Decline of Farmers’ Valuation for Smallholder Agriculture, Attitude Changes and Expansion of Mass Education in Rural Ethiopia

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Abstract

Mass education expansion is a necessity outcome that occurs in a society where the effects of high dependency and density ratios are less mitigated by policy/institutional opportunities. Population pressure effects such as land scarcity and diminishing returns to labour lead to a decline in farmers’ valuation for agriculture. Farmers do not longer consider agriculture as significant and primary as it used to be when resources are in abundance. They start to value other livelihood strategies such as wage labour or migration to urban areas. Since there is a lack of cash constraints for the expansion of wage labor in rural areas and since migration requires prior network, farmers tend to prefer and opt for education if and when schools are available. They believe that education is important for intensive agriculture, non-farm occupation and migration. Mass education is a result of farmers’ valuation decline for smallholder agriculture, non-tradable nature of the non-farm sector and society’s positive attitude change towards education. Government intervention, which was historically effective in creating elitist education, and school building does not by itself create a demand for mass education in rural areas.
1. Background

Education is one of the major instruments of social change and it is the force, which brings changes in the traditional outlook of the people, and it develops insight for judging things in their context. It is visualized that more the percentage of educated people more will be the rate of development.

Since 1995/96, twenty years after the distribution of nationalized lands, there is a dramatic growth in enrolments in primary schools throughout the rural areas of Ethiopia. In the first cycle of primary schooling (in grades 1-4), the enrolment grew faster at a pace of about 15 percent a year. The gross enrolment ratio of primary education, a common indicator for measuring coverage, quadrupled between 1995/96 and 2007/2008, from 23 to 95 percent. These trends are remarkable achievements of the educational system compared to the patterns of stagnation, reversals and uneven growth in the past (World Bank 2005).

Rural households’ interest in sending their children to school can also be measured by the conditions in the classrooms. Since 1995/96, the pupil-teacher ratio (PTR), and the pupil-section ratio (PSR), the number of pupils per section, have dramatically increased. The PTR rose from 39:1 in 1995/96 to 71:1 in 2001-02, and in the same years the PSR rose from 49:1 to 71:1. The trend in the PTR has increased to such an extent that it exceeded those in the urban schools, by an average of 60 percent in 2002/03. “Almost everywhere else in the world pupil-teacher ratios are typically smaller in rural areas because of their lower population densities. By contrast, classrooms in rural Ethiopia are as crowded as they are in urban areas.” (World Bank 2005).

The rapid expansion of primary school in rural areas has been understood and interpreted differently. World Bank views it as a “sign of distress in the system” or “desperate conditions” because of the “much heavier teaching loads for teachers assigned to rural than to urban schools”. Some researchers see it as a “crisis” of education where the “uncontrolled expansion of the sector” compromises the quality of education (Negash 2006). The Ethiopian government admires the enrolment as an achievement of its educational policy. What are the reasons for the explosive expansion of mass education in rural Ethiopia and how do we interpret the phenomenon?

2. Purpose and scope of the study

This study seeks to analyse and explain the driving forces and mechanisms for the rapid expansion of mass education in rural Ethiopia in recent times. It explains why and how mass education came to expand to a point of crisis or distress.

In this study mass education means the attainment of first cycle of primary education and it is measured by parallel increment in interrelated variables of enrolment: gross and net enrolment ratios, out-of-school children, pupil-teacher ratio, pupil class-ratio, proportions of female participation in schools, community participation in school construction, and community pressure in sending children to school.

The focus of the study is on school enrolment which here refers to whether a child is or is not enrolled in school. consider promotion rate and repetition of cohort (or retention) in first cycle of primary education as indicators of an interest in sending children to school. The study does not focus on school performance, attainment or achievements. Government education policy and school expenditure is discussed as related to the sudden expansion of mass education.

Changes in farmers’ occupational value as a result of population pressure, resource scarcity, low labour productivity and attitude towards education are considered important determinants for the explosive expansion of mass education in rural Ethiopia.
3. Interpreting Frameworks: Hypothesis for Expansion of Mass Education in Rural Areas

Functionalist theories explain the expansion of mass education as a result of government policy and means for education sector development (Csapo, 1983, Nhundu, 1992). According to them the Government promotes education either to solve problems of social integration or maintenance of elite dominance (Meyer, Ramirez and Soysal 1992). Government policy can be as specific as setting the age at which students begin school and the years of compulsory education to more general policies on funding, jurisdiction, curriculum, and governance.

agree that in every country school attendance rates are affected by these institutional constraints. The availability of schools provides opportunity to all irrespective of parental income and population differences (rich/poor, rural/urban, centre/region, girls/boys). In many developing countries, schools are not available for all students or schools may be located too far from the student’s home. Government expenditure in primary education and donors support for the program of universal schooling helps the poor to get access to the service.¹

Government policy and school availability is not, however, the whole story. Government intervention which was historically effective in creating elitist education does not by itself create a demand for mass education. For instance, in some areas there is markedly low enrolment rate (demand for education) in spite of the Government educational policy and allocation of budget. Government intervention does not by itself create a demand for mass education. The main reason for the expansion of mass education is parents’ choice of education as livelihood strategy for their children. This choice is related to four underling factors related to the driver and consequences of population pressure.

The first factor which influenced parents’ choice is the difficulty of getting access to farm lands as a result of growing number of young adult labour force in the rural area. Each year there are new entrants in the rural labour market as a result of the growth in the young adult labour force. Increase in the young adult labour is associated with decline in land for crop cultivation and this consequently leads to landless, underemployment or unemployment of the labour force.

The second factor related to the stagnation in the level of agricultural labour productivity and low return to farmers effort and time. As the number of child-rich households increase, subsistence households are forced to intensify their production either through extensification and/or intensification. These two non-market methods could not increase production in the long run as there is a limit to area expansion and labour intensity applied in degraded land. In the absence of investment and change in technology, level of agricultural labour productivity stagnates, while food consumption increases.

Land scarcity and low level of agricultural labour productivity give rise to decline of farmers’ valuation for agriculture. Farmers do not any longer consider smallholder agriculture as significant and primary as it used to be in the past and are not prepared to give hundred percent of their time. Expansion of mass education is related to shift in farmers’ value priorities. Education is the new value acquired when rural society experiences sever resource scarcity and productivity stagnation caused by two types of population pressure, namely growth in rural households with higher food consumption requirements and growth in young rural labour force seeking employment.

The third factor which contributed in the choice of education as a livelihood strategy is the expansion of employment based economy in the rural areas. This expansion has contributed to the making of the strategy in different ways. It provided non-farm economic employment

¹ Whether the poor have got benefit from the investment is assessed through the method of benefit incident analysis (see Tasew 1995/96).
opportunities for the landless or unemployed young adults of the society. But this sector is unproductive and could not absorb the growing labour force. Self-employment has entry barriers; it requires management skills and capital. Subsistence households could not provide these for their children and they think education can be of help in making the skill and capital accumulation. The wage employment, mainly in the agricultural sector, does not provide full-time employment all the year round and the wage level is as equal as the subsistence sector. The public employment sector in the infrastructure and social service development programs does not provide year round employment. It depends mainly on government budget and donor subsidised programs used often as safe net for destitute households.

Despite the relative expansion of employment based economies, parents do not have preference for non-agricultural activities since the chance of getting benefit out of the strategies is limited due to market imperfection (land, labour, and credit) and the underdevelopment of the non-farm sectors. Comparatively, households do not have bad experience of education. Their experience for education is relatively new and they want to give it a try.

The preference for education is not only a result of households’ knowledge about the existing opportunities in the alternative livelihood strategies. There is also positive attitude change towards education over time. Preference is based, in part, on changeable attitude. The fourth factor which contributed to the expansion of mass education in rural areas is the result of parents and children’s positive attitude towards education. Households’ belief about education has changed favourably over time as a result of a growing body of experiences and knowledge accumulation about the benefits of education. Attitude changes towards education can be measured by assessing the participation and outcome of the literacy campaigns and assessing the degree of community participation in expansion of schools and their perspective on female education.

Parents’ attitude towards beneficial outcomes of education can be examined through reference to functional needs. Intensive farming requires the use of modern inputs and training in farming methods. Dealing with local government officials and commercial institutions require basic reading and writing knowledge. Involvement in the local governance and improving once position by securing jobs in the local administration require education. To all intents, literacy campaign is one variable which shapes parental positive attitude towards education. It helps parents to see education of their children as an opportunity rather than a hindrance.

For the young adults school teachers in the village and urban migrants can serve as educational role models for they have become important figures in the village life. They may think that education can create the possibility that one could become a clerk or administrator in the public or private sectors. Young adults’ engagement in farming or other livelihood activities does not mean that they have no preference for education. Actual choice is not probably be identical with first preference. It is therefore important to ask their preferred goal.

To sum up, parents’ choice of education as livelihood strategy for their children is a result of: a) decline of farmers’ valuation for agriculture as a result of land scarcity and stagnation in labour productivity, b) limited rewards and entry chances offered by non-farm strategies and c) positive attitude change towards education.

4. The State of Research and Approach to Expansion of Mass Education in Ethiopia

Researchers and stakeholders have approached the subject of mass education emphasising different aspects of the expansion at policy and household levels. The bulk of the study is at the policy level dealing with the issues of access, equity, quality, efficiency, management, and finance.
According to its reports the government views the expansion of mass education as a result of its general policy (FDRE, 2002, 2005 and 2007). The government policy is, however, reviewed by a number of studies. There are studies which described access limitations in the regions (Lasonen et al. 2005) and proposed alternative measures such as Alternate Routes to basic Primary Education (Rose 2007), donor involvements (Yizengaw 2006; Shibeshi 2005), various forms of community participation (Swift-Morgan 2006) and mobilization of NGOs to cover the strong demand for primary education (MOE 2002).

Despite the progress in enrolment rate, the gender gap is not improved very much and there are researches which advocate increasing gender intervention (Rose 2003). Using benefit incident analysis, some researchers examined how much the poor have benefited from the expansion of education (Woldehanna and Jones 2006; Seifu 2002).

The quality of mass education is also measured in terms of school resources (Woldehanna et al. 2006) and household responses (Verwimp 1999). These studies pointed out the dilemma in making quantity-quality trade-off in rural Ethiopia. School children performance and achievements is also examined by looking factors of completion/dropout rates (Woldehanna et al. 2006; Nekatibeb 2002).

Despite differences in focus and interpretation, the research and review of mass education at the policy level, explained the expansion phenomenon basically from the same aspect or dimension, namely from a sector perspective, in this case the education sector. Aspects or factors of the education sector are studied by above and below perspective and in such cases the same aspects are interpreted differently. Whatever the differences in emphasis and focus all of them represent a specific disciplinary area. In this type of approach and investigation enrolment is not discussed as related to the developments in other economic sectors, namely farm and non-farm sectors.

When we come to the household level school enrolment is explained in terms of supply and demand factors. Supply factors study household responses to government initiatives (distance to and quality of schools). It is stated that households respond favourably if school infrastructure is improved (MOE 2005). To my understanding in a rural society sending children to school is not only related to supply and quality of schooling. think that household demand for education comes as a consequence of population pressure and occupational value changes in rural areas. Initially demand is shaped by the forces of resource scarcity, stagnation in the level of agricultural labour productivity and expansion of employment based economy (see section 8) not by the provision of educational opportunities (see section 7).

In some studies households’ investment in child schooling is explained by factors such as household income and parental education (Woldehanna et al. 2004). It is partly true that households’ wealth and education of the adult have positive impacts on sending children to school. But in rural Ethiopia all households cannot become educated and wealthy in a short span of time to be able to send their children to school en mass as is observed in the empirical data. My previous study shows that the economics of the households are not stable and it exhibits slow changes (Malmberg, and Tegenu 2007). For us the determining factors for the massive expansion of education are related to resource scarcity, the state of growth in the level and rate of labour productivity and attitude changes. These factors cannot easily be mapped onto demand for education.

Some researchers explain school enrolment by examining the economic importance of child labour in the household and farm economy. (Chaudhury et al. 2006; Admassie and Bedi 2003; Admassie 2003). The cost benefit analysis made at the household level assumes that parents have monetary consideration and gains. But the development of the rural economy is such that the money that can be gained by choosing one over the other is insignificant. Parents have no monetary value choices. The alternatives of not sending to school are either to keep the children home, engage them in agricultural activity, force them participate in local wage
labour market or facilitate their migration to towns. As we shall discuss later these alternatives are not desirable/preferred both by the children and their parents.

According to cost-benefit analysis parents determine school attendance for their children on the basis of expected benefits and costs to attending school (Bedi and Marshall, 2002). On the benefits side are the higher wages available from employment and quality of life benefits (Tietjen 1998). Costs include direct and indirect costs involved for the household. Indirect costs include loss of unpaid farm labour and household chores when children go to school (Cockburn 2001; Pal 2001; Tietjen 1998). The direct costs include clothing, book rentals and school fees (Duraisamy 2000; Vaduganathan, 2005). According to this general framework of choice, if the cost of education increases or if circumstances affecting opportunity costs change, the decisions about when a given student enrolls or leaves school may also change. This type of generalization is not true of all places and times. It may be so that families have developed over time a positive perception about the benefits of education and are ready to scarify for their children education. Attitude change may induce families to consider education as necessity. As pointed out above education may not be a commodity competing for choice among the desire list of households in a situation when the economy stagnates.

The cost-benefit analysis and the supply side approach (government intervention) assume that households have a fixed goal of sending their children to school. Since the children are illiterate sending them to school is taken for granted and what is important is the analysis of government policy or discussing the economic consequences of sending children to school. Households, however, have multiple and competing goals and wanting for education is not always given. Households may be interested in some or all of the following objectives with varying levels of priority: intensify agriculture, diversify their crops, integrate livestock and crop farming, diversify their income and activities, satisfy cash needs, changing consumption practices, engage in off-farm activities, decision to migrate, improve their dwellings, arrange marriage for their children or sending them to school. The question is why a high priority is given to education and what are the circumstances that led to the formation of such a want at a given point in time. Cost benefit analysis and supply side approach say nothing about the formation of the goal of sending children to school or its desirability.

In this study we intend to discuss the formation and the desirability of sending children to school. My point of departure is that households attach high priority in sending their children to school due to changes in value orientation\(^2\) under conditions of population pressure, resource scarcity, low labour productivity, diversified and yet non-specialized economic activities, and attitude\(^3\) changes.

### 5. Study Design and Methods of Data Collection

Different data collection methods are combined to obtain the necessary information: statistical materials, secondary sources, interview surveys. Detailed educational data are published in the form of annual statistical abstract by the Ministry of Education and Central Statistical Agency (CSA) from the period 1967 onwards. At regional level, education data are available

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\(^2\) Value stands for things preferred as significant or considered as a matter of right. Values determine our thinking and behaviour. They are the principles, fundamental convictions and standards that act as the general guides to our behaviour. They are enduring beliefs about what is worthwhile, the ideals for which we strive. They are the standards by which particular beliefs and actions are judged to be good or desirable. (See Guiren, 2006)

\(^3\) An attitude is a mixture of beliefs, thoughts and feelings that predispose a person to respond, in a positive or negative way, to some stimulus object, in our case education, (McGuire 1985; Fishbein and Ajzen 1975).
form education department offices. The educational data from the Federal Ministries and Regional Governments is used to explore fluctuating enrolment patterns over four decades. Based on extensive records of enrolment dating since 1967/68 a school enrolment growth curve is constructed to build a picture of progress.

Socio-economic data was gathered from research results, including from the studies based on the CSA. In studying the labour force growth, the 1999 and 2005 National Labour Force Survey of CSA are extensively used. These surveys provide labour force and related data at different levels and with varying details in their contents. To estimate the household consumption requirements, land holding sizes, labour supply and production, the study used the CSA’s Agricultural Sample Survey of 2006/07, which covered the entire rural parts of the country with the exception of one region and few zones.

To analyse past productivity change in agriculture at national level I used aggregate data (unweighted-unadjusted data) collected from the Agricultural Sample Survey data on Area and Production of Crops for the period 1995-2008. Since the education (enrolment ratios) and socio-economic data (labour force growth, household consumption requirements, productivity performance, etc) are not from the same database and sampling framework, it is not possible to perform regression analysis.

The quantitative information is supplemented by qualitative studies conducted over some years. Group and individual interviews are used following the specific research issues outlined on the basis of the hypothesis. The purpose of the group interview is to further understand population pressure, resource scarcity, value priorities and attitude changes at a village, household and individual levels. For this purpose I used cohort approach. Cohort is a group of persons who jointly experience a series of events over a period of time.

I choose farmer and school cohort group including both sexes. The farmer cohort groups are selected from different time periods to build up a longitudinal picture of progress through a resource system and demand for education. Criteria and procedure for farmer cohort selection include relevant features representing the cohort groups: have children, different villages, economic status, gender, etc. Accordingly three farmer cohort groups are selected:

a) eve of revolution (1971/72), the cohort is 1958-65
b) land distribution and allocation (1975/76), the cohort is 1961-68
c) the time education expands (1995/96), the cohort is 1981-1989

I choose also a school cohort, defined as a group of pupils who enter grades (1-4) of the first cycle of primary education in the same school year. The purpose of interview is not to trace the flow of a given cohort through their promotion, repetition, drop out and completion of the final grade of the cycle. The purpose is to assess their attitude towards education.

6. Measuring Expansion of Mass Education in Rural Ethiopia

By all evidence, the growth in primary education enrolment has been phenomenal. Gross enrolment of primary schools is the flow of children to schools irrespective of age from the school age population of the country. For instance, from 1994/95 to 2005/6, the number of students and schools quadrupled, from 2722192 to 10813703 students. Aggregate enrolment for primary education grew faster by an average of 14.7 percent a year between 1992/93-2005/06. These trends are a remarkable achievement given the patterns of stagnation, reversals, and uneven growth in the past (Figure 1).

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For detailed information about the data see

Figure 2 shows a comparison of rural and urban enrolments between 1994/95-2005/06. The percentage of rural enrolment is on the increase. By the end of 2005/06, 80% of primary enrolment was accounted for by rural areas and 20% by urban areas. In the same year there was a 60% enrolment gap between urban and rural areas compared to a 23.4% gap in 1994/95.
The classrooms in rural Ethiopia are as crowded as they are in urban areas. Figure 3 shows that an increasing trend in the pupil-teacher ratio and the pupil-section ratio (the number of pupils per section) at the national level. At its highest, in 2003/04 Ethiopia’s pupil-teacher ratios of 65:1 in government primary schools are among the highest in the world. Section sizes have also risen to extremely high levels, averaging about 74 students per section.

The pupil-teacher ratios in rural schools exceed those in urban schools, by an astonishing average of 60 percent in grades 1–4. Classrooms in rural Ethiopia are as crowded as they are in urban areas (WB 2005).

7. The Role of State Intervention: Limits of Supply-side Expansion

According to the reports provided by the government the achievement has been partly due to the general policy of the government that states ‘providing greater access to primary education with enhanced equity, quality and relevance’ and the subsequent implementation of specific policies like decentralizing the educational management; reforming the curriculum, especially the use of mother tongue at primary level; increasing the number of schools, enhancing the qualification of teachers and other measures taken under ESDP I program (FDRE, 2002, 2005 and 2007).

Can the expansion of mass education in rural areas attributed to the role played by policy as the government claims? When and to what extent does a policy make a difference in enrolment? It is necessary to explore the different components and evidences of the policy to understand the role played by policy in primary education enrolment. But what are the things that we have to measure to understand the role of policy. I will consider three examples to explain the role of policy: government school expenditure, the need for schooling and relative rate of enrolment growth.

First if one looks at government school expenditure, funding appears to have inconsistency. It appears that funding growth occurs in sporadic leaps and jumps (see WB 2005), while enrolment grew consistently. In Ethiopia there are regional differences in the allocation of budget and yet some regions with the lowest allocation have shown growth. When one places the enrolment coverage in a cross-country perspective, some regions continued to experience 20-30% annual growth without funding (or more than when the
expansion was not funded, see WB 2005). That means in some regions growth was healthy prior to receiving funding.

Certainly, there was an increase in schools. From 1993/94 to 2005/06, the number of schools doubled, from 9841 to 19412 (see figure 4). Additional schools, however, could not reduce the student pupil and teacher class ratios. Mass education in rural Ethiopia has expanded despite the poor quality of education.

That the government policy was not behind the rapid expansion of mass education in rural areas is by examining enrolment growth against the background of the need for primary
education in rural Ethiopia. Figure 5 shows the extent of the need for primary education over the years. The number of children out of school shows those that did not get the chance to go to school, while the number of children in school shows those children in the school system. The sum of the two areas shows the total school age population. As can be seen from the figure the annual growth rate of the school-age population is not the same throughout the years. There is a cohort effect. The need has sharply increased since 1982/83. The rural population of the country has grown from 37 million in the year 1982/83 to 63 million in the year 2005/06. The school age population has grown by 187 percent from 10.7 million to 20 million. By comparison, the percentages of children who are out of school in 2005/06 are as equal as it had been in the past.


The role of policy can further be examined by looking at enrolment growth level since 1967/68 when we have extensive records of enrolment dating. Figure 6 presents a general picture of the primary school enrolment level in the past four decades. The time pattern of growth can be divided into three sub-periods, which correspond to an initial period of modest growth, a period of decline and one period of s shaped growth. This periodisation is data driven and fits well with the development of the internal factors.

As Figure 6 shows, the first sub-period (1968 – 1972) is characterised by a modest 10.9% average constant growth rate in enrolment. The second sub-period (1978-1992), corresponds to a steady decline in enrolment, and the third sub-period (1993/94-to date) is characterised by s-shaped growth curve.

1967/68-1977/78: During this period enrolment grew with an average rate of 11% per year until it suddenly dropped to negative growth a year after the distribution of nationalized state lands. Even if there was modest growth in this period, without even being interrupted by the
1974 revolution, the education system was generally characterised elitist favouring urban areas and some regions.

1978/79-1992: The sudden dramatic increase in the level of enrolment in 1979/80 was due to the socialist government policy of literacy program in the whole of Ethiopia. In two years time it sharply declined to the level it was during the land distribution. Growth level was the short term effect of the literacy campaign. A study of the school cohort survival shows a sharp decline in dropout rates in the second grades. Even there was a short term recovery after the 1984/85 famine, there was a declining trend until 1992 where it plummeted with the bottom. Hitting the bottom in the 1992 was mainly related to the separation of Eritrea from Ethiopia. What is surprising is that enrolment growth declined sharply despite the dramatic growth in population general, cohort of 1983/84, and school age population in particular. During this year the rural population grew by 30 percent while the school age grew by 28%.

The 1975 national land reform played significant role both in growth of population in the rural area and in the decline of education enrolment. Nationalized lands were distributed to households based on family size. Many urban residence people have migrated back to the rural areas to get land. Since the national land reform the urban-rural migration was on stand still. The accumulation of people in the rural areas and the land incentive factor for reproduction has suddenly increased the rural population by 10 million. It was this extra cohort group which came to be levelled out in the 1990s.

Distribution of national land also hampered school enrolment growth. The distribution of land on family size has increased households possession of land. Because the marginal product of labour is increasing on farm size, this incentive is stronger among large land holders. However, because of imperfect labour market it was not possible to hire adult labour. Instead it became easier for families to use child labour. Families also believe that they have responsibility in giving agricultural training for their children and prepare them to inherit the family land. Since land could not be sold, families could not easily rent their land to send their children to school. So labour and land market imperfection forced families to use child labour (Bhalotra and Heady 2003).

1992/93-2005/06: despite leaps and jumps we have S-shaped growth curve, a pattern of growth in which, the enrolment growth increased slowly initially, in a positive acceleration phase; then increases rapidly approaching an exponential growth rate as in the J-shaped curve; but then declines in a moderate negative acceleration phase until it reaches the growth rate of the early 1970s. The question is why sudden upsurge in enrolment after low growth rate of 7 percent since the land reform.

Enrolment growth occurs in sporadic leaps and jumps, but usually follows a consistent declining and upwards trends. What may be happening in all of this growth is the simple influence of the availability of resources, particularly of land, where the pent-up demand of households continues to drive enrolment growth despite the number of schools and quality of education.

In other words, enrolment is driven more by demand than by supply (government policy). Cases of enrolment growth in regions where the policy (budget) is not in place during the EPRDF and the case of enrolment decline in the presence of policy during the Derg period seem to imply that government education policies are less influential than some researchers might want to think. It may be that household demand is more powerful than government education policies and can be highly correlated with primary education enrolments than state policies and plans.

My brief discussion on enrolment growth history leads us to the conclusion that the powerful force behind the rapid expansion of mass education since 1994/95 relates to household demands than government policies. As past patterns show reasons are related to demand than to supply factors. But demand – whether for education or consumer goods or
services – does not exist in nature, but has to be brought into being and made effective by extremely complex social, political and economic processes. In the next section we turn to an empirical discussion of this issue.

8. Explaining Demand: The Conditions and Driving Forces of School Enrolment

Labour force growth, land scarcity and enrolment

The expansion of mass education in Ethiopia has coincided with the start of the growth of the labour force in the country and the concomitant scarcity of land for employment. Since 1995 Ethiopia has started to experience an increase in working age population and an associated decline in the dependent age population (Tegenu, 2008). The labour force has grown rapidly as a result of moderate decline in the fertility rate and the echo of the baby boom generation of the 1975/76 land reform. In 2008 the country has a total population of 76 million, the second largest population in sub-Saharan Africa, and 48 percent of the adult population is in the age group 15-29. According to CSA study the absolute size of the national labour force was estimated at 12.9 million people in 1984. Over the subsequent decade the size of the labour force increased, reaching an estimated 28.3 million people in 2005.

The rural labour force is characterized by young age. The prime working age persons, age group 10-29, accounted for the highest share of the labour force. In 2005 they constituted 56% of the labour force, up from 55% in 1999. In 2005, the share of the middle aged group, aged from 30-59, reduced to 38%, compared to 39% in 1999. The older workers (60 and plus) has lower share of the labour force, even if it has slightly increased from 6,2% in 1999 to 6,4% in 2005.

The characteristic of the labour force is such that its growth requires either area expansion and/or land fragmentation. Creation of employment through land fragmentation has created what has become known as hunger plots, which are not economically viable. My own estimation is that currently the labour force needs 21 million hectares of additional land for employment creation and food self-sufficiency. This is practically impossible and there remains an imbalance between labour force growth and land availability.

In my study area before the onset of the labour force growth, land could be acquired through inheritance, parental sharing, redistribution, forest clearing, renting and share cropping. In the 1950s, land was available relative to the number of users and older cohorts had access to land mainly through tribute (landownership through paying tax) as tenants, and through kinship affiliation. At a time when their first child left home, in the middle of the 1970s, the land tenure system changed and the old cohort acquired a relatively considerable piece of land, due to the distribution of nationalized lands. Their offspring, the middle cohort, who formed their households at the time, received the same amount of land, despite the increase in the number of households in the area.

Land possession decreased as the number of households and settlers continued to increase in the area. The younger cohort of the 1980s possessed small size of land when they formed their own households. Periodic redistribution of land was halted as the number of households increased over time. When land was no more accessed through distribution, households began to clear forests and consequently began to farm marginal lands inhabited by wildlife.

At present farmers have access to land through means of land rental and share-cropping. But the land market has not developed for land is owned by the state and farmers have only use rights. The remaining alternative of accessing land through inheritance has become virtually impossible. There is hardly any share of land that can be transferred from father to each son. The informal practice of share cropping and land rent requires possession of certain amount of money and draft animals. Youngsters without possession of capital assets became landless and those who had acquired land through parental sharing have only small size land.
As a result of land scarcity and access problems the number of small land holders and landless is increasing in the area.

Schooling has changed over time as with the availability of land. Many of those who are now grandparents (those born in the 1930s and 1940s) did not attend school since they had no problem of land and no interest in education and there were no village schools. The next generation—those born in the late 1950s and early 1960s—did not attend school either since they had access to land through inheritance and redistribution. They had a lot of work to do in the household and in farming and there was also a limited expansion of schools. Currently, parents do not have enough land to partition or transfer to their children. Extension of land resources in fragile environment leads to low labour productivity.

Low Agricultural Labor Productivity and Strategy for children future

Farmers who own and cultivate their own plots of land said that the gain from crop output is not worth of the effort and time put in production. Referring to their long experience in agriculture business, they see no prospect of benefit from smallholder farming activities.

To understand farmers’ benefits of the output from their labour input, I examine labour productivity levels and growth rate over time. Labour productivity is an important source of long-term growth and it measures of what farmers get in return for their efforts (time and management skills). In this study labour refers to the economically active population in agriculture for each year in the country. To create homogeneous labour I adjusted the availability and participation of labour based on household structure types identified on the basis of their consumption requirements and labour supply capacity.

A number of studies on agricultural growth in Ethiopia have mentioned increase in inputs as the main sources of growth, while technological change/improvement and institutional innovations have not yet been attributed as sources of growth. CSA data on area and production of crops (Table 1) shows that grain output grew at a constant average growth rate (CAGR) of 7% between 1995-2008, while crop area and farm labour inputs grew by 3,85% and 5,4% respectively.

Table 1: Average growth rate of total grain output and inputs (land and labour)

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</tr>
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<td>Growth in Crop Area Cultivated</td>
<td>4.82</td>
<td>1.80</td>
<td>5.67</td>
<td>3.85</td>
</tr>
<tr>
<td>Growth in Farm Labor</td>
<td>8.33</td>
<td>6.34</td>
<td>5.89</td>
<td>5.41</td>
</tr>
</tbody>
</table>


Note: The farm labour is computed for each year by taking the number of holders grouped on the size of their land holding, the household member size, the total adult-equivalent labour supply of the household, and considering the active and inactive members of the household.

Price and market conditions are not the causes for input increases. In my previous study we found out that subsistence households are not profit motivated. Their objective is securing food and they do not care very much about growth (percentage change in output). In subsistence economy, crop output choice and input choice are not driven by profit incentives facing the farmers and their capacity to act on those incentives. Production factors (mainly land and labour) are not separate elements functioning on the basis of market price.

Population pressure is the main driver which induces farmers to use more inputs. We identified two qualitatively different pressure drivers defined by the objectives, needs and capacity of the sector of a population that is increasing. The first pressure driver is an increase in the number of high dependency ratio households that have relatively high consumption requirements. The second pressure driver is an increase in the volume and growth rate of labour force actively participating in rural labour market.
Concerning the first driver, child-rich households which seek cropping lands are growing by a constant average growth rate of 2.6% in the period 1994-2006 (Tegenu 2008). The second driver, the rural labor force (age group 10-64), which is seeking new employment has shown constant average growth rate of 4.69% in the year 1999-2005 (Tegenu 2008). As a result of an increase in food consumption requirements and access to agricultural employment, land input in production has increased by constant average growth rate of 3.85% in 2008 (see Table 1). This percentage change in land input is estimated to show 44% increase since 1996/97 (Dercon and Hill 2009). The question is where does this huge area expansion come from?

Currently grain land is expanding at the expense of other categories of land and environmentally inhospitable areas. A study on the proportional mix of land in the regions of Tigray, Amhara and SNNP shows that new crop lands are expanded at the expense of fallow land, cash crop land (coffee), wood land and other land categories including gardens and barn lands (see Figures 7).

The conversion of marginal areas with lower sustainable yield potential for crop cultivation demands greater labour input to raise land productivity. Conversion to crop land means deforestation, overgrazing, limited fallow, farming on steep slopes, limited application of nutrients/organic matter, and lack of proper soil and water conservation measures— which constitute proximate causes of land degradation (Yesuf, et al. 2005). To protect the land and increase its soil fertility (to regain land productivity) farmers are engaged in terracing, manure, inter-cropping (planting two or more species within an individual parcel of land) and land conservation infrastructure (grass strips, anti-erosion ditches, hedgerows). Increase in needs and demands of population pressure drivers on one side and the interrelated causes of land degradation on the other side lead to a downward spiral in labor intensity.

![Figure 7: Proportional mix of land use change 2003 and 2006](image-url)
The extension of cultivation to poor lands decreases the return to labour. In the marginal lands to obtain the same level of output more labour input per unit of output is required than had previously been the case. This situation, according to classical economists such as David Ricardo, leads to eventual stagnation, as the marginal return to additional labour decreases.

In addition to land degradation, cyclical drought, moisture stress and loss of local species have contributed to the law of diminishing returns. Farmers have mentioned the changes that took place in the context of small holder cultivation over the years. Rain is not available as it used to be, and if it does it may not come on time and in the right amount. Agriculture areas are affected by periodic drought, whose frequency has increased over the years. Shortage of rain fall and/or moisture stress has come to affect the level of yield harvesting. Farmers mentioned as well the loss of some of local plant species as a result of land degradation. They have no more possibilities of planting species that fits the ecology, altitude and soil type and gives higher yield.

![Figure 8: Farm Labour Productivity in Ethiopia, 1995-2008](image)

To see the changes in output subsequent to a proportional change in labor inputs, I analyzed the growth level and growth rate of labor productivity. The growth level is the starting value of whatever is growing; while the growth rate is the change in the growth level from year to year. Figure 8 shows growth level in recent past labour productivity, coinciding with the period of educational expansion. As shown in the figure the labour productivity growth levels fluctuate and do not show any increase. The labour productivity of 2008 has similar level to that of the middle of 1990s.
The growth rate of the labour productivity level, however, has shown a dramatic increase. According to CSA, (1995/96-2006/07) data, the constant average growth of labour productivity increased strongly from negative 8% in 1996-1999, to negative 0.1% in 2000-2004, and to positive 6.5% in 2005-2008. This, however, does not mean that an increase in economic productivity. For longer term growth it is necessary to keep both the growth rate and the growth level as high as possible. An economy with a low growth level will not grow very much in the long run even if the growth rate is high at times.

The increase in the average growth rate of 6.5% between 2005 and 2008, reaching 5.74 quintals per farm labour can be explained by the rise of land productivity (crop yields obtained from a given size and quality of land) rather than by technical progress (an improvement and move closer to existing best practices).

Figure 9: Land and Labor Productivity, 1995-2008


Figure 9 shows a parallel increase in land and labour productivity. An increase in land productivity is bound to have a positive effect on labour productivity, as it will affect the value of output, which is the numerator in the labour productivity index used here. Land productivity reflects the level of labour and fertilizer inputs. Since only 45% of the rural households in Ethiopia use fertilizers (CSA 2006) well below the recommended rates, land productivity is mainly the result of labor intensity.

The question is now what farmers have got in return for their efforts? To answer this question I assessed household production, consumption needs and productivity performance for a given year.

Table 2: Income left from household productivity in grain output in northern and central Ethiopia, 2006/07
## Table 1: Household Productivity and Consumption Requirements

<table>
<thead>
<tr>
<th>Regions</th>
<th>HH Types</th>
<th>Aggregate HH land and labour Productivity</th>
<th>Total Household Consumption Requirements (in quintal)</th>
<th>Surplus Crop for sale (in quintal)</th>
<th>Income from Crop sale (355 Birr/quintal)</th>
<th>Number of Persons in Household (adult equivalent)</th>
<th>Income Available for other Expenditures (per adult equivalent) in Birr</th>
</tr>
</thead>
<tbody>
<tr>
<td>LRS</td>
<td>10,36</td>
<td>3,71</td>
<td>6,65</td>
<td>2361</td>
<td>1,7</td>
<td>1389</td>
<td></td>
</tr>
<tr>
<td>Tigray</td>
<td>43,84</td>
<td>16,2</td>
<td>27,64</td>
<td>9813</td>
<td>7,2</td>
<td>1363</td>
<td></td>
</tr>
<tr>
<td>CR</td>
<td>11,24</td>
<td>12,04</td>
<td>-0,80</td>
<td>-284</td>
<td>5,4</td>
<td>-53</td>
<td></td>
</tr>
<tr>
<td>LRS</td>
<td>13,38</td>
<td>3,71</td>
<td>9,67</td>
<td>3434</td>
<td>1,7</td>
<td>2020</td>
<td></td>
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<tr>
<td>Amhara</td>
<td>38,80</td>
<td>16,2</td>
<td>22,60</td>
<td>8024</td>
<td>7,2</td>
<td>1115</td>
<td></td>
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<tr>
<td>CR</td>
<td>12,97</td>
<td>12,04</td>
<td>0,93</td>
<td>331</td>
<td>5,4</td>
<td>61</td>
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<tr>
<td>LRS</td>
<td>2,49</td>
<td>1,9</td>
<td>0,59</td>
<td>208</td>
<td>1,7</td>
<td>123</td>
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<tr>
<td>SNNP</td>
<td>6,11</td>
<td>8,1</td>
<td>-1,99</td>
<td>-707</td>
<td>7,2</td>
<td>-98</td>
<td></td>
</tr>
<tr>
<td>CR</td>
<td>4,19</td>
<td>6,02</td>
<td>-1,83</td>
<td>-651</td>
<td>5,4</td>
<td>-121</td>
<td></td>
</tr>
</tbody>
</table>

Source: Computation based on CSA, Annual Agricultural Sample Survey 2006/07. Report on Area and Production of Crops. Households are identified based on land holders’ household member size, land holding size, labour supply capacity and consumption requirements. Accordingly three household types are identified:

i) **LRS** (labour-rich households of small size class): household types with low dependency ratio and relatively low consumption requirements. LRHS include young couple (singles/married) without dependents and with two dependent children under 15 years old, and elderly households with one person, two or more elderly members.

ii) **LRL** (labour-rich households of large size class): household types with low dependency ratio and high consumption requirements. LRL include households with two or more adult children above 15 years old, households with affiliated adult relatives and married couples who have not yet established their own households. Extended families (households containing more than one family unit) can be included in the LRL category.

iii) **CR** (child-rich households): household types with high dependency ratio (ratio of producers to dependents) and high consumption requirements (low saving). The child-rich households include those with three dependent children under 15 years old, and four or more dependent children under 15 years old.

Table 2 shows the level of income available for non-consumption expenditure. Child-rich and labour rich households (76% of the total households) have lower income available for non-food expenditure. Even if the majority of these household types have the potential to cover their higher food requirements according to CSA data, they are left with no money to cover other household non-food annual expenditures: health, education, cloth, government tax, fertilizer debt, etc. It is not surprising if these families do not expect improvement in small holder agriculture and prospect of change in the standard of living of their children. Their children have nothing to lose except the chain of intensive labour productivity not worth of its effort and time.

Entry Chances offered by Non-farm Strategies and Preference for Education
Grain crop production is a seasonal activity in Ethiopia. Since the farming system is generally characterized by rain-fed crop production, the labour demand for agricultural activities has seasonal characteristics. The period from February-May is relatively low agricultural activity season while the peak period of agricultural activities (starting the beginning of June through the end of November) are depending on the availability of rain fall. The dry season (October-January) is the peak harvesting season in Ethiopia. Considering weekend and religious holidays, farmers have at least a total of 175 days that can be allocated for various agricultural activities in the wet and dry seasons. Due to the low level of technical changes and dependency on rain-fed agriculture, farmers use only 56% of the 175 days and the remaining days are used for off-farm and non-farm activities (working days are calculated based on
average annual labour input studies conducted by Gryseels and Anderson 1983;Tesfamicael 2005).

Non-farm sector include petty trade, handicraft, transporting, mining, selling of wood, local brewery, etc. Households participate in non-farm sectors either as self-employed or as wage labourer. Off-farm self-employment involves ownership of a firm that produces goods and services. It requires capital, managerial skill and access to market. As we have seen the majority of rural households have low productivity and shortages of liquidity to invest on equipment purchase. Farm households choose wage employment which requires less initial capital. But off-farm wage employment has two problems. First the off farm wage-employment is not readily available. In one study “when farmers are asked for the reason why they do not work more hours in off-farm activities, about 66% of them responded that they could not get off-farm employment around their district (Woldenhannaa and Oskamb, 2001). Secondly, the marginal value of farm labor (or reservation wage) is not less than the off-farm wage rate. In areas where there is a wage employment market (near to urban centers) farmers preference for non-farm wage employment is less since they earn lower than the marginal value of farm labour (Woldenhannaa and Oskamb, 2001, van den Berga and Kumbib, 2006).

Out-migration to urban centers requires prior networking with town people and having one is not easy for rural people. Besides, education attainment proved to be an important asset for out-migration and getting of employment in the non-agricultural sector (Mberu 2006).

From the above research studies and from our farmers’ cohort group interviews we have come to see that the chance of getting benefit out of the non-farm activities is limited due to market imperfection (land, labour, and credit) and the underdevelopment of the non-farm sectors. Comparatively, households do not have bad experience of education. Interviewed school director and teachers said that initially students who completed 12\textsuperscript{th} grade were sitting idle in the rural areas. After the rapid expansion of the decentralization system of local governance many of the completed students got employment in the regional and local public administration (note: government public sector has expanded by 56%). Nowadays it is only very few, those with lower grade result, which did not get employment. Those with higher grades could join the regional universities and colleges. Mass enrolment can be partly related to the process of urbanization.

Watching students either getting local public employment or higher education in rural urban centres has encouraged and gave hope to parents to send their children to school. The saying that “what benefit has an educated person got” is no longer valid. Households experience for education is relatively new when compared to agriculture and non-farm activities and it seems that they want to give it a try. But there is a question not yet answered. Can it be that households simply drift into education without deliberate decision because they lack sufficient information about education?

The preference for education is not only a result of households’ knowledge about the existing opportunities in the alternative livelihood strategies. There was an attitude change towards education over time. Households’ belief about education has changed favourably over time as a result of knowledge accumulation about the benefits of education.

Farmers’ Attitude Change towards Education
The attitude towards education has changed overtime. The old cohort generation attitude was neutral. Their knowledge about education was limited to church education aimed for the

\footnote{A farm household’s choice of whether or not to work off-farm depends on the reservation wage rate (marginal value of farm labour) and market wage rate. If the reservation wage rate is less than the prevailing market wage rate net of commuting cost, a farm household will choose among the available off-farm activities depending on the relative wage rates (Becker, 1965; Gronau, 1973).}
clergy: to produce deacons for the mass services and expansion of the Christian religion. Since church education was elitist the old cohort saw only two alternatives for their children: either to become a farmer or migrate to urban centres and become a petty trader. Since at their time land was owned by the feudal lords and since most of the farmers were small holders, access to land was through tenancy. Those who prefer not to be tenants and who had contacts with urban centres send their children to urban areas to learn such skills as tailoring, shoe making, masonry, etc. Some of them who were able to make their way to towns ended up in attaining a good level of schooling.

During the time of the second generation there was relatively positive attitude towards education as a result of the adult literacy campaign launched for 11 years, 1979-1990. The literacy campaign has created general awareness of education among Ethiopian society. The campaign was not, however, effective because there was less enthusiasm among the participants, estimated to be a quarter of a million (Afework T. 2004). Farmers at that time had access to land and were more interested in farming than on education. I think that in addition to the implementation problems of the literacy program, the availability of agricultural lands (either through redistribution or partition) has contributed to adults less motivation to participate in the literacy program.

During the time of the third cohort generation parents want their children to go to school. There is no variation in the positive attitude of parents towards the education of their children. At the time of interview all cohort groups have similar level of desire and efforts in sending their children to school despite differences in parents’ educational level. Below are excerpt of interview materials about the benefits of education in different areas and for different groups:

i) National Economic Development and Individual Efficiency

“Education expanded as a result of basic thinking change in the society. Peoples’ behaviour of understanding has changed as regards to development of their country, making the economy efficient and knowing what is needed to make a living. Education benefits not only the individual but also the country. Today there is a national awareness about the benefit of education”

“We do not have technology. Things have to change in a modern way. The hitherto existing situation did not benefit us. Education is one way of changing the situation.”

“An educated farmer knows what is advantageous and disadvantageous to him. Education enables you to see the differences. Uneducated farmer spends his time in alcohol drinking house while educate farmer use his time in work since he knows how to be efficient.”

ii) Agriculture Productivity

“Between educated and non-educated farmers there is a difference in using the techniques of decreasing soil-water erosion and increasing soil-water retention. Uneducated farmers often apply the tradition and practice of their forefathers which does not help in prevention. Changing crop enhances soil fertility but this is not practiced by uneducated farmer.”

“Education is needed since the return to land has become low and the cost of fertilizer is increasing. An educated farmer thinks how he can increase production in a situation when fertilizer input is very low. For instance, the land should be left for fallow for two years and receive livestock manure to regain soil fertility. This requires education. Selection of seeds that best suits the soil type requires as well education.”

iii) Fertility, Family and Child care:
“There is a difference between educated and uneducated farmer. An educated farmer can have fewer children since he gives space between births and he can give proper upbringing to the children. Since he has learnt about sanitation he can create a healthy family and can thus save hospitalization money. Giving education to girls helps to keep the house clean and provide better care to siblings. Uneducated farmer can not reflect on these issues. Educated person can guide his family and be useful to his country.”

“Uneducated person can marry two or three wives at the same time and give birth to more children leaving their fate in luck. Educated person marry one spouse and take advantage of it.”

iv) Governance and Communication:
“Uneducated person has difficulty to change his mind. During meetings he listens only to what he traditionally believes. He has suspicion to new ideas and does not accept them. He does not listen to what he does not believe in or traditionally discussed.”

“Uneducated person can not understand and follow up current developments. A person mind develops as he reads and follows up new things. The mind of non-educated person does not show progress.”

“In mass gatherings, say, when a district governor calls a general meeting, we observe differences between educated and non-educated persons. Those who are educated can stand up and put forward challenging question to the administrative body after listing their statements. Uneducated persons on the other hand murmur among themselves; they are often distracted and bewildered.”

“An educated person can listen and ask while a non-educated person does not follow up the discussion and silently thinks on other things.”

v) Female education (excerpt from interviewed women):
“During the time of the old and middle cohort generation there was an attitude that says girls need husband and not education. At the age of 15 and 16 girls went to their husbands’ house not to school. Parents do not know the changes that education can bring about. They give value and priority to farming. Now (at the time of interview) this has changed and parents are encouraging their daughters to go to school. They started to compare the status of their daughter with a daughter of another person who went through school and attained achievements.

Education is important for girls. Educated woman can plan and properly manage the household economy. Non-educated person only works and eats. He/She does not think differently. For instance, if we take the issue of health, an educated person can think differently than a non-educated person.

An educated rural woman can take advantage of any opportunity that comes to the village. She can be involved in petty trade or help their husbands by selling local alcohol-drinks. Engagement in trade needs education. Household work does not need formal education. We do household work without education.

Education is very important for girls than for boys. If a boy is not successful in education, he can be a farmer, or sell his labour or migrate to towns. If a girl is not successful in education the alternative is to get married. Boys have different alternatives while girls have only one alternative, namely marriage.”

The idea of gender equality has also changed the attitude towards education. Now the rights of women and children are being respected and this freedom has enabled us to bring about our children freely. Parents do not any longer give the hand of their daughter to
marriage as it used to be. Even if they wish, the daughter may refuse and they have no means to force her as it used to be traditionally. The daughter can appeal to the school officials or to the local administration. Marriage is now delayed as a result of this change in attitude towards women and children right and benefit of education. During the earlier period a daughter get married at the age of 15, but now it is at the age of 22 and even more, at the age of 30 in some cases. If a woman starts to attend school, she is saved from giving birth to many children. She can probably have two or three children.

vi) Students’ attitude towards education (excerpt from interviewed material):
At first we were forced (pushed) to go to school by our parents. Our parents do not want us to live a dark life like they have been through. They have the thinking that we live in life full of light. As we continue to go to school we have come to realize that education is the way to know about the world, the means to change our life, and the basis for the development of our country. Gradually we have come to have an aim why we go to school and we begin to come to school out of our own interest. School provides you knowledge and an opportunity to live an improved life. One of the benefits of education is to be free from being dependent on others. One can also help parents who toiled in financing the education.

We go to school not for self-pride. The main benefit of going to school is acquiring knowledge. But knowledge is empty if it is not applied to help one-self, parents and country. The measurement of a knowledgeable person is his/her practical application of the knowledge he/she acquired by going to school, listening radio and reading books.

Households’ belief about education has changed favourably over time as a result of knowledge accumulation about the benefits of education (for a comparison see Sjöström 1986). Interview materials provide evidence to our hypothesis which states that in rural areas the preference for education is also a result of parents and children’s positive attitude towards education.

9. Characteristics of Mass Education
In this study the overall research question underlying all other research questions can be formulated as follows: “When and what drives parents to enrol their children in school?” In the preceding sections we tried to establish the compelling factors for farmers’ resolute decision of sending children to school. There is, however, one remaining complementary question that should clarify the other side of the expansion story. How much capacity is there both at the state and household levels to absorb demand-led surge in mass education?

Performance reports on access, equity, quality and efficiency show that there are exceptions to the underlying process (see WB 2005 report, among others). There are few families who are not still sending their children to school and those who have already sent their children do not keep them long enough to complete schooling. Is non-enrolment related to farmer’s value or access factors (schools availability)? Is dropout rate (retention) related to sector development (households indirect cost) or quality of education (change in attitude towards education)? The final hypothesis of this study is that during the period of expansion school dropout is not related to the issues of school quality and achievements of education. It is related to household capacity.

We have interviewed school administrators, teachers and students to know who is not sending children to school and reasons of dropout. There are two reasons for not sending children to school. First is household capacity and the second is school availability. Farmers know and are clear about why they should give education for their children. But for few low
income households realizing their ambition is difficult. They do not have the capacity to cover schooling costs unless the cost is shared by NGOs.

The opening of primary schools in each of the localities and secondary schools in the nearby towns has encouraged households to send children to school. In places where school are not available or located far away from the villages, households find it physically difficult for ten-year-old children to continuously cover long distance walks. According to interviewed people not sending is related to school availability and households’ economic capacity.

In the case of dropout the reasons differ depending on individual cases, gender and regional setting conditions. The individual cases are related to the personality of the student. Some students who are lost the aim of going to school (for instance, girls involved in love affairs or students who feel that they are relatively materially deprived) have the tendency to leave the school on personal reasons. In some families girls who have still shouldered the burden of the household work tend to drop-out of school. Since these girls do not have the time to study, schooling is very difficult for them and they cannot continue for long. Often these girls are older in age and have started schooling late around the traditional marriage age.

In the majority of dropout cases, the reasons seem to have regional patterns. The proportion of a cohort of pupils who leave out the school system differs from region to regions. In regions where the household resources are meagre and where yield is very low (such as the highlands of Sodo district), supporting enrolled students for long time is difficult. At some stage households put pressure on their children to drop out of school and migrate for urban centres to work and send them back money. Interviewed teachers and school administrators noted that the return to education investment takes time. These families do not have the capacity to wait for long and most of them are dependent on remittance, at least for holiday expenses.

In the low land region of Sodo district the reason for drop out is different. In this area households cultivate cash crops such as teff and maize. During harvest time students, sometimes almost half of the class, abstain from school and engage in harvesting activities. In this area households have relatively larger land holdings. If households do not have adequate agricultural labour, it may be so that the absentee students will not come back to school and will remain back in agricultural activities for good. Cash crops cultivated in relatively large land holdings require intensive labour and this is often the cause of drop out.

In the weni-adega region, where households cultivate cash crop (temporary crop) and enset (permanent crop), all students attend class and dropout is almost unknown. In this area households do not have land to partition to their children and the return from agricultural activity is low. Since outmigration to Addis Ababa is not an established culture, households’ only alternative is to send their children to school. Students, however, can miss class once in a month when keeping the village herds becomes a turn of their households. In this area households herd their livestock jointly; they graze their animals together on the same day in a given place. They take monthly turns to watch each other’s herd. When his turn comes, the household head, often the father, asks his child to stay at home and look after the village herd while he does other agricultural activities. Except for such days of absenteeism caused by the joint herding strategy, in this region drop out is uncommon. The level of dropout is not high compared to the rate of its expansion. In all investigated cases where and when it happens, dropout is not yet related to the quality of school education (attitude change).

**Conclusion, Policy and Theoretical Implications of the Study**

This study presents an explanation to the dramatic changes in Ethiopia’s primary school enrolment patterns which have taken place since 1994/95. Four population pressure and agricultural resource scarcity related hypotheses explaining the phenomenon of mass education expansion in rural Ethiopia were examined in this study. The quantitative and
qualitative data support the overall hypothesis that mass education expansion is a necessity outcome that occurs in a society where the effects of high dependency and density ratios are less mitigated by technical changes and market perfections.

The first hypothesis that land scarcity and diminishing returns to labour leads to decline in farmers’ value for small holder agriculture is supported by the measures of labour force growth, employment structure and agriculture labour productivity. The rapid growth of the labour force since the early 1990s and the concomitant de-fragmentation of household assets and creation of hunger plots and landless groups have changed farmers’ value for agriculture. Agriculture does not create jobs for their children and in cases where it does it has not improved the household material well-being. Parents said that they do not want their children to be farmers like them because they do not any longer consider smallholder agriculture as significant and primary as it used to be when resources were in abundance. Since they see no future in farming, they think that schooling is obligatory and will open better opportunities for their children.

The non-farming sectors that have come to develop as a result of the diversification of household activities could be a competing field of engagement to education. The second hypothesis that non-farming sectors offer less employment opportunities which as a result leads to parents’ preference for education is proved by field interview and studies conducted in regions of Tigray and Oromo. The non-farm sector cannot be used as an alternative base for the establishment of adult life since they are not easily available and when they do they require capital, skill and market which young adults and households do not posses or have access to. Rather than investing time in the undeveloped sector, parents prefer to try education for their children which is relatively the new style in rural areas.

Parents have developed a positive attitude towards education as a result of their experience in life. The third hypothesis that households belief about education has changed favourably over time has been supported by extensive interviews with people from all walks of life: farmers, women, students, teachers and school administrators. The adult literacy campaign of the 1980s, expansion of the public sectors in the rural areas and farmers’ agriculture extension programs are some of the factors which shaped parental positive attitude towards education. Parents and students believe that education is beneficial for the individual, the society and the country. Parents have the same level of desire and effort in sending their children to school irrespective of differences in the levels of their educational background.

There is, however, a constraining factor in realizing the essentialness of education and this has to do with the household and state capacity to absorb the rising demand for education. The last hypothesis about the negative association between school drop out, households’ material deprivations and school access is proved by the interview data. Even though a further quantitative analysis is needed, interview data shows that families that do not send their children to school were either economically very poor households or the school is located far away from the village that can not be covered by the physical strength of 10 year old child.

The policy implication is that the government has to continue build schools near to the villages and find ways of increasing the household income since schooling is totally dependent on household wealth. Currently school children are partly working on the farm to finance their education and this further deteriorates the quality of education which already suffers from high pupil-class/teacher ratios.

The research underlines that the expansion and quality of mass education can not be understood or solved by a single sector approach. Inter-sectoral approach and strategy is needed to understand and deal with explosive expansion of education in rural areas. The quantity, quality and equity issues of schooling are very much related to the development of the farm and non-farm sectors. Education does not develop in isolation, and its growth is affected by what is happening in the other sectors of the economy.
At the level of theory the study introduces a new category in the area of livelihood strategy, namely mass education as a necessity-based livelihood strategy adopted under conditions of policy/institutions constraints. The study makes also a contribution to the discussion that the spread of education produces declines in fertility (Caldwell, 1980; Caldwell, Reddy and Caldwell 1985). Caldwell’s argument is that in rural society children tend to be net producers (rather than consumers) of wealth, an assumption probably driven by the prevalence of child labour. Mass education reverses the direction of the flow of wealth by reducing the economic contribution of the children to the households. Children attending school become a cost to the household and leading thus to less interest in having more children. It seems that he used the cost-benefit analysis for explaining fertility decline rather than for the expansion of mass education. In any case, his hypothesis that fertility decline is associated with increasing education levels is strongly supported by empirical data (London 1992), but it is not known that fertility decline is the unintended outcome of parents’ declining value for smallholder agriculture and preferences for education. This study maps out the mechanisms of fertility decline in rural areas. Population pressure, resource scarcity and low agricultural productivity brings about change in occupational value and choices. Parents’ choice for education is a reaction to increasing difficulties in securing an agrarian livelihood for their children. The consequent expansion of mass education (particularly girls’ education) brings about a delay in marriages and changes in reproductive behaviour (fertility transition).
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