesh is India's fifth largest state with a population of about 76.2 million and an area of 276,754 sq. km., making it sizably larger in population than France, and in area larger than the United Kingdom. It accounts for over 7 per cent of India's population.

Andhra Pradesh (AP) was the first state in post-independent India that was crafted out of existing political units to unite a group of people who speak the same language – Telugu (Gray 1971), although the population is characterised by much diversity in terms of language, religion and caste. About 85 per cent of the population identifies Telegu as its mother tongue (the second most commonly spoken language in India), another 7.5 per cent speak Urdu, and about 3 per cent speak Hindi. A number of other languages are spoken by the remaining population such as Tamil, Kannada, Marathi, Oriya, etc. The dominant religion in Andhra Pradesh is Hinduism (75 per cent) followed by Islam (11 per cent), and Christianity (3.5 per cent).

The natural population growth rate for Andhra Pradesh has been lower than that for the rest of India between 1987 and 1997, with a faster decline in birth rates and a slower decline in death rates. A continuation of these trends will mean that the average age of the population will be higher for Andhra Pradesh than rest of India, with ageing an important concern.

The political landscape of Andhra Pradesh is similar to several other large Indian states where for decades after independence the Congress Party was the dominant player but has been challenged by the emergence of a regional party (the Telugu Desam Party, TDP, formed in 1982). The TDP has held power in state government for substantial periods of time since 1982 (between 1984 and 1988, and then again between 1994 and 2004).

Another important political change in the past 20 years, as in the whole of India, has been the extension of powers to local bodies in both rural (73rd Amendment to the Constitution of India) and urban areas (74th Amendment). This allows for the election of about 250,000 locally elected representatives, of which 34 per cent are reserved for members from scheduled castes and scheduled tribes. One of the main differences between state- and *panchayati*-level elections is that smaller, regional (or state-specific) parties (other than TDP and the Congress), and independent candidates still remain quite active politically (see Suri 2002).

Andhra Pradesh has changed much since the 1990s due to a number of demographic and economic changes, not least the economic reforms undertaken in India after 1991. Much of the recent increase in economic growth in India post-dates these reforms. For Andhra Pradesh, however, the average growth rate since 1991 (4.1 per cent per annum) was not much different from its pre-reform rates in the 1980s (3.9 per cent per annum). Moreover, post-reform growth rates are also not very different to the national average of 4.2 per cent.

³ This section draws heavily from Mukherjee (2008), a background literature review of the issues of current research into childhood poverty in Andhra Pradesh.

However, levels of per capita income in Andhra Pradesh are noticeably lower than for India as a whole. This gap between state and national per capita income ranges between a third to a fifth of the poverty line for Andhra Pradesh in the early 1990s, and a quarter to one-seventh in 2004-05.

The sectoral composition of economic activity in Andhra Pradesh has been changing since the mid-1990s with growth rates in the service sector being highest at 16 per cent compared to agriculture, which was lower at 13 per cent. The share of agriculture in total state domestic produce remained around 30 per cent in the 1990s but is declining slowly giving way to an expansion in the services sector (around 44 per cent during the same period). The composition of the industrial sector in economic activity has remained stable at 25 per cent. These changes in sectoral composition mirror what is happening in India as a whole.

Andhra Pradesh continues to be largely rural with only 27 per cent of the population living in urban areas. With over 80 per cent of the population dependent on agriculture, the rural part of the state continues to drive much of the economy, making Andhra Pradesh an excellent example of the contrasts characterising the Indian economy more generally: Hyderabad, the capital of AP, is one of the leading centres of the IT revolution, while large expanses of Telangana and elsewhere have suffered from agrarian crisis for several years consecutively.

2.2 Poverty

Poverty measurement is an active and often contentious area of research in India. State- and country-level estimates of poverty are computed using separate poverty lines for urban and rural areas for every state from data collected in the National Sample Surveys. It is striking that poverty estimates in rural Andhra Pradesh are low in comparison with national averages: 11.2 per cent compared to the national average of 28.3 per cent in 2004-05; and that rural poverty is much lower than urban poverty which is at 28 per cent. This is not new and has been a trend for Andhra Pradesh since at least 1983.⁴ However, rural mean per capita expenditure (MPCE) for Andhra Pradesh was only about Rs25 more (or about 5 per cent of the poverty line) than the rural MPCE for India in the 2004-05 National Sample Survey Organisation (NSSO) estimates. This points to much of what the 'poverty debate' in India has been about – the construction of the poverty lines and concerns with the official price indices used in estimates of poverty in India.

Childhood poverty is less developed as a research area than poverty measurement. The rest of this section looks at two prominent aspects of child well-being, nutrition and education, and what existing data says about it.

Data from successive rounds of the National Family and Health Surveys show that child stunting (low height for age, a measure of chronic malnutrition) is worse for children in urban areas than rural areas.⁵ Over time we find that stunting and being underweight has been gradually declining in both urban and rural areas, possibly a little faster in rural areas than in urban areas. The prevalence of wasting however seems to have increased between 1998-99 and 2005-6. Rates of malnutrition in Andhra Pradesh are lower in comparison to the all-India

4 In 1983, rural poverty in AP was found to be 26.5 per cent and urban poverty 36.3 per cent. Corresponding national rates were 45.65 per cent and 40.75 per cent. In 1993, rural poverty was 15.9 per cent and urban poverty 38.3 per cent for AP. Corresponding national rates were 37 per cent and 32 per cent, respectively (NSSO 2006; NSSO 2007; Planning Commission 2007; GOI 2001, as cited in Mukherji 2008).

5 NFHS 3 (2005-06) reports that 27.4 per cent of children in rural areas, and 37.3 per cent in urban areas were stunted; the figures for wasting were 12.5 per cent and 13 per cent respectively.

figures, the contrast is particularly noticeable for wasting where the prevalence rate in AP is about half the national rates.⁶

Education and literacy rates in India and Andhra Pradesh have been steadily rising over the past 4 decades. However, the literacy rate in Andhra Pradesh has always been below the national average, even though literacy has been expanding rapidly since 1971. Reddy and Rao (2003) suggest that one of the reasons for the growth in women's literacy is due to Akshara Sankranti, a state-government literacy campaign which started in 2000. While important gains have been made, literacy remains a serious issue in Andhra Pradesh, with over 49 per cent of women unable to read or write in 2001.

2.3 Issues of current policy interest

There have been several developments in recent years that have merited attention from the media, researchers and policy-makers. In this sub-section we briefly mention three such issues in order to illustrate the policy context for Young Lives research in AP: the agrarian crisis, the Midday Meal Scheme and the National Rural Employment Guarantee Scheme.

That India is suffering from a grave agrarian crisis, and that this crisis has had a devastating impact on millions of households across several states, is now widely recognised. Farmers' suicides, indebtedness, and agrarian distress have become, even if belatedly, central to policy debates and initiatives. Official estimates concede that 150,000 farmers committed suicide between 1997 and 2005 (Sainath 2007) and this has prompted a strong response, including a large farm-loan waiver, by the current government. Agrarian distress has been, and continues to be, one of the major political issues in Andhra Pradesh in recent years.

The next major development worth mentioning is the Midday Meal Scheme. In 2001, the Supreme Court directed that all state governments should provide a cooked midday meal in all public primary schools within six months. By 2003, the scheme was universal in most states (including Andhra Pradesh which started providing midday meals from January 2003). The scheme today is universal across India and is the largest school-feeding programme in the world, covering an estimated 120 million children (Khera 2006). The scheme is a bold public initiative and, in outreach at least, is one of the most successful public programmes introduced in recent years.

The last major policy development has been the National Rural Employment Guarantee Scheme. In 2005, with the enactment of the National Rural Employment Guarantee Act, the Union government unveiled the largest public employment generation programme in the world, guaranteeing 100 days of employment every year at minimum wages to each household in rural India. This programme is arguably the single most important domestic policy initiative of the United Progressive Alliance government in its entire term and is its flagship poverty-reduction and social-security endeavour.

The above policy issues are not, of course, the only recent relevant developments; the National Rural Health Mission and the *Bharat Nirman* initiative for rural infrastructure are two more examples of relevant policies.

6 In 2005-06, 33.9 per cent of children in AP were stunted, 12.7 per cent were wasted and 36.5 per cent were underweight; the all-India figures for the prevalence of stunting, wasting and being underweight for the same period were 44.9 per cent, 23 per cent and 40.4 per cent respectively.

The above overview provides the backdrop for the work of Young Lives in Andhra Pradesh and all our findings and policy implications should be placed within this broader context. In the following sections we will discuss in detail our methodology and preliminary analysis and draw out relevant policy implications.

3. Methodology

Young Lives is designed as a panel study that will follow 3,000 children in each country over 15 years. The sample consists of 2 cohorts: a younger cohort of 2,000 children who were aged between 6 and 18 months when the first survey round was carried out in 2002, and an older cohort of 1,000 children then aged between 7.5 and 8.5 years.

The children were selected from 20 sentinel sites that were defined specifically in each country. The concept of a sentinel site comes from health surveillance studies and is a form of purposeful sampling where the site (or cluster, in sampling language) is deemed to represent a certain type of population or area, and is expected to show early signs of trends affecting those particular people or areas. For example, monitoring a typical slum of a given city may detect events and trends which will have an impact on most slums in that city.

The first round of data collection took place in 2002, and this report gives an initial analysis from the second round of quantitative data collection in 2006. In each case, the child's caregiver was interviewed as well as the older cohort of children (the younger children were still too young in 2006, being aged 5). The height and weight of each child was measured and a community-level questionnaire was completed for each sentinel site to give contextual information about the children's lives and facilities available to them.

3.1 Young Lives sampling strategy

Young Lives was set up in India in 2001, when the research team selected the study sites using a semi-purposive sampling strategy. The districts and the 20 sentinel sites from within the chosen districts were selected following a set of criteria. Then the selection of 100 households with a child born in 2001-02 and 50 households with a child born in 1994-95 per sentinel site was random.

In India, a sentinel site was defined as a mandal. Andhra Pradesh state is divided into 23 administrative districts, which are each subdivided into a number of mandals, dependent upon the size of the district. There are 1,125 mandals and around 27,000 villages in Andhra Pradesh. Generally, there are between 20 and 40 villages in a mandal, although in tribal mandals there can be as many as 200 villages. Villages are normally composed of a main village site with a small number (two to five) of associated hamlets. Tribal villages tend to have a large number of dispersed hamlets.

Andhra Pradesh has three distinct agro-climatic regions: Coastal Andhra, Rayalseema and Telangana. The sampling scheme adopted for Young Lives was designed to identify inter-regional variations with the following priorities:

- a uniform distribution of sample districts across the three regions to ensure full representation
- the selection of one poor and one non-poor district from each region, with district poverty classification based on development ranking

- when selecting poor districts and mandals, consideration was given to issues which might impact upon childhood poverty, including the presence or non-presence of the Andhra Pradesh District Poverty Initiative Programme (APDPIP).

Hyderabad district is urban and metropolitan and therefore different selection criteria were applied.

Selection of districts

The first step was to select the districts where the sites would be located. The selection attempted to ensure that (1) there was a uniform distribution of sample districts across the three geographical regions and (2) that a poor and non-poor district was selected from each region.

In order to classify districts from the three regions according to their poor/non-poor status, districts were ranked according to their relative level of development, based on three categories of indicators: economic, human development and infrastructure. Economic indicators included per cent of gross irrigated land, per capita income, and per cent of urban population. Human development indicators included proportion of the population who belong to scheduled castes and scheduled tribes (SC/ST), female literacy rate, infant mortality rate, percentage of children aged 5 to 14 who do not attend school. Infrastructure development indicators included total road length per 100 km square, number of banks per 10,000 population, and number of hospital beds per 10,000 population. A relative development index was constructed using a ranking method. Sectoral ranks were aggregated using the following weights: economic 30, human development 40 and infrastructure 30. Based on these ranks, a representative group of poor and non-poor districts was selected.

From Coastal Andhra, three poor districts were selected: Srikakulam, Prakasam and Vizayanagaram, with the APDPIP being implemented in two of the three districts. The APDPIP baseline survey (Dev et al. 2002) identified migration as an important issue in Srikakulam. Therefore, Srikakulam was chosen because the longitudinal aspect of Young Lives will enable exploration of whether a key policy intervention such as APDPIP, and a significant demographic phenomenon such as migration, impact upon child well-being. West Godavari was selected as representative of the non-poor districts of Coastal Andhra.

Anantapur was selected as the poor district of Rayalaseema region. It has a pattern of low rainfall (553mm per annum) and is a desert-prone area. Anantapur is the only district in Rayalaseema region where APDPIP is being implemented. In addition, the UNDP–South Asia Poverty Alleviation Programme (UNDP-SAPAP) was launched in Anantapur in 1995. These community mobilisation programmes have enjoyed considerable success, with a measurable reduction in poverty and an increase in women’s empowerment whilst strengthening social capital (Galab and Rao 2003). Two non-poor districts were initially selected in Rayalaseema, Chittoor and Cuddapah. Chittoor has a higher level of urbanisation and development than the other non-poor districts in the region and therefore finally Cuddapah was chosen as being more representative of the non-poor, non APDPIP districts.

In Telangana region, three poor districts were initially selected, with APDPIP being implemented in two of them: Adilabad and Mahaboobnagar. Adilabad is a largely tribal district and not representative of the region as a whole, therefore Mahaboobnagar was chosen for the survey. It should be noted that tribal communities were captured from a number of other districts throughout the regions. Three non-poor districts were selected in Telangana. Rangareddy is located on the outskirts of Hyderabad. Since poor slum communities were to be surveyed within the city, it was deemed unsuitable to work in a

district within such close proximity of the city sites. The other two non-poor selections were Karimnagar and Nizamabad. Following close consultation with NGO agencies working in the region, Karimnagar was selected as the non-poor region in Telangana.

The districts selected for sampling cover approximately 28 per cent of the state population and include around 318 of the 1,119 mandals (excluding Hyderabad).

Selection of sentinel sites/mandals

The second step was the selection of sentinel sites. A sentinel site was defined as equivalent to an administrative mandal area. A mandal was considered to be urban if more than two-thirds of the population lived in urban areas. Since there are relatively few urban mandals, the district capital was invariably chosen for urban sentinel sites.

One sentinel site was chosen from the urban slums of the state capital Hyderabad. The remaining 19 sentinel sites (excluding Hyderabad) were selected from the six poor and non-poor identified districts. In order to select rural sentinel sites, mandals were classified according to their relative level of development. The development indicators differ from those used for district-level selection due to the scarcity of data at the mandal level, although mandal ranking was carried out in the same way as district ranking.

Selection of villages

The next stage of sampling was the selection of villages within sentinel sites. Villages and their associated hamlets were defined as communities in rural areas. Mandals/sentinel sites cover between 20 and 40 villages, so it was important that the sample was distributed uniformly across the sentinel site. Each mandal/sentinel site was divided into four contiguous geographical areas and one village was randomly selected from each area. Care was taken to ensure that the four villages selected from each mandal had threshold populations sufficient to include 100 1-year-old and 50 8-year-old children. In order to estimate the threshold population sufficient to generate this sample size, the prevalence of 1-year-old children in the general population was estimated to be two per cent, requiring a base population of 5,000. Village sizes were estimated from population projections and mandal level growth rates based on 1991 India Census data. In a number of cases, additional villages had to be included, where sufficient children were not identified from the selected sample villages.

In urban areas, municipal wards were defined as communities and sample wards were identified using the same method of census codes. In Hyderabad city, three slum areas were selected in different areas of the city and included neighbourhoods with an ethnic and religious composition representative of the cultural diversity characteristic of Hyderabad.

Before data collection began in selected communities, a door-to-door listing schedule was completed in order to identify eligible children.

Representativeness of Young Lives sample in Andhra Pradesh

To assess the representativeness of the Young Lives sample, it was compared with the Demographic and Health Survey (DHS) 1998/99, a nationally representative survey. Examination of the common variables in the different surveys – household characteristics and assets, access to electricity and drinking water – indicates that the Young Lives sample includes households with better access to basic services and more ownership of assets and thus includes some biases. A comparison of wealth index scores reveals that the Young

Lives households seem to be slightly wealthier than the average household in Andhra Pradesh. Nevertheless, households in the Young Lives sample are less likely to own their house. These differences could be partly accounted for by the earlier collection year of the nationally representative survey. Despite these biases, it is shown that the Young Lives sample in Andhra Pradesh covers the diversity of children in the country. Therefore, while not suited for simple monitoring of child outcome indicators, the Young Lives sample will be an appropriate and valuable instrument for analysing causal relations, modelling child welfare, and its longitudinal dynamics in Andhra Pradesh. For further information see Kumra (2008), a technical note comparing the Young Lives survey to DHS.

3.2 Attrition and tracking

More than 97.5 per cent of Round 1 households were interviewed in Round 2. Of the other households, 38 Young Lives children had died, 9 could be located but did not wish to continue the study, and 27 could not be located. The sample attrition was higher in the urban areas (5.2 per cent) compared with rural areas (1.5 per cent). Excluding households which refused to participate in the project and cases of death, the attrition rate across the whole sample (including both cohorts) was only 0.9 per cent. It is worth mentioning that the Young Lives field staff went to much trouble to track individuals even when they had moved out of their original communities; the low attrition rates are partially a reflection of these efforts.

Table 1: *Tracking and attrition status at the end of Round 2 survey*

	Sample children	Traced	Child had died	Refused	Un-traceable	Attrition rate (%)	Attrition rate (%) (excl. died)
Younger cohort	2,011	1,950	32	7	22	3.03	1.47
Older cohort	1,008	995	3	7	3	1.29	1.00
All children	3,019	2,945	35	14	25	2.45	1.31

We find thus that attrition rates are not only small in absolute terms, but are also very low when compared with attrition rates for other longitudinal studies in less developed countries.⁷

3.3 Round 2 data collection

Data collection for the second survey round started in November 2006 and was completed in April 2007. As in Round 1, four questionnaires were used:

- Household questionnaire for caregivers of children born in 2001-02
- Household questionnaire for caregivers of children born in 1994 -95
- Child questionnaire for interviewing the children from the older cohort
- Community questionnaire (context instrument)

⁷ See the technical study of attrition in Young Lives by Outes-Leon and Dercon (2008). They look at attrition rates in the Young Lives data from all four countries, comparing Young Lives to other longitudinal studies from developing countries, comparing means of several variables between attriting and non-attriting households and looking at the factors predicting the probability and potential biases of attrition.

No child questionnaire was used with the younger cohort who were still considered too young to answer in their own right.

Table 2: *Contents of Young Lives Round 2 core questionnaires*

Child questionnaire	
Section 1	School and activities
1a	Child's schooling
1b	Child's time use
Section 2	Child health
Section 3	Social networks, social skills and social support
Section 4	Feelings and attitudes
Section 5	Parental and household issues
Section 6	Perceptions of future, environment and household wealth
Section 1c	Child development

Household questionnaire	
Section 1	Parental background
Section 2	Household education
Section 3	Livelihoods and asset framework
3a	Land and crop agriculture
3b	Time allocation of adults and children
3c	Productive assets
3d	Income from agricultural and non-agricultural activities
3e	Transfers, remittances and debts
Section 4	Household food and non-food consumption and expenditure
4a	Expenditures on foods bought, supplied from own sources
4b	Other expenditures – non-food items
4c	Food security
Section 5	Social capital
5a	Support networks
5b	Family, group and political capital
5c	Collective action and exclusion
5d	Information networks
Section 6	Economic changes and recent life history
Section 7	Socio-economic status
Section 8	Child care, education and activities
Section 9	Child health
Section 10	Anthropometry
Section 11	Caregiver perceptions and attitudes
11a	General
11b	Maternal health
11c	Child perceptions about own development
Section 12	(for younger cohort only) Child development

Community questionnaire	
<i>Module 1</i>	<i>General module</i>
Section 1	General community characteristics
Section 2	Social environment
Section 3	Access to services
Section 4	Economy
Section 5	Local Prices
<i>Module 2</i>	<i>Child-specific module</i>
Section 1	Educational services (general)
Section 2	Child day care services
Section 3	Educational services (preschool, primary, secondary)
Section 4	Health services
Section 5	Child protection services

Several new research topics were added to the Round 2 questionnaires to accommodate the fact that as children get older several new aspects become important and relevant. For example, questions on schooling and children's time use were added for the younger cohort. Similarly, some questions were no longer relevant and could be removed, for example questions on maternity and breastfeeding practices

As presented in Table 3, the Young Lives team in India added several country-specific research areas to the core modules. These additional modules were included mainly on account of their relevance to current policy debates in India and most of them focus on policies and programmes specific to India.

Table 3: *Country-specific topics in Young Lives in India*

Household questionnaire	
Section 2b	Girl Child Protection Scheme
Section 2c	Caste Based Protection Scheme
Section 2d	Child Labour Abolition
Question 3.1.7.1	If you are accessing PDS, which of the following items are you receiving?
Question 3.20	Do you have any serious debts?
Section 3f	Credit Provision and Livelihoods
Section 3g	Employment Guarantee Scheme
Question 9.7.6 – 9.7.13	Midday Meal Programme
Community questionnaire	
Question 2.1.1 – 2.2.1	Social Environment: Details on Gram Panchayat/ Zila Panchayat
Question 3.10	Availability of various programmes at community level

3.4 Piloting, translation and fieldworker training

The questionnaires were tested in a pilot survey in several villages in the Rangareddy district and the Warangal district and the findings from the piloting used to revise and modify the questionnaires. Prior to testing, the questionnaires and the manuals for the field supervisors were translated into Telugu. The translation of the questionnaire was an iterative process including translation, back-translation by an independent translator, and revisiting of details and specific wordings.

Fortunately Young Lives was able to work again with the same field supervisors who had carried out the Round 1 data collection (since CESS, had been able to retain them on different projects). This was felt to be very valuable as familiarity with the communities is important for a panel survey and greatly eased the process of locating and re-visiting households. We believe that retention of local field teams is another factor which has helped to achieve low attrition rates.

All seven field supervisors and the Principal Investigator and Senior Researcher, participated in a training session in Hyderabad to ensure a common understanding of the questions for piloting. The training was done in two phases – first the community questionnaire and second the household questionnaire for both cohorts. The training for the community questionnaire concentrated on how best to collect information from a group of people, and techniques for triangulation to ensure accurate information.

Next all seven field supervisors and the team leaders took part in a training of trainers in October 2006 to look at the draft final version of questionnaires and manuals, and covering anthropometry and child development issues. In addition, two field trips were conducted and real-time respondents, i.e. mothers and children, were invited for the training session. After the completion of training in Hyderabad, regional training was conducted for all the enumerators in Telenganga and in Coastal Andhra (for both coastal Andhra and Rayalaseema regions) under the supervision of the Principal Investigator and Senior Researcher. The training session included child development issues, an update on various government/non-government programmes, and on ethical issues.

Several field tests were conducted on the questionnaires, particularly for certain sections of the household questionnaire and some in the community questionnaire before launching the field survey. In addition, an assistant who could speak Telugu, Urdu and English fluently was engaged in Hyderabad to assist with data collection from those households who could speak only Urdu. Similarly, local people helped out in some areas where some of the respondents were not fluent in Telugu (in the state border and tribal areas). It was the responsibility of the supervisors to ensure verification of data (as per the field instruction manual) and dispatch of the questionnaire to Hyderabad on completion of data collection in each sentinel site.

3.5 Round 2 data collection and quality assurance

Seven teams were deployed for collection of data – two teams per region and one for Hyderabad city. Each team was comprised of three male and three female enumerators with one supervisor. Thus, in total, 42 enumerators, 7 supervisors, 4 local consultants and 3 senior researchers were involved in data collection. The data collection was carried out in two phases. The context instrument was administered in the first phase and tracking, canvassing of household questionnaires and child questionnaires were undertaken in the second phase without any break in-between the two. All the enumerators and supervisors were given check lists for verification and supervisors randomly cross-checked information with respondents to assure quality.

At headquarters, a register was compiled to show the number and type of completed schedules received for each sentinel site. Data verifiers were trained by the data manager to cross-check the various codes and report any discrepancies to the data manager for further action. Data verifying began in January 2007. In the meantime, data entry operators were recruited and trained. All data entry was carried out in Hyderabad under the direct supervision of the data manager, working in teams of 5 each with a room supervisor who was responsible for maintaining records of checking and data entry. On completion, the room supervisor passed completed schedules to the second team to carry out the second data entry before the schedules were stored. All computers were assigned unique numbers so the data manager could take back-up copies each day, and the two rounds of data entry were carried out in two different rooms so that there would be no chance of any mix-up. The merging of data bases was undertaken by the data manager with consistency checks run with the help of Epi-info and any errors which were rectified to reduce the error rate as far as possible.

3.6 Challenges in data collection

We have pointed out elsewhere that supervisors and enumerators made great efforts to track the households in order to maintain the sample. They faced two particular challenges – first, the timing of the data collection and second, families moving and relocating.

The second round started during the harvest season, which meant some enumerators had to make several visits to families in order to complete the lengthy questionnaire. The time taken to complete the questionnaire and the timing of the interview are both important factors to consider in planning similar activities. In some cases, children were out at work and parents or caregivers were afraid to disclose this, so enumerators had to use their common sense and act appropriately to get information.

Similarly, some households had moved from their original homes, sometimes simply because rental contracts had ended, or due to displacement because of development projects, or migration. Our field staff finally traced many of them in their new location by making constant enquiries – with neighbours, relatives, revenue officials, petty traders, teachers, etc. Supervisors even went outside the state to locate the respondents and succeeded in their efforts. In areas where the influence of Naxalites (Maoist insurgents) is strong, our field staff had to be very careful, and convinced communities to participate by showing their identity cards and other necessary papers and explaining the objectives of the project. Thus, a great deal of effort was made by the field staff to trace households and reduce the attrition rate.

A further challenge was posed by the community questionnaire. The data collection for some of the sections had to be triangulated after getting different views on the same questions to arrive at a picture which is as close to reality as possible. Pooling a group of people particularly during the working season became a challenging task especially for our field supervisors. A letter from the director of CESS to all the district collectors assisted greatly to persuade district collectors to ensure the cooperation of their staff after explaining the importance of the project which paved the way for the successful completion of field work.

4. Aspects of well-being for Young Lives children in Andhra Pradesh

Young Lives seeks to improve understanding of the causes and consequences of childhood poverty. Preliminary analysis of the data from Rounds 1 and 2 addresses the following questions:

- How has child well-being changed over time?
- What are the determinants of child outcomes such as nutrition, enrolment, child labour and subjective well-being?
- Are characteristics such as parental poverty, rural location, ethnicity and gender important determinants of child outcomes and therefore causes of inequality?

These three questions are the basis for this section, which proceeds thematically. Firstly, trends and patterns in indicators of household wealth, expenditure and poverty are examined. Then patterns in and determinants of nutrition, education, child labour and subjective well-being are analysed.

The section presents descriptive statistics, for both cohorts, from both rounds. These statistics illustrate the prominent changes and trends in the sample as well as disparities by income, location (urban/rural), caste and gender. Econometric results from Ordinary Least Square (OLS) and Probit regressions for child outcomes are also presented.^{8,9} Regression analysis has the benefit of incorporating multiple relevant variables at the same time, giving a better understanding of the processes at work. For example, a regression analysis makes it possible to consider whether parental education has an impact on child nutrition separately from its indirect effect via household income.

It is important to note that no causality is claimed in this report. This requires more careful in-depth study, which is already in progress as Young Lives moves forwards.¹⁰ However, this preliminary work highlights interesting trends and correlations that will be a basis for future investigation.

8 A regression (equation) is an equation representing the relation between values of one variable (x) and observed values of the other (y). A regression equation permits the prediction of the most probable values of y given the observed values of x. A commonly used form of regression is 'Ordinary Least Squares', which is suitable for use when the outcome variable, y, is continuous, such as a child's height or weight. The coefficients from an OLS regression can be interpreted as the marginal effects of the corresponding variables.

9 OLS is not suitable when the outcome variable can only be one or zero, such as whether or not a household is in poverty. In this case a Probit or Logit model is usually preferred. A coefficient from a probit regression cannot be interpreted as the marginal effect of the corresponding variable because the marginal effect depends on the value of the dependent variable. But it can be calculated for a particular value of the dependent variable. In this report marginal effects are calculated and reported at the mean value of the dependent variable.

10 At several points in the following narrative, where research papers that examine a theme in much greater detail are in progress, we have mentioned them in footnotes. This gives a brief overview of the wide research agenda that Young Lives is currently catering to in India.

Table 4: *General characteristics of Young Lives sample children*

Variable	Younger Cohort	Older Cohort
<i>Child and household characteristics</i>		
Male	53.23	47.99
Female	46.77	52.01
Urban	24.41	25.05
Rural	75.59	74.95
Long term health problems	5.79	6.39
Number of elder siblings	.9794	1.31
Number of younger siblings	.5635	.8058
Mother's Education	4.55	3.96
Father's education	6.34	5.25
Household size	5.52	5.20
Household head is male	94.77	80.46
Household head is female	5.23	19.54
<i>Caste</i>		
Scheduled Castes	18.15	20.34
Scheduled Tribes	12.82	10.07
Backward Classes	47.84	48.84
Other Castes	21.02	20.64
<i>Region</i>		
Coastal Andhra Pradesh	35.28	34.70
Rayalaseema	29.69	30.38
Telangana	34.87	34.91
<i>Religion</i>		
Christian	.91	1.30
Muslim	7.33	6.5
Hindu	91.69	92.15

4.1 Trends in Household Poverty: Wealth, Consumption, Poverty

In both rounds a wealth index was calculated as a measure of household prosperity. The wealth index (see Appendix B for a precise description of the method for calculation) takes a value between zero and one, with a higher value reflecting higher household wealth. The index reflects the welfare of the household members in the sense of comfort related to their housing (the number of rooms and the materials the wall, roof and floor of the house are made of) and their use of durable goods (such as radio, fridge, bicycle, TV, motorbike/scooter, motor car/truck, electric fan, mobile phone, landline phone, modern bed, table or chair and sofa). The wealth index, as demonstrated in Table 5, averaged 0.33 in Round 2, an increase of 0.02 from the average value in Round 1.¹¹ The wealth index, by its nature, it is the result of a relatively long process of accumulation and relatively static across

¹¹ The wealth index and per capita consumption values were not significantly different between the cohorts and as such are presented together.

time, and our analysis shows a marginal overall increase. It is noticeable that the improvement was greater for rural rather than urban households. However, in terms of levels, the urban household wealth index is twice as high as the rural index.¹²

Additionally, in Round 2, comprehensive data was collected on expenditure by households on various items using which estimates of consumption expenditure by the households (both on food and on non-food items excluding consumer durables) were computed.¹³ These estimates were adjusted for price differences between communities by computing a price index. Due to non-availability of similar data for Round 1, estimates of consumption expenditure have only been analysed for Round 2. Analysis on these measures has been done jointly for the two cohorts. Overall, urban consumption levels are higher than rural consumption levels at Rs785.43 and Rs643.45, respectively.¹⁴

Table 5: Overall levels and changes of wealth index (by location)

	Round 1	Round 2
<i>All children</i>		
Wealth index	0.319	0.333
Consumption (Rs)	—	676.64
<i>Rural</i>		
Wealth index	0.241	0.268
Consumption (Rs)	—	643.45
<i>Urban</i>		
Wealth index	0.556	0.539
Consumption (Rs)	—	785.43

Note: Consumption refers to per capita consumption expenditure adjusted for community price variation

Disaggregating the above estimates on the basis of caste (Table 6) reveals that 'scheduled tribes' category had the lowest wealth in both rounds and the lowest consumption expenditure in Round 2, whereas the 'Other Castes' (predominantly 'upper-castes') had the highest wealth and consumption consistently.¹⁵

12 An asset index, including the livestock, land, dwelling, consumer durables, and productive assets owned by the household (see the Appendix for more details) was also calculated for both rounds. The asset index rose significantly from 0.27 to 0.29 between the two rounds. The index was higher for rural areas at 0.27 and 0.29 between the two rounds and lower for urban areas at 0.19 and 0.21, respectively. The asset index was originally designed for assessing the prosperity of households in a rural, agricultural setting. In a sample including urban and non-agricultural workers, its use as a reflection of household prosperity is questionable. Furthermore, the difficulty of selecting weights to reflect land value makes the interpretation of the asset index problematic even within rural areas. It is therefore excluded from the analysis in this report.

13 Appendix B gives details of the methodology by which the wealth index and the consumption expenditure were computed.

14 Per capita consumption not adjusted for price differences are at Rs1000 and Rs684 for urban and rural areas respectively.

15 The caste system is still extremely important in India in various spheres, not least politically. The 'other castes' category comprises mostly of 'forward castes' (sometimes also called 'upper castes') who traditionally enjoy a more privileged socio-economic status; on the other end of the spectrum, scheduled castes and scheduled tribes are traditionally disadvantaged communities.

Table 6: *Overall levels and changes of wealth index and per capita expenditure (by caste)*

Caste	Wealth index (Round 1)	Wealth index (Round 2)	Per capita expenditure (price-adjusted) (Round 2)
Scheduled castes	.253	.273	622.98
Scheduled tribes	.201	.242	541.51
Backward classes	.320	.334	668.26
Other castes	.450	.450	837.30
Total	.319	.334	676.64
Observations	2954	2944	2776

To estimate the proportion of children living in poverty, we used (separately) both absolute and relative poverty lines. Households in absolute poverty are defined as those with a monthly consumption expenditure below Rs617.8 for urban areas and Rs332.1 for rural areas, following the estimates used by the National Sample Survey Organisation.¹⁶ Households in relative poverty are defined as those below 50 per cent of the median consumption expenditure (adjusted for price differences between communities). This works out to be Rs289.55 per month in rural areas and Rs387 in urban areas. Because of life-cycle effects, and because younger children will consume less food, statistics for the two cohorts are presented separately.^{17,18} Children in the younger cohort are more likely to be in poverty based on these measures.

Our estimates suggest that 12.67 per cent of the children in the younger cohort, and 7.95 per cent of children in the older cohort, live in households below the absolute poverty line. In both cohorts, the proportion of households below the poverty line is much higher in urban than in rural areas (Table 7).

Table 7: *Levels of poverty in both cohorts (by location and caste)*

		Absolute poverty (%)		Relative poverty (%)	
		Older cohort	Younger cohort	Older cohort	Younger cohort
Overall		7.95	12.67	6.79	11.05
By location	Urban	16.18	19.11	7.75	10.55
	Rural	5.31	10.58	6.48	11.2
By caste	Scheduled castes	9.40	9.88	7.17	7.37
	Scheduled tribes	18	29.20	22.68	34.72
	Backward classes	7.01	9.32	5.36	7.94
	Other castes	3.9	12.68	2.03	6.48

16 Note that to calculate the percentage of households below the state-level poverty lines, we use consumption unadjusted for price differences. This is because the state-level NSSO estimates are not adjusted for price differences,

17 The ages of parents in the older cohort are on average about 7 years more than those of parents in the younger cohort. Moreover, education levels of the parents in the younger cohort are about a grade more for fathers and two grades more for the mother. However, older household heads have better household conditions in terms of assets and consumption. This is part of the explanation for the finding of lower poverty amongst the older cohort.

18 It is possible to control for these effects by adjusting household size using an equivalence scale in order to reflect differing household compositions. The adjusted household size can then be used to adjust consumption expenditure. This could be an area for future work.

Figures on relative poverty show 11 per cent of children in the younger cohort, and 6.79 per cent in the older cohort, live in relative poverty. In contrast to the figures on absolute poverty, however, no large gap exists between urban and rural areas in terms of relative poverty in either cohort.

Factors explaining household poverty

We use a probit analysis based on a simple specification to tease out what household and community-level factors are associated strongly with the incidence of a household being in poverty in Round 2.¹⁹ The dependent variable takes the value of one if the child lives in a household below the general poverty line (i.e. absolute poverty, defined above) and zero otherwise. The analysis is conducted for urban and rural areas separately because it is likely that poverty is explained very differently in these two areas.

Table 8 reports the results. In urban areas the higher the education level of the mother, the less the chance that a household is in poverty. Conversely, a primary income source of casual labour and larger household size contribute positively to a household being in poverty. In rural areas low education of both the mother and the father; being from a scheduled caste, scheduled tribe or backward class compared to other castes; the primary income source being from casual labour; and household size all have a significant impact on a household being in poverty.²⁰

In both rural and urban areas children in the younger cohort are more likely to be in poor households. This could be due to a variety of reasons to discuss which is beyond the scope of this report. Briefly, however, the difference could be because children in the younger cohort are from families where the parents are younger, and so less established in their professions and earning less than more experienced workers. Another reason may be that, as discussed previously, we have not adjusted household consumption by age or gender and as such more households in the younger cohort appear to be in absolute poverty compared to the older cohort.

The estimations below also account for the fact that the households may have suffered sudden exogenous shocks that affected income and expenditure in particular between rounds. Such shocks considered were, thefts or robberies, sudden changes in regulations that may have affected the households, environmental changes such as drought or floods, and shocks such as job loss, sudden rises in input prices or falls in output prices. The coefficients for these variables have not been reported in the table because they were not found to be statistically significant.

Community characteristics clearly matter for poverty incidence. Community-level dummies were included but not reported. The most prosperous community was used as a baseline. The coefficients on most of the other sites are positive. This indicates that aggregate conditions in certain communities do make a difference to the incidence of poverty. It should be noted that the analysis presented here is only preliminary and does not allow us to further probe the mechanisms behind this finding. However, the importance of the site dummies

¹⁹ A probit model is used to conduct regression analysis where the outcome is zero or one rather than being continuous.

²⁰ Backward classes (BCs) are people belonging to a group of castes who are considered to be backward in view of the low level of the caste in the structure. In Andhra Pradesh the BCs are further divided into four groups (ABCD) and some caste groups are placed into each of these sub-groups. Recently, the High Court has ordered the inclusion of a fifth sub-group, E, and Muslims have been placed into this category.

suggests that the impact of community characteristics such as infrastructure and access to services may be a fruitful area for further research and policy implications.

Table 8: *Effect of household and community-level factors on poverty in urban and rural areas in Round 2*

	(1) Marginal effect Urban	(2) Marginal effect Rural
Mother's education level	-0.00746** (2.45)	-0.00182* (1.87)
Father's education level	0.000412 (0.16)	-0.00272*** (3.00)
Scheduled castes	0.0641 (1.24)	0.0759*** (2.85)
Scheduled tribes	0.0699 (0.61)	0.183*** (4.77)
Other Backward Classes	-0.00883 (0.28)	0.0386** (2.05)
Casual Labour	0.214*** (4.29)	0.0461*** (3.35)
Agriculture	-0.0586 (-0.60)	0.0166 (1.22)
Services and Trade	0.00764 (0.24)	0.00560 (0.32)
Household size	0.0385*** (5.33)	0.00815*** (4.88)
Younger cohort	0.175*** (2.65)	0.0361* (1.73)
Observations	724	2217
R-squared	.	.

z-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

NB 1. Community dummies not reported.

2. Coefficients on environmental shocks and job loss between rounds not reported because they were insignificant.

Access to services

Lack of access to or poor quality of public services is an aspect of a multidimensional conception of poverty. It is believed to perpetuate the poverty circle. The availability of public services depends on community characteristics, but the actual utilisation of the public service also depends on individual resources. The analysis therefore reviews data from the community survey as well as household level data. Because the children live in the same communities, it is appropriate to pool younger and older cohorts.

Public services under consideration include health services, access to electricity and access to sanitation facilities. All study sites have access to some form of health facility, although it is

unclear how quality varies between communities. Most households have access to electricity, and there has been an impressive increase in the proportion of households with access to safe water. However, progress in access to sanitation has been slower with very obvious differences in access based on location (with rural areas having far less access than urban areas) and wealth quartile (with the poorest households having far less access than richer households).

Table 9 looks at the availability of health care at the community level. We observe stark disparities between localities in towns and cities and localities in rural areas; unsurprisingly, urban localities have much better access to health-care facilities of all descriptions. It is also clear that there is greater outreach of private health-care provision in both urban and rural areas. For example, in urban areas, 82 per cent of the communities indicate the availability of a private hospital compared to 52 per cent having a public hospital. In rural areas the corresponding figures are 3.8 per cent and 10 per cent respectively. In terms of health centres, again the private-sector outreach is higher at around 64 per cent in urban areas and 20 per cent in rural areas compared to 20 per cent and 15 per cent respectively for state-run centres. While the greater outreach and participation of the private sector is encouraging, it is questionable as to how much this care is affordable to the poorer households. This is especially so in the context where nearly 60 per cent of the rural communities have no state-run health-care facility in their community. Moreover, rural households take significantly longer to reach a public health facility (62 minutes on average), with the time significantly larger among scheduled tribe communities (100 minutes on average) that live in more remote areas. The average time for urban households to reach a public health facility is 40 minutes.

Table 9: *Availability of health-care facilities in Round 2*

Type of facility	Rural (%)	Urban (%)	Total (%)
Public Hospital	3.80	52.94	12.50
Private Hospital	10.00	82.35	22.68
State health-care centre	15.00	20.25	17.50
Private health-care centre	20.25	64.70	28.12
Public Dispensary	36.25	76.47	43.30
Private Dispensary	37.50	76.47	44.33
Pharmacy	17.50	82.35	28.86
No. of communities	80.00	17.00	97.00

Table 10 reports access to electricity which is quite high. In Round 2, nearly 90 per cent of the households in our sample reported having access to electricity, a considerable growth from the 82 per cent reported in Round 1. This growth is driven mainly by improved access in rural areas.

Unfortunately, the same does not hold in terms of access to sanitation, which was defined as those households that have access to a flush toilet or pit-latrine within the compound. Overall access rates in Round 2 were just 32 per cent with the urban-rural gap in access very high: 90 per cent of urban households reported access compared to just 14 per cent in rural areas. Thus even though rural access to sanitation grew from 6 per cent to 14 per cent between rounds, narrowing the urban-rural gap, in terms of levels the disparity is stark.

Table 10: Access to services (by location)

	Access to electricity (%)		Access to sanitation (%)	
	Round 1	Round 2	Round 1	Round 2
Urban	96.96	98.33	86.90	90.24
Rural	77.15	86.80	06.15	14.23
Total	82.11	89.61	26.39	32.74

There is also a large difference in the access to electricity and sanitation between different wealth quartiles, with the access of the poorest quartile being much worse than the richest, in both rounds. In Round 2, only 9.3 per cent of children in the poorest quartile had access to sanitation compared to 81.3 per cent in the richest. So despite some improvement in overall access, disparities remain.

Table 11: Access to services (by wealth quartile)

Wealth quartile (Round 1)	Access to electricity		Access to sanitation	
	Round 1	Round 2	Round 1	Round 2
1	48.32	76.42	0.40	09.30
2	84.35	88.16	04.35	09.93
3	96.48	94.96	18.29	31.06
4	99.46	99.04	80.62	81.34
Total	82.09	89.59	25.89	32.76

4.2. Nutrition

Malnutrition is another dimension of childhood poverty. For analysis of nutrition, we look at height-for-age z-scores for both cohorts.²¹ Deficit in the height-for-age measure corresponds to linear growth retardation i.e. the inability to reach the genetic potential in terms of height. This is viewed as a longer term measure of deprivation than weight-for-height which is more sensitive to short-term or seasonal variations in food availability. Height, and by extension height-for-age, is also said to have a strong relationship with mental function and mortality (Gopalan 1992). In addition we examine weight-for-age for the younger cohort and BMI-for-age for the older cohort as measures of short-term nutritional status.

Stunting, or low height-for-age, is a measure of chronic malnutrition. The definition of stunting is the incidence of child height-for-age z-scores more than two standard deviations below the median of the WHO reference population. In the younger cohort, stunting had worsened between the two rounds; 31.37 per cent of the cohort were stunted in Round 1 increasing to 35.57 per cent in Round 2. The difference is statistically significant. In both rounds, stunting is much higher in rural areas than in urban areas: in Round 2, 40 per cent of children in rural areas were stunted whereas only 21 per cent in urban areas were. Expectedly, stunting is concentrated among poorer households with only 20 per cent of children in the wealthiest 25 per cent of the households being stunted in comparison to 46.7 per cent in the bottom 25 per

²¹ The z-scores were computed using the 2006 WHO standards. Under the new standards, weight-for-height z-scores (indicating wasting) can only be computed till the age of 60 months. Since a large proportion of children in the younger cohort, and all children in the older cohort, are above this age threshold we do not report analysis of wasting here.

cent. There is marked heterogeneity in the prevalence of stunting by caste: in both rounds stunting is highest for scheduled tribes and lowest for the other castes. Finally, stunting is more common among boys than girls in both rounds.

Table 12: *Prevalence of stunting in both rounds (by cohort, location and caste)*

		Round1		Round 2	
		Older cohort (%)	Younger cohort (%)	Older cohort (%)	Younger cohort (%)
Overall		33.03	31.37	34.11	35.57
By location	Urban	20.72	20.87	25.74	21.14
	Rural	37.12	34.92	36.76	40.19
By caste	Scheduled castes	35.37	36.88	34.93	38.98
	Scheduled tribes	33.94	46.02	38.68	40.28
	Backward classes	35.68	30.38	36.24	37.84
	Other castes	24.65	18.72	26.41	23.66
By gender	Boys	33.74	34.17	32.51	37.39
	Girls	32.36	28.12	35.67	33.37

In the older cohort, analysis of stunting shows almost no change between rounds. Whereas about 33 per cent of children were stunted in Round 1, 34 per cent were in Round 2; the difference is not statistically significant. The distributional patterns of stunting are similar in some respects to the younger cohort. Stunting is much more common among children in rural areas and among children from poorer households and 'Other Castes' have much lower proportion of stunting than other castes. Unlike the younger cohort, however, there are no consistent gender differences in the prevalence of stunting.

*Regression Analysis*²²

To develop a better understanding of the factors determining nutritional outcomes, we regressed a child's anthropometric z-score as a linear function of various individual and household characteristics in the second round. The regression output is presented in tables at the end of the document.

The younger cohort presents some interesting findings. As can be seen from Table 15 (Appendix A), both weight-for-age and height-for-age are strongly influenced by household characteristics. Children from households with higher consumption, in urban areas, and with mothers with better education had significant positive impact; while children from scheduled castes, scheduled tribes or backward classes or coming from Telangana or Rayalaseema

²² Analysis of nutrition outcomes, their causes and consequences, is one of Young Lives' core strengths and much work is being done in all the study countries on this. In India specifically, current papers in progress include Boo on the effect of early childhood investments in health on later child health and education outcomes, and Singh looking at the factors determining changes in anthropometric scores between rounds, and specifically the contribution of the Midday Meal Scheme to these changes.

had significant negative impact. Children from 'other castes' or the Coastal AP region, or who had more educated fathers, had significantly higher z-scores. Additionally, children from households with access to electricity (a proxy for development) had higher z-scores. Children from households which suffered from drought in the past four years had significantly lower height-for-age z-scores, indicating long-term deprivation arising from drought and were also more likely to be underweight.²³ HAZ is also influenced positively by father's level of education and having access to electricity. Further analysis of changes in z-scores between rounds shows that suffering from drought reduced a child's height-for-age z-score by 0.24 standard deviations. Boys had significantly lower height-for-age z-scores than girls and were more likely to be stunted.

The results by gender are, however, different for the older cohort (Table 16, Appendix A): boys saw greater improvements in height-for-age between the two rounds and have higher z-scores by Round 2. The influence of caste and region on child health in the older cohort was similar to the effect among younger children: children from 'other castes' had significantly higher height-for-age z-scores than others, as did children from Coastal AP. In this cohort as well, children from poorer households, backward classes, and from Telangana and Rayalaseema were more likely to be stunted than children from other groups.

4.3 Enrolment

We summarised pre-school and primary school enrolment of the younger cohort and school enrolment for the older cohort.

In Round 2, over 86 per cent of children in the younger cohort are reported to have ever attended a pre-school (Table 13). Around 44 per cent also claim to be already enrolled in primary school. The latter figure is puzzling, given that only 20 per cent of our sample had turned 5 years old in 2006, the age at which children in Andhra Pradesh formally become eligible to enrol in formal schooling. Disaggregation of school enrolment based on wealth quartiles sheds some light. It shows that the highest primary school enrolment rates are from the poorest households at 50 per cent, whilst only 30 per cent of parents in the richest quartile send their children to primary school. Further analysis shows that 40 per cent of children are sent to school well before the formal school starting age – nearly 80 per cent to public school. These children come mainly from the poorer households and it is likely that the free midday meal provided by the state explains why poorer parents send their children to school early. Such an effect has been documented extensively (Drèze and Goyal 2003; Khera 2006) and a recent study using Young Lives data has also shown important gains in learning and nutrition (Singh, forthcoming).²⁴

23 Drought is the most important economic shock affecting households in the surveyed communities: about 36 per cent of households in rural areas in both cohorts self-report having suffered from drought in the four years between the two rounds.

24 A list of forthcoming papers using Young Lives Round 2 data from India is given in the References.

Table 13: *Education and child work for both cohorts; by location, gender, caste and wealth quartile*

	Younger cohort		Older cohort	
	Ever enrolled in pre-school (%)	Started formal schooling (%)	Currently enrolled in school (%)	Child work (%)
Overall	86.87	44.31	88.83	20.42
Urban	89.58	27.05	94.78	5.22
Rural	85.94	50.24	86.85	25.50
Male	87.18	43.73	90.98	22.85
Female	86.51	44.95	86.84	18.18
Scheduled castes	84.46	53.39	84.65	22.28
Scheduled tribes	79.6	57.6	85	32
Backward classes	89.39	41.47	88.25	22.27
Other castes	87.56	34.88	96.09	8.78
Wealth Quartile 1 (poorest)	85.21	50.92	82.03	31.25
Quartile 2	86.34	46.58	84.21	27.13
Quartile 3	84.69	48.85	92.94	18.82
Quartile 4 (richest)	91.11	30.78	96.61	3.38

In the older cohort, almost 99 per cent of the children report having ever been enrolled in school, but only 88.83 per cent are still in school by the second round, with about 10 per cent of the children having dropped out of school between the two rounds. Drop-out rates are higher in rural areas (10 per cent) than in urban areas (3 per cent), among the poorest quartile (16 per cent), among scheduled tribes children (possibly because of distance to school), and among girls (11 per cent). Drop-out rates are much lower among the 'other castes' category in comparison to the other groups. Interestingly, there are no significant differences in enrolment between boys and girls, although initial analysis of data gathered by the Young Lives qualitative team shows possible gender discrimination in spending, with boys more likely to be sent to private schools.²⁵

Regression Analysis

In the younger cohort we analysed the determinants of having attended pre-school from the age of 3, and of having started formal schooling by Round 2; the results are presented in Table 17.

The results suggest that richer households, and households with more educated fathers, were more likely to send their children to preschool. Whereas children from backward

²⁵ Although the analysis in this section focuses only on enrolment, Young Lives researchers are investigating several other facets of education as well. For example Himaz (forthcoming) in a paper provisionally titled *Intra-household Allocation of Education Expenditure in India: A Boy Bias?* analyses possible gender discrimination in household spending on education while S. Galab (forthcoming) looks the influence of parents' socio-economic status on children's schooling outcomes in Andhra Pradesh. Uma Vennam (forthcoming) uses the qualitative survey data from Young Lives to look at another aspect of education – the transition from pre-school to formal schooling, and the experiences of children in making this transition.

classes were more likely to enrol in pre-school than the base group (other castes), scheduled tribes were less likely; further, children from Rayalaseema, and children from households belonging to the base category of primary occupation (mostly industry, informal manufacturing etc.), were less likely to be enrolled in pre-school.

The same factors act rather differently in determining whether a child had begun formal schooling by Round 2. In contrast to the positive relationship between consumption and pre-school enrolment, we find that richer households are less likely to have already enrolled their child in school. Further, being from the scheduled castes significantly raises the probability of being enrolled in school already as does belonging to a household where agriculture or casual labour are the chief occupations. Finally, belonging to an urban community reduces significantly (by over 18 per cent), the probability of already being enrolled in school. It is clear from this profile that children already enrolled in school come from significantly more deprived backgrounds – they are likely to be poorer, from traditionally deprived castes and from rural areas. Against this backdrop, it is reasonable to infer, as we did earlier, that many of these children have been enrolled early for the purpose of benefiting from the Midday Meal Scheme.

We also analysed the determinants of current enrolment in the older cohort (Table 18). Results suggest that being currently enrolled is affected positively by being male, belonging to richer households, agricultural households and households with more educated parents. The probability of being currently enrolled is significantly lower for Rayalaseema than the other regions.

4.4 Child work

In the older cohort, paid child work emerges as an important issue in Round 2, despite recent national legislation against child labour. Over a fifth of the children in our sample reportedly engage in paid work (Table 14); most of these children are in rural areas where the incidence of child labour (25.76 per cent) is much higher than in urban areas (3.73 per cent). Breaking down these aggregates by caste also reveals some clear patterns: child labour is highest among the scheduled tribes (30.84 per cent) and lowest among the 'other castes' (9.3 per cent).²⁶

Table 14: *Children participating in paid labour*

	Round 1 (%)	Round 2 (%)
All	6.14	20.44
Rural	1.05	25.76
Urban	0	3.73
By caste		
Scheduled castes	0.47	21.90
Scheduled tribes	3.67	30.84
Backward classes	0.64	22.51
Other castes	0	9.3

²⁶ The appendix gives further information about the precise question from the survey used to estimate the prevalence of child labour. Importantly, since the questions only ask about *paid* work, our estimate of child labour does not account for children's unpaid contribution to domestic work, and thus is likely to underestimate child work by girls.

*Regression Analysis*²⁷

Our results (Table 19) suggest that household characteristics strongly influence the probability of child work. Briefly, the results show that males are more likely to work than females. This may well reflect of course, that girls are more involved in unpaid work within the household perhaps, rather than the fact that girls work less than boys. Other significant factors that influence child work is if the children are from rural communities, scheduled tribes, the Telangana Region and households where casual labour is the primary occupation, or are from communities with low level of development (which we proxy by access to electricity). Children with more educated mothers are less likely to work. Finally, and very significantly, children in households which had suffered from drought are much more likely to work. This is possibly because strained circumstances require households to supplement incomes through child work.

4.5 Perceptions of well-being

Under the multidimensional approach to childhood poverty, an individual's subjective assessment of their well-being, as well as their material well-being as defined, for example, by living below the poverty line, is of interest. Young Lives is one of the few projects to collect measures of subjective well-being for children in a developing country.

Perceptions of the well-being of children are subjectively derived through the responses of the children of older cohorts. Respondents were asked whether the people in the area they are living in treat them well or not. As the same questions were asked in Round 1 and Round 2, we can assess whether the children's feeling of well-being has improved over the four-year period. On the whole, around 95 per cent of the children reported that they have been treated fairly in the community. Another measure to capture well-being is based on children's perceptions of where on a ladder (consisting of 9 rungs) they stand at present and where they think they might stand in 4 years' time. On average, the responses show that they stand on around step 3 of the ladder at present.

Regression Analysis

The analysis of what determines well-being returns some interesting results (Table 19). Rather surprisingly, household expenditure or access to services like electricity and toilets do not affect perception of well-being in any significant way, i.e. our data do not indicate any significant link between children's perception of their own well-being with their material prosperity. Children in Rayalaseema, perceive themselves as much better off. The reverse is true of children belonging to scheduled tribes, backward classes and households where casual labour is the primary occupation.

The children were also asked where on the ladder they expected themselves to be in four years. Using their responses on their current position and future expectations, we generated a variable for the expected change in circumstances (Optimism). Analysis of what drives optimism about future prospects gives some marked results. There are major regional differences: children from Telangana expect their lot to get better, whereas in Rayalaseema children mostly expect to be worse off. Children who had suffered from drought in the past four years expect a large improvement in their circumstances in the future. Children with

27 A current Young Lives paper in progress (Krutikova) looks in much greater detail at the role of individual characteristics of young children in determining how much they work in later childhood.

more educated mothers are more optimistic. Finally, children in larger households expect their circumstances to deteriorate. The reason for this last finding is not immediately clear.

5. The impact public policy has on children

The previous section attempted primarily to understand the processes governing the many aspects of childhood poverty and well-being. Looking at the factors that determine child malnutrition, school and pre-school enrolment, and subjective well-being is crucial to understanding what needs to be done in these areas, and how. The themes that emerge out of such analysis have broad policy relevance in the realm of child-focused development.

This section aims at demonstrating how Young Lives can shed light on issues and policies of current and topical interest. Further, the section attempts to highlight how issues (such as the agrarian crisis) not normally associated with child well-being may in fact have central links with it and how Young Lives is uniquely placed to address such issues. As an illustration, we will focus on same three areas which were singled out as central to current public policy and debate in Section 1 – the agrarian crisis, the Midday Meal Scheme and the Employment Guarantee Scheme.

5.1 Agrarian crisis

The Young Lives survey consists of an exhaustive household questionnaire, administered in both rounds. In Round 2 especially, the survey collected data about the shocks that affect households and their responses to these shocks. Using this data, we can attempt to understand the plight of the farmers and, as importantly, the impact of the crisis on their families and especially their children.

A brief analysis of the survey responses show that 35.8 per cent of households in rural areas in the younger cohort, and 36.10 per cent in the older cohort, reported being affected by drought in the period 2002 to 2006, and they gave details of their most important response to drought. In both cohorts, one option dominated: over 23 per cent of households in both cohorts reported using credit as their best response to being affected by drought. When droughts follow for years in a row, as they did in several parts of India (including Andhra Pradesh) over this period, we have the making of a classic debt-trap.

Drought, though possibly the most common, is certainly not the only shock that can affect agricultural households. The survey also elicited responses to similar questions about a range of other shocks: other agricultural shocks like pests, crop disease or the illness/death of livestock; economic shocks like rise in input/output prices; crime and violence; migration and forced resettlement; and illness or death of household members. Analysis of each of these shocks, and household responses to them, are possible with the Young Lives data. An understanding of what shocks affect households, and how households respond, is crucial to designing social safety nets and insurance schemes to mitigate the harm that such shocks, arising from factors beyond the household's control, inflict upon farmers.

Our understanding of the long-term impact of agricultural shocks (like droughts) is severely limited, but several factors point to the usefulness of Young Lives data to fill the gaps in our knowledge: the comprehensiveness of the surveys and tracking the same individuals over

time means we can examine both the complex inter-linkage between shocks and diverse outcomes, as well as trace how the harm shocks inflict may persist long into the future. For example, a recent paper using Young Lives data (Singh 2008) shows that younger children (but not children in the older cohort) from households which reported having been stricken by drought suffered a significant reduction in their height-for-age and weight-for-age anthropometric scores. This effect may well persist over time and eventually lead to worse health and lower earnings in adulthood. Similarly, we can trace whether households draw down their assets when struck by drought and the impact of this response, particularly the impact being forced to sell off productive assets may have on the future, even if not affected by further shocks.

5.2 Midday Meal Scheme

The Midday Meal Scheme in schools has attracted much attention from policy researchers ever since it was introduced by the Supreme Court and there is now a vast number of evaluations of the scheme using survey and case-study based evidence. Khera (2006) is the best review of these surveys. Most of these studies, though illuminating, can, due to constraints on data availability and collection, only focus on a few aspects of the scheme. The prominent area that has been examined most intensively has been the effect of the scheme on school participation, showing clearly that midday meals bring children to school, increasing both enrolment and attendance.

The above literature has, however, neglected some of the key questions that we are interested in:

- What effect do midday meals have on the health outcomes of children?
- What effect do they have on their learning skills?
- Do these benefits vary by the caste or the gender of the child?
- Can midday meals compensate adequately for a deficiency in food intake at home caused, say, by a negative shock?

Since the introduction of the Midday Meal Scheme in Andhra Pradesh falls neatly between the two rounds of the Young Lives survey, we can look at all the above questions and speak authoritatively on them.

A recent paper commissioned by Young Lives (in progress) does, in fact, look at exactly the above issues and provides some very interesting and policy-relevant results.

5.3 National Rural Employment Guarantee Scheme

The Government's National Rural Employment Guarantee Scheme aims to provide 100 days employment a year for all rural households. Of our survey clusters (mandals), the NREGS was in operation in 10 out of 20 clusters, although there is a large variation in uptake. The proportion of households registered in eligible clusters varies from 40 per cent to as high as 89 per cent in one cluster. A look at how many days households availed of NREGS work (if they availed at all) is also interesting: households took anywhere from 1 to 100 days of work under the scheme but the average was low; the median of the number of days worked under NREGS is only 20 days and the mean only 32.44.

Fuelled by its national prominence, much research has been conducted on the NREGS since 2005. Young Lives can supplement the current understanding of the implementation of the NREGS in several ways: because of its sampling strategy, the findings from the Young Lives

study on NREGS will have broad applicability and be representative at least for Andhra Pradesh, unlike some studies that only look at a few villages/communities and whose findings cannot be generalised. Further, using the detailed data on household characteristics, we can construct profiles of who accesses the scheme both in terms of registering for it and accessing work; finally, we can eventually attempt looking at the effect of the NREGS on different outcomes like child well-being or household incomes.

Any such insights that may emerge in the future out of Young Lives data will be of great policy relevance and general interest both for policy makers in India and possibly as a template for application elsewhere

6. Concluding remarks

Childhood poverty and deprivation are challenges central to development in India and yet the extent of our knowledge in these areas is much less comprehensive than it needs to be in order to effectively address the many complex and inter-related issues surrounding them. Young Lives aims to further this understanding. We see Young Lives as potentially interacting with, and informing, a range of agents in society – policy-makers, researchers, civil society groups and the media – disseminating insights achieved through rigorous interdisciplinary research and complementing their work and efforts in their respective fields.

Drawing our analysis done previously in this section together, we notice a few recurrent themes emerging quite clearly:

- **The importance of household characteristics:** It is clear that household characteristics, such as household per capita expenditure, play a crucial role in determining relevant outcomes for children like nutrition and enrolment. This provides a strong case for targeted public schemes to improve outcomes in poorer/more disadvantaged households.
- **The importance of parental education:** Parental education is a significant determinant of nutritional and educational outcomes, like anthropometric z-scores, for younger children and enrolment for older children. This points to the externalities of education and provides an insight into inter-generational transmission of prosperity/poverty, strengthening further the case for intervention in education
- **Regional and urban/rural differences:** We have seen much evidence of there being significant differences between urban and rural areas, and between different regions, over the entire range of outcomes that we examined in the preceding analysis. We need to evaluate what drives these differences: different levels of administrative efficiency, agro-climatic differences between regions, or wilful governmental neglect are few of the possible options. Understanding why outcomes differ is essential to ensuring equitable access to opportunities and outcomes across regions and location.

Developing an understanding of these trends is important not just for policy purposes but also to achieve a fuller understanding of childhood poverty and well-being.

In this section we have attempted to present some preliminary analysis on these broad themes but also give a flavour of the current research being undertaken using Young Lives data in various countries.

Appendix A. Regression Tables

Table 15: *Determinants of nutrition (younger cohort)*

Variables	(1) Weight-for-age	(2) Height-for-age	(3) Δ Weight-for-age	(4) Δ Height-for-age	(5) Under-weight	(6) Stunted
Male	-0.0650 (-1.543)	-0.150*** (-3.493)	0.136*** (3.217)	0.0506 (0.800)	0.0381 (1.594)	0.0634*** (2.848)
Urban	0.205*** (2.719)	0.253*** (3.279)	-0.0611 (-0.808)	0.0963 (0.856)	-0.142*** (-3.330)	-0.0961** (-2.440)
Log of price adjusted consumption	0.218*** (4.768)	0.249*** (5.334)	-0.00905 (-0.197)	0.0318 (0.464)	-0.0987*** (-3.761)	-0.0590** (-2.435)
Access to electricity	0.112 (1.502)	0.165** (2.167)	-0.0275 (-0.366)	0.0310 (0.277)	-0.0821* (-1.943)	-0.00621 (-0.164)
Toilet access	0.0455 (0.655)	0.0652 (0.920)	0.0724 (1.040)	-0.0917 (-0.885)	0.0255 (0.644)	-0.0131 (-0.353)
Scheduled castes	-0.158** (-2.212)	-0.158** (-2.168)	0.124* (1.735)	0.0760 (0.713)	0.0272 (0.671)	0.123*** (3.051)
Scheduled tribes	-0.261*** (-3.138)	-0.198** (-2.322)	0.140* (1.672)	0.163 (1.302)	0.0457 (0.966)	0.215*** (4.544)
Other backward classes	-0.217*** (-3.698)	-0.181*** (-3.019)	0.0158 (0.268)	-0.0245 (-0.279)	0.0490 (1.449)	0.0878*** (2.652)
Telangana	-0.309*** (-5.523)	-0.317*** (-5.530)	-0.0441 (-0.784)	-0.00640 (-0.0761)	0.160*** (4.985)	0.103*** (3.427)
Rayalaseema	-0.197*** (-3.263)	-0.133** (-2.161)	-0.120** (-1.987)	-0.673*** (-7.440)	0.0541 (1.561)	-0.0628** (-1.967)
Mother's BMI	0.000233 (0.987)	-2.95e-06 (-0.0122)	3.46e-05 (0.146)	-0.000348 (-0.962)	-2.25e-05 (-0.172)	-2.63e-05 (-0.201)
Father's education level	0.00396 (1.116)	0.00703* (1.941)	-0.00297 (-0.830)	1.25e-05 (0.00235)	-0.00188 (-0.938)	-0.00169 (-0.904)
Mother's education level	0.00888** (2.560)	0.00788** (2.224)	-0.00217 (-0.620)	-0.00832 (-1.604)	-0.00406** (-2.033)	-0.00313 (-1.636)
Drought	-0.0863 (-1.631)	-0.123** (-2.276)	-0.0655 (-1.231)	-0.241*** (-3.027)	0.0656** (2.193)	-0.0570** (-2.090)
Constant	-3.081*** (-10.75)	-3.156*** (-10.76)	-0.254 (-0.883)	-0.284 (-0.660)		
Observations	1808	1799	1793	1783	1809	1802
R-squared	0.097	0.123	0.019	0.080	.	.

t statistics in parentheses

*** indicates a coefficient is statistically significantly different from zero at the 1 per cent level, ** at the 5 per cent level and * at the 10 per cent level.

Columns (5) and (6) report marginal effects evaluated at the mean for probit regressions.

Table 16: *Determinants of nutrition (height-for-age z-scores) (older cohort)*

	Height-for-age z-score	ΔHeight-for-age	Stunted
Male	0.164** (2.34)	0.129** (2.34)	0.0105 (0.332)
Urban	0.228* (1.95)	0.0224 (0.24)	-0.0893* (-1.722)
Log of price adjusted consumption	0.341*** (4.52)	0.0153 (0.26)	-0.125*** (-3.591)
Do you have electricity	-0.0242 (-0.19)	0.0127 (0.13)	-0.00317 (-0.0583)
Toilet access	0.0336 (0.31)	0.0113 (0.13)	-0.00295 (-0.0614)
Scheduled castes	-0.149 (-1.28)	-0.108 (-1.17)	0.0536 (0.984)
Scheduled tribes	-0.294** (-1.98)	-0.129 (-1.10)	0.0656 (0.935)
Other backward classes	-0.237** (-2.48)	-0.132* (-1.74)	0.116*** (2.599)
Telangana	-0.292*** (-3.20)	-0.0188 (-0.26)	0.0447 (1.056)
Rayalaseema	-0.391*** (-3.90)	0.0526 (0.66)	0.147*** (3.148)
Mother's BMI	0.0000907 (0.20)	0.000263 (0.74)	1.41e-05 (0.0746)
Father's education level	-0.00526 (-0.95)	-0.00336 (-0.77)	0.000866 (0.351)
Mother's education level	0.00639 (1.10)	0.00263 (0.57)	0.00116 (0.454)
Drought	-0.0291 (-0.33)	0.0182 (0.26)	0.0325 (0.818)
Constant	-3.450*** (-7.03)	-0.0743 (-0.19)	
Observations	906	906	911
R-squared	0.08	0.01	.

t statistics in parentheses

*** indicates a coefficient is statistically significantly different from zero at the 1 per cent level, ** at the 5 per cent level and * at the 10 per cent level.

Columns (3) reports marginal coefficients evaluated at the mean for the probit regression.

Table 17: *Enrolment in pre-school and formal schooling (younger cohort)*

	(1) Since age of 3, has child attended Pre-school	(2) Started Formal Schooling
Male	0.0123 (0.802)	-0.0138 (-0.574)
Urban	-0.00438 (-0.148)	-0.192*** (-4.470)
Log of price adjusted consumption	0.0332* (1.918)	-0.0639** (-2.394)
Do you have electricity	0.00753 (0.286)	0.0723* (1.740)
Toilet access	5.02e-05 (0.00193)	0.00556 (0.141)
Scheduled castes	0.00930 (0.371)	0.111*** (2.650)
Scheduled tribes	-0.0412 (-1.316)	0.0902* (1.886)
Other backward classes	0.0515** (2.371)	0.00616 (0.180)
Telangana	-0.0289 (-1.325)	-0.0533* (-1.658)
Rayalaseema	-0.0638*** (-2.718)	-0.00341 (-0.0989)
Mother's BMI	0.000154 (1.337)	-5.30e-05 (-0.402)
Father's education level	0.00557*** (3.600)	-0.00281 (-1.389)
Mother's education level	0.00185 (1.365)	-0.000414 (-0.211)
Drought	-0.0122 (-0.646)	-0.0214 (-0.719)
Household size	-0.00313 (-0.895)	-0.00931* (-1.672)
Primary occupation: agriculture	0.0409* (1.873)	0.0903** (2.420)
Primary occupation: casual labour	0.0420** (2.026)	0.0882** (2.516)
Primary occupation : trade and other services	0.0438** (1.961)	0.0141 (0.373)
Observations	1818	1818

t statistics in parentheses

*** indicates a coefficient is statistically significantly different from zero at the 1 per cent level, ** at the 5 per cent level and * at the 10 per cent level.

Columns (1) and (2) report marginal coefficients evaluated at the mean for probit regressions

Table 18: *Determinants of enrolment (older cohort)*

	Enrolled
Male	0.0325* (1.925)
Urban	0.0320 (1.099)
Log of price adjusted consumption	0.0440** (2.177)
Do you have electricity	0.0735** (2.401)
Toilet access	-0.000402 (-0.0151)
Scheduled castes	-0.0277 (-0.827)
Scheduled tribes	-0.0390 (-0.899)
Other backward classes	-0.0282 (-1.001)
Telangana	-0.0385 (-1.568)
Rayalaseema	-0.0667** (-2.358)
Mother's BMI	0.000371 (0.491)
Father's education level	0.00370** (2.090)
Mother's education level	0.00469** (2.530)
Drought	-0.0134 (-0.662)
Household size	0.00426 (0.784)
Primary occupation: agriculture	0.0531** (2.443)
Primary occupation: casual labour	0.0149 (0.691)
Primary occupation: trade and other services	0.0426* (1.656)
Observations	911

t statistics in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table reports marginal coefficients evaluated at the mean for probit regression.

Table 19: *Determinants of child work, well-being, and future expectations (older cohort)*

	(1) CHLDWORK	(2) CLADDER	(3) Optimism
Male	0.0388* (1.740)	-0.198 (-0.380)	0.116 (1.381)
Urban	-0.137*** (-3.712)	-0.435 (-0.486)	-0.115 (-0.780)
Log of price adjusted consumption	-0.0709*** (-2.597)	-0.217 (-0.374)	-0.134 (-1.406)
Do you have electricity	-0.103*** (-2.592)	-0.0922 (-0.100)	0.0330 (0.227)
Toilet access	0.00961 (0.265)	0.335 (0.417)	0.139 (1.069)
Scheduled castes	-0.0146 (-0.367)	-0.373 (-0.425)	0.163 (1.146)
Scheduled tribes	0.136** (2.262)	-1.819* (-1.654)	0.0975 (0.551)
Other backward classes	0.0334 (0.935)	-1.255* (-1.765)	0.154 (1.347)
Telangana	0.283*** (7.426)	0.417 (0.608)	0.295*** (2.620)
Rayalaseema	0.00521 (0.140)	2.718*** (3.599)	-0.310** (-2.440)
Mother's BMI	-0.00131 (-0.651)	-0.00338 (-1.008)	0.000278 (0.477)
Father's education level	0.000160 (0.0847)	-0.0509 (-1.230)	0.00616 (0.950)
Mother's education level	-0.00429** (-2.006)	-0.0430 (-1.000)	0.0179*** (2.657)
Drought	0.0780*** (2.746)	-1.128* (-1.688)	0.309*** (2.858)
Household size	-0.00956 (-1.365)	-0.145 (-0.982)	-0.0418* (-1.787)
Primary occupation: agriculture	-0.00360 (-0.107)	-0.519 (-0.666)	0.0885 (0.704)
Primary occupation: casual labour	0.0607* (1.750)	-1.661** (-2.177)	-0.0299 (-0.241)
Primary occupation : trade and other services	-0.0271 (-0.700)	0.185 (0.233)	0.152 (1.158)
Constant	0.512*** (2.82)	8.157** (2.046)	1.969*** (3.054)
Observations	911	908	824
R-squared	0.23	0.038	0.064

t statistics in parentheses

*** indicates a coefficient is statistically significantly different from zero at the 1 per cent level, ** at the 5 per cent level and * at the 10 per cent level.

Column (1) reports marginal coefficients evaluated at the mean for probit regressions

Appendix B: Definitions of key outcome variables

Outcome Variable	Description	How to calculate using R1 data	How to calculate using R2 data
Expenditure per capita	Expenditure per capita		Sum of the estimated value of food and non-food (excluding gold jewellery), over the past 30 days, divided by household size.
Price adjusted expenditure per capita	Expenditure per capita deflated using price index to account for inter-community price variation		Construct price index by generating weights for each consumption item based on its share in total expenditure of reference community, constructing an individual index for all goods using average prices for each community, and summing up indices for each community. Use price index so constructed to deflate expenditure per capita.
Absolute poverty	Percentage of children living in households under the national poverty line		<p>Absolute poverty is defined as per capita expenditure being below the following thresholds: Rs. 617.80 in urban areas Rs. 332.10 in rural areas</p> <p>These thresholds are the poverty lines used by the NSSO to determine poverty rates in India.</p>
Relative poverty	Percentage of children living in households under the relative poverty line		<p>Number of households below 50% of the median consumption over all households.</p> <p>Thresholds are Rs289.55 in rural areas and Rs387 for urban areas.</p>
Wealth-index based poverty	Percentage of children living in households below 0.2 of the wealth index	Percentage of children living in households below wealth index threshold 0.2	Percentage of children living in households below wealth index threshold 0.2

Outcome Variable	Description	How to calculate using R1 data	How to calculate using R2 data
Subjective well-being (household)			<p>Question on 'ladder' in household questionnaire for older and younger cohorts. Where on the ladder do you stand at this present time? LADDER</p> <p>Where do you think you will be in 4 years time? FARLAD.</p> <p>It takes three values:</p> <p>1 - Bad well-being if LADDER = 1 or 2 or 3</p> <p>2 - Average well-being if LADDER = 4 or 5 or 6</p> <p>3 - Good well-being if LADDER = 7 or 8 or 9</p>
Subjective well-being (child)			<p>Question on 'ladder' in child questionnaire for older cohorts. Where on the ladder do you stand at this present time? (CLADDER)</p> <p>Where do you think you will be in 4 years time? (CFARLAD)</p> <p>1 - Bad well-being if CLADDER = 1 or 2 or 3</p> <p>2 - Average well-being if CLADDER = 4 or 5 or 6</p> <p>3 - Good well-being if CLADDER = 7 or 8 or 9</p>
Wealth index	Changes to wealth index (between R1 and R2)	<p>Wealth Index=H+CD+S</p> <p>H=housing quality calculated as scaled values (0 to 1) of rooms per person, wall, roof and floor durability divided by 4</p> <p>CD=consumer durables Calculated as scaled values (0 to 1) of radio, fridge, bicycle, TV, motorbike/scooter, motor car/truck, mobile phone, landline phone, fan and motor divided by 9</p> <p>S=services Calculated as scaled values (0 to 1) of electricity, water, sanitation and cooking fuel divided by 4</p>	<p>Wealth Index=H+CD+S</p> <p>H=housing quality calculated as scaled values (0 to 1) of rooms per person, wall, roof and floor durability divided by 4</p> <p>CD=consumer durables Calculated as scaled values (0 to 1) of radio, fridge, bicycle, TV, motorbike/scooter, motor car/truck, mobile phone, landline phone, fan and motor divided by 9</p> <p>S=services Calculated as scaled values (0 to 1) of electricity, water, sanitation and cooking fuel divided by 4</p>
Asset index	Changes to asset index (between R1 and R2)	<p>Asset index = (LSW + LDW + HW + CDW + PAW)/5</p> <p>AI would have value from 0 to 1</p> <p>LSW: livestock owned</p> <p>LDW: land owned</p> <p>HW: dwelling owned</p> <p>CDW: consumer durables owned</p> <p>PAW: productive assets owned</p>	<p>Asset index = (LSW + LDW + HW + CDW + PAW)/5</p> <p>AI would have value from 0 to 1</p> <p>LSW: livestock owned</p> <p>LDW: land owned</p> <p>HW: dwelling owned</p> <p>CDW: consumer durables owned</p> <p>PAW: productive assets owned</p>

Outcome Variable	Description	How to calculate using R1 data	How to calculate using R2 data
Access to electricity		Proportion of households with electricity—ELEC=1 (Do you have electricity, hh Questionnaire)	Proportion of households with electricity—ELEC=1 (Do you have electricity, hh Questionnaire)
Sanitation facilities		Proportion of households using flush toilet or household pit latrine (TOILET=1 or TOILET=2--What kind of toilet do you use?, HH Questionnaire)	Proportion of households using flush toilet or household pit latrine (TOILET=1 or TOILET=6--What kind of toilet do you use?, HH Questionnaire)
Malnutrition calculated based on height-for-age, weight-for-age, weight-for-height, and BMI-for-age	Percentage of children with z-scores less than -2	<p>- Use file named: "inchildlevel1yrold.dta" for younger cohort and "inchildlevel8yearold.dta"</p> <p>- Use variables: sex, dob, dint, chweght, chheght. These variables are gender, date of birth, date of interviewing, weight and height of these children.</p> <p>Created one more variable for the age of the child in days (equal to dint – dob).</p> <p>- Produce Z-score of HAZ, WAZ, WHZ and BMI. By using Anthro software, the most recent software provided by WHO.</p> <p>- Malnutrition rate is the percentage of the children who have Z-score<-2 (for HAZ, WAZ, WHZ and BMIZ)</p>	<p>Using similar method that used for R1 to calculate malnutrition rate.</p> <p>Use file name: "INChildLevel5YrOld.dta" for younger and "INChildLevel12YrOld.dta" for older cohort.</p> <p>Note that only HAZ and BMI-for-age are computable for older cohort, and HAZ, WAZ and BMI-for-age for the younger cohort.</p>
Enrolment of child (5-year-old)	Percentage of children enrol the school		calculated based on HASSTRT; if HASSTRT=1 (Yes); (Has child begun formal school Ques-5yrHH)
Enrolment of child (12-year-old)	Percentage of children enrol the school	Percentage of children are in school now. schnow=1 (are you currently enrolled in school?)	Percentage of children are in school in this school-year. ENRSCH=1 (did u attend school last year?) Child Questionnaire: 4.1
Dropping out	Dropping out rate of child	<p>DROP OUT = 1(Yes) if (eversch==1 & schnow==2)</p> <p>Quest-8yrHH:</p> <p>4.1: Has "NAME" ever attended formal school? EVERSCH</p> <p>4.2 Is NAME currently attending school?SCHNOW</p>	<p>DROP OUT = 1(Yes) if (EVERSCH==1 & ENRSCH==0)</p> <p>Quest-12yrchild:</p> <p>1.1. Have you ever attended formal school? EVERSCH</p> <p>1.2. Are you currently enrolled in school? ENRSCH</p>
Child labour	Percentage of child labour of older cohort	<p>-Use file named: inchildlevel8yrold.dta</p> <p>- Use variable: chldwork (Have you done anything in the last year to earn money?)</p> <p>- Children considered to work when chldwork=1</p>	<p>- Use file named:</p> <p>- Use variable: CHLDWORK (Has child done paid work in the past 12 months?)</p> <p>- Children considered to work when CHLDWORK=1</p>

References

- Dev, S. Mahendra, S. Galab, M. Gopinatha Reddy, K.S. Reddy, C. Ravi, K.S. Babu and G.K. Mitra (2002) *APDPIP Baseline Survey Report in Sustainable Livelihood Framework*, Hyderabad: CESS
- Drèze, J. and A. Goyal (2003) 'The Future of Mid-Day Meals', *Economic and Political Weekly*, 1 November: 4673-82
- Galab, S. and N. Chandrasekhara Rao (2003) 'Women's Self-Help Groups, Poverty Alleviation and Empowerment', *Economic and Political Weekly*, 22-29 March
- Gopalan (1992) 'Undernutrition: Measurement and Implications' in S.R. Osmani (ed.) *Nutrition and Poverty*, Oxford: Clarendon Press
- Government of India (2001) *Economic Survey 2001-02. Technical Report*, New Delhi: Economic Division, Ministry of Finance, Government of India
- Gray, H. (1971) 'The Demand for a Separate Telangana State in India', *Asian Survey* 11.5: 463-74
- IIPS and ORC Macro (2007) *National Family Health Survey (NFHS 3) 2005-6: India*, Volume 1, Mumbai: International Institute of Population Sciences
- Khera, Reetika (2006) 'Mid-day Meals in Primary Schools: Achievements and Challenges', *Economic and Political Weekly*, 18 November
- Kumra, Neha (2008) *An Assessment of Young Lives Sampling Approach in Andhra Pradesh, India*, Technical Note 2, Oxford: Young Lives
- Mukherjee, Arnab (2008) *Trends in Andhra Pradesh with a Focus on Poverty*, Technical Note 7, Oxford: Young Lives
- National Sample Survey Organisation (1996) *Key Results on Household Consumer Expenditure 1993-94*, NSSO Technical Report 401, New Delhi: Department of Statistics, Government of India
- National Sample Survey Organisation (2007) *Household Consumer Expenditure Among Socio-economic Groups*, NSSO Technical Report 514, New Delhi: Department of Statistics, Government of India
- Planning Commission, Government of India (2007) 'Poverty Estimates for 2004-05', Press release (21 March)
- Reddy, V.R. and R.N. Rao (2003) 'Primary Education: Progress and Constraints', *Economic and Political Weekly*, 22-29 March: 1242-51
- Sainath, P. (2007) 'Nearly 1.5 lakh Suicides in 1997-2005', *The Hindu*, 11 November
- Suri, K.C. (2002) *Democratic Process and Electoral Politics in Andhra Pradesh, India*, Working Paper 180, London: ODI

Forthcoming papers

- Boo, Florencia L.: *What Are the Effects of Early Childhood Investments in Health on Later Child Health and Education Outcomes?*
- Galab, S.: *Parent's Socio-Economic Status on Children's Schooling Outcomes in Andhra Pradesh*
- Himaz, Rozana: *Intra-household Allocation of Education Expenditure in India: A Boy Bias?*
- Krutikova, Sofya: *The Role of Individual Characteristics of Young Children in Determining How Much They Work in Later Childhood: A Case of Rural India*
- Morrow, Virginia and Uma Vennam: *Children Combining Work and Education in Cottonseed Production in Andhra Pradesh: Implications for Discourses of Children's Rights in India*
- Singh, Abhijeet: *Do School Meals Work? Treatment Evaluation of the Midday Meal Scheme in India*
- Vennam, Uma: *Children Negotiating Early Childhood: How Child Development Services Support Successful Transitions*

Young Lives is an innovative long-term international research project investigating the changing nature of childhood poverty.

The project seeks to:

- improve understanding of the causes and consequences of childhood poverty and to examine how policies affect children's well-being
- inform the development and implementation of future policies and practices that will reduce childhood poverty.

Young Lives is tracking the development of 12,000 children in Ethiopia, India (Andhra Pradesh), Peru and Vietnam through quantitative and qualitative research over a 15-year period.

Young Lives Partners

Young Lives is coordinated by a small team based at the University of Oxford, led by Jo Boyden.

Ethiopian Development Research Institute, Ethiopia

Centre for Economic and Social Sciences, Andhra Pradesh, India

Save the Children – Bal Raksha Bharat, India

Sri Padmavathi Mahila Visvavidyalayam (Women's University), Andhra Pradesh, India

Grupo de Análisis para el Desarrollo (Group for the Analysis of Development), Peru

Instituto de Investigación Nutricional (Institute for Nutritional Research), Peru

Centre for Analysis and Forecast, Vietnamese Academy of Social Sciences, Vietnam

General Statistics Office, Vietnam

The Institute of Education, University of London, UK

Child and Youth Studies Group (CREET), The Open University, UK

Department of International Development University of Oxford, UK

Statistical Services Centre, University of Reading, UK

Save the Children UK (staff from the Rights and Economic Justice team in London as well as staff in India, Ethiopia and Vietnam).



Young Lives 
An International Study of Childhood Poverty

Department of International Development
University of Oxford,
3 Mansfield Road, Oxford OX1 3TB, UK
Tel: +44 (0)1865 289966
Email: younglives@younglives.org.uk

www.younglives.org.uk