GENDER AND GROWTH ASSESSMENT – NIGERIA

NATIONAL OVERVIEW

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Glossary of terms

Dutch disease:	The deindustrialization of a nation's economy that occurs when the discovery of a natural resource raises the value of that nation's currency, making manufactured goods less competitive with other nations, increasing imports and decreasing exports. The term originated in Holland after the discovery of North Sea gas.
Knowledge economy:	The use of knowledge to produce economic benefits
Naira	The currency of Nigeria
Own-account workers	Workers who are self-employed and do not have paid employees
Rent seeking:	The opportunity to capture monopoly rents provides firms with an incentive to use scarce resources to secure the right to become a monopolist. Such activity is referred to as rent-seeking. Rent-seeking is normally associated with expenditures designed to persuade governments to impose regulations which create monopolies. Examples are entry restrictions and import controls. However, rent-seeking may also refer to expenditures to create private monopolies (OECD, 2009).
Resource curse	The paradox that countries with an apparent abundance of natural resources such as minerals and fuels (especially oil and gas) tend to have lower rates of economic growth (Auty, 1993)
Poverty	Poverty is understood either in terms of some aggregate measure of the people living in households with income or expenditure below a normatively-defined 'poverty line', or more broadly as encompassing deprivation in one or more spaces, for example, housing, education, nutrition, health, social participation, employment, and so on. The former is usually referred to as 'money-metric' poverty because it is defined in terms of monetary aggregates. The latter can be referred to as 'multi-dimensional poverty' or 'well-being', and in recent years has often been associated with Amartya Sen's theory of capabilities and functionings (Sen, 1985). Welfare refers to either of these concepts. Because of confusion in the use of the term poverty to refer to both of these concepts we generally use poverty to mean 'money-metric' ill-being, preferring the term 'well-being' for the other concept(s). The meaning of the term welfare should be evident from the context.
Well-being	See definition of poverty above

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Executive summary

i) Introduction

Nigeria is Africa's most populous country with 140 million people of whom close to 54 percent, or 72 million, live on less than $1 a day (NBS, 2005). Despite being one of the world's ten major oil exporters, with crude oil production exceeding 2 million barrels per day in 2006, the country has experienced a rather disappointing economic performance over the last four decades, with minimal improvements in living standards and extensive macroeconomic instability. Several factors including gender inequality, widespread corruption, political instability, underinvestment in key infrastructure, lack of diversification and 'Dutch Disease' have jointly resulted in poor economic performance and lack of sustainable growth.

Since 2000, Nigeria's economic performance has improved with the economy currently growing at approximately 6 per cent per year. This has been attributed to a revamping of agricultural production and export, but is most likely a result of the recent surge in oil prices. Oil accounts for over half of GDP, 98 per cent of exports and nearly 85 per cent of government revenues (Collier et al., 2008). However, the oil sector accounts for only 4 per cent of employment, with almost all the poor and women engaged in the non-oil economy. The latter is dominated by agriculture and accounts for only about 28 per cent of GDP but close to 60 per cent of employment. While the non-oil economy grew at 10 per cent p.a. in 2004-2007 it has not created many formal sector jobs. Rather, the informal sector has mushroomed and employs an increasing number of the poor and a large proportion of women. Persistent youth unemployment at around 60 per cent coupled with unrest in the Niger Delta make for a potentially incendiary situation. Unless economic fundamentals and overall macroeconomic management improve drastically the current growth rate will prove unsustainable in the long-run, especially if oil prices adjust downwards.

Given the dominance of the oil sector there has been considerable variation in patterns of growth and development by region, gender and ethnicity. Yet there have been few analyses of the gendered implications of growth or the lack of it across sectors. This gender and growth assessment (GGA) seeks to analyse available statistical and qualitative data from a gender perspective to develop an understanding of the extent to which women of different groups and in different locations gain from growth processes, how far these processes in turn contribute to a reduction in gender inequalities and indeed to what extent patterns of growth worsen existing gender inequalities.

There is a growing body of literature around the linkages between gender inequality and economic growth in both conceptual and empirical terms. Verschoor et al. (2006) have identified eight major pathways connecting gender equality to growth. These encompass the multiple implications of lower female human capital (education and health) for productivity at home, as also for agriculture, wage employment and

entrepreneurship, fertility, and child human capital accumulation; labour, asset, credit and output market discrimination; savings rates differences between males and females; and possible advantages of low female wages enabling growth based on low-wage employment.

The methodology for this GGA has been fourfold, involving a preliminary scoping visit to identify local perspectives on gender and growth, a review of existing economic and sociological research that explores this issue at macro, meso and micro levels, a statistical analysis based on existing datasets to identify the linkages between gender, poverty, wellbeing and growth, and finally sub-national case studies in Kano, Bauchi, Lagos and Cross River States to provide evidence of state-level differences in terms of the gendered implications of growth.

ii) Key research findings

Nigeria is a resource-rich economy with an abundant supply of high-quality oil, yet over half of its population lives in poverty, especially in the northern region and the rural areas. Oil has dominated and continues to dominate Nigerian exports and contributes the largest share to its GDP. The dependence on oil, however, has negative implications for both growth and distribution. Fluctuations in global oil prices have meant that growth rates have also fluctuated considerably. At the same time, the oil economy has not generated investment or employment, or indeed encouraged the development of highly-skilled human capital in the country; on the contrary, it has taken corruption and rent-seeking to unprecedented levels. The current (post-1999) democratic dispensation is making serious attempts to sterilise the oil revenue shocks,[1] combat fraud and corruption and improve the institutional environment, yet in terms of poverty reduction, employment generation and improving the educational and health status of its population, the record is still poor. Nigeria is still one of the countries with the highest levels of both child and maternal mortality in the world. Policy shifts, especially structural adjustment, have had a profound impact on women's economic participation, largely increasing their participation but also their burden of household welfare. Extant macro-economic planning frameworks (NEEDS) have not given sufficient attention to the gender-differentiated distribution of growth, perhaps due to reported figures of lower poverty rates in female-headed households.

Good institutions key to gender-equitable growth

Our analysis of the cross-country evidence on the relationship between gender equity and growth indicates that 'good institutions' are a necessary requirement for pro-poor, gender-equitable growth (section 4.1). While the evidence is not conclusive with regard

[1] 'The established way to sterilizing fiscal shocks is to put the bulk of oil revenues into financial investments rather than spending them, or removing resource rents from government expenditure' (Humphreys et al., 2007:271).

to whether 'good institutions' or high human (including female) capital is more foundational; perhaps the timing and causality vary with context, the simple causal pathway from gender inequality in education to low growth is not supported, and disappears in the presence of poor institutions and resource curse phenomena associated with oil exports. Good macro-economic management including a well-run oil stabilisation fund and limiting the Dutch Disease phenomena of economic distortions and political and administrative corruption will facilitate appropriate federal- and state-level investment of oil rents in infrastructure and services (power and electricity, water, transport, communications, education and health, law and order, and so on). It will also limit the harmful effects of the resource curse on tradables, especially agriculture and manufactures, and this will have beneficial effects on the employment of less-skilled workers and women. As these macro policies are implemented at federal and state levels they need coordination across governance levels and appropriate federal monetary and fiscal structures that promote stable, long-term economic investment. It is important to:

- Deliberately target investment at non-oil activities, in particular manufacturing and agriculture;
- strengthen infrastructure development, especially electricity and power supply, transport and communication;
- substantially enhance investment in the social sectors of health and education;

Access to and analysis of available datasets to inform policy-making

The database of nationally-representative information that is of potential use in evidence-based policy analysis is extensive and includes a recent living standards measurement survey, three demographic and health surveys, three multiple indicator cluster surveys, many general household surveys, one core welfare indicators survey and at least one labour force survey. With the exception of the latter, all these surveys are conducted by the Nigerian Bureau of Statistics, which has many other tasks as well. Fewer than a handful of the analyses beyond the official reports have made significant use of this database. Among the major reasons for this seem to be limited access to the data; even now only one of these databases (NLSS) is publicly available, and that only since June 2008. A further and perhaps linked problem is the quality of the data where available. This is most obvious in the difficulties linking different files from the same survey,[2] but is also plain in the numerous errors in data (stray codes, extreme values, inconsistent coding schemes), missing data, even missing sections of surveys, as with the village infrastructure component of NLSS. These problems present major obstacles to potential policy researchers, severely restricting the use of these resources.

The main message from this assessment is that there is a need to promote policy analysis among a broad spectrum of institutions and organisations (government

[2] This applies particularly to the NLSS and GHS. MICS, NDHS and CWIQ identification codes do not suffer from this problem.

agencies; universities; private sector enterprises and organisations such as employers and trades unions, the media, etc.), and among donors. A healthy and vibrant policy arena will critically examine the relevant national databases and promote demand for and use of good-quality data, and these are a priority if donor funding is to address some of the most difficult problems confronting Nigeria in terms of both bio-physical and standard of living indicators such as infant, child and maternal mortality and premature adult mortality in both sexes. Specifically we suggest that it is important to:

- make official national-level sample survey data publicly available;
- improve the quality of official data production, possibly by encouraging the undertaking of large-scale surveys by other public sector or private organisations such as market research companies;
- improve accounting of women's work in the national statistics and collect gender-disaggregated data on access to assets, in particular land and credit. This would include measures to strengthen the national macro-economic database, including national and state accounts, trade, population, education and health statistics, and adequate gender and environmental accounts.

Female Post-Secondary Education Positively Related to Growth

Much attention has been paid in the growth literature to the role of female education in driving growth. The effect of female education can be both direct and indirect through enhanced productivity in waged or income-earning activities on the one hand and improvements in maternal and child health, associated with a downward shift in fertility, on the other. However, the evidence in Nigeria is mixed (section 4.1.1). In terms of employment, the concentration of women in the self-employment sector almost wipes out any effects of education on their earnings, as the low returns to self-employment contribute to the lower returns to female employment in general. The exception is perhaps higher education, including university education and teacher training. Field experience suggests that women tend to concentrate at the lower end of even the self-employed sector, the burden of domestic work being a contributory factor in low earnings, an area not addressed by technological or infrastructural improvements. In terms of indirect effects, too, the growth impacts are not clearly visible. Fertility rates continue to be high, ranging from an average of 4-5 children in the south to 5-7 in the north, as do infant and child mortality rates, despite an improvement in educational levels, especially in the south (section 4.1.3). Substantial changes in these indirect benefits appear to occur only once the mother has completed her secondary education.

Despite its recognition of the importance of education, Nigeria is nowhere near achieving universal education even at the primary level. There is of course huge regional variation; in general the south performs better than the north with over 80 per cent attendance rates for both boys and girls at primary level in comparison to 50 per cent for boys and 40 per cent for girls in the North West and North East zones. Apart from the overall lower educational level in the north, the gender gap too is larger in the north than in the south, making girls in the north the most disadvantaged in terms of

educational access and achievement. Interestingly, though not surprisingly, there is a sharp decline in school attendance by both boys and girls beyond primary level across the country. While the gender gaps again are not substantial in the south (favour girls in the South East), the pattern for the north continues to disadvantage them by over 10 percentage points, similar to the primary level.

Low levels of human development in Nigeria, with considerable gender inequality in most regions, at least in the education sector and in waged employment appear to be linked reciprocally and through the resource curse. The challenge therefore is to:

- improve access to and quality of education up to secondary level across the country – this would include issues of cost, distance, infrastructure, teacher training, materials, community support etc; MDG Goal 3 to be pursued with multi-focal attention on the problems of girls' education;
- shift from a dual track of religious and 'modern' education, mainly in the northern regions, to a strategy that enables the two streams to be combined;
- provide special incentives for girls' education, especially in northern regions;
- promote policies that emphasise access to good-quality and relevant vocational training for self employment.

Good health contributes to growth

While ignored in the growth literature, the issue of male education emerges strongly in our analysis, in relation to improved health status, more though with respect to infant and child mortality than to fertility rates (section 4.1.1.2). Education is positively correlated to men's earnings; hence apart from influencing health-seeking behaviour ideologically, access to health services also becomes more affordable. Cost is a major factor that appears to constrain people from seeking medical attention, contributing to the high mortality rates.

We also found very poor levels of nutrition and health which in many cases reflect both poor health practices and low accessibility to good-quality health infrastructure, especially in the north and in rural areas (section 4.1.2). In the north these problems relate to deep-rooted cultural identities and their interaction with Islamic religious affiliation.

HIV is emerging as a major growth issue in terms of its implications for economic participation as well as its demands on health services (section 4.1.4). Interestingly, education per se does not seem to influence the spread of HIV, linked as it appears to be to poverty and unemployment, rising costs of living and growing aspirations. The persistence of high levels of stigmatisation and discrimination appear to be thwarting state efforts to control the spread of the pandemic. While this study could not explore policy alternatives in any detail, it seems important to:

- improve public health care infrastructure and delivery for the poorer sections of the population.

- develop strategies to address deprivation among existing HIV/AIDS sufferers, for example through employment and nutrition programmes;
- enhance public sector performance in the education and health sectors through support for civil society-led budget monitoring and evaluation such as Education or Health Watches, using the more rigorous methodologies represented by recent international initiatives on impact evaluation (e.g. International Institute for Impact Evaluation, 3IE).

Persistent high fertility reduces per capital growth

Fertility remains high in Nigeria notwithstanding a strong inverse association of fertility with education and rising levels of education (section 4.1.3). Even in areas of the South West, where the strong association of fertility with education was noted nearly 40 years ago and where education levels have risen substantially since, fertility remains high. In the north, high fertility coexists with very high levels of maternal (and infant) mortality.

Fertility appears to be additionally influenced by cultural and perhaps religious norms. Ethnicity (rather than or in addition to religion) has appeared as a very important determinant of female education and fertility behaviour and a strong influence on child nutritional status, the odds of being vaccinated and access to household infrastructure (piped water, electricity, and suchlike). Not only is ethnicity an important correlate of religious affiliation, it is also important to note that its influence in many cases transcends that affiliation. Thus there is little difference between Yoruba Christian and Yoruba Islamic fertility, even though at the national level there is a big difference between the Christian and Muslim populations. The nature of marital and gender relations in different contexts is another major influencing factor, with fertility often used as a tool for bargaining for resources with spouses, especially in the north where polygyny continues to be widely prevalent. There is need to:

- address issues of accessibility to health services, including good-quality contraceptive and maternity services;

Female employment <u>can</u> be good for growth but requires complementary policies

Employment is perhaps the most important driver of economic growth. Data problems have rather hampered the analysis of employment patterns, yet what is clear is that except in the South West, female participation is lower than male participation in all parts of the country, and lowest in the North East and North West (section 4.2). Of the women reporting participation in the labour force, the majority are self-employed followed by those working in agriculture, both sectors with lower returns than either government or private employment. While approximately 10 per cent of women are in government employment (with the exception of the North West), their engagement

with the private sector remains minimal. While there appears to be little wage discrimination in government and private employment by gender (although females seem somewhat disadvantaged in access to government and especially private sector employment), this is not the case in the self-employed sector, with women strongly disadvantaged in relation to men.

There are several possible explanations for this disadvantage. First, qualitative and small-scale survey data strongly suggest that women generally appear to have lower levels of access to a range of productive assets – land, credit, technology or indeed skills. This leads them to operate on a smaller scale with a lower resource base, denying them some advantages of scale, including higher profits. Second, most self-employed women also deal with domestic work, including care of their children, the elderly and the sick, limiting the time they have available for their income-earning activities and consequently earnings. Work burdens are often increased due to a generally high cost of living in the face of declining incomes, but also to a lack of basic services and infrastructure provision, especially water, power and transportation.

Despite an apparent recent revival in agricultural production and the rural sector generally, the north in particular has remained disadvantaged by import-substituting industrialisation policies based on the taxation of export crop agriculture and, more recently, by resource curse phenomena. Nevertheless, as the bulk of the population and of the poor reside in rural areas, and their livelihoods in large part depend directly or indirectly on this sector, in addition to our calls for appropriate macro-economic policies, and education and health policies specifically targeting rural needs, support is needed for agriculture and rural non-farm employment through:

- strengthening credit operations in rural areas through agricultural and commercial banks and microfinance organisations;
- support for women's informal enterprise, including access to extension and training services, agricultural inputs and female-friendly technologies, licensing, insurance, credit, mortgage and infrastructural facilities (personal safety, electric power, transport, etc.), specifically addressing the constraints created by seclusion practices to women's contributing to and benefiting from growth;
- simplifying procedures for land registration;
- provision of drinking water, fuel and improved sanitation, as well as simple labour-saving devices to ease the performance of domestic work.

Persistent gaps between women's participation in politics and in the economy

Women's autonomy and decision making is seen to significantly influence growth. A qualitative analysis of decision making reveals differentiated patterns across regions and sectors. As in most societies, females are under-represented in most public and political arenas in Nigeria, yet their role in markets varies across regions. In the south, women traders dominate market associations, although interestingly, despite their strength and voice, they are not always able to access resources such as land and credit

or to influence banking decisions or state policies, which are very much politicised. In the north, working within the constraints of seclusion practices, while women earn incomes far greater than reported in the data they too are hardly able to influence the larger trade and market scenario. In the domestic realm, however, the situation is different: women do exercise agency, though their strategies for bargaining and negotiation are context-specific and variable (section 4.1.3).

Our evidence is supportive of the argument that resource curse phenomena militate against female public participation, particularly by reducing their presence in formal-sector employment, to which political regimes are particularly responsive. Reduced female earnings may also reduce expenditure on and promotion of child welfare and human capital, with longer-term negative implications for growth and well-being. Since there is evidence that positive discrimination in favour of female participation in political office is beneficial in patriarchal political cultures (Goetz and Hassim, 2003; Chattopadhyay and Duflo, 2004), including those associated with the resource curse, it may hence be appropriate to explore ways to:

- promote women's participation in politics and policy-level decision-making;
- mitigate the cultural practices that hinder women's autonomy, such as early marriage and domestic violence, through stronger advocacy and strengthening understanding of the link between gender violence and poverty;
- encourage and promote legal structures that aim to address gender discrimination in the workplace and to improve access to common property resources.

1 Introduction

Nigeria is Africa's most populous country with 140 million people, of whom close to 54 per cent, or 72 million, live on less than $1 a day (NBS, 2005). Despite being one of the world's ten major oil exporters (with crude oil production exceeding 2 million barrels per day in 2006), Nigeria has experienced a rather disappointing economic performance over the last four decades, with minimal improvements in living standards and extensive macroeconomic instability. Several factors, including gender inequality, widespread corruption, political instability, under-investment in key infrastructure, lack of diversification and 'Dutch Disease'[3] have jointly resulted in poor economic performance and lack of sustainable economic growth.

Since 2000, Nigeria's economic performance has improved, with the economy currently growing at approximately 6 per cent per year. This has been attributed to the growth of agricultural production and exports, but is more likely a result of the surge in oil prices (upto mid-2008). Oil accounts for over half of GDP, 98 per cent of exports and nearly 85 per cent of government revenues (Collier et al., 2008). However, the oil sector accounts for only 4 per cent of employment, with almost all poor people and women engaged in the non-oil economy. The latter is dominated by agriculture, which accounts for only about 28 per cent of GDP but close to 60 per cent of employment. While the non-oil economy grew at 10 per cent p.a. in 2004-2007 it has not created many formal-sector jobs. Rather, the informal sector has mushroomed and employs an increasing number of the poor and a large proportion of women. Persistent youth unemployment of around 60 per cent coupled with unrest in the Niger Delta is a potentially incendiary situation. Unless economic fundamentals and overall macroeconomic management improve drastically, the current growth rate will prove to be unsustainable in the long run (especially if oil prices adjust downwards).

Given the dominance of the oil sector, there has been considerable variation in the patterns of growth and development by region, gender and ethnicity. The National Gender Policy, developed on the basis of extensive consultation, recognises that gender equality is not just a human rights issue but a prerequisite for sustainable development and rapid economic growth (FMWASD, 2007: vii). While rightly identifying four core strategies for achieving the objectives of the National Gender Policy – namely mainstreaming gender concerns at all levels, education and capacity-building, legislative reforms to guarantee gender justice and economic reforms for enhanced productivity – little has changed in terms of concrete action. There have been few analyses of either the gendered implications of growth or the lack of it across sectors, or of the gendered determinants of variations in growth performance as tools for informing gender-sensitive policy making. This Gender and Growth Assessment

[3] The deindustrialisation of a nation's economy that occurs when the discovery of a natural resource raises the value of that nation's currency, making manufactured goods less competitive with other nations, increasing imports and decreasing exports. The term originated in Holland after the discovery of North Sea gas (InvestorWords.com, 2009). See also section 2.1 below.

(GGA) seeks to analyse available statistical and qualitative data from a gender perspective in order to develop an understanding of the extent to which women of different groups and in different locations gain from growth processes; how far these processes in turn contribute to a reduction in gender inequalities; to what extent patterns of growth worsen existing gender inequalities, and whether gender inequalities themselves influence the nature of, and variations in, growth performance.

1.1 Conceptual framework

There is growing concern that economic growth in many developing countries has proceeded without due attention to the inequities it has generated in terms of human development and gender (Elson & Cagatay, 2000). While perhaps not intentional, growth processes are not gender neutral – the impacts of development policies are different for men and women. This is because such impacts are mediated by economic, social, cultural and political contexts and intra-household relations, including the relative bargaining power of spouses to influence allocations of limited resources to different people and purposes within the household. In a largely patriarchal context where women are seen as responsible for most reproductive tasks, negative outcomes of gender inequitable growth processes include increased burdens of work, insecure employment and growth in child labour. These have received academic and, to a more limited extent, policy attention. What is often missed, however, is recognition that gender inequality, too, slows down and distorts growth processes. In simple terms, this two-way relationship between gender equality and growth can be explained as follows:

1. Gender-differentiated patterns of growth result in:

concentration of women's economic activities in predominantly low growth sectors;
differential human development outcomes of growth in terms of health, education, income, assets, etc.;

2. Gender inequalities impact on growth in the forms of:

differential returns to human capital, implying differential efficiency in allocation of human capital and consequent differences in contributions to and rates of growth of male and female dominated sectors; differential access of women and men to assets affecting entrepreneurship, productivity, accumulation and the results of poverty reduction strategies.

Verschoor et al. (2006) have identified eight major pathways connecting gender equality to growth, seven of which reflect the underutilisation of female potential (see also Blackden et al., 2006). The first and most critical pathway relates to the multiple negative implications for growth of lower female human capital (education and health) through its impacts on productivity at home, in agriculture, in wage employment and entrepreneurship, fertility, and children's education and wellbeing (Dollar and Gatti, 1999, Forbes, 2000, Klasen, 2002, Knowles et al., 2002, Schulz, 2002, Klasen and Lamanna, 2003, Abu-Ghaida and Klasen, 2004). The second major pathway relates to the positive relationship between the participation of females in the labour force and growth (Klasen and Lamanna, 2003). This is related to the third and fourth pathways in that equal gender relations, by mediating equitable access to assets (land, labour and credit), raise the productivity of investment directly (Udry, 1996) but also indirectly

through generating higher female savings (Sagrario, Floro and Seguino (2003) find a difference in savings rates between males and females, with implications for investment). Gender equality (especially through education as mentioned above) has further growth implications through lowering fertility rates and increasing investment in children and consequently future growth. The inequitable gender division of labour that leaves women 'time poor' is clearly, then, a constraint to growth. In particular circumstances, however, as in the case of export-oriented industrialisation, low female wages may enable growth based on low-waged employment.

These pathways have been developed from analyses of a wide range of countries and locations using macro-economic cross-country econometrics, micro-econometric analyses of household economic and labour market surveys and qualitative and case study research methods. However, with the recent exception of Ross (2008) there has not been specific focus on gender growth relationships in countries characterised by abundant natural resources, specifically oil; nor has the gender growth literature examined the role of institutions in mediating these relationships.

Similar to countries with unequal gender relations experiencing inferior growth rates (Klasen, 2002, Klasen and Lamanna, 2008), countries characterised by abundant natural resources are also widely thought to have experienced inferior growth performance due to a 'resource curse'4 (Sachs and Warner, 1995). However, recent analyses of the resource curse suggest that this may only occur when institutions are weak (Isham et al., 2005; Mehlum et al., 2006; Robinson et al., 2006; Boschini et al., 2007; Andersen and Aslaksen, 2008), echoing arguments that the key to growth and development may lie in institutions (Acemoglu et al., 2001). Further, there may well be specific gender implications of the resource curse whereby women are particularly disadvantaged as a result of processes associated with it. Ross (2008) argues explicitly that it is the resource curse rather than Islam that is the cause of female disadvantage in countries characterised by both. His argument is that the resource curse leads to a rise in the non-traded sector (for instance, the construction sector), in which males are more likely to be employed than females, and to a fall in the competitiveness of the tradables sector in which females are mainly employed; this in turn leads to a fall in the value of female time in formal employment and a rise in the opportunity cost of female time in the home (because male wages and household incomes have risen and female home time has a highly responsive to changes in income levels). This results in less waged employment for females and has the further effect of disempowering women in the household and the political arena, which is more responsive to wage workers. Consequently, according to Ross, this results in 'higher fertility, less education for girls, and less female influence in the family' (p107). It is these economic mechanisms rather than Islam that lead these societies to have 'strong patriarchal cultures and political institutions' (ibid).

[4]The paradox that countries with an apparent abundance of natural resources such as minerals and fuels (especially oil and gas) tend to have lower rates of economic growth (Auty, 1993).

A major inspiration for gender and growth analyses has been the argument that gender equality promotes growth, especially pro-poor growth, and this warrants unilateral implementation of gender equality policies (Klasen, 2002; Klasen and Lamanna, 2008). While institutions are seen as either prerequisites or important intermediating variables in determining desirable growth and development outcomes, it is clear that untangling relationships between gender and growth cannot proceed independently of resources and institutions. In policy terms it may then become a question of whether policies to empower women (say through promoting female education, employment, and political participation) can be effective in advance of or as a means to reforming institutions; or whether reforming institutions should proceed in parallel with gender equality policies; or whether there are important issues to be considered in phasing and sequencing these different types of reform.

As indicated in the TOR and proposal, the methodology for this Gender and Growth Assessment (GGA) has been fourfold. It involved a preliminary scoping visit, followed by a literature review, statistical analysis and subnational case studies in Nigeria's Kano, Bauchi, Lagos and Cross River States, details of all of which are provided in Annex 1. In section 2 we turn to the major findings of the macro-economic analysis of growth, poverty and inequality in resource-rich countries, followed in section 3 with a specific focus on poverty and gender in Nigeria. This is followed by a micro-level analysis of the various gender and growth pathways identified, focusing particularly on human capital (education, health and fertility) and employment (section 4). The final section presents broad conclusions and tentative recommendations (section 5). All the boxes used in this report are based on field interviews carried out as part of the GGA.

2 Growth, poverty and inequality in resource-rich countries

Since the seminal work of Jeffrey Sachs and Andrew Warner (1995), there has been a large body of theoretical and empirical work investigating the so-called 'paradox of plenty'; i.e. the tendency of resource-scarce economies to outperform their resource-rich counterparts in terms of economic growth. The first attempts to find the correlation between resource wealth and sluggish growth rates focused on Dutch Disease explanations (i.e. currency appreciation and declining volume of exports), the crowding out of pro-growth industrial activities and the declining prices of primary commodities relative to manufactured, commodities (see Prebisch 1950, Corden 1984, Corden and Neary 1982, Matsuyama 1992). More recently, the focus has shifted towards political economy explanations, exploring the tendency of resource-rich countries to suffer from increased rent-seeking activities, corruption, bad governance, low saving rates and 'white elephant' type public investment (see Lane and Tornell, 1999; Leite and Weidmann 1999, Auty, 2000, Baland and Francois, 2000, Torvik, 2002, Bulte et al., 2005, Robinson and Torvik, 2005, Mehlum et al., 2006, Papyrakis and Gerlagh, 2006, Robinson, et al., 2006; Andersen & Aslaksen, 2008; Boschini et al., 2008).

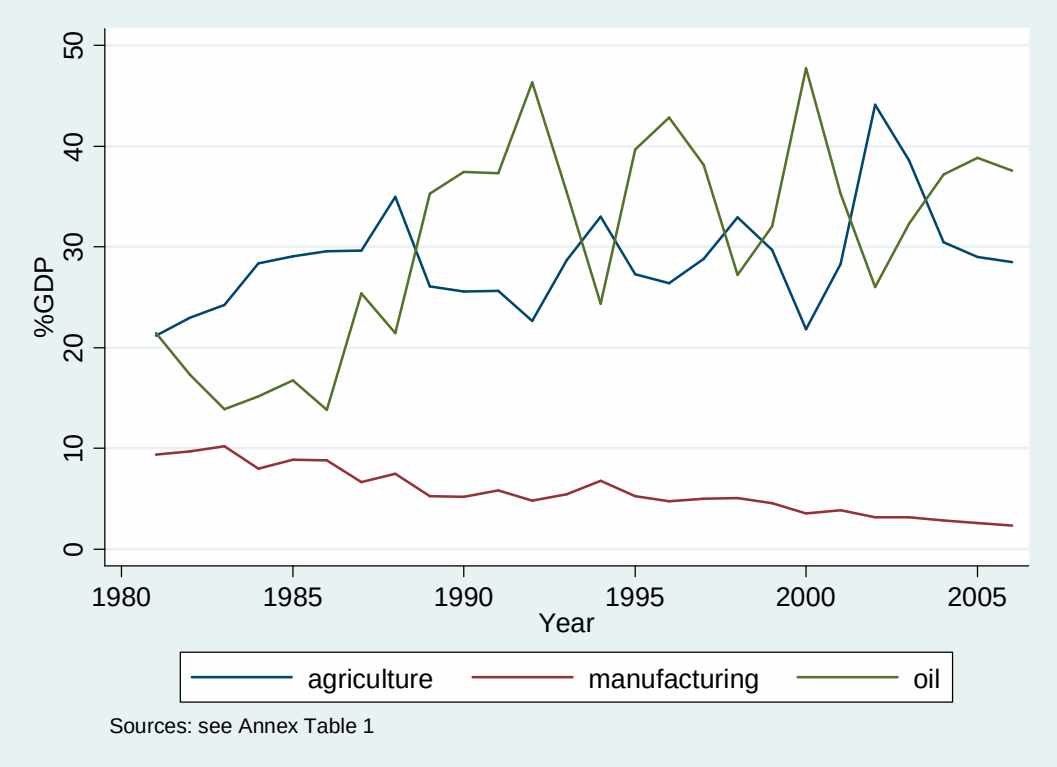
One of the most striking manifestations of the resource curse appears to be the disappointing performance of the oil cartel countries, many of which have experienced negative growth rates in gross domestic product (GDP) per capita over extended periods. Oil-rich Venezuela had the second-highest GDP per capita in Latin America before the first oil boom in the 1970s, but sustained an average income growth rate of only -0.3 per cent thereafter. Nigeria's unimpressive average growth of 0.12 per cent per annum over the 1970-2000 period also suggests a stagnant economy, though it improved somewhat thereafter. Most countries that produce minerals accounting for more than 20 per cent of their GDP appear to experience negative rates of income growth. Econometric evidence suggests that an increase in mineral production of 10 per cent (the difference between Nigeria and Mali or Malawi, for instance) would decrease economic growth by approximately 0.6 per cent (Sachs and Warner 1995, Papyrakis and Gerlagh, 2004). Yet if resource-rich countries manage to sustain their pro-growth activities (high investment rates, education, trade openness and good governance), they can achieve fast rates of income growth.

Some of the key barriers to economic growth are briefly explained below.

2.1 Dutch Disease

Nigeria appears largely to conform to the patterns witnessed in Dutch Disease economies (Iyoba and Oriakhi, 2008). While the share of the agriculture and oil sectors in GDP was almost equal at the beginning of the 1980s (after the second oil shock), this has changed over the last two decades, with the neglect of agricultural policies transforming Nigeria to a net importer of the agricultural commodities it traditionally produced (i.e. rice and maize). Even more importantly, manufacturing's relative share shrunk from 10 per cent of GDP at the beginning of the 1980s to a mediocre 2.3 per cent in 2006, with no signs of immediate recovery. Although agricultural production has increased in recent years consequent to attempts to diversify the economy, soaring

oil prices have kept the relative share of the oil sector in GDP at very high levels (close to 38 per cent in 2006) (see Graph 1 and Annex Table 1). As a result, Nigeria is likely to remain a largely resource-driven economy and hence prone to resource curse development failures, at least in the short term.

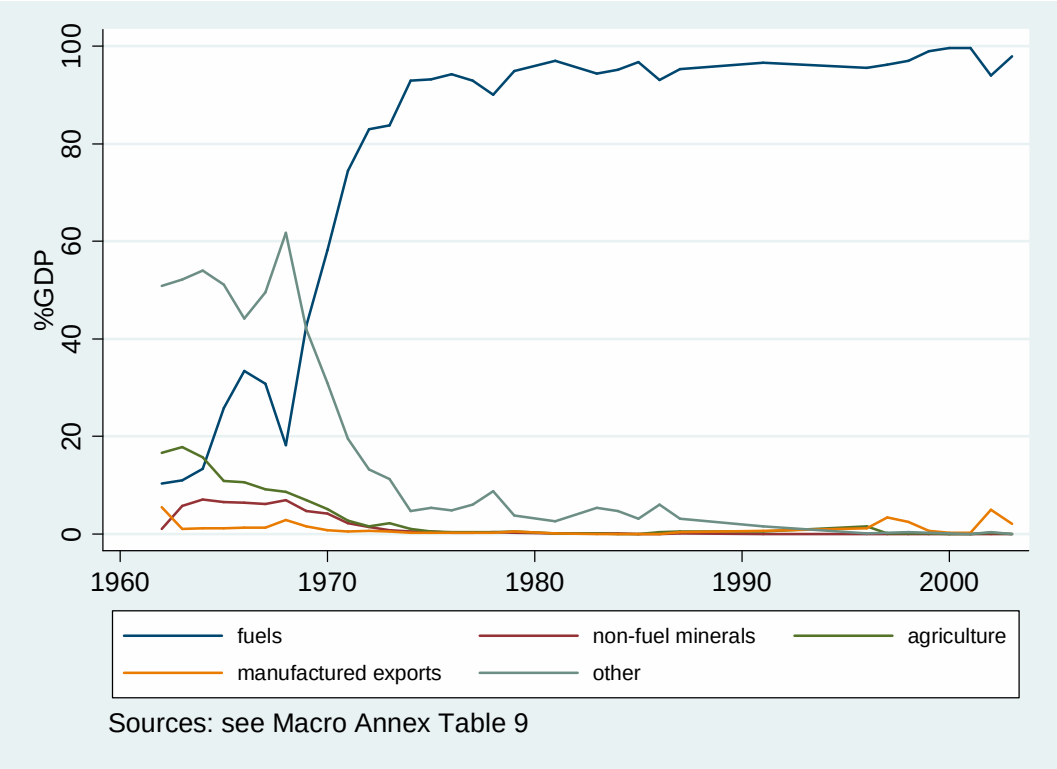


Graph 1: **Agriculture, manufacturing and oil shares of GDP (%)**

A decomposition of export data confirms this. While exports were much more skewed towards agriculture at the beginning of the 1960s, by the early 70s oil was already accounting for more than 50 per cent of the volume of exports (World Bank, 2008). Ever since then oil has consistently dominated exports. Oil currently accounts for 98 per cent of all exports, and, notwithstanding recent fluctuations in international oil prices, the current level of oil prices is most likely to reinforce the current trend (World Bank, 2008). The share of agricultural commodities in exports has been negligible in recent years and there has been a slight increase in manufacturing. Nevertheless, unless investment deliberately targets non-oil activities, it is very unlikely that any drastic changes in the sectoral balance of exports can be expected (see Annex 2: Macroeconomics for details).

As the shares of agriculture and agricultural exports and of traded goods in the economy both declined (Graph 2), conforming to classic Dutch Disease characteristics, women, concentrated in the agricultural sector and in tradables such as textiles and garments and the informal sector, may typically have been still more disadvantaged (Ross, 2008). But because for the majority, male wages and household incomes have not been rising, the consequent negative impact on gender relations has been worsening

time poverty, especially in agriculture as female roles intensified in response to the out-migration of males to urban centres for non-agricultural work. In terms of access to resources, while women gained access to land (Famoriyo, 1995), they lacked asset security (Akanji & Akande, 1994) and/or income security due to the negative terms of trade in the sector (Dorosh and Akanji, 1987).



Graph 2: Fuels, non-fuel minerals, agriculture, manufactured exports and other sectors as shares of GDP (%)

2.2 Investment

Investment, such as in building infrastructure, is widely perceived as one of the fundamental elements for successful economic development (see Barro 1991, Sachs and Warner 1997). Levine and Renelt (1992), in their regression analysis, found investment to be one of the few robust determinants of economic growth. At the same time, recent empirical research has identified the crowding-out impact of resource abundance on investment rates and consequently on economic growth (Sachs and Warner 1995).

Several explanations justify the negative relationship between resource abundance and investment. World prices for primary commodities tend to be more volatile than those for other goods. Therefore an economy based on primary production will shift relatively often from booms to recessions, creating uncertainty for investors (see Herbertsson et al. 1999). Furthermore, resource abundance often leads to a contraction of the manufacturing sector, which is mainly responsible for the accumulation of capital goods. Last, even if the level of investment in physical capital is of similar

magnitude in resource-abundant and resource-scarce regions, there are differences in its quality and the efficiency of use. Investments often fail to reach the productive base of the economy, being concentrated in military and internal security sectors or in prestigious and popular projects with very low rates of return (Robinson and Torvik, 2005).

Nigeria has traditionally invested a rather low share of its GDP, often falling below 10 per cent in the early 80s. Since investment is largely associated with the building of new infrastructure supporting the productive capacity of the economy, low rates of investment jeopardise sustained long-term economic growth. On a rather more positive tone, it has to be acknowledged that the liberalisation of credit markets, the establishment of new banks, consolidation of the insurance sub-sector, recapitalisation of the community banks and privatisation of public enterprises following the 1986 Structural Adjustment Plan boosted domestic investment. Besides this, the Central Bank of Nigeria established requisite financial infrastructure through an appropriate policy, regulatory and supervisory framework to support investment. The share of investment in GDP reached its peak in 1998 at 24 per cent, and despite the current influx of petrodollars and increased public revenues, investment is no longer on the rise (World Bank, 2008). Although underinvestment is rather endemic in sub-Saharan Africa as a whole (largely explained by the low availability of domestic savings and high investment risk), much faster-growing South Asian and Southeast Asian economies tend to experience investment rates much above 30 per cent (with China and India approximately up to 45 and 35 per cent respectively).

2.3 Institutions

There is extensive literature on the beneficial role of institutions in economic development (see for example, North 1981, 1991, Murphy et al. 1993, Knack and Keefer 1995, Acemoglu et al., 2001, 2002). Good standards of governance in terms of rule of law, bureaucratic efficiency, corruption constraints, political stability, democratic liberties and transaction transparency are strongly associated with economic prosperity. This implies that any negative direct effect of natural resources on institutions will indirectly frustrate economic growth.

The important literature on the relationships between political constitutions and economic policies and outcomes (Persson, et al., 2000a & b, Persson and Tabellini, 2003) suggests that resource curse syndromes are particularly associated with certain types of polity, perhaps reflecting the type of constitution, or other institutional or cultural characteristics. For example, Mehlum et al. (2006) emphasise ‘grabbing’ types of polity, while Andersen and Aslaksen (2008) explore the effects of particular types of constitution on resource abundance-growth relationships. It is also possible that the type of resource may have an effect on these relationships, with some being more appropriable and hence conducive to rent-seeking and Dutch Disease outcomes than others (Boschini et al., 2008). The model of the resource curse suggested by these analyses is shown in Figure 1.

The Nigerian polity has a federal structure with a majoritarian presidential constitution; however, it has alternated between this civilian constitution and authoritarian rule – effectively military dictatorship – in the years since oil became the dominant economic resource following the colonial and immediate post-colonial period up to the late 1960s, when agricultural exports were the major feature of the economy. However, under both types of regime, Nigerian politics has been characterised by rent-seeking, corruption and poor administration.[5]

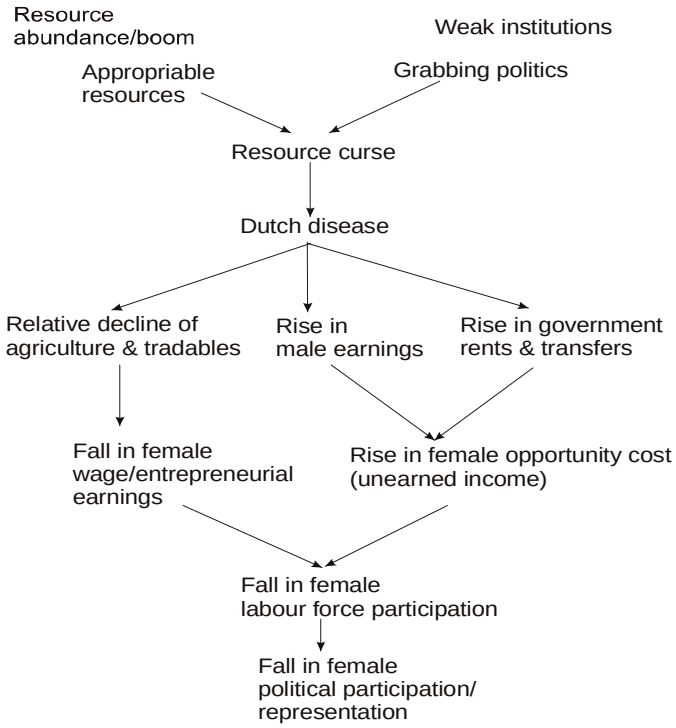


Figure 1: Determinants (simplified) of the effects of the resource curse on women (modified from Ross, 2008)

An argument against institutional fundamentalism is that human capital is more important than institutions in determining growth performance (Glaeser et al., 2004), and that prescriptions for appropriate institutions, such as particular forms of democratic constitutions, have not been necessary for rapid economic growth and human development (for example in the newly industrialised countries (NICs) of East Asia), and may well not be appropriate for many less-developed countries (Glaeser et al., 2007). This debate has not yet reached a conclusion, as it is clear that there are mutually causative inter-relations between human capital and the performance of

[5] Rent seeking: The opportunity to capture monopoly rents provides firms with an incentive to use scarce resources to secure the right to become a monopolist. Such activity is referred to as rent-seeking. Rent-seeking is normally associated with expenditures designed to persuade governments to impose regulations which create monopolies. Examples are entry restrictions and import controls. However, rent-seeking may also refer to expenditures to create private monopolies (OECD, 2009).

political institutions.[6] Countries with high human capital may develop in the absence of prescribed institutions (e.g. the East Asian Tigers); however, it is not clear whether the successes of authoritarian regimes can be replicated elsewhere. On the other hand 'good' institutions may promote human capital accumulation and contribute to development both directly and indirectly.

Exploring the relation between resource rents, institutions, human capital and growth is consequently complex. Many scholars have claimed that resource rents tend to erode the sound institutional base of the economy. Resource rents often tempt individuals to engage in rent-seeking competition rather than productive activities (see Baland and Francois, 2000, Krueger, 1974, Torvik, 2002). This is related to the nature of natural resources themselves, especially in the case of minerals. In most cases there is limited access to resource usage rights granted to a few public or private companies or even individuals, due to the limited physical availability of the resources. Such sector conditions that restrain intense competition create excessive profits accruing to a few agents in the economy. Resource revenues also tend to increase unlawful informal activities; for instance, resource rents often induce individuals to bribe the administration in order to gain access to them (Leite and Weidmann, 1999). Another institutional aspect of the resource curse lies in the manner in which resource rents are utilised in the economy. A large share (if not all) of the resource revenues is either appropriated by government officials or used to reward the electorate belonging to their party or interest groups that favour it, rather than to support investment in human capital.

A further conditioning variable that has sometimes been discussed in relation to the resource curse literature is the role of Islam, which has also been linked to low economic and political participation of women. As we show in this analysis, however, it is difficult to untangle the effects of religion and ethnicity on growth and well-being outcomes.

Probably the most important challenge Nigeria faces in an effort to achieve robust, sustained and equitable economic growth will be the control of endemic corruption and an increase in transparency. Although there has been criticism of the inefficient management of resource rents, a much larger problem in the past was the corrupt malpractices of governing regimes. While social spending and investment did increase in the period following Structural Adjustment, poor governance characteristic of a military autocracy, along with mismanagement of public funds and lack of public accountability led to an increase in poverty and regional inequalities (Federal Office of Statistics, 1999). Former rulers directed resource revenues into private accounts abroad and widely tolerated, if not rewarded, extensive rent-seeking and bribery (Iyoba and

[6] This debate is not resolved in, for example, Collier and Goderis (2007), who provide further evidence of the occurrence of the resource curse conditional on poor institutions, because they do not consider (gendered) education. Bolt and Bezemer, 2008, on the other hand, provide evidence of the causal effects of colonial education on institutions and hence growth, but do not differentiate between male and female education.

Oriakhi, 2008, Kwakwa et al., 2008). Data on corruption such as the Corruption Perception Index and Corruption Control Index reveal that Nigeria appears to have made little progress in combating fraud, and corruption is still embedded in everyday life (Kaufmann et al., 2007,Transparency International, 2008;).

Nigeria's commitment to implementing the Extractive Industry Transparency Initiative launched in 2004 (aiming at making petroleum revenues and contracts more transparent), alongside other measures to fight corruption such as the setting up of the Budget Monitoring and Price Intelligence Unit, Independent Corrupt Practices and Other Related Crimes Commission, Economic and Financial Crimes Commission and so on, may slowly reverse the current trend and is certainly a step in the right direction.

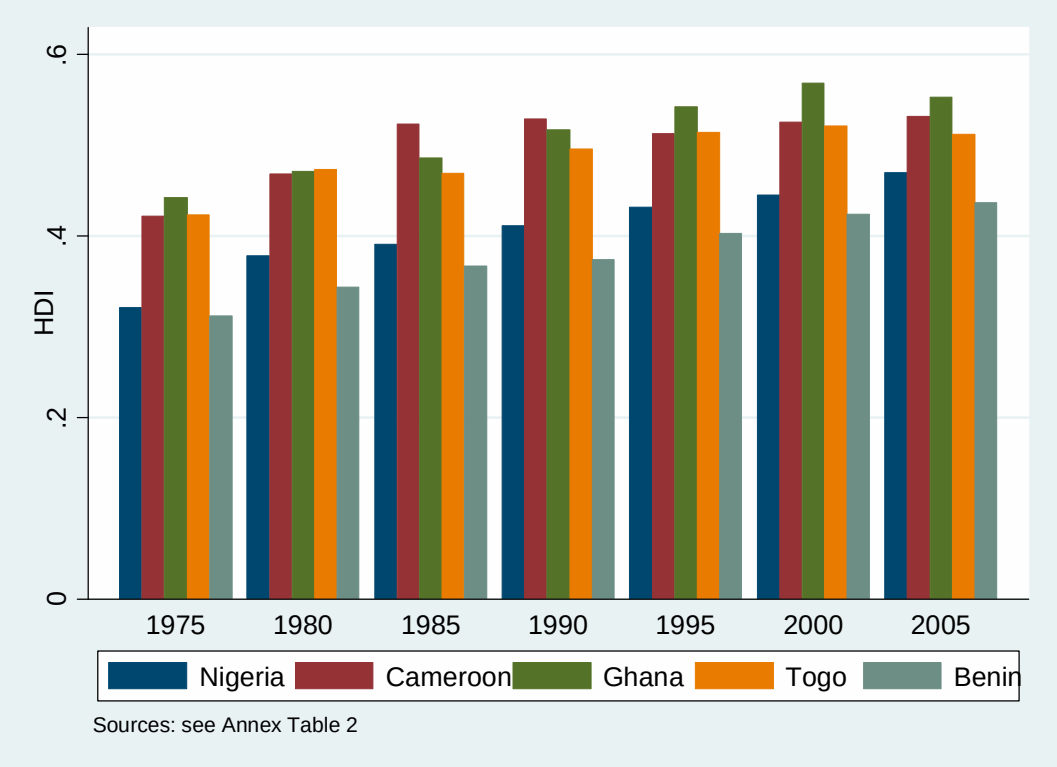
2.4 Policy development

The country's dependence on oil to the neglect of other sectors led to a huge rise in poverty in Nigeria in the 1980s as a result of the fall in oil prices (Bevan et al., 1999). Government revenues dwindled and infrastructure and services fell apart. Between 1980 and 1984 average per capita income dropped, and so did private consumption. Coupled with worsening corruption associated with the first post-civil war civilian government, the country's capacity to manage the economic downturn led to a crippling debt crisis by the mid-1980s. Structural Adjustment Policies (SAPs) were introduced with support from the World Bank and the International Monetary Fund (IMF) in 1986; the exchange rate was sharply devalued, import licenses were eliminated and marketing boards abolished. In the short term, the structural adjustment of 1985 to 1992 led to nominal growth in farm income and farm outputs, significantly enhancing the agricultural sector's contribution to GDP during the first few years of this period. Yet the range of import bans and other tariff measures did little to curb import dependency or to increase national food sufficiency, which only reduced marginally over the SAP period (NISER-CBN, 1992). In fact, the changes in government spending patterns and deregulation of input markets led to worsening income inequality and rising poverty (Canarajan et al., 1997; Oxfam, 2002).

In the period following Structural Adjustment, 1992–1998, the policy focus was on addressing the negative fallout of SAPs and reducing the debt burden through a series of poverty reduction strategies and enhanced spending on women's empowerment. Yet quality-of-life indicators like literacy and maternal and child health dropped to unprecedented low levels, with cuts in public spending in the welfare sectors and the consequent privatisation of public utilities (Akanji, 2003). Gender inequalities in education, health and income showed up in the nation's social statistics (FOS, 2004, FMWASD, 2007, NBS, 2008), and in all the national sample survey data.

The current democratic dispensation (post 1999) and a new macro-economic planning framework, Nigeria's National Economic Empowerment and Development Strategy (NEEDS), have led to a reversal of some of the negative profiles of the preceding policy eras. The granting of debt relief in 2005 was conditional on Nigeria channelling the savings from the debt relief towards providing primary education, primary health care, rural infrastructure, electrification, water supply and other key poverty-reducing

sectors. The medium-term plan performance assessment (NISER, 2005, NISEREEL, 2005) reported an overall positive growth rate and greater macroeconomic stability as well as some improvement in diversification of the revenue base from oil. However in terms of sustainable poverty reduction and employment generation, less than impressive records were reported. Education, health (such as maternal mortality and infant and under-5 mortality rates) and other human development indices continue to be low, more so even than other, poorer West African countries (Graph 3), with funding of these sectors enjoying no major budgetary inflow (Akanji, Bonat & Salihu, 2003). This could be related to the fact that the primary sector generally demands a less skilled and educated labour force (Gylfason, 2001a).

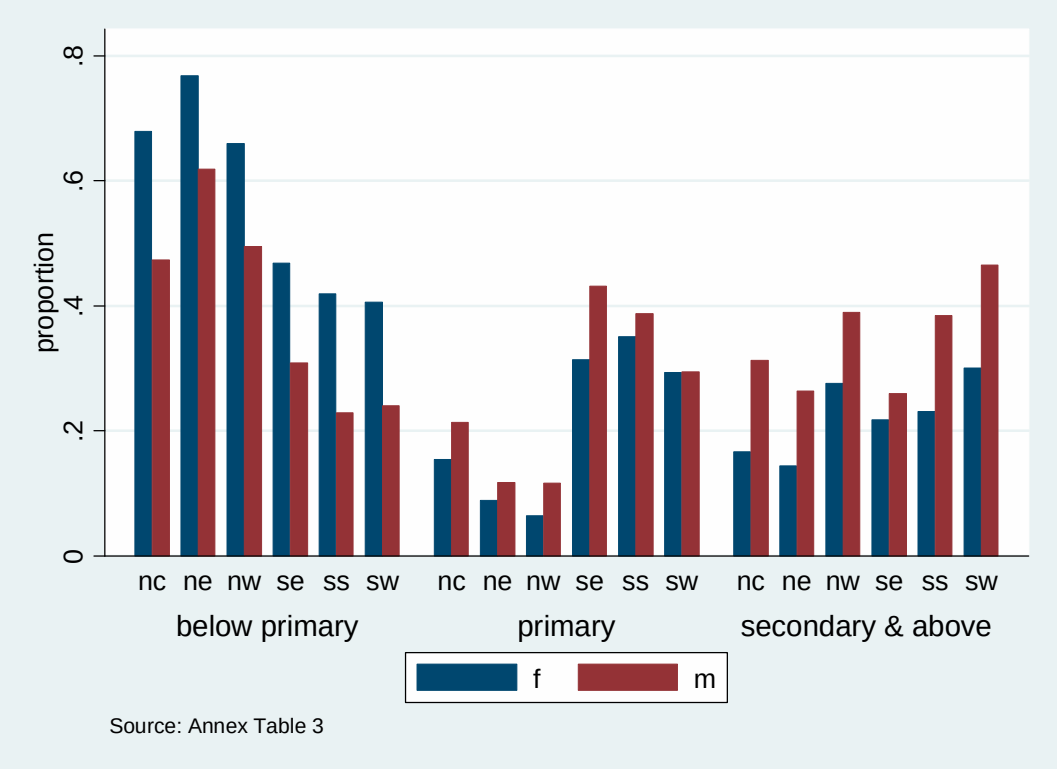


Graph 3: Human Development Index of Nigeria and neighbouring West African countries

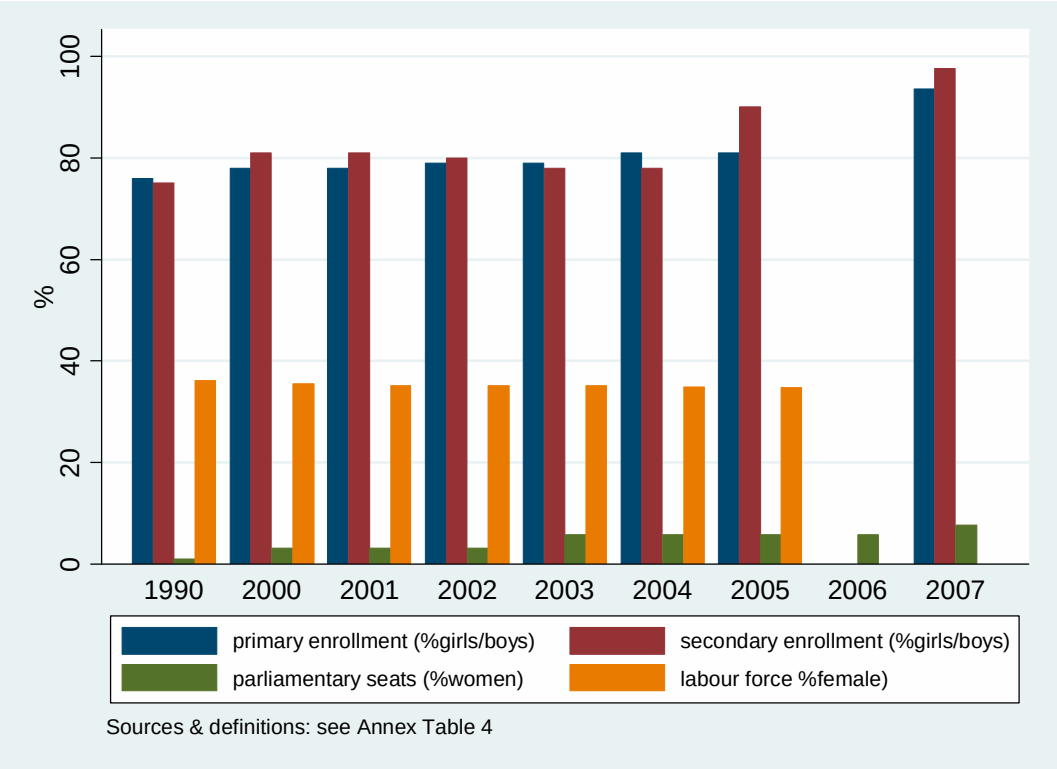
Auty and Mikesell (1998) argue that since resource revenues often accrue to governments, their management decision making lies in just a few hands. Women in particular have been largely excluded from decision making at higher levels. Women's representation in the Federal Parliament was 1 per cent in 1990, increasing marginally to 3.1 per cent in 2000 and to 7.7 per cent in the last elections held in 2007. A stable democracy could enhance women's political participation in the future, possibly with positive implications for both gender mainstreaming and the framing of gender-sensitive policy priorities.

Little attention has been given until recently to female empowerment and gender equality as a means of promoting economic opportunities and broader development. Female education had been largely neglected, with a ratio of girls to boys in primary

and secondary education close to 75 per cent in 1990 (see also Graph 4 and Graph 5). Only in very recent years has there been a significant improvement in equalising basic educational opportunities for both sexes, though completion rates remain poor, especially in the northern region. According to the Global Monitoring Report on Education for All (2009), Nigeria is one among ten countries which have over a million children out of school. Very few of those who go to secondary school are able to attain technical and other higher education qualifications.



Graph 4: Education levels in Nigeria, by zone, as proportion of total eligible population

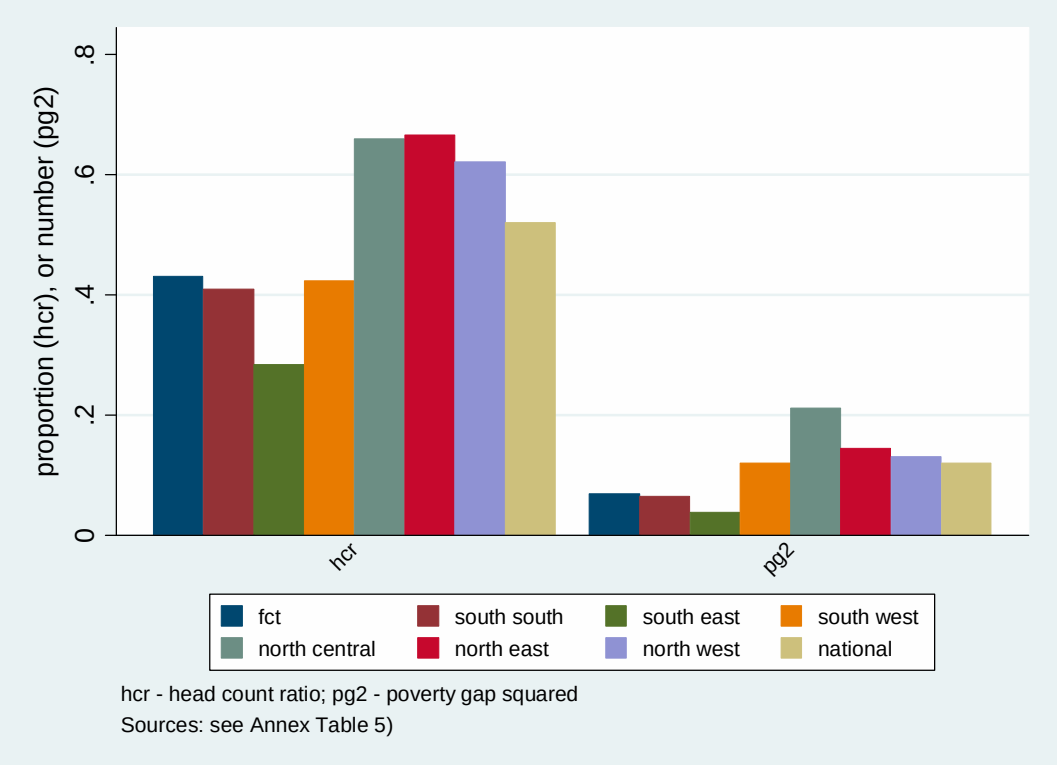


Graph 5: Measures of gender inequality in Nigeria by year (% female)

Little, too, has been done in terms of economic reforms to support the enhanced productivity of the majority of women workers, who are concentrated in the lower-paid subsectors of the informal economy. Credit, information and technical expertise largely continue to bypass them. Legislative reform is of course critical to ensuring an enabling environment for women's equal participation, yet this is not enough. The National Gender Policy (2006) provides a framework and a plea for gender mainstreaming in all sectors of the society and economy, yet clearly it needs to be converted into action agendas the implementation of which can be regularly monitored.

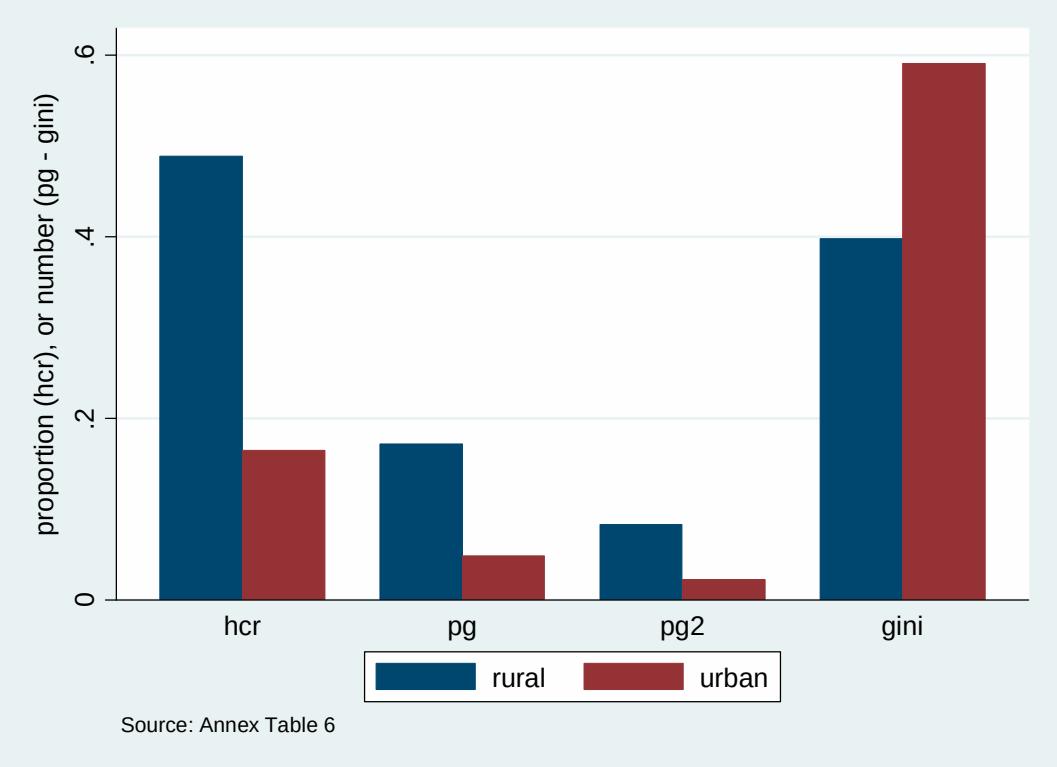
3 Poverty and gender in Nigeria

As discussed above, poverty intensified over the decade of the 1980s and seems to have remained high throughout the 1990s (Bevan and Collier, 1999). Poverty was higher in rural than in urban areas, and in the northern states compared to the south. In 1992, a third of Nigeria's poor were in Kano, Sokoto and Bauchi states alone. Inequality, too, worsened. Between 1985 and 1992 the top 10 per cent had more than 35 per cent of the total income and the lowest 10 per cent were earning just 2 per cent; indeed the bottom 20 per cent were worse off than in 1985. Graph 6 and ***Graph 7*** show our calculations of the distributional statistics at national and zonal levels[7]; as one would expect, the head count ratio (HCR) of poverty is lower in urban areas. Both the proportion of the population that is poor and the total number of poor are much higher in rural areas (and in all zones), close to 50 per cent nationally. Yet levels of inequality are higher in the urban areas. Further, not only are the HCRs of poverty somewhat smaller in the southern zones, but inequality among the poor is also much less than in the northern zones.



Graph 6: Poverty (HCR and Poverty Gap Squared, 2003/4), by zone

[7] Details of our calculations are given in Annex 3.



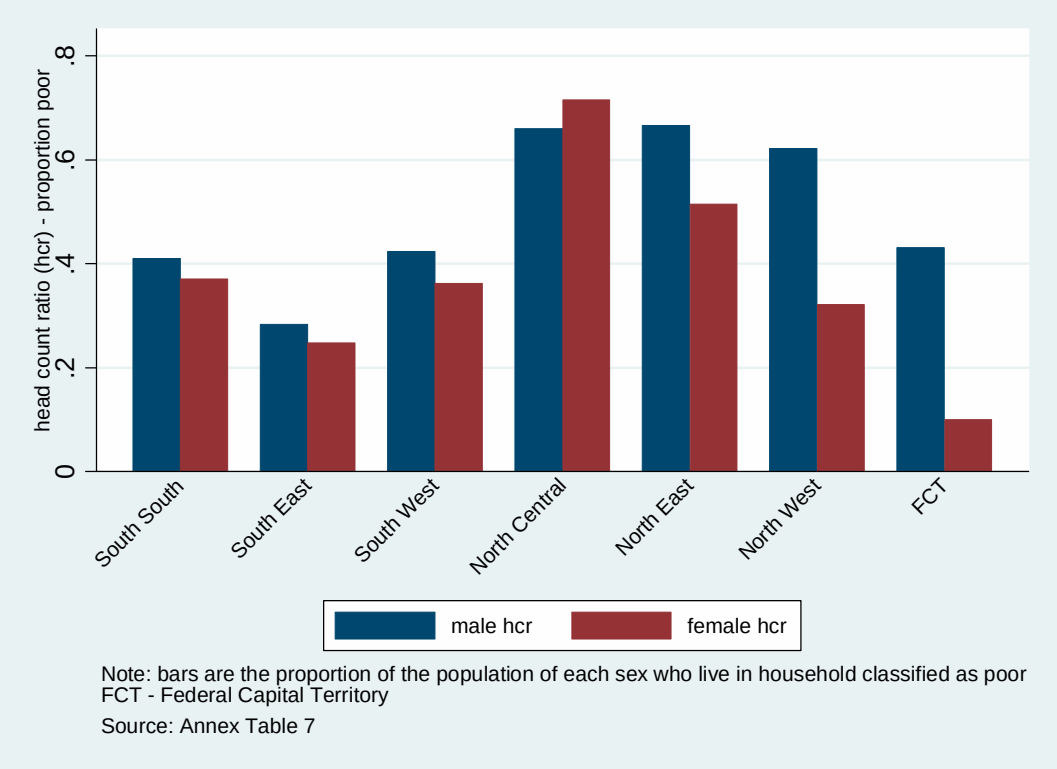
Graph 7: Rural and urban indicators of poverty & inequality, 2003/4

3.1 Female headship: Adversely related to well-being but not an indicator of poverty

Female-headed households have often been regarded as the poorest of the poor[8], and several development interventions have been targeted at this category. Interestingly, female-headed households manifest lower levels of poverty in all zones except North Central (NC); also, there are fewer females among the poor, and a lower proportion of females are poor in all zones except North Central (Graph 8). This may partly be a consequence of the smaller average size of female-headed households and the difficulties of taking account of household composition and household economies of scale in expenditure and poverty calculations. Further, female-headed households may

[8] Poverty is understood either in terms of some aggregate measure of the people living in households with income or expenditure below a normatively-defined 'poverty line', or more broadly as encompassing deprivation in one or more spaces, for example, housing, education, nutrition, health, social participation, employment, and so on. The former is usually referred to as 'money-metric' poverty because it is defined in terms of monetary aggregates. The latter can be referred to as 'multi-dimensional poverty' or 'well-being', and in recent years has often been associated with Amartya Sen's theory of capabilities and functionings (Sen, 1985). Welfare refers to either of these concepts. Because of confusion in the use of the term poverty to refer to both of these concepts we generally use poverty to mean 'money-metric' ill-being, preferring the term 'well-being' for the other concept(s). The meaning of the term welfare should be evident from the context.

quite possibly present a bipolar distribution between those who have been abandoned, and are indeed amongst the poorest, and those who have exercised agency in asserting their headship. This latter group is also likely to be better-educated and in regular employment, while the former may be under-represented in the data.



Graph 8: Poverty of female-headed households by zone, 2005

This finding is somewhat contrary to claims in the National Gender Policy that over 65 per cent of the population living below the poverty line is female (2006: 4).[9] The conclusion is based on a gendered analysis of employment sectors, wherein men dominate regular, formal employment and women are concentrated in low-earning, informal employment. While the inequities and discrimination in employment are real, it is a mistake to conflate this with poverty, or, indeed, to equate female-headed households with poverty (Jackson, 1996). As we found during this analysis, both poor and not-so-poor women face a range of barriers in terms of economic participation across sectors which need to be addressed. At the same time, while female-headed households are often a useful category for targeting resources it is important to understand the process by which they became female-headed. In some instances,

[9] Two caveats are that poverty figures are derived from per capita welfare aggregates; since household sizes are smaller for female headed households, the finding that they are less poor may be an artefact of the welfare measure. However, biological indicators of the standard of living such as nutritional status do not indicate that females are discriminated against in Nigeria.

women may be more vulnerable to poverty within marriage than in female-headed households.

Regression models on welfare and poverty based on the Nigeria Living Standards Survey (NLSS), 2003/4 data do however reveal that female headship is negatively associated with household welfare conditional on other variables (Annex Table 8). While poverty levels per se may be lower, female-headed households are likely to have less access to a range of assets and services, making them more vulnerable to shocks and less able to enhance household welfare. This re-emphasises the need to disaggregate the category of female-headed households in order to understand their nature, composition and access to resources before making a blanket intervention.

3.2 Positive link between human capital and household welfare

A poverty profile can provide some rather subtle insights into the relationships between gender, poverty and growth. We explore this using regressions between indicators of human capital (employment, health, nutritional status education, etc.) and possible causal variables such as sex, age, ethnicity, education[10], and so on (see also Appleton et al., 2008). As expected, the better-educated the head of the household, usually male, the greater his or her well-being. Given the general presumption that mothers', or more generally female, education is more significant than male in determining human capital outcomes (Schultz, 2002), we added spouses' education to this regression. Nevertheless, the education of the household head remains substantively and statistically significant. For male household heads the effect of level of education on outcome is broadly the same for household head and spouse, but for female-headed households, the effects of secondary and higher education are rather larger than for their male spouses Annex Table 8). While educated women who head households are likely to be characterised by exceptional abilities, this finding is qualified by the fact that the estimates for their (male) spouses are not very precise. This is because in most cases (88 per cent) the education level of the spouse is missing from the data. Quranic education of the household head or spouse does not appear to be a significant determinant of wealth or poverty. The interesting issue here seems to be the level of education: although primary education is important, its effects on welfare are not great, while secondary education is crucial yet the transition to post-primary education remains low, as discussed in the next section.

The relationship between fertility and welfare is, not surprisingly, negative. Wusu & Ahiadu (2006), investigating the relationship between fertility rate and household poverty in Nigeria, used the 1999 Demographic and Health Survey data as well as the statistical abstract of the Federal Office of Statistics to demonstrate that poorer households are likely to have larger families and less likely to have invested in human capital, thus perpetuating poverty. This was evident during field visits in Bauchi and Kano States, where except for the extremely poor, the majority of rural men maintained

[10] Education is not of course used to explain education, but it is an important contributory factor to other indicators of human capital.

multiple wives and had large numbers of children. In Cross River State, cultural and religious norms have led to support for large numbers of children per family. The dispersed nature of landholdings and the problems of management were presented as one reason for needing larger families, but there was also the belief that larger numbers would supply more hands to earn and enhance the status of the family. Poor health services and high levels of mortality as discussed in section 4.1.2 also promote higher fertility levels, which contributes to inter-generational transmission of high levels of poverty, and reduces per capita growth.

3.3 Social capital and welfare: The positive role of groups and associations

We also investigated the role of various elements of social capital (trust, cooperation, loan, conflict, community groups) as reported in Appleton et al. (2008), but apart from the community program, conflict and crime, few appear to be statistically significant (see Annex Table 9). While conflict and crime have a negative effect on welfare and poverty, community programs seem to have a positive influence. This is confirmed by using two other variables from the NLSS (Nigeria Living Standards Survey), namely, membership of associations and churches. Households reporting no membership of any association, or membership of an Islamic mosque, have a significantly lower household welfare, effects which are statistically significant ($p = 0.01$) when the regression is cluster-adjusted (see: Annex Table 10). This finding needs to be treated with caution, however, because membership of a mosque is confounded with ethnicity, which is poorly reported in NLSS;[11] Yoruba Muslims seem not to be so disadvantaged.

The field studies reveal that women across regions tend to be members of associations, be they trade groups, rotating savings and credit associations (ROSCAs), or health and Islamiya[12] groups. In fact, many of the women we met in Bauchi and Kano emphasised that since the introduction of Sharia in 1999, women's collective activities have gained in strength. In Lagos, women farmers increasingly depend on group pressure to improve their economic conditions. It is hoped that collective action and group pressure will ultimately improve service delivery by making institutions more accountable.

3.4 Summary

As highlighted by other analyses, poverty levels remain high in Nigeria, being more severe in the north and in rural areas. While female-headed households have often been assumed to be the poorest of the poor, this does not seem to be the case in the Nigerian

[11] NLSS did not record ethnicity affiliation directly. It can, with some fuzziness, be inferred from the Nigerian language in which household members are literate in most households, or by the predominant language of the location of the household in the remainder. Religious affiliation can be garnered from direct questions and the question on membership of associations, which lists churches. It is assumed that the religious affiliation indicates whether the church reported is a Christian church or a mosque.

[12] Modern Islamic education in schools in which students do both English and Arithmetic (and related exams), and Koranic studies: http://www.international.ucla.edu/cms/files/Profiles_of_Islamic_Schools.pdf. In this particular context, the usage refers to groups of adult women coming together to learn the Koran.

context. However, one has to be careful in interpreting these data as the category is diverse and likely to include both the poorest as well as those who are perhaps better-educated and more independent, and the result may contain a statistical artefact in that many female-headed households are smaller than male-headed households, distorting the measure of poverty. Women, both within marriages and heading households, face a range of constraints in terms of access to resources and opportunities and are hence likely to be more vulnerable to poverty than men.

Again as expected, human capital variables such as education and health are positively associated with individual and household welfare. Interestingly, the only social capital variable that is positively significant is membership of a community association. While the role of Islam appears ambiguous in the poverty analyses, we demonstrate in the next section that rather than Islam per se it is a range of cultural and social factors that seem to be inhibiting growth, particularly in northern Nigeria.

Given the large numbers living in poverty, the resultant ill-being is a matter of urgency and there is a need to combine both universal and targeted approaches. General improvements in health and education delivery systems as discussed in the next sections can contribute to strengthening all-round human capital and consequently welfare. At the same time, the very poor, including but not only female-headed households, need additional support to overcome their existing vulnerabilities. These could include:

- conditional cash transfers linked to welfare indicators such as child education and nutrition, targeted at poor women within marriages but also at particular categories of female-headed households such as widowed and abandoned women. The much-acclaimed Opportunidades in Mexico could be used as an example;
- women and men to be encouraged to participate in community groups for school management, agriculture development, health mobilisation etc, given that membership of groups seems to have a positive effect on household welfare.

4 Gender and Growth Pathways in Nigeria

This section focuses primarily on a discussion of the growth linkages between gendered human capital (education and health) attainments and labour force participation in Nigeria, with a more cursory analysis of time poverty and its effect on the supply of female labour to wage earning occupations, access to productive assets (capital, land and technology), and decision making. These emphases are dictated by the availability of representative data.

4.1 Human capital development and growth

4.1.1 Female education is a driver of growth

4.1.1.1 Does education precede institutional reform?

The impact of gender inequality in education on economic growth is possibly the gender-growth linkage that has attracted the most attention in the literature (Summers, 1994, Hill and King, 1993, Lagerdof, 1999, Blackden, 2003), in terms not only of its direct impact on labour force participation (Lofstrom, 2001), but also of its indirect impacts through improvements in maternal and child health (Barro and Lee, 1994); the number of children and their educational attainments (Klasen, 2002, Schultz, 2002); fertility behaviour including contraceptive adoption and fertility control (Klasen, 1994, Isiugo-Abanihe, 1997, Bogunjoko et al.,1998, Odusola, 1998); and the overall impact of the knowledge economy[13] on competitiveness and growth (Salle, 2000).

Gender inequality in education deprives girls with innate abilities similar to those of boys of opportunities to develop their human capital and participate in a series of growth-supporting economic activities. Assuming declining marginal productivity of education, gender inequality results in fewer girls than boys becoming educated at each level; this may have the consequence that, on average, the boys who are educated are less able than the girls with the same educational attainments. This then lowers the average level of human capital available in the economy, resulting in inefficient public resource use, slowing down economic growth (see Schultz, 2002, Dollar and Gatti, 1999, Knowles et al., 2002). Amongst the studies mentioned here, Klasen's econometric analysis has received prominent attention (2002), although a series of other cross-country studies reach similar conclusions on the beneficial impact of gender equality in education on economic growth (Benavot, 1989, Klasen and Lamanna, 2003, Abu-Ghaida and Klasen 2004,). This argument is crudely represented in Figure 2, below.

[13] The use of knowledge to produce economic benefits

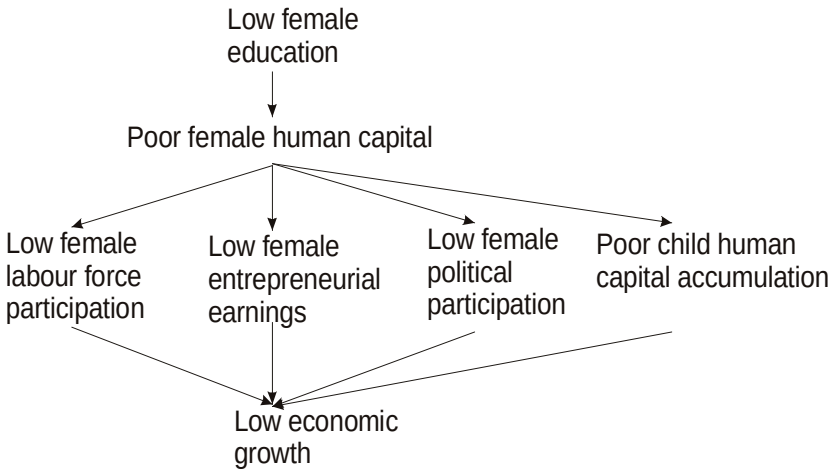


Figure 2: Klasen-type routes between female education and economic growth

However, little emphasis has been given to the robustness of these results. Nor, in the gender-growth literature, has the relative importance of institutions been considered; as noted in section 2.3, institutional variables are receiving increasing attention in the growth literature. A noticeable exception is the study by Morrison and Jütting (2005) that conditions the positive effect of gender equality in education on the presence of state, market and community institutions that ensure equal opportunities in both education and labour market participation. A micro-study by Assaad (2005) also confirms that institutions are likely to play a greater part than gendered schooling in explaining growth differences. He notes that in Egypt, the positive impact of female education on total factor productivity[14] crucially depends on specific social norms that prevent gendered discrimination at work. Ross (2008) considers the effects of the resource curse on women, but not the possibility of causal effects of gender equity in education on mitigating the resource curse.

Glaeser et al (2004, 2007), however, argue that the emphasis on democratic institutions in particular is erroneous since many countries have developed under authoritarian regimes, and that democracy requires a somewhat educated polity. They also argue in favour of the fundamental role of human capital (primarily education) in facilitating growth and development. These authors do not however consider the resource curse phenomenon, and as we have shown above, this only occurs in the presence of weak institutions and appropriable resources, both of which characterise Nigeria (see section 1.1). Nevertheless, both conceptually and empirically it is difficult to determine which comes first – good institutions or human capital – both for methodological reasons and because it may be in the interests of non-democratic regimes to promote human capital accumulation. Bolt and Bezemer (2008) relate slow growth in sub-Saharan Africa to the legacy of colonial education practices; however, their results are driven by the contrast between French and British colonial practices, and do not take adequately into

[14] The part of output growth that is not accounted for by growth in the quantity of inputs.

account institutional and natural resource factors, which, as we have argued, are important.

A major finding of the macro-economic analysis carried out as part of this GGA highlights that in the context of resource-rich countries such as Nigeria, institutions and resource abundance rule over gendered education as growth determinants, capturing their underinvestment in female education. This finding is consistent with and augments those of Mehlum et al. (2006), Andersen and Aslaksen (2008) and Boschini et al. (2008), by pointing to the fundamental role of (weak) institutions in restraining growth. It is also often argued that the gender problem of oil-rich countries lies in the dominance of Islamic religious affiliation in most of them. Ross (2008), however, argues that the effect of the resource curse on women lies not in any association with Islam but via the Dutch Disease and patriarchal culture, which he sees as perpetuated and indeed 'induced by oil' (p 121). Together these arguments do not suggest that there is a causal pathway from female education to the abnegation of the resource curse and gender equitable growth. Our micro-economic and case study evidence suggests, in the context of regional and social differences in Nigeria, that it is indeed the patriarchal culture, pre-dating oil or indeed the colonial agricultural export resource booms, that is associated with welfare outcomes that do not favour females.

A general specification of the model 'explaining' growth using Ordinary Least Squares reveals that the relative female-male years of schooling (growth of female relative to male education 1960-2000) is a consistently significant educational variable accounting for economic growth that dominates over other proxies for education included in these models. The effect is also of substantial magnitude. An increase in the ratio of female to male education from 30 per cent (as in Sudan and Zaire) to 50 per cent (as in Cameroon and Turkey), would result in an increase of economic growth by approximately 0.45 percentage points per year. At a second stage in the regression analysis, when data on institutional characteristics, natural resources and mineral abundance are added, the relative female-male schooling variable becomes insignificant as a determinant of growth. Basic results are given in Annex Table 11, which also provides comparison with Klasen's results (see Tables 1-4 in the Macro Economics Report for a more detailed discussion). Such analysis provides an insight into the possible reasons for the lack of substantial achievement by girls, but also by boys, beyond the primary level of schooling.

While at the macro-level there is little support for the causal pathway between gendered education and growth once institutions have been taken into account, at the micro-economic level we find evidence that there are gender inequalities in educational attainments, with implications for employment and health. While the linkages are regionally and socially specific, education is generally connected with desirable human development outcomes such as child nutritional and educational status, fertility decline and health behaviour, as well as with rather more limited information on formal sector engagement.

The relationship between female education and these outcomes is however confounded with partners' education and ethnicity. While, as noted above, the common presumption is that female education is more productive than male in enhancing child welfare, in many of our cases the father's/partner's education contributes as much to development outcomes as the mother's, and statistical interpretation is complicated by assortative mating (marriage of educated females to generally more educated males). We also find that while religious affiliation is associated with indicators of well-being, it is confounded with ethnicity. In simple analysis, Islamic affiliation and membership of traditional religions have inferior outcomes, but once ethnicity is included the association breaks down. This is more obvious in the case of the Yoruba ethnicity, where Islamic affiliation has if anything a positive association (compared to Christians and others) with children's well-being and a negative one with fertility (see Annex Table 16 and Annex Table 17). The negative association of Islam with well-being arises only in other ethnicities. A further complication here is that ethnicity is spatially confounded; thus the non-Yoruba Muslims are overwhelmingly from the Hausa, Fulani, Kanuri and other northern ethnicities. Since the north is generally less developed than the south and there are few Christians (the other major religious group) in the north, it is hard to separate the effects of non-Yoruba Islam from other factors associated with northern underdevelopment.

As institutions confound the relationship between resource abundance and the determination of growth, so also does ethnicity confound the relationship between female education and well-being. In this case, factors unfavourable to females, for which we use ethnicity as a proxy indicator reflecting many social and institutional features of the local society, jointly lead to low female education and poor well-being, so that just attempting to educate females without addressing these other factors is unlikely to be particularly effective in bringing about desired improvements in areas of well-being, such as female participation in the labour force and child and female human capital accumulation. This clearly has implications for the choice of policy interventions and their phasing and sequencing to address the underlying obstacles in advance of or parallel with direct attempts to improve female educational status. The gender-growth pathways considered here are depicted in Figure 3.

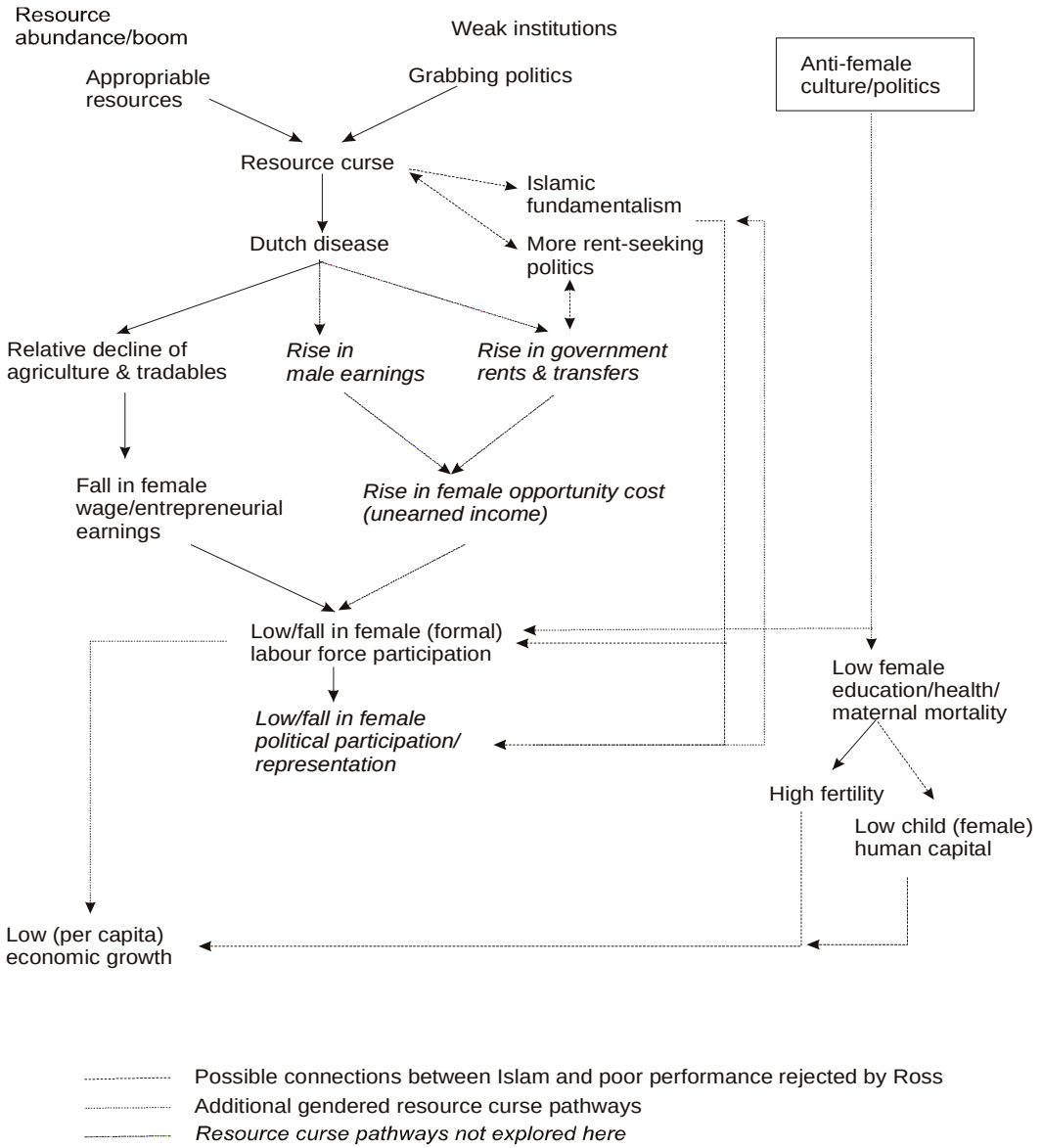
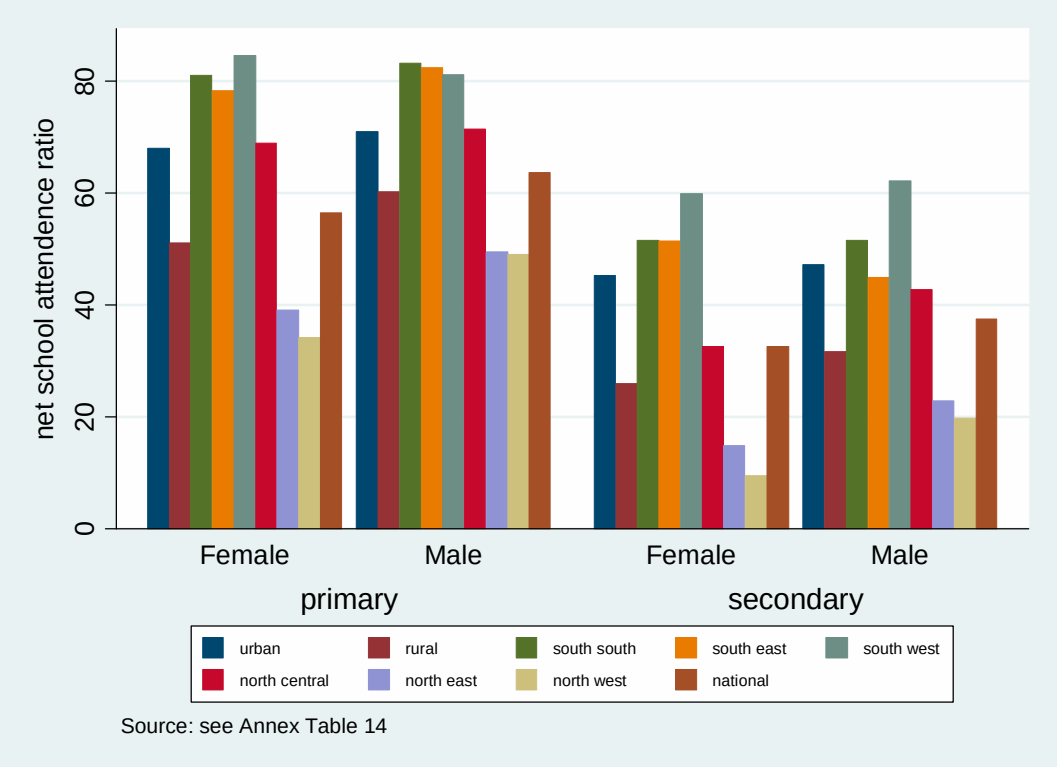


Figure 3: Pathways between growth and gender in the presence of the resource curse

4.1.1.2 The importance of relevant education

The recognition of the importance of education has led successive governments to focus on strengthening this sector, yet huge differences remain across zones, sectors and levels of education (see Graph 9). In Nigeria the south in general performs better than the north, with over 80 per cent attendance rates for both boys and girls at primary level in comparison to 50 per cent for boys and 40 per cent for girls in the North West and North East zones. Interestingly, though not surprisingly, there is a sharp decline in the post-primary attendance of both boys and girls across the country. While again the gender gaps are not substantial in the south, in fact they favour girls in the south-east, the pattern in the north continues to disadvantage girls by over 10 percentage points, similar to primary level.



Graph 9: Net school attendance ratios by location (2003)

Similar conclusions are reached by Okpukpara & Chukwuone (2001) who used data from the 2000–2001 Child Labour Survey to investigate the role of children's household and community characteristics in urban, rural and north and south zones on their school attendance in Nigeria. Their findings confirm that more children participate in schooling in urban, south and non-poor households and more male children are enrolled than female children. However, in terms of background characteristics it is interesting to note that the education of fathers has a stronger impact in increasing the probability of child school attendance than the education of mothers, while poverty, though positive, has a very weak influence on child school attendance (<3 per cent), although the influence is stronger on girls than boys. For instance, the marginal effect of poverty on girls' education is 21 per cent while this is only 5 per cent for boys in rural Nigeria. Distance to school also has a strong negative effect on child schooling, indicating the importance of access to school in increasing the participation of children. In urban areas, at the age of 17 the probability of dropout among girls is 23 per cent compared to 12 per cent for boys.

The regional variation can partly be explained by the practice of seclusion and early marriage in the north (a reflection of patriarchal cultures), but also an inherent suspicion of 'western' education associated with the influx of missionaries in the south, though to varying degrees in Nigeria's post-colonial history. This has led to gendered differences even in the north, with fewer girls and boys in North West and North East

Nigeria likely to attend 'modern' schools.[15] While for girls marriage at puberty still remains a widely-accepted norm in Kano and Bauchi, leading to their withdrawal after primary schooling, many rural boys miss this opportunity too, being enrolled for several years in Quranic schools that do not equip them with any marketable skills, which puts them at a disadvantage in the labour market (Box 1).

Box 1: Gender inequalities in Islamic educational systems

In the 12 northern states of Nigeria, western education systems exist alongside Islamic ones. Girls, however, are marginalised in both.

Quranic school, Giginya, Nasarawa LGA, Kano

This school was established in 1983 by the present teacher with four boys from his village in Bichi, and later 36 more boys joined from different places. The community was happy to have a school in the neighbourhood, so welcomed them. At present the total number of boys is 370, the average age of enrolment is between 8 and 14 and the average training period is 6 years, but this depends on the ability of the individual student. The education here is at basic level: reading, writing and reciting the Quran. Some go for further training or education or join different trades. Most come from rural areas, and while there are no fees, the children have to find their own accommodation and food, so many do some part-time work such as car-cleaning, ironing, helping in shops, domestic work etc. in the neighbourhood. While girls are excluded from such traditional Quranic schools, such schooling however also fails to equip boys for jobs in the modern economy.

Islamiya School, Nasarawa LGA, Kano

This school operates as a regular primary school in the morning and an Islamiya primary school in the afternoon. Unlike the Quranic school, the curriculum includes both religious and general education; the major omission is science. Three hundred of the four hundred students enrolled are girls, as this is their only opportunity to learn about their rights and obligations within religious practice, a useful tool for bargaining with their spouses in later years. Interestingly many of the girls we spoke to in Grade 6 of this Islamiya School were also secondary school students, with aspirations to join a range of professions not possible with a purely Islamiya education.

Recognising this disadvantage there has been a push from Islamic scholars for the setting up of Islamiya schools that combine religious education with 'modern' subjects. Yet little attention has been paid in policy circles to this dual track within the education system in the northern states, and the Global Monitoring Report (GMR) 2009 out-of-school figures for Nigeria in fact fail to take note of students enrolled in Quranic schools.

Factors influencing gender gaps in school enrolment, then, extend beyond access and poverty to the nature of the curriculum and the skills their education provides, as well as religious and socio-cultural factors that dichotomise both the employment and the

[15] State schools which teach to the West African School Certificate exams.

social domains of females and males (Adewoye, Shettima & Otu, 2000). Supportive policies can help to overcome some of these barriers, as evident from a field visit to a primary school in Dass Local Government Authority (LGA), Bauchi State, at which the Girls Education Initiative was launched in 2006 (Box 2). Girls now constitute 60 per cent of the children enrolled, and dropouts have drastically decreased. Such progressive initiatives have however been confined to the lower levels of education rather than higher education, where in spite of positive changes in enrolment in the past two decades gender inequality still persists in the core scientific and technical disciplines (Odejide, Akanji & Odekunle, 2006) likely to have greater income and productivity impacts.

Box 2: Overcoming barriers to girls' education

In Bauchi, as in Kano, the completion rates for girls at both primary and secondary levels of schooling are much below those of boys. There are several reasons for this. Girls generally help their mothers to hawk their produce and are hence essential to women's economic activities. Girls are married soon after puberty, and it is widely recognised that only special men would marry educated girls. The Iliya Adamu Primary School in Dass LGA was originally set up by missionaries and the traditional leaders did not allow girls to attend, seeing the school as a negative influence on their values. Finally, the lack of infrastructure and facilities and the poor-quality teaching made school appear a waste of time, especially for girls, who could usefully assist their mothers with domestic work and income generation.

Things started to change with the launch of the Girls' Education Initiative in 2006. Apart from the provision of textbooks, stationery and teacher training, a major thrust has been the involvement of communities, especially women, in school activities. Women's groups have been provided with support such as sewing machines, stoves and cooking pots, so they permit their daughters to remain in school, seeking their assistance if required before and after school. The School Management Committee has constructed a new block of toilets, with women contributing to this process by providing wood for the roof and buckets for carrying water. Several clubs have been set up for the children and mentoring programs initiated, giving a sense of vitality and contribution. Girls' enrolment has already increased, as has transition to secondary school.

With the growing dependence on self-employment for making a living as the number of formal sector jobs continue to shrink for men as well as women, a higher level of skills is essential for market success. While bakeries, tailoring shops and petty vending have been mushrooming at a rapid pace, their lack of advanced technical skills leaves women at the lower end of the informal sector. Vocational education and the upgrading of skills remains a largely neglected sector, though worth attention.

4.1.1.3 Summary

Despite the recognition of the importance of education, Nigeria is nowhere near achieving universal education, even at the primary level. The southern states generally perform better than the north, especially the North East and North West, but here too there is a steep decline post primary school. Apart from the overall lower educational

level in the north, the gender gap, too, is larger in the north than in the south, making girls in the north the most disadvantaged in terms of educational access and achievement.

The major determinants of education, especially for girls in the north, appear to be access to good-quality education; poverty and the inability to meet the costs of education; parental education status, and cultural norms and practices that lead to preferences for particular forms of education (ie Quranic or Islamiya over 'modern' subjects). Cultural norms such as child marriage or using daughters to hawk are not immutable, provided an enabling institutional environment and appropriate incentives for an alternate livelihood are put in place. The following policy measures may be considered:

- Free education for both boys and girls up to secondary/higher secondary level;
- Special incentives for girl's education in the northern region, e.g secondary school stipends to cover additional costs of schooling;
- Facilitation of policy discussion in the north to shift from a dual track of religious and 'modern' education to a strategy that enables the two streams to be combined;
- A comprehensive package to improve the quality of education across the country up to secondary level to be developed to take account of issues of access such as distance and infrastructure, but also teacher training, curriculum and materials development (including relevant vocational and skills training) and mobilising community support.

4.1.2 Poor health status, high mortality and high fertility reduce growth

The determinants of good health and the gender inequalities therein depend on not just the parameters of health provision but also the gendered power relations at household, community and state/policy levels that mediate the demand and supply of health care. In terms of growth, the health status of a person determines the available person-days devoted to productive work; the productivity per unit time and the proportion of income and time devoted to managing family health. The health and welfare of the family is asymmetrically assigned to women and so poor family health tends to take a greater toll on women's use of productive time. Reproductive health status is also affected by intra-household power relations, which influence women's access to health services; the choice of type of service; the conditions of marriage such as age at first marriage; first pregnancy; access to safe motherhood practices and facilities, and so on. A few key health indicators (Table 1) indicate that Nigeria has lagged behind other countries of SSA, but also other low income countries in terms of its health profile, be it life expectancy at birth, contraceptive prevalence, maternal mortality or births attended by skilled staff.

Table 1: Changes in major health indicators

	Nigeria				Sub-Saharan Africa		Low income	
Indicators		1990	2000	2004	1980	2004	1980	2004
GNP per capita (US$)	810	280	280	430	652	601	321	507
Male life expectancy at birth (years)	44	45	43	43	47	46	52	58
Female life expectancy at birth (years)	47	48	44	44	50	47	53	60
Total fertility rate (births per woman)	6.9	6.7	6.0	5.6	6.7	5.3	5.6	3.7
Prevalence of contraceptive use (% women aged 15-49)	5	6	15	13	1980	22	..	40
Births attended by skilled health staff (% of total births)	..	31	42	35	..	42	..	40
Maternal mortality ratio (per 100,000 live births)	..	..	800	704	..	..	..	..
Child malnutrition prevalence, weight for age (% of children under 5)	..	35	31	29	..	..	..	43

Source: World Bank website: GenderStats

Wealth (and poverty) are significant in shaping health-seeking behaviour, but the effect seems greater in urban than in rural sectors. Agbonlahor (1995) examined the determinants of maternal and child health care decisions in Edo state by administering questionnaires to a sample of 400 respondents (200 couples). The key findings were that most couples do not have household budgets for health. Husbands were more concerned with curative treatment than preventive action and usually made decisions on when to see a doctor and the kind of physician to be consulted. In considering the choice of health facilities and efficacy of treatment, cost considerations were rated highest. This is evident when one considers the range of maternal mortality rates in a single state, varying from a low of 300 per 100,000 live births amongst the elite classes in Kano city to a high of over 4-5000 per 100,000 live births in remote rural locations (interview with Dr A. Sadiq, Community Health Department, Bayero University). While donor-supported initiatives have been in operation for the last decade such as the DFID-supported PATH in Kano or the USAID-supported Community Participation for Action in the Social Sector (COMPASS) in Bauchi, without state commitment and follow-up these initiatives are not likely to be sustainable (Box 3). They create public awareness and demand, but if not matched by an equally efficient supply response, frustration will only mount.

Box 3: Dealing with maternal mortality in the North: the problems of health care delivery

The free maternal service of the Kano State government is a laudable policy with great potential for reducing the rate of maternal mortality and morbidity in the state. However, the policy is only fully implementable in the secondary health centres operated by the state government, and therefore poor women in the rural areas, who mostly patronise the local government-owned primary health centres, cannot fully enjoy the benefits of free maternity services. In Muntsira Village (Kano), women reported that free drugs were available only on the first few days of the month; thereafter the prescribed drugs have to be purchased. The health centre, staffed by two nurses, opens from 9:00 am to 2:00 pm Mondays to Fridays. Outside these hours people can only get medical attention at the local government headquarters. As a result of the delays involved in seeking medical attention in terms of travel from home, timings of the primary health system and the availability of drugs, many women have lost their lives due to preventable pregnancy-related complications.

Community health initiatives such as PATH in Kano and COMPASS in Bauchi are now trying to reverse this situation. Local midwives are trained in modern methods of delivery, and take their patients to a secondary health centre at the earliest sign of danger. Community blood donor volunteers have been mobilised, as also volunteers trained to provide information and awareness on reproductive health and child spacing. In order to make the initiatives sustainable, women in Muntsira have formed an association and make regular contributions that can be used for transporting pregnant women to the hospital.

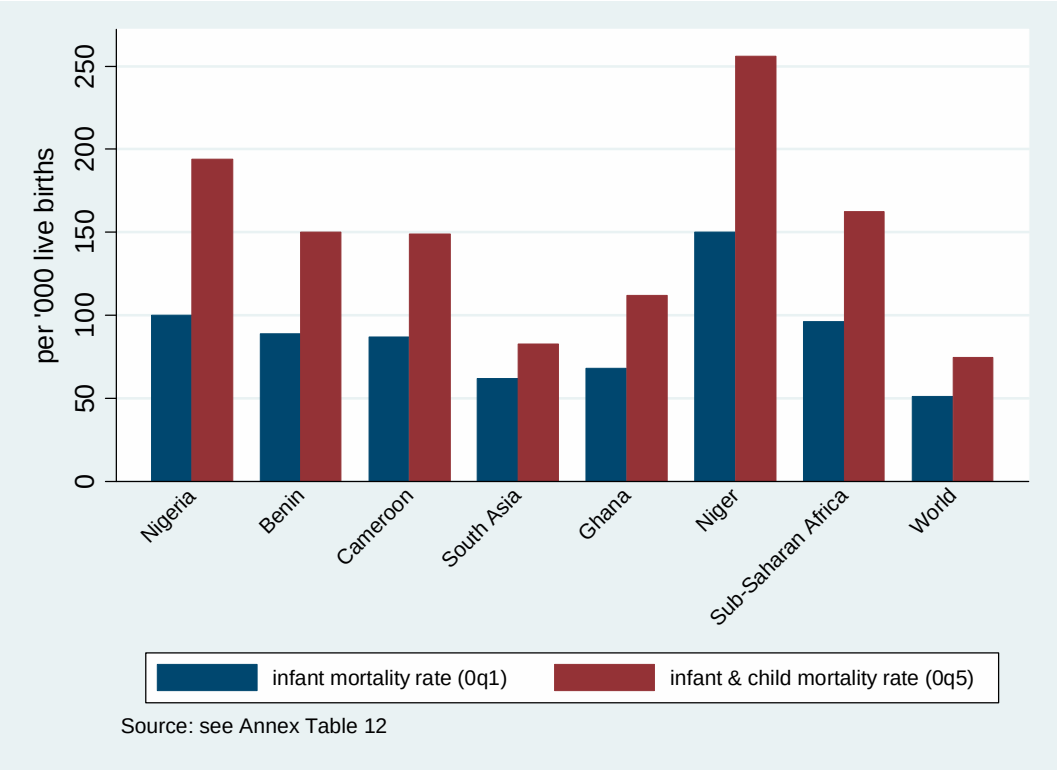
Not surprisingly, poor health and health care expenses are major reasons keeping women trapped in the lower levels of the informal sector. A woman selling bread in Lagos noted that most of her earnings had been wiped out by an illness in the family. It is only very recently (July 2008) that a private hospital has introduced a health insurance scheme for women traders under a public-private partnership programme of the Lagos state government (interviews during field visit, August 4-5, 2008).

Information on mortality in Nigeria was the basis of one of the most widely-quoted and almost certainly foundational texts on the association of maternal education with child mortality (Caldwell, 1979). Caldwell reports a child mortality index computed for a sample of Yoruba-speaking residents of Ibadan,[16] and for a broader sample of residents of Western Nigeria, and argues for 'the primacy of mother's education as a factor in depressing mortality' (400). He claims that: '[T]he preceding analysis has shown that maternal education is the single most significant determinant of these marked differences in child mortality' (408). The single most telling evidence seemed to be the much lower-estimated child mortalities of mothers whose education level was greater than that of the father. Subsequent literature (for example Schultz, 2002) has focused on the links between maternal education and child mortality and other indicators of well-being, largely ignoring links with partners' education, even when it has been noted that fathers' education is also strongly associated with child well-being outcomes

[16] In this survey we are told that there is no information on fathers' education (399), for which Caldwell has to rely on a smaller survey.

(see, among others, Trussell and Preston, 1983; UN, 1985), especially in terms of accessing health care when required (educated fathers are likely to have higher incomes and more positive attitudes to health-seeking behaviour).

Notwithstanding the massive increases in both mothers' and fathers' education since Caldwell's 1973 survey (Caldwell, 1979), child mortality is still very high in Nigeria, around 200 per 100,000 live births (see Graph 10 and Annex Table 12) and has fallen by only about 20 per cent (from around 250) since the 1970s, despite the significant increases in maternal education during this period. This compares unfavourably with neighbouring countries. While there is a strong association of parental education with child mortality, with the reduction in infant and child mortalities somewhat steeper for mothers' compared to fathers' education; nevertheless given the pattern of decision-making at household level and the control over resources, especially money, it is important that fathers' education is not ignored in the drive to educate mothers.

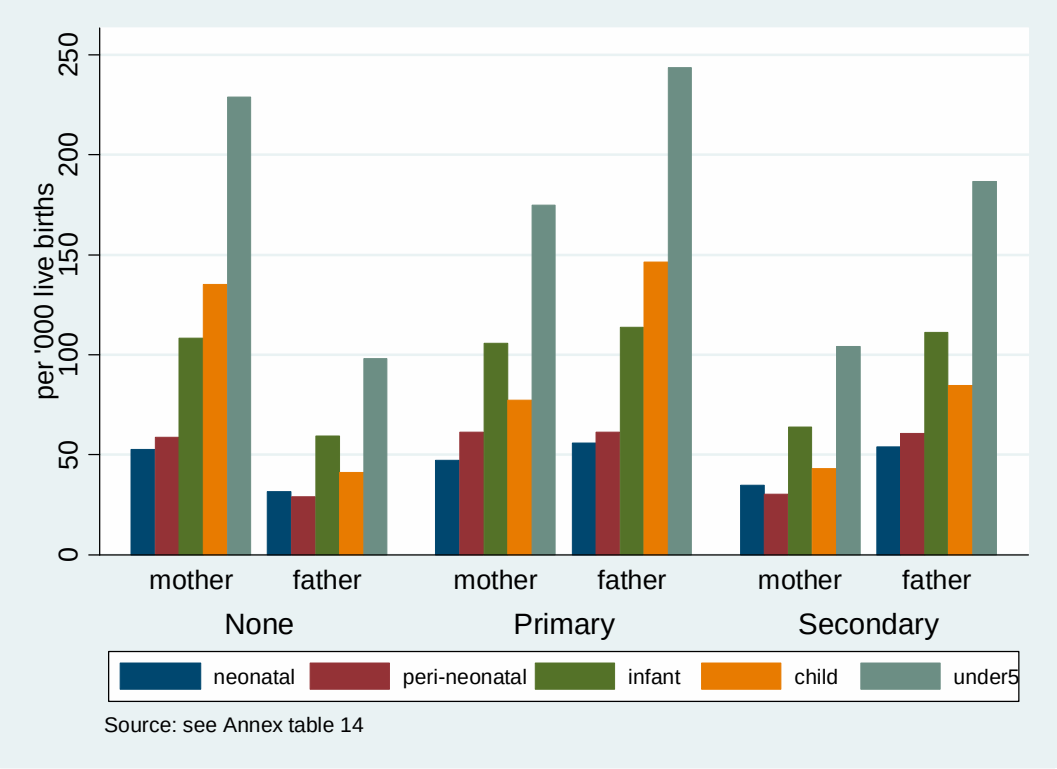


Graph 10: Infant and child mortality rates

Apart from parental education, child mortality is strongly correlated with region, sector (rural or urban), ethnicity, religion, education and wealth; intervening variables such as health practices and hygiene assets are also aligned with these variables. Region, ethnicity and religion are highly correlated, and it is hence unwise to settle on any one of these as determinants of mortality or fertility. Our analysis shows that survival chances are higher in the south than in the north, with child survival particularly poor in the North East and North West**.** Whether the poor mortality figures of the north are due to religion (Antai, 2009, Antai et al., 2008) or ethnicity is not easy to ascertain. Hausa-

speaking groups, together with other largely northern groups (Kanuri and Fulani speakers) all have poor mortality statistics. Similarly, while Islamic households (and adherents of traditional religions) have much worse mortality figures than Christian groups, the Yoruba-speaking Islamic households are not obviously worse than their Christian counterparts; indeed they are somewhat better (for further details see the Macro and Micro Economics Report).

Immunisation became a contentious issue in Nigeria in 2004 when various northern political and Islamic leaders promulgated a view that vaccinations were harmful, and vaccinations in certain regions fell. While we have only examined data prior to this period, we find that the likelihood that a child will be fully immunised depends on both ethnicity and religious affiliation, as well as on both mother's and father's education, occupations and contextual variables that reflect access to health facilities, (such as living in an urban area) (Graph 11, and Annex Table 14). Thus, as with education, ethnicity is confounded with religious affiliation, and there is little support for the argument that specific tenets of religion determine health-seeking behaviour (for further details see the Macro and Micro Economics Report).



Graph 11: Infant and child mortality by parental education, 2003

4.1.2.1 Summary

Nigeria is one of the worst performers in the world in terms of all basic health indicators, in particular in maternal and child mortality. Poverty and lack of resources and the absence of an efficient and responsive health delivery system are the two major

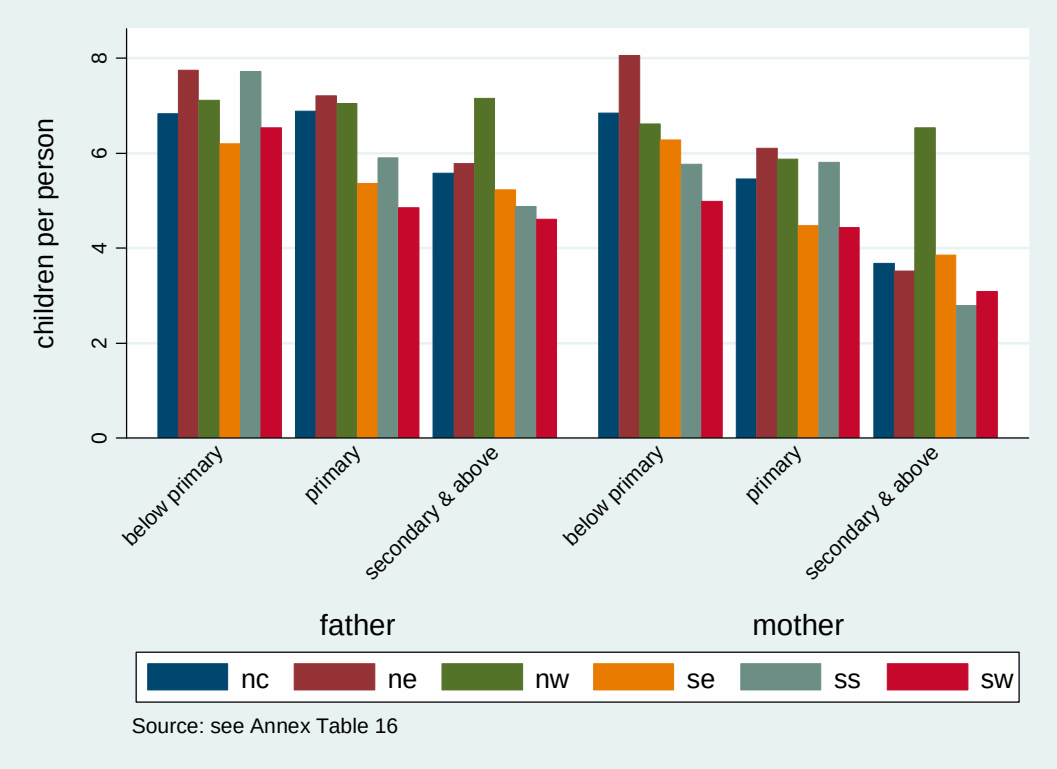
contributory factors, as private health care is beyond the reach of most people. Regional and cultural factors, too, need attention. The following are identified as policy priorities:

- Acknowledge the cultural roots of poor health-seeking behaviour when preparing and communicating health services and messages;
- Improve health care infrastructure and delivery on the ground, especially in terms of costs, quality (health personnel, equipment, drugs) and accessibility;
- Introduce community health insurance schemes, especially for the self-employed (recently initiated in Lagos as part of a public-private partnership).

4.1.3 Secondary and higher education reduces fertility

Similar to the studies on education and child mortality, several studies have pointed to the linkages between female education and fertility behaviour (George, 1992, Alonge, 2004, Alonge & Ajala, 2004). Arowolo (1979), in his study of 957 Yoruba women in Ibadan, found that education had a strong effect on fertility, not only for women with specialised education beyond secondary school but also for those with primary schooling. An exception perhaps is Moughalu (2005), who found that male (partner's) education, especially higher education, had a strong influence on fertility levels, including in the case of professional women in Ife-Ife and Lagos.

High fertility rates may be linked to persistent high mortality in Nigeria because of the perceived relation between the desire for children and their survival rate, especially in the north. However, Graph 12 shows that the difference in total fertility rate (TFR) between regions is not as large as might be expected. Generally, fertility is lower in the southern and North Central zones than in the North East and North West. However, within each region fertility declines with the education of the mother, and to a lesser extent with the education of the partner; this effect is similar in other zones. However, as mentioned earlier we need to note that the educational level of over a quarter of partners is missing. Nevertheless, as was found during the field studies, a major reason for higher male fertility in the northern regions is the practice of polygyny, a major purpose of which appears to be to demonstrate masculinity by extending the male reproductive period.



Graph 12: Number of children by parent, 2003

What then are the links between maternal education, infant mortality and fertility decline? In the fertile group (women aged between 20 and 40), while the number of years that mothers were in education increased significantly from around 1-4 to 5-6 or even more years between the early 1970s when Caldwell's survey was conducted in Ibadan and Western Nigeria and the first years of the 21st century, fertility is still high even in the southern and western regions. While this evidence is based on broadly descriptive statistics, it does not seem to strongly support the arguments of Osili and Long (2008) and Osili (2008) that the Universal Primary Education (UPE) programme has had a major effect on fertility (see Annex Table 16 and Annex Table 17). Clearly, attention needs to be paid to the supply of health services, to supporting secondary and higher education and to the nature of marriage and gender relations that appear to constrain a push towards a decline in fertility rates.[17]

4.1.3.1 Summary

In the growth literature, female education has been positively related to improvements in maternal and child health and associated with a downward shift in both mortality and fertility. However, the evidence in Nigeria is mixed. Education levels have increased and are quite high in the south and west, but fertility rates have remained

[17] We were told for instance that in a context of widespread polygyny the husband often distributes resources amongst his wives on the basis of the number of children they produce. Producing a large number of children is thus a strategy to claim both more time and more resources from the husband.

remarkably high in all zones. While ignored in the growth literature, the issue of male education too emerges strongly in this analysis, more in relation however to infant and child mortality than to fertility rates. Education is positively correlated to men's earnings; hence apart from influencing health-seeking behaviour ideologically, access to health services also becomes more affordable. Cost is a major factor that appears to constrain people from seeking medical attention, contributing to the high mortality rates.

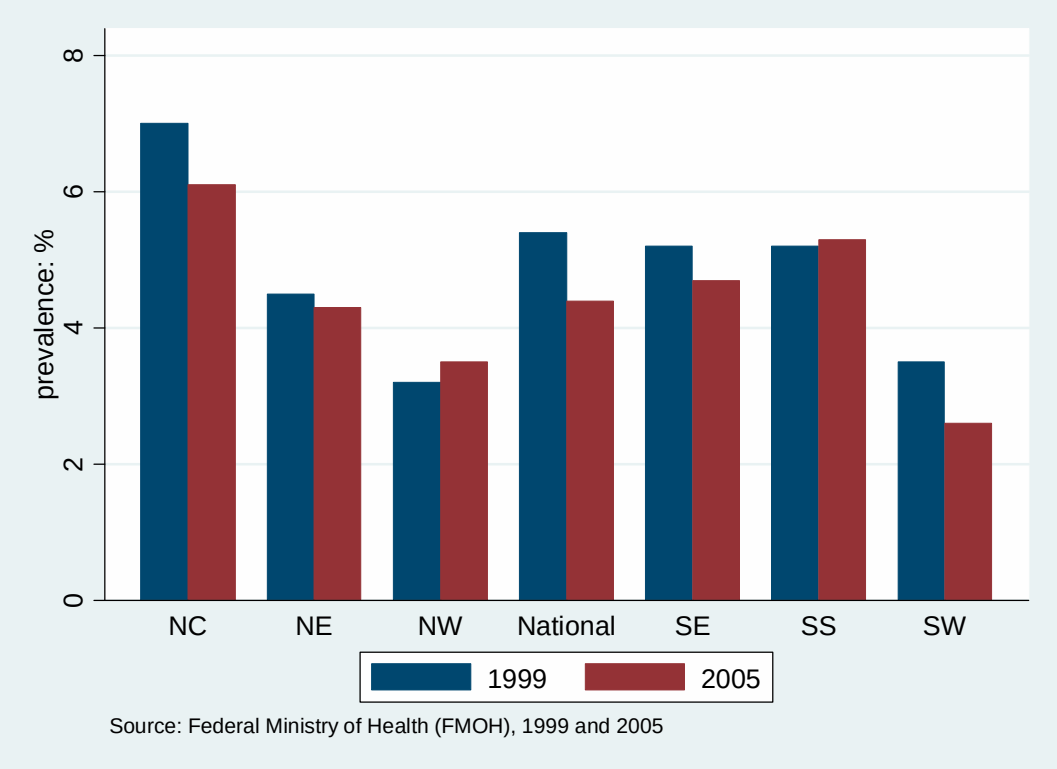
Fertility, unlike mortality, appears to be influenced by cultural or ethnic and perhaps religious norms. Ethnicity (rather than or in addition to religion) has appeared as a very important determinant of female education and fertility behaviour, health-seeking behaviour and child nutrition. While ethnicity is an important correlate of religious affiliation, it is important to note that its influence in many cases transcends that affiliation. Thus there is little difference between Yoruba Christian and Yoruba Islamic fertility, even though at a national level there is a large difference between Christians and Muslims. The nature of marital and gender relations in different contexts is a major influencing factor, with fertility often being used as a tool for bargaining for resources with spouses, especially in the north where polygyny continues to be widely prevalent.

Apart from the general improvements in health infrastructure and service provision suggested above and investment in post-primary education, the issue of fertility can be tackled by:

- Culturally and religiously sensitive awareness and mobilisation around fertility control targeting men and women;
- Ensuring free, easily accessible and good-quality contraceptive and maternity services.

4.1.4 Prevalence of HIV/AIDS slows down growth

The AIDS pandemic is a state and national problem which has reached a critical threshold. With an HIV prevalence rate of 12 per cent in 2003, Cross River State had the highest incidence of HIV/AIDS amongst the 36 states of Nigeria, second only to Benue. While figures for HIV prevalence apparently have been declining (Graph 13) due to proactive strategies by the state, field interviews create some doubt about whether this is really the case (**Error! Reference source not found.**). The pandemic is a cross-cutting issue that is linked to other sectors of the economy such as education, health, agriculture, industry etc, with adverse implications for growth.



Graph 13: HIV prevalence by zone

Box 4: Implications of HIV/AIDS in Cross River State

Cross River State has one of the highest incidences of HIV/AIDS in the country, and despite statistics that show the rate to be decreasing, field experience suggests otherwise. Poverty alongside a high cost of living contributes to the spread of HIV, as even though drugs are free, many, especially young widows, continue to engage in casual sex in order to earn money for a good diet for themselves and their families. Tourism has encouraged this trend by creating high demand, especially during the carnival at Christmas. The government has introduced condoms in all hotels to prevent the spread of HIV/AIDS during peak tourist times, but 70 per cent of male visitors do not use them. Despite awareness programs, stigmatisation and discrimination, including from close family, remain high and hence many of the infected prefer not to reveal their positive status.

I am a widow: the members of my husband's family told him when he was ill to infect me with the virus so that I can die as well. I have five children and they are not positive but when we go to some of our family members to visit we are not always welcome: they find it difficult to even give us water to drink or to allow the children to help in washing the dishes. Many of us have to encourage ourselves, many are thrown out of their homes with the children. Stigmatisation won't let people go for the test and if they do not know their status the infection will continue to spread. (Woman in the People Living with HIV/AIDS (PLWHA) group)

There are more women getting infected nowadays than before. We have been trained by different organisations in various skills, but we have not been empowered, as many of us are not engaged in income-generating activities. There is a lot of lip service from the government. Those of us who need the intervention are not getting it; the funds are being mismanaged. (Woman in the PLWHA group)

I have a diploma certificate but could not continue my education due to the illness. No one is ready to employ me because I have emaciated so much; it's almost obvious I have the virus. I got some financial support from my family, but beyond this I need a job so I don't keep depending on other people. (Only male member of the PLWHA group, who died in November 2008)

4.1.4.1 Summary and recommendations

HIV is emerging as a major growth issue in terms of its implications for economic participation as well as demand on health services. Interestingly, education per se does not seem to influence the spread of HIV, linked as it appears to be to poverty and unemployment, the rising cost of living and growing aspirations. Despite state efforts to control the spread of the pandemic the persistence of high levels of stigmatisation and discrimination appear to be thwarting these efforts.

Apart from awareness and information dissemination, what is recommended is:

- A clear focus on strengthening livelihood and employment opportunities for HIV-positive people. Apart from helping them to earn a living this will help to reduce the stigma of the disease, which is essential to curb the epidemic.

4.2 Female labour force participation: Dealing with informalisation

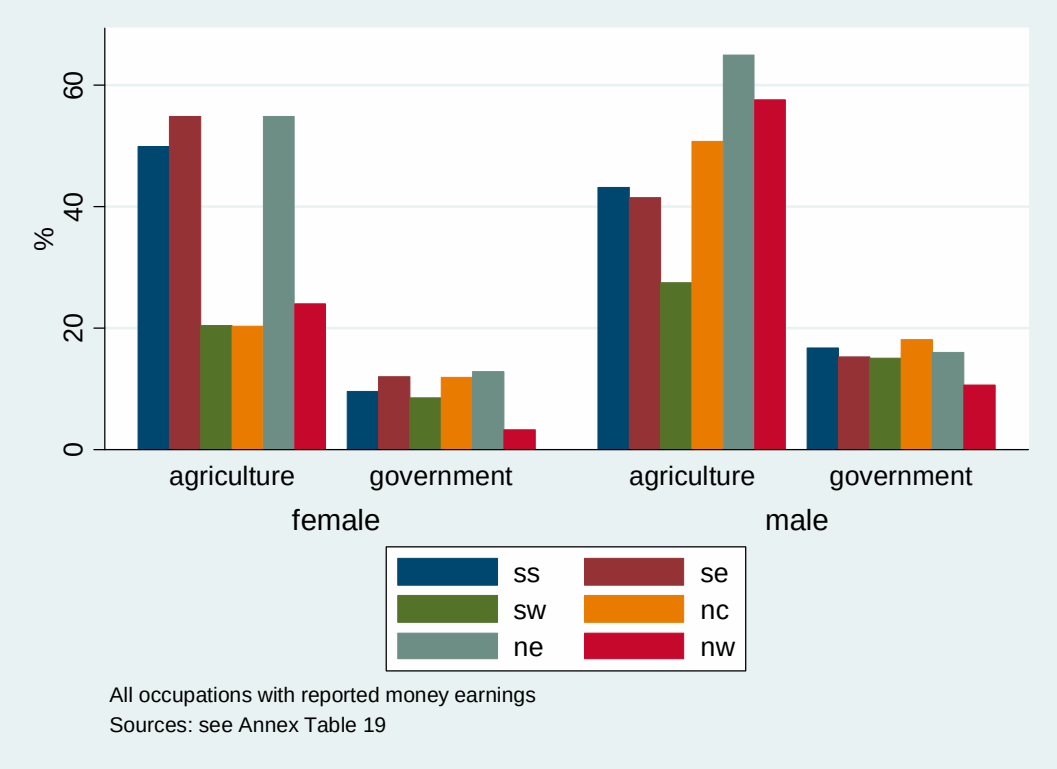
As discussed in section 1, female participation in economic activities is a second critical gender and growth pathway which contributes directly to productivity gains and hence growth. Female labour force participation is mediated through household-level responses to macroeconomic policy and its changes in the process of trade expansion and adjustment (Fontana, Joekes & Marsika, 1998, Fontana & Wood, 2000, Cagatay, 2003); export-led agricultural commercialisation (Floro, 2000, in the Philippines); agro-based industrialisation (Berik, 2000 in Taiwan), and other livelihood coping strategies that drive poor women into the labour force (Nazneen and Barrientos, 2002). Examining the specific impacts of female labour-force participation on growth in different developing country contexts, a range of authors have pointed to the existence of wage discrimination, unequal access to assets, and time poverty, but also to the changing modes of employment, with a move towards greater informalisation and lower levels of job security as a result of shifts in macro-economic policies (Erturk and Cagatay, 1995, Arriagada, 1998, Erturk and Darity, 2000, Seguino, 2000, Beneria, 2001). In the context of the growing poverty in Nigeria and lack of investment in the social sector, including in basic services, informal sector growth (mainly self-employment) has been driving female engagement with the labour force. Against a background of poor access to resources for production, biased access not just to land (Adepoju, Onibokun & Faniran, 1995, Akanji and Ogunwumiju, 2003) but also to credit and technological equipment (Garba, 1997, Aina, 1998) including information and communication technologies (ICTs), and gender inequality in productivity, earnings, and incomes have been reinforced both in the agricultural (Carim, 2003) and the informal sector.

4.2.1 Self employment: The persistent problem of accounting for women's work

Sub-Saharan Africa has experienced the greatest growth in the informal sector over the 1980s and '90s, covering the period of the new wave of globalisation. A majority of women workers in Nigeria are engaged in the informal economy, which generates almost 60 per cent of GNP (USAIS, 2007, Verick, 2005). There has also been a general increase in the number of own-account workers in recent years alongside the proportion of unpaid family workers. Makinwa-Adebusoye (1990), summarising a number of case studies of women's enterprises all over Nigeria, depicts women as own-account workers (self-employed and without paid employees) and labourers engaged in primary and secondary processing and distribution of major national staples such as *garri* (flour made from cassava tubers), milled rice, groundnut oil and *iru* (a popular condiment for flavouring soups and stews). Women also produce assorted ready-to-eat products which are sold from homes, on street corners, at construction sites, etc. and which are of profound importance in all parts of the country, where at least one meal is eaten outside the home each day.

There are significant problems with the nationally-representative survey employment data in terms of the designs of questionnaires, their canvassing, and probably the data entry and processing. While the NLSS and Labour Force Survey (LFS) do not give an

accurate picture of employment, with both surveys under-reporting female earnings from self-employment as well as female household-based non-farm enterprises[18] they do highlight some trends in terms of sectors of employment and the problems of non-recognition of women's work, especially in the north (Graph 14). Two points are worth noting. First, work participation in general is lower in the north than in the south, particularly for females. Second, except for the south-east and North East, where agricultural activity is a dominant activity for women, the majority of women reporting any waged income are self-employed (overall, the proportions of self-employed females and males are about the same), and are less likely to be in waged employment than men, especially in the higher earning government and private sectors.



Graph 14: Proportions of adults reporting employment, by region

While strong regional variations do exist – women in the southern zones are more likely to have reported employment earnings than those in the northern zones – the findings from qualitative and small-scale inquiries show that women in the north are very likely to have earnings from self-employment (Box 5). This is confirmed by the high share of self-employment earnings among those women in the north who do report employment earnings.

[18] For example, section 11 (Household non-farm Enterprises) of NLSS, 2003/4 does not report many northern females being responsible for non-farm household enterprises.

Box 5: Women's non-farm employment in the North

As substantiated by the literature though under-reported in the statistics, nearly all women in the northern states of Kano and Bauchi are engaged in some form of income generation, mainly based on processing and trade.

Dakatsalle Women Farmers' Cooperative, Kano State

The association was formed 4 years ago with 25 members to enable the women to access subsidised credit and benefit from government subsidies on fertilisers and other inputs. Apart from the association leader, however, none of the women utilised the money for farming; they all invested it in their home trades. One purchased a sewing machine and stocked up on thread from the N20,000 she received from the group funds; another woman purchased bags of rice during the harvest season for resale when the price was higher. Even the association leader invested the bulk in her gurasa (local bread) business. She reported that money invested in farming did not yield any significant benefits due to lack of personal control, dependence on hired labour and the early cessation of rains that year. However, she realised a considerable profit from her home-based micro bakery, as did the others from sewing and trading.

Abujarama women's group, Dass LGA, Bauchi State

This group of Muslim women was formed in 2004 with 25 members, with the objective of improving their economic activities. Earlier too they had engaged in petty enterprises or provided services such as washing clothes for others, milling rice, selling firewood from the house and so on, or saved small sums of money given to them by their husbands for the home. Yet with many children and the inability of their husbands to provide enough, the women felt the need to earn more. One woman narrated how 'when the children were growing up, they would come home and ask for pencils or books. I could not give them these and this distressed me, so I decided to earn something too and took up trading'. The women are now into rice processing and trading processed food. While they cook the food, they send their children to hawk, due to the practice of seclusion. They feel comfortable with such home-based activities which are easier to combine with their domestic work.

Women's Development Centre, Gwale, Kano

In a meeting with the Islamiya class, all the women present reported being engaged in some income-generating activity or the other – processing food, making beancakes, tomato-chilli paste or noodles, selling cold drinks etc. Their children sell it for them; some take it to the primary school, some to the markets, and in some cases the customers come to their homes. It gives the women independence and dignity, as they find it shameful to constantly have to ask their husband for every little thing. Further, with poverty and inflation men's income is not sufficient to run the household. Sharade's husband was working in a tannery but was laid off two years ago, and now engages in casual labour. Another woman's husband, similarly laid off, now sells vegetables.

As evident from some of the examples in Box 5, women's participation in the economy cannot automatically be seen as a positive trend, but is often a strategy for survival in the face of rising costs and declining male incomes. While structural adjustment reforms led to an expansion of trans-border trade on account of the liberalisation of commodity and currency markets (and the devaluation of the naira, the currency of Nigeria), this can also be seen as a result of the decline in local livelihood opportunities

and incomes. Transborder trade, however, has undermined local food security and agricultural development initiatives by siphoning off subsidised inputs to neighbouring countries on the one hand (Meagher and Ogunwale, 1994), and importing wheat flour and rice on the other. Worse still, the importation of cheap Asian manufactured goods has crippled local manufacturing, which is unable to compete with the imported goods in the face of high production costs (Hashim and Meagher, 1999, Meagher, 2003), leading to high levels of retrenchment of the labour force. Interviews with female traders of goods from Dubai in Lagos made it clear that several had been driven into this trade due to lack of alternate employment, in some cases through retrenchment from public employment, but also that much of this trade remains unofficial with hardly any policies or infrastructure to support its growth (Box 6).

Box 6: Impacts of policy on Nigerian businesswomen

Having started in the early 1980s, the Dubai trade flourishes around a range of textiles, cosmetics and leather goods, with more than 2,000 women in the Dosumu market in Lagos engaged in this business. Women traders travel to Dubai to source their goods approximately once a month; sometimes three or four close friends or relatives join together and take turns in this to reduce costs. To run this business effectively an estimated capital amount of 5000-10,000 USD (500,000-1,000,000 naira) is required. This is too small an amount for the commercial banks and too large for the micro-finance banks, which further charge a very high rate of interest. Most of the women depend on their families and friends for capital for their business. Five years ago when the market was booming this may have been affordable, but not any more.

Recently China has spoilt the market for us: the clothes we bring in at $15 per yard, a Chinese will bring into the country at $2 without paying taxes or duties, thus the policy of the government to ban importation of some textiles and allow China to bring in inferior goods without caution, especially in the last three years, has crippled our business (female Dubai trader).

Apart from customs duties, the state also imposes several fees including the recent 'lock up shop fee', despite the fact that state provision of either security or infrastructure is minimal and shopkeepers have to arrange for everything themselves, including diesel to run the generators in their shops. The local government is renovating and selling the shops at Tejuosho market at 4-5 million naira per shop, but this is clearly far beyond the means of the women.

Policies and strategies, ill-conceived for their gender effects, can thus push women to dire levels of poverty rather than promoting their entrenched economic enclaves. In Cross Rivers, the construction of the Tinapa tourism complex raised much hope for employment but has left agricultural populations without livelihoods or compensation, pushing women and youth into deeper poverty while also encouraging risky behaviour (see Box 8). Having lost both their land and fishing to the complex, many young women engage in sexual activities to earn a living. In Lagos, modernisation of traditional markets such as Tejuosho has thrown women, who historically predominated in commerce, out of business due to the escalating costs of modernised

commercial properties. Open-trade policies similarly affect the profitability of women's trade as other supportive strategies are lacking.

Male unemployment seems to be breaking any cultural barriers that may have existed against female economic participation. Men are hardly able to provide for women, who have no option but to trade in the markets to support themselves. Even in Kano, while women are largely engaged in home trade and provision of services, several of them have entered these occupations in the last few years as a result of male retrenchment from manufacturing jobs. As Adamu (1999) notes, the economic crisis has a corresponding effect on increasing the participation of women in purdah in economic enterprise in order to supplement or meet the needs their husbands are unable to fulfil.

The discussion on cross-border trade however points to the fundamental element of diversification of livelihoods, of people using all opportunities available to them to make a living, particularly in the context of an unstable agricultural sector and declining manufacturing sector. In a detailed village study in Hausaland (Kaduna district), Meagher (1999) found not just a high level of diversification involving both men and women (though within the limits of seclusion), but more importantly, a positive association between household size and accumulation reflected in the ownership of assets acquired through participation in both farm and non-farm activities. We heard this justification for larger family sizes frequently during our field visits in both Bauchi and Kano States. The story was as follows: children all have different abilities, so having a large number ensures that at least some will get an education and go into professional careers, helping their siblings, while others engage in agriculture to ensure supplies of food and basic necessities. Women play an important role in agricultural processing and small-scale trade, usually transacted through their husbands or children, as well as in raising livestock. This element of mutuality and sharing was bolstered with recourse to an Islamic injunction that calls upon both parents and siblings to give freely rather than considering provision a burden, as this leads to abundance from Allah. Not taking into account the linkages between state policies, material livelihoods and household relations has perhaps been a key reason for the failure to reduce both poverty and fertility levels, especially in the north, which in turn limits the impacts of growth.

4.2.2 Agriculture and services: Neglecting women's needs

In terms of women's participation in the labour force, agriculture comes second to self-employment, followed by the services sector. A study by Chikwendu and Arokoyo (1997) was conducted in 17 states in different agro-ecological zones of the country to determine the roles of Nigerian women in promoting sustainable agricultural production. The results showed that over 90 per cent of the women were involved in farming; even in the Muslim-dominated states where purdah is practiced. About 64 per cent of the women were involved in crop production only, 48 per cent in both crop and livestock production and only about 4 per cent in livestock only. Most were involved in processing and marketing. The results also indicated that women farmers were actively involved in all farming operations, although to a lesser extent in land clearing (12 per cent) and land preparation (18.6 per cent) on family farms. They were highly involved

in planting, weeding and fertilising, and totally responsible for processing, with little or no appropriate labour-saving devices or technologies to employ in these labour-demanding and time-consuming tasks.

The service sector does not provide as much employment space for women in Nigeria as it does in other semi-industrialised countries. In developed countries 60 per cent and in Latin America and the Caribbean nearly 75 per cent of working women are employed in this sector, compared with just 30 per cent in sub-Saharan Africa and southern Asia. Data from national manpower surveys show that since the period of structural adjustment, female employment has been on the rise in the public sector yet remains far below that of men.

What is clear is that both women and men are active economic agents engaged primarily in trade and agriculture, and less so in other services and crafts or petty manufacture. There are however differences in the nature of their engagement, with women in the north – other than widows, separated and post-menopausal women, who are allowed to go out of their houses to farms and other public places – mainly trading from their homes, while those in the south are more visible in public spaces and in commercial activities, including import businesses. Yet there are few interventions in terms of technological innovations or financial or other services that focus specifically on the gendered division of activities and respond specifically to women's needs that could potentially facilitate their participation in the labour force (see discussion in section 4.3).

4.2.3 Employment sector and wage discrimination cause earnings gaps with negative effect on growth

One of the objectives of our analysis of the employment data was to explore the gendered employment patterns and wage gaps, by sector of activity, educational levels and other variables (ethnicity and so on). We were particularly concerned to explore the hypotheses in the gender and growth literature that women face discrimination in the labour market in terms of the sectors in which they are employed and the wages they earn. Despite data problems, we have attempted to explore these relationships through Mincerian wage equations (see Appendix 3: Microeconomics Report for a detailed explanation of the method).

Column 1 of Annex Table 20 shows a simple model of education and earnings; we take the log of earnings reported in the main activity and regress it (adjusting for clustering) on levels of education, with controls for length of work experience[19] and zone. As expected, education has a strong positive effect on earnings, which rise steadily with level of education. Earnings are higher in the government and private sectors compared to self employment (compared to agriculture). Adding terms for female education in column 2, we see that all coefficients are negative, implying that females obtain lower

[19] Computed as age less estimated number of years of education completed; this is computed from the highest level of educational attainment, and does not allow for repetition.

earnings for equivalent educational attainments. In the case of teacher training and university education, the coefficients are small and not statistically significant. In column 3 the negative coefficients on female education all become non-significant (although still negative). This implies that the lower coefficients on education for women are a product of their low earnings in the self employed sector, and that wage discrimination in the government and private sectors are not significant. Akanji (2005), examining the trends in wage gaps over the period 1997 to 2001, found the gender wage gap to be lower in sectors like retail trade, hotel and restaurants, as well as health and education, which are traditionally female-dominated jobs (
Table 2), and also lower in relation to global trends in wage inequality.

Table 2: Gender wage gap in selected sectors of Nigeria's economy (gender wage gap F earning as % of M)

Sector of economy	1997	2001
Crude oil & extractives	25.8	18.0
Health & social work	96.0	89.7
Estate Activities	93.7	49.3
Post & telecom	42.3	87.9
Manufacture of textiles	39.8	77.9
Manufacture of machines/equipment	45.8	79.3
Retail trade	89.2	102.2
Education	-	85.8
Hotel & restaurants	78.6	90.3

Source: Author's calculations from Annual Sample Survey on Employment, Wages, Earnings; Federal Ministry of Labour and Productivity, Abuja.

However, the lower average level of education and the likelihood that those women who are educated have greater ability than their male counterparts at any level of education suggests that the lack of a positive wage gap in favour of women may reflect some discrimination. Offsetting this argument is the possibility that women may be less productive employees, due to conflict with gendered time allocation and effort patterns which focus their attention on domestic and perhaps 'care' labour (Budlender, 2008). We should note that because the dependent variable is earnings rather than wages, this may also vary because of variations in the amount of time spent in each form of employment; this is particularly likely in the self-employment sector.

Not only are women's earnings apparently lower in the self-employed sector, but they are also particularly likely to be employed in this (self-employed) sector. This is shown in columns 4-7 of Annex Table 20 which report regressions of the probability of employment in each sector. The large positive coefficient of being female in column 6 compared to the negative coefficients in columns 4, 5 and 7 indicate the greater likelihood of female self-employment compared to employment in the government sector (though here the coefficient is small and only marginally significant).

4.2.4 Time poverty curtails female supply response

Despite women's active and near-universal participation in the economy, the benefits of participation in economic activity remain largely unequal by gender. This is mainly due to constraints that women face in access to critical resources, especially labour. The major national surveys are not particularly useful sources for the exploration of constraints on women's time allocation because it is difficult to untangle the effects of wealth, education and access to housing utilities. The problems associated with the data on household enterprises in NLSS, from which neither we nor Appleton et al. (2008) can extract usable information, are unfortunate in this respect.

In the absence of both usable time use and village infrastructure data we make inferences about the effects of reducing time and effort famine from the associations of well-being outcomes[20] with household infrastructure such as access to modern water, sanitation, electricity, and cooking fuels. These assets enable significant reduction of the time and effort burden of domestic labour and generally improve the health environment. We would expect households with these assets to have children with higher nutritional attainments, and this is indeed what we find; e.g. Annex Table 21 shows positive and significant relationships between the infrastructure variables and child anthropometric status. However, as with other analyses in this report, access to these assets is confounded with parental education, ethnicity and religious affiliation, and regional and locational variables. Nevertheless, the positive and significant effects of access to modern cooking facilities, water sources, sanitation facilities and electricity on child nutritional status makes clear their beneficial effects. Installing purification and pumping facilities for drinking water as viewed in the Dass LGA, Bauchi State can indeed contribute to growth through both saving women's time and reducing the spread of diseases, and thus improve health status.

When we explore the effects of these variables on female labour force participation, however, the effects are not straightforward. This is likely to be because domestic labour may be readily obtained by those with access to these facilities, and other factors determine whether the woman enters the labour force.

Moreover, some less representative data are suggestive. A study by Akanji (1992) estimated the output lost in agricultural households due to time constraints of women, particularly in meeting household water needs from non-potable sources in Ogun State. The net food loss attributed to the inability to increase cropped land area due to labour shortage is substantial. Labour constitutes over 70 per cent of costs (Olayide, 1975, NISER-NAMRP, several volumes, Oxfam, 2008). Therefore constraints related to labour cost and availability continue to dampen the outcomes of increasing female participation in agriculture, or indeed earnings through self-employment (Box 7).

[20] We use height for age, a common anthropometric measure of nutritional attainment as a proxy for wellbeing.

Box 7: The burden of domestic work

A day in the life of Ramatu, Gwale WDC, Kano

I usually wake up between 5:00 and 5:30 am to perform my early morning prayers and then rush to the open kitchen to make the fire and boil water for the children's bath. I have seven children, and two of them are very young so I need to give them their bath myself. We finish the washing up around 6:15 am, after which I prepare breakfast and some snacks which the five older children take to school. As soon as they leave for school, I tie the baby on my back and start cleaning the house. I wash the dishes and the cooking pots and sweep the rooms and the compound and also do some laundry. I also feed the livestock that we keep in the backyard. I usually finish the morning routine around noon, just in time to start preparing lunch before the children return from school. In between these activities, I breastfeed the baby and attend to the needs of the restive toddler. After lunch and a little rest or play, the children prepare for their afternoon Islamiya classes at 3:30 pm. I then perform my Asr [afternoon] prayer and start tidying up again. I go through the same round of chores which now end up with dinner preparations and cleaning up. When my husband returns from the market in the evening I serve him dinner and also attend to his needs. My day usually ends around 10:00 pm after putting the children to bed. I do some hair dressing (kitso) in between these chores to earn a little extra income. When I get clients I shelve the day's laundry till another day. I also do some tailoring. When I have clothes to sew, I squeeze it in between dinner and bedtime. My older daughter has now learnt some sewing and helps me during the weekend.

Several other studies (WORDOC, 1995, Akin & Salau, 1992) also reveal that women have been more affected than men by the myriad of environmental problems facing Nigeria because of the nature of their domestic and vocational activities. The following are distinct arguments presented to illustrate the impact channels of the environment on women's ability to respond to labour market opportunities and gender relations more broadly:

- Desertification leads to deforestation and scarcity of firewood. This increases the time spent on fuel collection, especially by women. Also, pollution, especially from firewood smoke, affects primarily women's health;
- Oil spillage drastically affects the means of livelihood of women living in fishing communities. It leads to scarcity of drinkable water and intensifies the tasks of women and girls in sourcing water for household uses.

4.2.5 Summary and recommendations

Employment is perhaps the most important driver of economic growth. Data problems have somewhat hampered the analysis of employment patterns, yet what is clear is that except in the South West, female participation in the labour force is lower than male participation in all parts of the country, lowest in the North East and North West. Of the women reporting participation, a majority are self-employed followed by those working in agriculture, both sectors with lower returns than either government or private employment. While approximately 10 per cent of women are in government

employment (with the exception of the North West), their engagement with the private sector remains minimal. There appears to be little wage discrimination in government and private employment by gender (although females seem somewhat disadvantaged in access to government and especially private sector employment), yet this is not the case in the self-employed sector, where women are strongly disadvantaged in relation to men.

Apart from the lack of access to assets discussed in the next section, a major reason for this disadvantage relates to the fact that most self-employed women also deal with domestic work, including the care of children, elderly and the sick, limiting the time they have available for employment and consequently earnings. Work burdens are often enhanced due to a generally high cost of living in the face of declining incomes, but also lack of basic services and infrastructure provision, especially water, power and transportation. Clearly, if the issue of informality of work and women's lower earnings has to be dealt with from a gender perspective, several policy measures are required:

- strengthen the quality of survey data on women's work (including home-based activity) in terms of conceptualisation, instrument and sample design, conduct and supervision, data processing, analysis and reporting;
- develop a package of support for women's informal enterprise in terms of provision of licenses, insurance cover including health insurance, adequate credit provision at reasonable rates of interest, mortgage facilities for commercial premises, infrastructural facilities in the markets (safety, power and transport) etc;
- arrange for provision of household infrastructure and services such as drinking water, fuel and improved sanitation, as well as simple labour-saving devices, to ease the performance of domestic work burdens and reduce time poverty.

4.3 Access to productive assets

4.3.1 Increasing insecurity of land access

Studies reviewed show that women are seriously disadvantaged with regard to land acquisition and development in Nigeria, by virtue not of the law per se but of deeply entrenched socio-cultural (including religious) and economic factors. While there are no written legal enactments working against women's access to urban land allocation and use – and in fact their access to land appears to have improved with urbanisation, the spread of western education and the influence of colonisation – there are longstanding cultural practices which constrain (to various extents) women's claims to land and their engagement with the modern economy (Onibokun et al, 1995).

Although the participation of women as direct producers has continued to increase, they still face land restrictions even when growing tradable crops; farm smaller and more fragmented plots; have less secure access to farmland and walk greater distances to their plots than men. In certain states like Oyo State Dorosh and Akanji (1987) found that women cocoa farmers occupied marginal lands and sometimes encroached onto forest reserves to farm. A study by NISER (2001) of the Cross Rivers Forest

Management Programme found that women were the *de facto* farmers but that they also depended a lot on non-timber forest products for their livelihood because they lacked access to farmland for cultivated agriculture. Chikwendu and Arokoyo (1997) found in their study that the majority of women neither owned nor possessed land, nor did they have adequate funds for farming. Although women did most of the farm work, it was men who made decisions on what to grow and what inputs to use. Men also controlled the proceeds from the family farms.

The implications of this on growth are far-reaching, as women farmers achieve relatively lower outputs and lower returns to labour and other inputs. This is in spite of the fact that women's role in agricultural production has become increasingly important in the entire West African sub-region as men respond to market opportunities (as in southern Nigeria), and as out-migration takes them away from the farm (as in the Sahelian areas). Women are also more important as processors and retailers of food products (IIED, 1999). This is reflected in Akanji's study (1997), which notes that the gender of agricultural workers is predominantly female, yet women 'sow on borrowed land'. SAPs have intensified their agricultural roles, yet have restricted access to production inputs while making access to land more competitive in a situation of growing agricultural commercialisation.

Even in the urban context, Akanji and Ogunwumiju (2002) found that more women utilise commercial land space as users rather than owners in South West Nigeria. In the last few years many women have been coming forward to get their land occupancy registered in Lagos; this is essential for securing loans from banks to expand their businesses (interview with the Deputy Registrar, Land Bureau, Lagos, August 6 2008). While there is an attempt to streamline the land registration process, procedures are still cumbersome, especially in relation to establishing occupancy. In the private land market, women were found to have more access than in government land markets; however, the cost of land being higher, affordability becomes a crucial issue.

Box 8 presents the current employment situation of a community in Cross Rivers State which has been displaced from its land, which was taken over for a large tourism project. The hope still is that the project will compensate for the loss of land by creating jobs; however, at the moment many women are left in a very vulnerable situation.

Box 8: The fallout of tourism in Cross Rivers: displacement, HIV/AIDS and trafficking

Adiabo community is a settlement adjoining the newly-built Tinapa Resort. Extensive land was taken from the community in 2003 for the project, and while some compensation was negotiated with the chief the women at least did not participate in this process, nor did they see any part of this compensation package. While a majority was earlier engaged in farming in addition to fishing and petty trade, they have now lost their farms; fishing too has been reduced as one of the creeks has now been taken over by the resort. During the construction of the resort, youth from the community were employed as contract workers, women sold a great deal of food and drink to the workers, and commerce in general increased. Since construction has been completed, however, they are not allowed inside, jobs have not expanded and the youth are unemployed and frustrated. Girls in the community were trained in catering skills in readiness for the commencement of services at the Tinapa hotel, but this is yet to happen. While there are shops inside the complex, these are expensive and beyond their reach. One woman with ten children noted that they had had enough food before Tinapa came. Now her husband is old and cannot work, three of her children are young and another three unemployed. While four children work away from home and do remit money home, this is not regular, so she manages the daily expenses at home mainly through selling fish. They are still hoping that once the resort is fully operational opportunities will expand and their lives improve.

While perhaps not directly linked to tourism but rather to the high cost of living encouraged by tourism, a large number of adolescent boys and girls from the Ekori Community (Yakurr LGA) drop out of school to work in Lagos and other parts of the country. While a majority are trafficked in the first instance, moving to Lagos without the consent of their parents and taken by taskmasters to camps from which they are picked up by employers, a few are able to build up contacts at their destination that facilitate independent migration in the future, with the potential for better returns. Our fieldwork suggested that boys were often physically beaten and not given enough food to eat, while the girls were sexually abused, often returning home ill or pregnant. They hardly received a fraction of the wages due to them. Yet they continued to go year after year, and other children followed too, as farming was not productive, they needed money for their education and other needs and everything was becoming more and more expensive by the day. Their parents were unhappy, but in a context of poverty and subsistence agriculture with hardly any resources to invest in their children they had little control over their decisions. As one of them said: 'If the government provides inputs that will help improve output and yield on our farms and also credit to help expand our farm operations, then the children may be encouraged to stay back and work on the farms'.

4.3.2 Inadequate access to capital

Capital and credit are major constraints to growth, and as a host of writers have noted (c.f Cornwall, 2002, 2007, Meagher, 2006, Igodan, 1994), a majority of women depend on their husbands and other relatives to provide them with assistance for investing in inputs and labour. Food processors, according to Makinwa-Adebusoye (1990) rely on

two main sources of capital: (i) personal savings or proceeds from the sale of their own property; and (ii) gifts and/or loans from husbands and other relatives. Women are rarely able to secure credit from institutional sources such as banks and government-sponsored credit schemes, including cooperatives, because of cumbersome and unfavourable bureaucratic procedures as well as the high interest rates charged on credit. Women traders' associations which operate informal ROSCAs, however, have emerged as a source of support for many women, especially in the south. Recent developments in micro-credit programmes have the potential to improve women's access to credit although the amount of credit available to them remains relatively small and interest rates high. As Iheduru (2002) notes, women are given a smaller loan ostensibly because they are considered to have a lower capital absorptive capacity than men, owing to the prevalence of patriarchal forms of business regulations that disadvantage them in terms of engagement with high-productivity activities (Box 9).

Box 9: Access to credit or the lack of it: women traders in Lagos State

Country Women's Association of Nigeria (COWAN), Makoko Market, Lagos

COWAN consists of 25 groups of crop and livestock farmers producing rice, corn, vegetables, cassava, fish, sheep, goats and poultry. COWAN gave them a loan of 1.7 million naira five years ago from a microfinance bank. This was distributed amongst all the groups, depending on their needs and capabilities, at an interest rate of 20 per cent over 4 months. The women complained that the interest rate was high and the repayment period too short so there was no gain for them. They are presently negotiating longer repayment periods with COWAN. There have been several attempts to access credit from the agricultural banks, which have a lower interest rate of 8 per cent, but these have largely failed. The agricultural banks require religious leaders and community heads to stand in as guarantors before the loans can be accessed, and people in these categories are not disposed to do this. The rice farmers' group was an exception, and was able to access some funds due to political connections, but even the money that they received was not sufficient, so they went to LAPO (Lift Above Poverty Organisation), a micro finance bank run by an NGO, for additional funds. The interest rates, however, are high, and they are able to retain profitability only by using improved technology and growing exotic varieties of paddy that fetch a high price. For the majority, capital is sourced from the contributions made in the various associations. The women contribute N100 weekly to their association and take turns to ask for the money in bulk when the need arises.

Akinola (2005) notes that in the cocoa marketing sub-sector, while there are no gender segregation practices that serve as barriers to entry into the cocoa business, gender discrimination is widespread regarding access to credit; hence women's mean gross profits are lower than those of their male counterparts. Awoyemi and Adekanye (2005), in their gender analysis of economic efficiency in cassava-based farm holdings in South West Nigeria with a view to examining the degree of gender differential in access to productive resources and its implications for the output lost due to the apparent misallocation of inputs across cassava farms controlled by men and women, also found that the major constraint facing women was their overall low-income status and low access to capital for investment.

4.3.3 Technology

In considering access to, application of and returns from technology in a study conducted in Gwer East local government area of Benue State, Akanji (2003) found that access to technology (especially knowledge-based) appears to be better for male than for female farmers. Male farmers were also found to be better adopters of technology, although its use by both male and female farmers was similarly low. While women were mainly constrained by credit and the time to learn modern skills, for male farmers the major constraints were the high cost of materials and the inaccessibility of technology development agents in the farming areas. While both men and women suffer some form of constraint in their access to technology, nevertheless their scattered plots, the small size of landholdings and the demands of domestic labour appear to affect women farmers more negatively. Taiwo (1997) further notes that while women play a major role in food processing, preparation and preservation, the techniques employed are time-consuming, laborious and inefficient. Often they do not even respond to women's needs (Box 10). The implications of these findings can be observed directly at the household level, where women have to spend more hours preparing and processing foods for storage. Work at this level is of course rarely remunerated, and the fact that it is done without utilising labour- and time-saving techniques constrains women's potential for participation in productive work, and in turn household decision making, even further.

Box 10: Technological interventions: rarely responding to women's needs

Groundnut oil extraction, Kademi village, Gaya local government, Kano

The case of Tabawa, a middle-aged woman, illustrates the disastrous and tragic consequences of the introduction of inappropriate technologies. In 2006, the village extension officer announced the availability of a groundnut extraction machine available for sale at Kano Agricultural and Rural Development Authority (KNARDA) to women's cooperatives at a cost of N250,000, with an initial deposit of N50,000 by the association. Tabawa's group lacked the cohesion to enable them to raise such a large sum at short notice, so KNARDA decided to give the machine to any member of the association who would make the initial payment. Tabawa and her friend decided to jointly mobilise the initial sum and pick up the machine. So she sold one of her two farms and her friend sold an ox to raise the money. As soon as they made the initial deposit, the machine was delivered and installed. The total cost was subsidised by government by about 8 per cent. Hardly a month later, Tabawa's bangles got entangled in the rotating blades of the open mouthed extraction tunnel of the machine and her right hand was completely crushed. After prolonged and costly hospital treatment she has resumed production, but she has lost the use of her right hand permanently. The irony is that the amount of money generated by the machine is less than the N200-300 she was earning from her previous business selling ganda (a traditional delicacy made of meat) and groundnut oil cake. One of the reasons for the low earnings is that the machine is designed for large-scale oil extraction, but most of Tabawa's customers are operating on a small scale. The cost of running and maintaining the machine is also high since diesel now costs N800 per gallon. The machine is expensive, its safety measures inadequate, and it carries no guarantee or insurance provision.

Okurikang Women's Multipurpose Co-operative, Cross River State

As a result of Mr. Asibong's exposure in Lagos and the presence of other oil palm processing mills in Okurikang, the idea of a garri (processed cassava)-processing mill emerged and a co-operative was formed for this purpose and registered. The co-op approached the Agriculture Development Project (ADP), who linked them with the International Institute of Tropical Agriculture (IITA), which set up a cassava processing unit at its own cost. Asibong took the initiative because, according to him, he wanted the women to be productively engaged so they would not think of going into prostitution. He had heard a lot about HIV/Aids in Lagos. Operating the equipment is physically demanding, hence the women are unable to do it themselves and have employed a young man for the purpose. The main benefit to the members is the cash discount they get for processing their cassava at the unit in comparison to non-members. While the equipment cannot be handled by the women, fortunately in this case it was installed at IITA's expense and as a grant from them, so the capital does not need to be repaid. If this had not been the case this project would also have been non-viable.

Apart from agriculture and processing technologies, which have by and large failed to make a substantive impact on either productivity or time, what is less discussed are the implications of other labour-saving technologies for growth that can relieve the constraints on women's time. The issue of the provision of basic infrastructure and

services such as a regular supply of clean drinking water, improved sanitation facilities and fuel-efficient stoves has already been mentioned in the section on time poverty.

4.3.4 Summary and recommendations

A major reason for women remaining at the lower levels of the informal economy appears to be lack of access to a range of productive assets: land, credit, technology, or indeed skills, and time. This leads them to operate a smaller scale of activity with a lower resource base, denying them some advantages of scale including higher profits and the opportunity to cultivate certain crops or enter particular trades. Competing demands for land have made both access and control insecure. Credit is a major area needing attention. Adequate-sized loans with reasonable interest rates and flexible collateral arrangements need to be ensured. While micro finance banks are relatively accessible to women, the loans are small and interest rates high and thus do not meet their needs. Similarly, technologies need to be sensitive to women's needs, focusing on saving both their time and their labour while enhancing productivity, especially in activities in which women specialise. Additionally, training in relevant skills and the use of technology is an important priority.

There is need to creatively think through the issue of access to productive assets to enhance women's participation in the economy as well as contribute to the strengthening of human capital:

- Strengthen agricultural banks need to be strengthened and give commercial banks a quota to provide women with enhanced levels of credit which is accessible, timely and affordable;
- Strengthen women's access to extension services and agricultural inputs through increasing the number of female extension agents in the rural areas;
- Simplify procedures for the registration of land by women, in particular the process of acquiring a 'certificate of occupancy'.

4.4 Decision making

Finally, women's decision-making power has important implications for both gender equality and growth. There appears to be a clear distinction between the extent of women's involvement in decision-making at the different levels of the home and the public space, and this varies regionally. While women in the south are much more visible in the markets and public spaces, women's movement is substantially restricted on account of the practice of seclusion in the north. Yet in both the northern and southern parts of the country women do have substantial control over not just their own incomes but also decision-making at the household level. Adamu (2003) provides substantial evidence from court records in Sokoto that reveals the ways in which women both resist subordination and are able to negotiate their interests at the household level. She identifies the two major fields of negotiation as maintenance and sex. In the South West in particular a large number of women hardly receive any support from their spouses and have no option but to actively engage in making decisions in relation to their own lives and those of their families.

Women's decision-making in the public sphere is however much more restricted. In the north they are hardly visible in market associations or indeed politics. In the south, while trade and market associations – especially those related to agricultural products and processed foods – are dominated by women, their participation in politics is limited. This perhaps also limits their ability to influence the policies of the state or banking institutions in their favour. From a dismal 1 per cent in 1990, women constituted 3 per cent of the members of the Federal Assembly in 2000, rising to 7 per cent in 2007. The nature of politics, with its high levels of corruption and prevalent rent-seeking, are likely to make women hesitate to take part. As a consequence perhaps of women's lack of political voice, policy agendas continue to be gender-blind in practice despite statements to the contrary.

Enhancing women's decision-making power requires the creation of an enabling institutional context wherein they are able to effectively voice their perspectives and exercise agency. Affirmative action to ensure women's adequate representation in politics as well as across other institutional sites is a strategy used in several developing countries including the southern African States, and is perhaps worth considering in the case of Nigeria.

5 Conclusions

5.1 Key findings

Nigeria is a resource-rich economy with an abundant supply of high-quality oil, yet over half of its population lives in poverty, especially in the northern region and the rural areas. Oil has dominated and continues to dominate Nigerian exports and contributes the largest share to its GDP. The dependence on oil has, however, had negative implications for both growth and distribution. Fluctuations in global oil prices have meant that growth rates have also fluctuated considerably. At the same time, the oil economy has not generated investment or employment, or indeed encouraged the development of highly-skilled human capital in the country; on the contrary, it has taken corruption and rent-seeking to unprecedented levels. **The current (post-1999) democratic dispensation is making serious attempts to sterilise the oil revenue shocks,[21] combat fraud and corruption and improve the institutional environment, yet in terms of poverty reduction, employment generation and improving the educational and health status of its population, the record is still poor.** Nigeria still has one of the highest levels of both child and maternal mortality in the world. Policy shifts, especially structural adjustment, have had profound impacts on women's economic participation, largely increasing their participation but also their burden of household welfare. Extant macro-economic planning frameworks (NEEDS) have not given sufficient attention to gender-differentiated distribution of growth, perhaps due to reported figures of lower poverty rates in female-headed households.

We have re-examined the macro-economic evidence relating gender inequality and growth that underlies claims that gender inequality in education causes poor economic and social performance (section 4.1). The simple causal pathway from gender inequality in education to low growth is not supported, and disappears in the presence of poor institutions and resource curse phenomena associated with oil exports. The literature is not conclusive with regard to whether 'good institutions' or high human (including female) capital is more foundational; perhaps the timing and causality vary with context.

The database of nationally-representative information that is of potential use in evidence-based policy analysis is extensive and includes a recent living standards measurement survey, three demographic and health surveys, three multiple indicator cluster surveys, many general household surveys, one core welfare indicators survey and at least one labour force survey. With the exception of the labour force survey, all these surveys are conducted by the Nigerian Bureau of Statistics, which has many other tasks as well. Fewer than a handful of the analyses beyond these official reports have

[21] "The established way to sterilizing fiscal shocks is to put the bulk of oil revenues into financial investments rather than spending them, or removing resource rents from government expenditure (Humphreys et al., 2007:271)."

made significant use of this database. Among the major reasons seem to be limited access to the data; even now only one of these databases (NLSS) is publicly available, and that only since June 2008. A further and perhaps linked problem is the quality of the data when available. This is most obvious in the difficulties linking different files from the same survey,[22] but is also plain in the numerous errors in data (stray codes, extreme values, inconsistent coding schemes), missing data, even missing sections of surveys, as with the village infrastructure component of NLSS, and so on. These problems present major obstacles to potential policy researchers, severely restricting the use of these resources.

Much attention has been paid in the growth literature to the role of female education in driving growth. The effect of female education can be both direct and indirect: through enhanced productivity in waged or income-earning activities on the one hand and improvements in maternal and child health, associated with a downward shift in fertility, on the other. However, the evidence in Nigeria is mixed (section 4.1.3). Further, despite the recognition of the importance of education, Nigeria is nowhere near achieving universal education, even at the primary level. There is of course huge regional variation; in general the south performs better than the north, with over 80 per cent attendance rates for both boys and girls at primary level in comparison to 50 per cent for boys and 40 per cent for girls in the North West and North East zones. Apart from the overall lower educational level in the north, the gender gap too is larger in the north than in the south, making girls in the north the most disadvantaged in terms of educational access and achievement. Interestingly, though not surprisingly, there is a sharp decline in school attendance by both boys and girls beyond primary level across the country. While the gender gaps again are not substantial in the south, in fact favouring girls in the south-east, the pattern for the north continues to disadvantage them by over 10 percentage points, similar to the primary level.

Given that educational achievements have been low, their growth impacts too are not clearly visible. In terms of employment, women's concentration in the self-employment sector almost wipes out any effects of education on their earnings, as the low returns to self-employment contribute to the lower returns to female employment in general. The exception is perhaps higher education, including university education and teacher training. While field experience suggests that women tend to concentrate at the lower end of even the self-employed sector, a contributory factor in low earnings is also the burden of domestic work, not eased by technological or infrastructural improvements. In terms of the indirect effects too, the growth impacts are not clearly visible. Fertility rates continue to be high, ranging from an average of 4-5 children in the south to 5-7 in the north, as do infant and child mortality rates, despite an improvement in educational levels, especially in the south (section 4.1.3). Substantial changes in these indirect benefits appear to occur only once the mother has completed her secondary education.

[22] This applies particularly to the NLSS and GHS. MICS, NDHS and CWIQ identification codes do not suffer from this problem.

While ignored in the growth literature, the issue of male education too emerges strongly in this analysis, more in relation however to infant and child mortality than to fertility rates (section 4.1.1.2). Education is positively correlated to men's earnings; hence apart from influencing health-seeking behaviour ideologically, access to health services also becomes more affordable. Cost is a major factor that appears to constrain people from seeking medical attention, contributing to the high mortality rates.

Fertility, however, appears to be additionally influenced by cultural and perhaps religious norms. Ethnicity (rather than, or in addition to religion) has appeared as a very important determinant of female education and fertility behaviour and a strong influence on child nutritional status, the odds of being vaccinated, and access to household infrastructure (piped water, electricity, and suchlike). Not only is ethnicity an important correlate of religious affiliation, but it is also important to note that its influence in many cases transcends that affiliation. Thus there is little difference between Yoruba Christian and Yoruba Islamic fertility, even though at a national level there is a big difference. The nature of marital and gender relations in different contexts is another major influencing factor, with fertility often used as a tool for bargaining for resources with spouses, especially in the north, where polygyny continues to be widely prevalent.[23]

HIV is emerging as a major growth issue in terms of its implications for economic participation as well as its demands on health services (section 4.1.4). Interestingly, **education per se does not seem to influence the spread of HIV, linked as it appears to be to poverty and unemployment, rising costs of living and growing aspirations.** Despite state efforts to control the spread of the pandemic, the persistence of high levels of stigmatisation and discrimination appear to be thwarting these efforts.

Employment is perhaps the most important driver of economic growth. Data problems have rather hampered the analysis of employment patterns, yet what is clear is that except in the South West, female participation is lower than male participation in all parts of the country and lowest in the North East and North West (section 4.2). **Of the women reporting participation in the labour force, a majority are self-employed, followed by those working in agriculture**, both sectors with lower returns than either government or private employment. While approximately 10 per cent of women are in government employment (with the exception of the North West), the engagement with the private sector remains minimal. **While there appears to be little wage discrimination in government and private employment by gender** (although females seem somewhat disadvantaged in access to government and especially private sector employment), **this is not the case in the self-employed sector, with women strongly disadvantaged in relation to men**.

[23] This could partially explain why male fertility rates tend to be somewhat higher than female fertility rates (Annex Table 15).

There are several possible explanations for this disadvantage. First, qualitative and small-scale survey data suggest strongly that women generally appear to have lower levels of access to a range of productive assets – land, credit, technology or indeed skills. This leads them to operate on a smaller scale with a lower resource base, denying them some advantages of scale including higher profits. Second, most self-employed women also deal with domestic work including care of their children, the elderly and the sick, limiting the time they have available for their activity and consequently earnings. **Work burdens are often increased due to a generally high cost of living in the face of declining incomes, but due also to a lack of basic services and infrastructure provision, especially water, power and transportation**.

Finally, women's autonomy and decision making has been seen to significantly influence growth. A qualitative analysis of decision making reveals differentiated patterns across regions and sectors. While women continue to be largely absent from the realm of politics, their role in markets varies across regions. In the south, women traders dominate market associations, although interestingly, despite their strength and voice, they are not always able to access resources such as land and credit or to influence banking decisions or state policies, which are very much politicised. In the north, working within the constraints of seclusion practices, while women earn incomes (far greater than reported in the data), they too are hardly able to influence the larger trade and market scenario. In the domestic realm, however, the situation is different: women do exercise agency, though their strategies for bargaining and negotiation are context-specific and variable. Greater female autonomy experienced through women's economic roles is however often dampened by institutional inadequacies such as cumbersome land title registration procedures.

5.2 Policy recommendations

Our recommendations are clustered thematically below; we include some hints as to how it might be possible to implement them.

5.2.1 At the macro-level

Our analysis of the cross-country evidence on the relationship between gender equity and growth indicates that 'good institutions' are necessary requirements for pro-poor, gender-equitable growth; adding gender-aware policies may facilitate the creation of macro-economic management conditions necessary for pro-poor gender equitable growth. This joint requirement is especially pertinent to oil-rich countries afflicted by resource-curse phenomena such as Nigeria. Good macro-economic management, including a well-run oil stabilisation fund, limiting the Dutch Disease phenomena of economic distortions and political and administrative corruption, will facilitate appropriate federal and state-level investment of oil rents in infrastructure and services (power and electricity, water, transport, communications, education and health, law and order, and so on). As these macro policies are implemented at federal and state levels they need coordination across governance levels and appropriate federal monetary and fiscal structures that promote stable, long-term economic investment.

Good macro-economic management will limit the harmful effects of the resource curse on tradeables, especially agriculture and manufactures, and this will have beneficial effects on the employment of less-skilled workers and women.

These recommendations, in addition to those below, can be promoted by enhancing and maintaining evidence-based macro-economic policy capabilities in federal and state governments, universities and think-tanks, the media and civil society.

- Deliberately target investment on non-oil activities, in particular manufacturing and agriculture;
- Strengthen infrastructure development, especially electricity and power supply, transport and communication;
- Substantially enhance investment in the social sectors of health and education;
- Improve accounting of women's work in the national statistics and collect gender-disaggregated data on access to assets, in particular land and credit. This would include measures to strengthen the national macro-economic database including national and state accounts, trade, population, education and health statistics, and adequate gender and environmental accounts.

5.2.2 At the micro-level

In Nigeria poverty and bio-physical indicators of the standard of living such as infant, child and maternal mortality and premature adult mortality of both sexes are dire, yet there is relatively little recent academic policy analysis; there are several usable data sets that are relatively underexploited, in part because of their inaccessibility until very recently. The lack of use of these data means that relatively little is known about their quality, but the analysis conducted here indicates both their potential and some limitations. However, the main message is that there is a need to promote a policy analysis among a broad spectrum of institutions and organisations (government agencies; universities; private sector enterprises and organisations such as employers and trades unions, the media, etc.), and among donors. A healthy and vibrant policy arena will critically examine the relevant national databases and promote demand for and use of good-quality data, and these are a priority for donor funding. Specifically we suggest that it is important to:

- Make official national-level sample survey data publicly available;
- Improve the quality of official data production, possibly by encouraging the undertaking of large scale surveys by other public sector or private organisations such as market research companies.

We have found low levels of human development in Nigeria and considerable gender inequality in most regions, at least in the education sector (section 4.1) and in waged employment (section 4.2). These phenomena are linked reciprocally and through the 'resource curse', as argued in section 2. The challenge therefore is to:

- Improve access to and quality of education up to secondary level across the country – this would include issues of cost, distance, infrastructure, teacher training, materials, community support etc; MDG Goal 3 to be pursued with multi-focal attention to the problems of girls' education;
- Shift from a dual track of religious and 'modern' education, mainly in the northern regions, to a strategy that enables the two streams to be combined;
- Provide special incentives for girls' education, especially in northern regions;
- Promote policies that emphasise access to good quality and relevant vocational training for self employment.

We also found very poor levels of nutrition and health, which in many cases reflects both poor health practices and low accessibility to good quality health infrastructure, especially in the north and in rural areas (section 4.1.2). In the north these problems relate to deep-rooted cultural identities and their interaction with Islamic religious affiliation. While this study could not explore policy alternatives in any detail, it seems important to

- Improve public health care infrastructure and delivery for the poorer sections of the population.

Fertility remains high in Nigeria notwithstanding a strong inverse association of fertility with education and rising levels of education (section 4.1.3). Even in areas of the South West, where the strong association of fertility with education was noted nearly 40 years ago and where education levels have risen substantially since, fertility remains high. In the north, high fertility coexists with very high levels of maternal (and infant) mortality. There are also growing but often unacknowledged levels of HIV/AIDS (section 4.1.4). A number of policy suggestions arise from this analysis; in addition to measures to reduce infant, child and maternal mortalilty there is a need to:

- Address issues of accessibility to health services including good-quality contraceptive and maternity services;.
- Develop strategies for addressing deprivation among existing HIV/AIDS sufferers, for example through employment and nutrition programmes;
- Enhance public sector performance in the education and health sectors through support for civil society-led budget monitoring and evaluation such as Education or Health Watches, using the more rigorous methodologies represented by recent international initiatives on impact evaluation (e.g. International Institute for Impact Evaluation, 3IE).

Despite an apparent recent revival in agricultural production, agriculture and the rural sector generally, the north in particular has remained disadvantaged by first, import-substituting industrialisation policies based on taxation of export crop agriculture, and, more recently by resource curse phenomena. Nevertheless, the bulk of the population and of the poor resides in rural areas, and their livelihoods in large part depend directly or indirectly on this sector. Hence, in addition to our calls for appropriate macro-

economic policies, enhanced infrastructure provision for rural areas and the urban poor, and education and health policies specifically targeting rural needs, support is needed for agriculture and rural non-farm employment through:

- Agricultural and commercial bank and microfinance organisations; credit operations in rural areas;
- Support for women's informal enterprise, including access to extension and training services, agricultural inputs and female-friendly technologies, licensing, insurance, credit, mortgage and infrastructural facilities (personal safety, electric power, transport, etc.);
- Simplifying procedures for land registration, including by women;
- Exploring further the ways in which seclusion practices may obstruct women's contributing to and benefiting from growth and addressing them, including through the provision of household infrastructure and simple labour saving devices;
- Encouraging civil society organisations to produce agriculture and rural 'watches' similar to the education and health watch organisations mentioned above.

As in most societies, females are under-represented in most public and political arenas in Nigeria. Our evidence is supportive of the argument that resource curse phenomena militate against female public participation, particularly by reducing their presence in formal-sector employment (section 4.2), to which political regimes are particularly responsive. Reduced female earnings may also reduce expenditure on and promotion of child welfare and human capital, with longer-term negative implications for growth and well-being. Since there is evidence that positive discrimination in favour of female participation in political office is beneficial in patriarchal political cultures (Goetz and Hassim, 2003; Chattopadhyay and Duflo, 2004), including those associated with the resource curse, it may hence be appropriate to explore ways to:

- Promote women's participation in politics and policy-level decision-making;
- Mitigate the cultural practices that hinder women's autonomy, such as early marriage, and domestic violence through stronger advocacy and strengthening understanding of the link between gender violence and poverty;
- Encourage and promote legal structures that aim to address gender discrimination in the workplace and in access to common property resources.

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Annex 1: Methodology

As indicated in the TOR and proposal, the methodology for this GGA has been fourfold. Each of the four aspects is briefly discussed here. Appended to this report are more detailed reports on the macro and micro-economic analyses, the report of the preliminary scoping visit and a bibliography of literature reviewed.

Scoping visit

Conducted in April 2008, the main purpose of the scoping visit was to hold discussions with DFID and CIDA, the sponsors of the research, and key development partners as well as officials at the federal and state levels in order to gain insights into major local perspectives on gender and growth and secure access to relevant datasets, studies and policy documents. The scoping visit included stakeholder discussions in Abuja, the nation's capital, and in the four states selected for the sub-national study: Kano, Lagos, Bauchi and Cross River These four sub-national studies aimed specifically at developing clearer focal themes for the sub-national studies in these states.

Literature search

Not much material that explores gendered changes in Nigeria in recent years is available through published journal articles and books. A major task has therefore been to locate existing, economic and sociological research that explores gender and growth issues at macro, meso and micro levels, and review and inventory them. An annotated bibliography is being prepared as a separate document.

Statistical review and analysis

Based on our brief review of existing quantitative policy analyses, Nigerian (and West African) secondary data sources and analyses in other Gender and Growth Analysis documents, the statistical analysis has been conducted along the following lines:

Because of the limited availability and scope of national multi-purpose household economic surveys, we undertook a limited extension of the work of Klasen (2002) and Klasen and Lamanna's (2003) pseudo-panel (combined cross-country and time series) analysis of gender, well-being, poverty and growth, focusing on resource-rich economies and using widely-available national level quantitative data. The detailed macro-analysis is presented in Annex 2.

We have undertaken capture and analysis of the major national level household surveys, the Nigerian Demographic and Health Surveys (NDHS), Nigerian Living Standards Survey (NLSS), Multiple Indicators Cluster Survey (MICS), General Household Survey (GHS), and Labour Force Survey(LFS), where accessible and usable, and conducted micro-level, gender disaggregated analysis. Most of these data sets contained data quality problems which limited our analysis. We paid most

attention to gender-disaggregated analysis of poverty, earnings, and child and maternal health and fertility.

Details of this statistical review and analysis are in Annex 3. Because sample sizes limit the analysis at state-level, the analysis has generally been disaggregated to the zonal level.

Sub-national case studies

Given the scattered and rather anecdotal nature of gendered growth in Nigeria, state-level case studies were conducted in Kano (North West), Lagos (South West), Bauchi (North East) and Cross River (South South) states to provide evidence of state-level differences in terms of the gendered implications of growth. The case studies include a review of relevant secondary literature in relation to these states/regions as well as a small-scale qualitative study to complement the limited literature and secondary analysis. The major field method used was focus group discussions with men and women of different categories involved in areas identified as focal themes for the state. The purpose was to understand the ways in which the effectiveness of formal institutions can be affected by the operation of informal social institutions and norms. Separate state-level reports are being submitted with the main report.

Annex 2: Annex Tables

Annex Table 1: GDP decomposition

Year	Agriculture (% of GDP)	Manufacturing (% of GDP)	Oil (% of GDP)
1981	21.18	9.42	21.46
1982	22.98	9.72	17.35
1983	24.23	10.23	13.91
1984	28.38	8.00	15.16
1985	29.05	8.90	16.75
1986	29.56	8.82	13.82
1987	29.66	6.65	25.40
1988	35.00	7.47	21.47
1989	26.10	5.26	35.30
1990	25.57	5.18	37.46
1991	25.63	5.86	37.33
1992	22.67	4.79	46.34
1993	28.68	5.44	35.40
1994	33.00	6.78	24.35
1995	27.28	5.27	39.65
1996	26.41	4.75	42.84
1997	28.83	4.98	38.15
1998	32.94	5.09	27.20
1999	29.69	4.58	32.07
2000	21.83	3.52	47.72
2001	28.31	3.85	35.32
2002	44.13	3.18	26.02
2003	38.59	3.14	32.30
2004	30.48	2.82	37.22
2005	29.02	2.57	38.87
2006	28.50	2.31	37.61

Source: National Bureau of Statistics (2007): Nigeria, National Accounts

Annex Table 2 Human Development Index

Year	HDI index	HDI % chang	HDI Cameroo	HDI Ghana	HDI Togo	HDI Benin
1975	0.321		0.422	0.442	0.423	0.312
1980	0.378	17.76	0.468	0.471	0.473	0.344
1985	0.391	3.44	0.523	0.486	0.469	0.367
1990	0.411	5.12	0.529	0.517	0.496	0.374
1995	0.432	5.11	0.513	0.542	0.514	0.403
2000	0.445	3.01	0.525	0.568	0.521	0.424
2005	0.470	5.62	0.532	0.553	0.512	0.437

Source: United Nations (2008): Human Development Report 2007/2008

Annex Table 3 Education (% persons 5 years and above)

	Zone					
none	nc	Ne	nw	Se	ss	sw
Male	28.1	26.6	33.1	23.0	29.4	28.2
Female	24.6	25.6	30.5	23.6	25.9	27.0
below primary						
Male	28.3	30.4	27.9	27.2	30.3	30.0
Female	21.9	27.0	22.7	25.6	26.3	26.0
primary complete						
Male	10.1	11.4	9.0	9.5	9.5	10.6
Female	7.5	10.5	8.0	9.1	6.9	10.9
secondary complet						
Male	16.8	20.6	18.3	25.8	18.8	20.2
Female	9.9	15.9	12.7	20.6	13.9	16.8
higher education						
Male	7.9	8.6	8.1	10.9	7.7	6.0
Female	4.3	4.9	4.9	6.2	3.9	4.6
other						
Male	8.7	2.5	3.6	3.7	4.2	5.0
Female	10.4	1.7	3.5	2.7	3.5	4.4

Authors' calculations from NLSS, 2003

Annex Table 4: Gender Education Equality Measures

Year	Ratio of Girls to Boys: Primary Education (%)	Ratio of Girls to Boys: Secondary Education (%	Parliamentary Seats held by Women (%)	Female Labour Force (% Total Labour Force)
1990	76	75	1.0	36.20
2000	78	81	3.1	35.47
2001	78	81	3.1	35.17
2002	79	80	3.1	35.15
2003	79	78	5.8	35.16
2004	81	78	5.8	34.84
2005	81	90	5.8	34.70
2006			5.8	
2007	93.6	97.6	7.7	

Source: National Planning Commission (2007): 2006 MDG Nigeria Report and World Bank (2008): World Bank Development Indicators

Annex Table 5: Poverty and Inequality of Consumption (per adult equivalent)

Zone	hcr	pg	pg2	gini
South South	0.410	0.138	0.065	0.392
South East	0.284	0.085	0.039	0.356
South West	0.424	0.196	0.121	0.431
North Central	0.660	0.331	0.212	0.445
North East	0.666	0.276	0.145	0.394
North West	0.621	0.251	0.131	0.420
FCT	0.431	0.145	0.070	0.468
National	0.520	0.217	0.121	0.435

Source: Authors' calculations from NLSS.
Note: Based on population weighted undeflated household expenditure per adult equivalent and state/sector poverty lines.

Annex Table 6: Poverty and inequality by Sector and Zone

		hcr	Pg	pg2	gini
National	rural	0.489	0.172	0.083	0.398
	urban	0.165	0.049	0.023	0.591
Rural	South South	0.489	0.172	0.083	0.367
	South East	0.324	0.098	0.044	0.341
	South West	0.399	0.146	0.077	0.353
	North Central	0.704	0.338	0.209	0.394
	North East	0.762	0.329	0.176	0.339
	North West	0.768	0.328	0.176	0.367
	FCT	0.645	0.233	0.118	0.343
Urban	South South	0.268	0.078	0.032	0.388
	South East	0.165	0.049	0.023	0.360
	South West	0.429	0.206	0.130	0.445
	North Central	0.579	0.318	0.218	0.499
	North East	0.481	0.175	0.086	0.399
	North West	0.383	0.126	0.058	0.385
	FCT	0.222	0.059	0.024	0.411

Source: Authors' calculations from NLSS

Annex Table 7: Poverty among female headed households

	National	Female Headed Household			Proportion of persons who are poor	
Zone	hcr	hcr	Pg	pg2	Female	Male
South South	0.410	0.371	0.122	0.056	0.404	0.415
South East	0.284	0.248	0.075	0.034	0.269	0.301
South West	0.424	0.362	0.150	0.083	0.406	0.442
North Central	0.660	0.715	0.462	0.337	0.661	0.659
North East	0.666	0.515	0.192	0.100	0.664	0.667
North West	0.621	0.321	0.109	0.050	0.612	0.629
FCT	0.431	0.100	0.040	0.016	0.428	0.434
National	0.520				0.507	0.533

Source: Authors' calculations from NLSS; see appendix 3 Tables 13 & 14.

Annex Table 8: Coefficients of HHH and Spouse's Education on Welfare

Dependent variable = ln (monthly adult equivalent expenditure)	Regression				
	Without spouse	With spouse		Female hhh with spouse	
	hhh	hhh	Spouse	hhh	spouse
Incomplete primary	0.096*	0.106**	-0.047	0.085	0.273
Primary	0.128***	0.124***	0.007	0.113	0.782*
Incomplete secondary	0.134***	0.109**	0.052	0.141	-0.189*
Secondary	0.231***	0.173***	0.166***	0.355***	-0.053
Teacher training	0.289***	0.237***	0.288***	0.377**	0.000
Polytechnic	0.441***	0.334***	0.023	0.654***	0.000
Quranic	0.056	0.036	0.226***	0.058	0.000
University	0.793***	0.594***	0.447***	0.921***	0.358*

Source: Author's calculations from NLSS.

Annex Table 9: Regression Models of Welfare and Poverty, Nigeria 2003/4

	OLS	SVY OLS	Tobit	SVY Tobit	Logit	SVY Logit
Dependent variable	Log of monthly per adult equivalent expenditure				poor	poor
Social capital variables	1	2	3	4	5	6
Community program	0.057***	0.039*	0.064**	0.052**	-0.122***	-0.072
	(0.010)	(0.017)	(0.011	(0.019)	(0.036)	(0.057)
Affected by conflict	-0.120***	-0.122**	-0.124**	-0.107*	0.342***	0.309*
	(0.028)	(0.041)	(0.029	(0.043)	(0.093)	(0.138)
Affected by crime	-0.180***	-0.140**	-0.132**	-0.099	0.308**	0.107
	(0.033)	(0.054)	(0.036	(0.054)	(0.117)	(0.178)
Has access to loans outside the household - reference definitely not						
definitely	0.243	-0.058	0.436*	0.029	0.496	1.997*
	(0.163)	(0.322)	(0.172	(0.356)	(0.560)	(0.985)
probably	0.460**	0.217	0.578*	0.377	0.541	1.711
	(0.167)	(0.334)	(0.176	(0.364)	(0.571)	(1.002)
unsure	0.319	0.053	0.528*	0.241	0.220	1.250
	(0.194)	(0.390)	(0.204	(0.428)	(0.657)	(1.164)
probably not	0.225	0.021	0.496	0.280	-0.253	0.640
	(0.257)	(0.515)	(0.274	(0.578)	(0.895)	(1.580)
One has to be alert or someone is likely to take advantage of you - reference disagree somewhat & strongly						
strongly agree	0.407	0.076	0.230	0.144	-0.921	0.068
	(0.224)	(0.449)	(0.238	(0.500)	(0.777)	(1.426)
agree somewhat & strongly	0.232	0.083	0.351	0.192	-0.716	0.585
	(0.226)	(0.445)	(0.238	(0.495)	(0.775)	(1.420)
neither agree nor disagree	0.414	0.166	0.162	0.247	-0.405	0.246
	(0.240)	(0.476)	(0.251	(0.528)	(0.823)	(1.533)
disagree	0.588*	0.327	0.239	0.581	-0.775	-0.991
	(0.250)	(0.498)	(0.261	(0.556)	(0.850)	(1.579)
Would you contribute to a project that did not benefit you but did benefit others - reference very unlikely						
will contribute	-0.305	-0.014	-0.240	-0.064	1.306	0.690
time & money	(0.242)	(0.490)	(0.274	(0.560)	(0.881)	(1.534)
time only	-0.755**	-0.545	-0.409	-0.525	2.218*	2.208
	(0.268)	(0.543)	(0.298	(0.613)	(0.961)	(1.668)
money only	-0.514	-0.340	-0.208	-0.340	2.501*	2.718
	(0.273)	(0.531)	(0.306	(0.617)	(0.988)	(1.704)
not answered	-0.277	-0.161	0.659	0.093	1.749	1.671
	(0.376)	(0.764)	(0.411	(0.842)	(1.330)	(2.344)
People here are ready to help - reference disagree strongly						
strongly agree	0.071	0.146	0.050	-0.003	-2.287**	-2.770
	(0.255)	(0.462)	(0.228	(0.497)	(0.824)	(1.673)
agree somewhat	0.123	0.155	0.096	-0.083	-1.506	-1.905
	(0.260)	(0.479)	(0.236	(0.518)	(0.848)	(1.703)
neither agree nor disagree	-0.313	-0.113	-0.106	-0.344	-1.539	-1.058
	(0.257)	(0.465)	(0.238	(0.510)	(0.839)	(1.604)
disagree somewhat & strongly	0.374	0.407	0.210	0.228	-1.740	-1.809
	(0.318)	(0.572)	(0.324	(0.703)	(1.068)	(2.056)
constant	10.887***	10.724***	8.348**	8.301***	-2.170	-2.119
	(0.362)	(0.724)	(0.377	(0.802)	(1.250)	(2.300)
sigma			0.657**	0.663***		
			(0.004	(0.009)		
r2	0.469***	0.426***				
N	19158	19158	19158	19158	19158	19158

Source: Authors' calculations from NLSS. Note: we report here only the coefficients of social capital variables; the full version of this table appears in Annex 3 Table 16.

Annex Table 10: Membership of Associations and Church/Mosque, Welfare and Poverty, Nigeria 2003/4

	Monthly per adult equivalent expenditure	Poor
Member of:	Survey tobit b (se)	Survey logit b (se)
No association	-0.068* (0.028)	0.358*** (0.086)
Christian church	0.012 (0.023)	0.030 (0.074)
Islamic Mosque	-0.094*** (0.026)	0.26** (0.078)
Yoruba Muslim	-0.076* (.038)	-.014 (0.117))
Constant	9.227*** (0.555)	-3.319 (1.722)
Sigma	0.662*** (0.006)	
N	19158	19158

Source: authors calculations from NLSS. Variables and controls not listed include all those in Table 16 & age, agesq, urban, zone, logs of land owned and other assets, demographics, and clustering.

Annex Table 11: Growth Regressions from Klasen, 2002, Klasen & Lamanna, 2003, and the report

		Sources											
Right hand side variables		Klasen, 2002		Klasen and Lanamma, 2003		This report							
		Growth		Growth		Growth		Growth		Growth		Growth	
Variables in Klasen, 2002; Klasen & Lamanna 2003	Log of income 1960	-1.13	***	-2.27	***	1.49	***	1.23	***	0.91	***	1.83	***
	Population growth	-0.55	*	-2.8	***	-0.09		ns		ns		ns	
	Labour force growth	0.62	*	2.33	***	[a]		[a]		[a]		a	
	Openness of trade	0.007	**	-0.001		0.45		1.29	**	ns		ns	
	Investment	0.056	**	0.06	***	0.04		ns		ns		ns	
	Education 1960	0.19	**	0.01		-0.17		ns		ns		ns	
	Growth of education	12.61	**	10.42	***	-0.12	*	ns		ns		ns	
	Relative F/M edn. 1960	0.9	*	0.68		2.29	*	2.28	*	ns		ns	
	Relative growth of female to m edn. 1960-2000	0.69	***	0.7	***	0.03		ns		ns		ns	
Institutions	Government effectiveness					1.25	***						
	Ethnic fracionalisation							-1.53	***				
Resources	Mineral production									3.82	***		
	Agricultural production											8.78	***
	other vars	b		b		b		b		b		b	
	N	109		93									

Notes: a: data problems; b: regional dummies and constant. For further details see Annex 2

Annex Table 12: Infant and child mortality in selected areas

Country	Infant mortality rate (0q1)	Child mortality rate (0q5)
Benin	89.0	150.0
Cameroon	87.0	149.0
Ghana	68.0	112.0
Niger	150.0	256.0
Nigeria	100.0	194.0
Sub-Saharan Africa	96.3	162.6
South Asia	62.0	82.9
World	51.4	74.9

Source: WDI, 2007, estimates for 2005

Annex Table 13: Net Attendance Ratio (2003)

	Primary School			Secondary School		
	Male	Female	Total	Male	Female	Total
Urban	71	68	69.5	47.2	45.3	46.3
Rural	60.2	51.1	55.7	31.7	25.9	28.7
NC	71.4	68.9	70.2	42.7	32.6	37.7
NE	49.5	39.1	44.4	22.9	14.9	19.1
NW	49	34.2	41.7	19.8	9.5	14.7
SE	82.4	78.3	80.2	44.9	51.4	48.5
SS	83.2	81.1	82.2	51.6	51.5	51.5
SW	81.2	84.6	82.8	62.2	59.9	61
National	63.7	56.5	60.1	37.5	32.6	35.1

Source: National Population Commission, 2004 (NDHS,2003)

Annex Table 14: Child mortality rates by parental education

Parent	Highest education	Neonatal	Peri-neonatal	Infant	Child	Under 5
Mother	None	52.6	58.8	108.3	135.2	228.9
	Primary	47.2	61.3	105.6	77.4	174.8
	Secondary	34.8	30.2	63.9	43.1	104.2
	Higher	56.3	15	70.4	24.4	93.1
Father	None	31.4	28.9	59.4	41.1	98
	Primary	55.8	61.4	113.7	146.5	243.5
	Secondary	53.9	60.6	111.3	84.7	186.6
	Higher	53.2	10.1	62.8	160.3	213
	Don't know	53.2	10.1	62.8	160.3	213
Mothers'	Fathers'					
None	None	54.2	59.6	110.6	150.7	244.6
	Primary	53.1	68.6	118	114.9	219.4
	Secondary	47.4	50.1	95.1	107	191.9
	Higher	42	16	57.3	7	63.9
	Don't know	104	0	104	410.2	471.6
Primary	None	54.8	70	121	135.4	240
	Primary	49.3	59.4	105.8	69.1	167.6
	Secondary	49.5	58	104.6	52.4	151.5
	Higher	10.6	68.6	78.5	56.9	130.9
	Don't know	42.5	17.9	59.6	117.7	170.3
Secondary	None	117.1	69.7	178.6	54.1	223.1
	Primary	64.9	43.9	105.9	45.9	146.9
	Secondary	26.4	23.3	49.1	35	82.4
	Higher	19	26.1	44.7	50.4	92.8
	Don't know					
Higher	None					
	Primary	81.7	0	81.7	0	81.7
	Secondary	0	39.5	39.5	24.7	63.2
	Higher	66.6	9.4	75.4	29	102.2
	Don't know					

Source: Author's calculation from NDHS3
Note: Partners' information for better-educated mothers disproportionately missing

Annex Table 15: Logit regressions for Full Immunisation with religious affiliation and ethnicity

	1	2	3	4	5	6	7	8
Muslim	0.183***		0.531	0.140***	0.410	0.062***	0.072***	0.504
	(0.042)		(0.204)	(0.045)	(0.197)	(0.023)	(0.022)	(0.210)
Other religion	0.648		0.758	0.602	0.757	0.602	0.711	0.902
	(0.363)		(0.409)	(0.359)	(0.409)	(0.359)	(0.411)	(0.472)
Hausa		0.081***	0.105***		0.129**			0.129**
		(0.049)	(0.066)		(0.088)			(0.089)
Yoruba		4.465***	5.136***		4.278***			3.447***
		(1.262)	(1.483)		(1.456)			(1.075)
Igbo		5.193***	4.165***		3.904***			4.216***
		(1.300)	(1.233)		(1.148)			(1.040)
Fulani		0.239*	0.310		0.380			0.381
		(0.156)	(0.207)		(0.276)			(0.279)
Crossriver		0.656	0.626		0.619			
		(0.342)	(0.317)		(0.325)			
Kanuri		0.206*	0.266		0.324			0.324
		(0.162)	(0.214)		(0.275)			(0.277)
Tiv		1.388	1.071		1.030			
		(0.606)	(0.492)		(0.474)			
Edo		3.405	3.144		3.019			
		(2.217)	(2.103)		(1.976)			
Protestant			0.909	0.728	0.921	0.728		
			(0.391)	(0.259)	(0.396)	(0.259)		
Other_christia			0.590	0.559	0.619	0.559	0.659	
			(0.217)	(0.167)	(0.229)	(0.167)	(0.159)	
Yoruba Musli					1.647	20.348**	20.816**	2.095
					(0.811)	(7.478)	(7.740)	(1.038)
Cross R. Mus						0.396	0.396	0.396
						(0.320)	(0.320)	(0.320)
Tiv Muslim							4.627	1.606
							(4.998)	(1.792)
Constant	0.069***	0.030***	0.044***	0.107***	0.046***	0.107***	0.091***	0.037***
	(0.009)	(0.006)	(0.015)	(0.026)	(0.016)	(0.026)	(0.014)	(0.007)
ll	-8.1e+10	-7.0e+10	-6.9e+10	-7.8e+10	-6.9e+10	-7.3e+10	-7.3e+10	-7.0e+10
chi2	54	113	130	55	127	89	88	118

Source: Authors' calculations from NDHS3; * p<0.05, ** p<0.01, *** p<0.001

Note: figures in brackets are robust standard errors, computed with clustering and survey weights Control variables include zones and urban residence.

Annex Table 16: Total Fertility Rates by Educational Status of Parents and Zone

	Region						
Mothers' educational attainment	North Centr	North East	North Wes	South East	South Soutl	South We	Total
no education	7.05	7.60	7.37	6.35	5.73	5.55	6.61
incomplete primary	6.64	8.52	5.87	6.21	5.81	4.42	6.28
Complete primary	5.52	7.06	6.72	5.04	6.06	4.78	5.85
incomplete secondary	5.41	5.14	5.04	3.91	5.57	4.10	4.84
Complete secondary	4.10	3.55	8.95	4.67	2.50	2.79	4.60
Higher	3.25	3.49	4.13	3.05	3.09	3.39	3.40
Total	6.54	6.61	6.51	5.17	5.59	4.96	5.89
Partner's educational attainment							
no education	7.08	7.81	7.43	6.32	7.09	5.93	6.94
incomplete primary	6.58	7.70	6.80	6.09	8.35	7.15	7.11
Complete primary	7.23	8.30	7.20	5.97	5.48	5.21	6.55
incomplete secondary	6.55	6.11	6.90	4.75	6.33	4.50	5.84
Complete secondary	5.42	5.59	7.94	5.18	4.72	4.06	5.45
Higher	5.75	5.97	6.36	5.27	5.04	5.17	5.59
don't know	6.11	4.94	2.99	3.46	2.53	2.55	3.75

Source: Author's calculation from NDHS3

Annex Table 17: Mean differences in years of education and (early) births between test and control cohorts

	Years education			Births before 25		
UPE	Cohort			cohort		
NDHS2	1956-61	1970-75	Diff.	1956-61	1970-75	Diff.
L0	6.12	8.41	2.29	1.83	1.49	-0.34
	(.413)	(.234)	(.44)			
HI	2.58	5.59	3.01	2.48	2.08	-0.40
	(.156)	(.125)	(0.22)			
Difference in difference[1]	3.53	2.81	0.72			-0.06
	(.37)	(.323)				

Source: Author's calculations from NDHS2 based (see Annex 3 for further details)

Annex Table 18: Difference in Difference Effects of UPE (NDHS2)

Panel A	Years of education			childrenbornlt25		
		Add state Fixe Effects	Add state a & year of birth Fixed Effects		Add state Fix Effects	Add state a & year of birth Fixed Effects
I_k*C_{70-75}	0.818	0.797	0.770	-0.098	-0.078	-0.087
	(1.884)	(1.885)	(1.824)	(-0.569)	(-0.457)	(-0.512)
C_{70-75}	2.015***	2.062***	2.698***	-0.286	-0.301	-0.809**
	(5.178)	(5.439)	(4.312)	(-1.861)	(-1.955)	(-3.276)
I_k	-1.491***	1.644*	1.725*	0.309	0.000	0.000
	(-3.597)	(2.051)	(2.158)	(1.891)	(.)	(.)
r2	0.357	0.399	0.409	0.078	0.090	0.110
Number of obs	2603	2603	2603	2608	2608	2608
Difference in Difference UPE with UPE Expenditure Variable						
Panel B	Years of education			childrenbornlt25		
Ik = Fed. Gov't UI FUnds		Add state dummies	Add state & yo		Add state dummies	Add state & yob
Ik*C70-75	0.006*	0.006*	0.007*	-0.002	-0.002	-0.002
	(2.027)	(2.244)	(2.482)	(-1.562)	(-1.651)	(-1.695)
C70-75	2.128***	2.126***	2.625***	-0.201	-0.192	-0.692**
	(6.738)	(6.922)	(4.373)	(-1.614)	(-1.539)	(-2.958)
Ik	-0.001	-0.011**	-0.012**	0.001	0.004*	0.004*
	(-0.418)	(-2.734)	(-2.905)	(1.018)	(2.259)	(2.455)
r2	0.356	0.400	0.410	0.077	0.091	0.111
Number of obs	2603	2603	2603	2608	2608	2608

Source: Author's calculations from NDHS2; * p<0.05, ** p<0.01, *** p<0.001; "t" values in brackets

Controls do not include proportion of females in total enrolment in 1970, nor proportion of civil servants who are female when the individual was 6, as used by Osili and Long, due to lack of access to the data. However, we doubt that this causes the difference in results as discussed below. We include coefficients for C_{70-57} & I_k in specification 2, 3, 4 & 5, and 3 & 6 respectively despite the change in interpretation due to inclusion of state and yob fixed effects.

Annex Table 19: Proportions of persons* reporting Employment Earnings

		Zone							
Sex	Occupations	South South	South East	South West	North Central	North East	North West	FCT	Total
		% all eligible persons who have employment earnings							
Male	All occupations	50.98	39.64	56.76	38.74	28.21	22.98	28.38	34.98
Female	" "	37.33	31.06	50.73	18.74	9.98	5.25	13.98	20.20
% have employment earnings									
Male	agriculture	43.21	41.48	27.55	50.80	64.98	57.64	39.23	48.41
	government	16.77	15.25	15.06	18.09	16.07	10.69	34.62	15.54
	private	8.32	7.18	11.62	4.55	3.65	3.64	6.15	6.31
	self -employed	31.69	35.99	45.77	26.56	15.30	28.03	20.00	29.74
	total	100.00	99.90	100.00	100.00	100.00	100.00	100.00	99.99
Female	agriculture	49.92	54.91	20.49	20.37	54.87	24.06	30.77	37.21
	government	9.61	11.98	8.61	11.93	12.92	3.26	30.77	10.20
	private	3.50	3.63	4.92	1.99	1.24	2.26	11.54	3.44
	self -employed	36.97	29.37	65.98	65.71	30.80	68.67	26.92	49.00
	total	100.00	99.90	100.00	100.00	99.82	98.25	100.00	99.84

* Of persons older than 5 and less than 61 who did not attend school in 2002/3.

Annex Table 20: Education, Gender and Wage earnings

	OLS			Probit			
	Log of total monthly earnings in main occupation			Govern-ment	Private	Self employment	Agri-culture
	1	2	3	4	5	6	7
Incomplete primary	0.301**	0.418**	0.232	0.327*	0.263*	0.214**	-0.419***
	(0.105)	(0.149)	(0.156)	(0.136)	(0.119)	(0.069)	(0.068)
Primary	0.446***	0.550***	0.323***	0.669***	0.271**	0.410***	-0.651***
	(0.073)	(0.076)	(0.086)	(0.091)	(0.083)	(0.046)	(0.046)
Incomplete secondary	0.517***	0.749***	0.504***	0.843***	0.494***	0.419***	-0.941***
	(0.129)	(0.131)	(0.136)	(0.134)	(0.124)	(0.073)	(0.075)
Secondary	0.992***	1.118***	0.844***	1.332***	0.444***	0.577***	-1.327***
	(0.095)	(0.095)	(0.104)	(0.096)	(0.094)	(0.058)	(0.062)
Teacher training	0.929***	0.914***	0.727***	2.269***	0.569***	-0.442***	-1.313***
	(0.123)	(0.144)	(0.152)	(0.133)	(0.149)	(0.131)	(0.115)
Quranic	-0.118	0.316	0.143	0.092	0.115	0.271**	-0.330***
	(0.219)	(0.218)	(0.218)	(0.173)	(0.148)	(0.090)	(0.089)
polytechnic	1.329***	1.441***	1.230***	2.358***	0.770***	-0.315**	-1.754***
	(0.144)	(0.150)	(0.158)	(0.119)	(0.126)	(0.102)	(0.110)
University	2.078***	2.016***	1.832***	2.521***	0.725***	-0.462***	-2.438***
	(0.147)	(0.141)	(0.147)	(0.137)	(0.141)	(0.109)	(0.178)
Female				-0.096*	-0.464***	0.536***	-0.463***
				(0.047)	(0.055)	(0.030)	(0.030)
Female * education							
Incomplete primary		-0.331	0.004				
		(0.174)	(0.187)				
Primary		-0.423***	0.000				
		(0.083)	(0.105)				
Incomplete secondary		-0.743***	-0.314				
		(0.194)	(0.211)				
Secondary		-0.620***	-0.145				
		(0.091)	(0.121)				
Teacher training		-0.175	-0.022				
		(0.176)	(0.209)				
Quranic		-2.369***	-1.957***				
		(0.435)	(0.448)				
polytechnic		-0.536*	-0.339				
		(0.254)	(0.311)				
University		-0.053	0.086				
		(0.224)	(0.244)				
Sector							
government	1.249***	1.255***	1.31***				
	(0.079)	(0.081)	(0.088)				
Private	1.217***	1.163***	1.247***				
	(0.091)	(0.092)	(0.099)				
Self-employed	0.775***	0.829***	1.179***				
	(0.067)	(0.067)	(0.084)				
Female * sector							
government			0.025				
			(0.160)				
Private			-0.043				
			(0.177)				
Self-employed			-0.745***				
			(0.094)				
r2	0.105	0.115	0.121				
N	14487	14487	14487	14487	14487	14487	14487

Source: Authors' calculations from NLSS 2003-4; controls excluded from reported results

Annex Table 21: Regressions of Household Infrastructure on Child Height for age

Length/height-for-age z-score (WHO)

	1	2	3	4	5	6
Domestic water (base value is open water source						
piped_water		1.350				
		(0.415)				
improved_water		1.555*				
		(0.276)				
protected_water		1.135				
		(0.180)				
open_well		1.269				
		(0.179)				
purchased_water		1.883*				
		(0.553)				
Domestic toilet (base value is none)						
flush_toilet			1.627**			
			(0.299)			
improved_toilet			1.605			
			(0.475)			
trad_toilet			1.274*			
			(0.154)			
Electricity (base variable is none)						
electricity				1.470***		
				(0.148)		
Cooking fuel (base value is biomass)						
modern_cooking					2.187	1.985
					(1.168)	(1.075)
improved_cooking					1.583**	1.268
					(0.229)	(0.225)
wealth index factor score						1.230*
						(0.101)
Constant	0.217***	0.177***	0.183***	0.178***	0.207***	0.221***
	(0.045)	(0.035)	(0.037)	(0.038)	(0.042)	(0.044)
r_square	0.091	0.094	0.093	0.094	0.094	0.095
Number of obs	4164	4164	4164	4164	4164	4164

Source: Authors' calculations from NDHS3; controls for mother's and father's education, female child, ethnicity, zone and rural residence included in all regressions e.g. in column (1)
Note: standard errors are robust using survey weights and clustering
* p<0.05, ** p<0.01, *** p<0.001