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PRODUCTION, TRADE AND LIVELIHOODS OF COTTON PRODUCERS IN NIGERIA

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ABSTRACT

The sustainable livelihood framework is applied to the context of cotton production and trade in Nigeria's cotton belt with focus on small cotton farmers vulnerability to natural and environmental disasters; the effects of which policies and programmes were formulated to mitigate. The study aims at the application of multidisciplinary knowledge to the study of households and their livelihoods. In addition, the study helps to augment the pool of livelihoods research in Nigeria. With the aid of interviews and focus group discussions (FGDs), primary data were obtained from purposively selected communities in five northern states of Nigeria; namely Kano, Katsina, Kaduna, Zamfara and Jigawa in addition to secondary data on Nigeria's cotton sector. The key finding of the study suggests that farmers are vulnerable to natural and environmental disasters as well as policy shocks to which some programmes and projects are targeted. The study also finds that institutional interventions to reduce vulnerabilities have been less successful in dealing with the restoration of small cotton farmers' economic and social capital assets. Consequent upon the findings of the study, the adoption of sustainable livelihoods is germane for addressing cotton farmers' vulnerabilities in order to guarantee the success of poverty reduction strategies meant to help combat poverty for cotton producers.

Key words: Sustainable livelihoods, vulnerability, poverty, livelihood diversification.

INTRODUCTION

Cotton has been described as one of the world's most influential plants due to its widespread use by millions of people who wear cotton garments at any particular moment. Recently, cotton appeared at the centre-stage of international trade negotiations in one of the ministerial conferences of the World Trade Organisation (WTO) when four least-developed West African countries namely Benin, Burkina Faso, Chad and Mali demanded that a special consideration be given cotton in the negotiations because

of the tendency for the export subsidy policy of developed countries to impoverish cotton growers of these poor countries. Cotton has been cultivated in Nigeria since the pre-colonial period and provided raw materials for its then slowly growing local textile industry in the 19th century. During the colonial period, the methods of cotton production introduced by the colonial masters transformed Nigeria from a net exporter of local textile products to neighbouring communities, to a substantial supplier of raw cotton to British factories and a net importer of textile. Thus, a development appeared to have sparked the need for government to subsequently impose import restrictions including outright prohibitions in an attempt to reverse the truncation of the then emerging industrialisation.

A major input in textile production, cotton has remained part of the intractable problems of Nigeria's textile sector as the quality and quantity of Nigerian cotton have suffered severe deterioration since the late 1980s. Nigerian cotton lint is polypropylene contaminated, a phenomenon that has eroded its local and international value and constrained its use to the production of Ankara, an African printed fabric. The shortness of the Nigerian staple cotton in contrast to the medium staple cotton makes it unsuitable for blending export textile products and hence Nigerian export-oriented textile firms have to import the latter from neighbouring Francophone West African countries. Local production of cotton has also drastically slowed down, growing by a mere 5.6 per cent between 1970 and 2001(CBN 2002), and particularly between 1991 and 2001, cotton output declined by –1.16 per cent. This falling output trend is attributed to poor seed quality; little use of fertilizers and pesticides; inadequate quality assurance and credit support for small holders, ginners and merchants, and commodity planning and market information system; as well as late planting. The abolition of the Cotton Board in 1986 appears to have worsened the deterioration of the quality of cotton seed available for planting.[1]

While cotton's contribution to industrial revolution is widely recognised, its contribution to livelihoods of majority of farmers particularly in developing countries like Nigeria is not well known despite ever-present macroeconomic shocks and vulnerability to risks. For instance, continuously falling outputs of cotton translates to a sustained erosion of revenues of farmers and other stakeholders in the cotton sub-sector, with profound implications for livelihood patterns and coping mechanisms, vulnerability and liability to slide into abject poverty. Indeed, individuals and households become vulnerable to poverty and health risks such as HIV/AIDS if their assets are lost through unsustainable income generation opportunities and macroeconomic shocks. Such income loss might erode their asset and reduce their ability to cope with future needs and crises (Devereux, 1993). Fafschamp (1999) rationalises that the poor are better able to manage welfare- reducing risks as their incomes rise. This paper seeks to identify major issues and constraints relating to cotton production and marketing and their impacts on the sustainable livelihoods (SL) of small-scale female and male farmers. It in the process reviews existing policies and practices impacting on the livelihoods of cotton growers in poor communities in Nigeria and attempts to provide analysis of diversity and gender relations with a view to identifying felt needs of the small cotton producers that will enhance their productivity as well as the physical and other barriers constraining their access to markets. The need to deploy the sustainable livelihoods framework to the analysis of cotton production and trade stems from two

sources. One is that this framework emphasises the multidisciplinary knowledge (political, economic, social and anthropology) of households and their livelihoods (Nicol, 2000). The second reason is the dearth of published livelihoods research in Nigeria even though it is suspected that most of the studies using this approach may have been conducted for development organisations. This paper fills this gap by specifically applying the SL framework to small cotton producers in order to understand how and the extent to which they are making a living in the presence of both exogenous and endogenous shocks.

Theoretically, the sustainable livelihoods framework as a method of analysis of how and the extent to which individuals and households make a living examines whether economic activities, be the rural or urban, market or non-market, are capable of sustaining the individuals and households that are engaged in those activities. As argued (Adams *et al*, 1998), the framework emanates from the consciousness that development efforts could become sustainable and constructive if they consider the origins, dynamics and differential experience of rural diversity and the risk-minimising activities of communities and households in coping with crisis. Thus, the livelihoods approach emphasises the multiple ways in which these individuals and households make a living and build their worlds (Whitehead 2002). Conceptually, livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, … which contributes net benefits to other livelihoods" (Drinkwater and Rusinow, 1999). It thus appears that coping is a broader term encompassing livelihoods if one were to view coping strategies as a continuum with variation in resilience and vulnerability to crisis or its continuation (Webb *et al*, 1992).

Quite a number of studies[1] have used the sustainable livelihoods approach to understand how poor people make a living over time. For example, Whitehead (2002), assesses changes and similarities in the livelihood strategies of farm families in the Bawku District of north-eastern Ghana over about fifteen years using case study approach. The author found that although changes had occurred in crops and farming incomes, the main income sources were similar over the study period. Ellis and Bahiigwa (2003), researches the connection between livelihoods and rural poverty in Uganda and found that rural poverty is strongly associated with lack of land and livestock as well as the inability to secure non-farm alternatives to diminishing farm opportunities. Orr and Mwale (2001) find in their study of smallholder livelihood strategies in response to adjustment that majority of small holders reported improvement in their economic status due to market liberalisation induced higher income from crops while the worse-off quarter of the sample attributed their impoverishment to widowhood, and economic adjustment policy. Nieof (2004), studies the significance of diversification for rural livelihoods systems and reasoned that households construct increasingly diverse livelihood portfolios, making use of diverse combinations of resources and assets. Watts (1983), studies the drought-affected Hausaland, Nigeria, and found that response to crisis suggested a decreasing reversibility and increasing commitment of domestic resources such that household

[1] For further enquiry into the views of other works, see Fox (1996), Ellis (1998), Fafschamps (1999), Francis (2002), Niehof (2004), and Cleaver (2005).

assets are pledged or sold in times of crisis. This response of communities, households and individuals to crisis is affected by a range of exogenous and endogenous factors that are in turn intervened by the type of resources available and the access to the resources. The exogenous factors include economic and political forces, local climate and ecology, local economy, local culture, institutions and networks, and local infrastructure. The endogenous factors consist of household's demographic structure (household size, composition and life-cycle stage in consumption and productive capacity); socio-economic status (assets ownership, income and expenditure, productive diversity, debts, and food security); social networks (kinship, membership of village organisations); intra-household dynamics (power relations between generations and genders regarding household resource allocation and control); and recent crises, coping strategies and consequences.

Three main approaches to livelihoods research were distinguished by Murray (2002). The first is circumspective which focuses on means of livelihood at a particular time with investigation mainly achieved through a blend of surveys, one-off interviews and various participatory techniques. The second approach is retrospective which emphasises ensuring understanding the changes affecting target communities, households and individuals over time through longitudinal comparison studies that involve panel or repeated cross-sectional studies of the same population over time with a view to analysing trajectories of accumulation or impoverishment as well as vulnerability contexts of the population. The hub of the prospective approach, which is the third, is to use previous experiences from the instrumentality of monitoring and evaluation to analyse policy successes or failures for the purpose of subsequent practical interventions, an approach more favoured by development organisations.

The rest of the paper is organised as follows. Section II presents the material and methods used in the paper which include the review of literature and the analytical framework based on the sustainable livelihoods approach followed by the methodology. In section III, the results of analysis are presented and discussed focusing on the effectiveness of government policies on cotton over time in terms of production, marketing and finance and livelihood patterns, aswell as the findings from interviews and FGDs on cotton production, trading mechanisms and livelihoods of small cotton growers in Nigeria's cotton belt. The coverage of the analysis includes cotton farmers' input and output decisions, their access to finance and credits, extension and research services as well as the influences which farm associations have on small cotton farmers and their access to formal institutions to improve their production and incomes. Section IV summarizes and concludes the paper.

MATERIAL AND METHODS

The theory linking institutions to economic, social and political development shared its history in the works of North (1990), Putnam (1993) and Platteau (1994a, 1994b). These theories have facilitated the analysis of the impact of the civil society on development processes at both the macro and case study levels while their elaborations have revealed the importance of the organisations of the rural and urban poor and thus bring about the actors onto theoretical and policy stage (Bebbington and Perreault 1999). This theoretical linkage of institutions and development has been developed into a sustainable livelihood (SL) framework in the subsequent work of development partners with the work of each leading to models that share substantially more similarities

than differences. The SL framework is an analytical framework that provides a way of understanding the factors influencing people's ability to enhance their livelihoods and an approach to poverty eradication which pursues the principle that development support should be people-centred, participatory and dynamic (Baumann and Sinha 2001). Figure 1 shows the sustainable livelihood framework which connects policies, institutions and processes to shocks, trends and seasonality to which the household deploys livelihood assets, namely financial, human, natural, physical and social capitals, using livelihood strategies to achieve a set of livelihood outcome that includes increased income and well-being, reduction in vulnerability to shocks, improved food security and sustainable natural resource base.

The paper focuses on five states from Northern Nigeria namely Kano, Katsina, Kaduna, Zamfara and Jigawa states, and the states are regarded as covering a substantial area of Nigeria' cotton belt that spreads across the country's North West, North Central and North East geo-political zones. The zones, which occupy the semi-desert region in the extreme north, comprise of Zamfara, Katsina, Kaduna, Kano, Jigawa and Gombe States, including Biu in Bornu State. The Hausa-Fulani and Kanuri emirates largely inhabit the cotton belt and which have been prominent in Nigeria's political affairs but also feature many minority groups who live in abject poverty and whose primary source of income has remained cotton production. The poverty status of this minority groups is an indication of their marginalisation and the little influence they have on decision-making regarding their livelihoods.

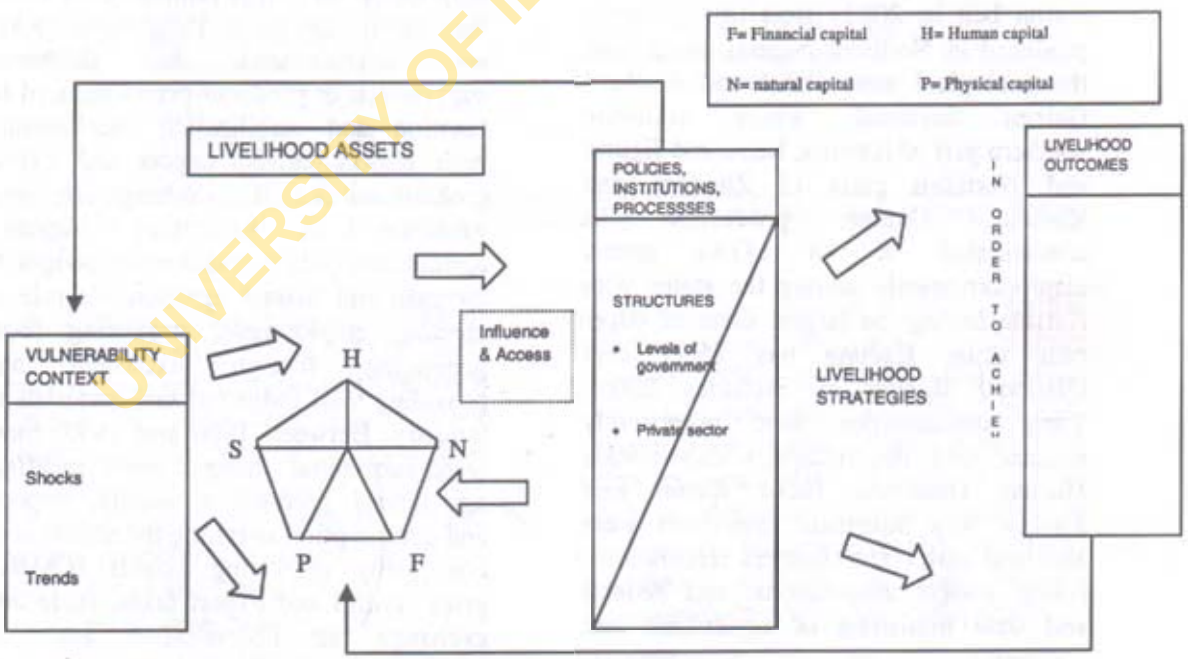

Figure 1: Sustainable Livelihood Framework

Source: DFID, 2001

The import of the SL framework is captured by three main relationships. These are livelihood assets as characterised by the prevailing policy and institutional environment, livelihood outcomes that mirror the extent of households' vulnerabilities, and sources of households' vulnerabilities. The logic of the framework is anchored on the fact that livelihoods will be guaranteed by the extent to which policies and institutions insulate households from shocks that can put households in vulnerability conditions. However, processes governing the administration of the policies and the institutions are as important as the livelihood outcomes to be influenced positively.

The application of the SL framework requires the use of primary data which were obtained from interviews and focus group discussions (FGDs) conducted with small cotton producers from Nigeria's cotton belt in 2003. Most of the cotton produced in Northern Nigeria come from the ecological zone Sahel and northern Guinea Savannah which comprise southern part of Katsina, Kano and Jigawa and Northern parts of Zamfara and Kaduna. Cotton production is concentrated in 48 LGAs spread disproportionately among the states with Katsina having the largest share of 40per cent while Kaduna has 25per cent (National Bureau of Statistics 2005). Three communities were purposively selected from the villages which include *Marma, Daudawa, Ikara, Katum and Karaye*. Key informant interviews were also held with cotton farmers associations, cotton traders associations, and federal and state ministries of agriculture and commerce, local governments' departments of agriculture, and state-level agriculture development programmes. Furthermore, the instruments designed brought out the gender relations of the farmers. Secondary sources of data were also used to obtain trends of cotton outputs and tariffs, requirements which provided basic overview of the economic situation of Nigeria's cotton sector. The analysis of impact of policies evaluates the effectiveness of these policies through nationally collected data on cotton production.

RESULTS AND DISCUSSION

Institutions, Policies and Processes Affecting Cotton Production and Trade.

The extent of cotton production and trade as well as the impact on livelihoods of cotton farmers are direct implications of the enunciated general agricultural policies of the government while many other policies such as fiscal, monetary, exchange and interest rates as well as prices and incomes policies indirectly impinge on the sector. Nigeria's agricultural and other policies prior to the Structural Adjustment Programme (SAP) are characterized by deliberate suppression of producer prices induced by taxation and stabilization mechanisms, high import tariffs, import and export prohibitions as well as exchange rate over-valuation. In particular, Nigeria's agricultural policy traditionally sought to increase and sustain agriculture's role of creating employment, producing food, generating foreign exchange and providing vital industrial raw materials to industry. Between 1986 and 1993, there were substantial changes made to affect agricultural production, supply, exports and consumption spanning the abolition of commodity marketing boards (CMBs), price control and export taxes, trade and exchange rate liberalization, and 100 percent retention of export revenue (Idachaba, 2000; Garba, 1998). The new agriculture policy of 1988 and revised in 2001 documented these policies. In addition, Agricultural Development Programmes (ADPs) were established in

all the states of the federation starting in 1991. The 2001 agricultural policy contained policy directions that aimed at creating conducive macro-environment to promote greater private sector participation and investment in agriculture with new roles designed for the federal, state and local governments. The roles of the different levels of government, summarised in Table 1, are limited to development of broad policy and institutional framework and provision of developmental, supportive and service-oriented activities, as well as promotion of market-based activities to enhance private sector participation.

Table 1: Stakeholders' Roles in Agriculture

	Federal Government	State government	Local Government	Private Sector
Roles	• Provision of sector and general macro-environment framework • Provision of resources • Support to rural infrastructure • Research and development including biotechnology • Seed development, law enforcement and quality control • Input supply and distribution support • Pests and disease control • Establishment of Agricultural insurance scheme • Maintenance of Strategic National Food Reserve	• Provision of extension services • Promotion of production of inputs • Ensuring access to lands for farming purposes • Development and management of irrigation areas of large dams • Pests and disease control • Promotion of credit institutions Investment in rural infrastructure	• Provision of extension services • Provision of rural infrastructure • Management of irrigation areas of large dams • Mobilisation of farmers through cooperatives, local institutions and communities • Provision of land subject to the land Use Act • Coordination of data collection at the primary level	• Investment in all aspects of agriculture: o Production o Storage processing and marketing o Input supply and distribution o Commercial seeds and seedling production o Mechanization o Enterprise-specific rural infrastructure

Source: Federal Ministry of Agriculture and Rural Development, ***New Agricultural Policy, 2001,*** Abuja.

Table 2 indicates the trend of output of seed cotton from 1975 to 2002. Seed cotton output fell continuously between 1975 and 1985. Seed cotton output did not recover from this persistent decline until 1992, seventeen years after the downward trend commenced. The recovery in 1992 was only temporary, as another prolonged decline started and lasted for the next five years. Output then was on the increase from 1997 to 2001 when it again dropped in 2002. Thus, out of the 27 years for which data are analysed, it was only between 1997 and 2001 that cotton production sustained a short-term growth, meaning that output suffered a declining trend for a period of 22 years with clear negative consequences for incomes of small-cotton farmers as their incomes and livelihood suffered, as they became increasingly impoverished in the process.

Table 2: Cotton production in Nigeria.

Year	Seed cotton (mt)	Trend 1975=100
1975	313	100
1980	77	25
1985	114	36
1990	276	88
1992	348	111
1995	251	80
1998	347	110
2000	399	127
2001	400	128
2002	350	112
Period Averages	Metric Tonnes	Percentage
1975-1986	142.4	-9
1987-1992	249.8	10
1993-2002	318.1	6

Source: Federal Ministry of Agriculture, Abuja.

Despite the fact that the Cotton Consultative Committee was reorganised in 1993, it had a considerably short term growth impact on seed cotton production. The committee worked for 5 years in the first and second instances (i.e. 1992 and 1998) before its activities could influence output to reach 1975 level . It is therefore clear that specific cotton development and other agricultural policy measures have not been too successful in addressing the issues impinging on cotton development, and by extension in alleviating poverty of those engaged in cotton production. The relationship between activities in the seed-cotton sector and production of textile also indicates that Nigerian small cotton farmers do not appear to have permanent guarantee of domestic market outlets for their cotton. Thus, Nigeria's small cotton farmers have been impoverished through falling production of cotton, while their livelihood conditions were made worse by the low patronage engendered by imported raw materials for textile production and the subsequent stagnation of Nigeria's textile sector.

While finance as an input into cotton production is needed for initial planting exercise for the procurement of men and materials, and to pay for farmers' subsistence, the policy of deregulation of the interest rate in 1987 led to a sharp rise in interest rates to as high as 40 percent and has remained over 20per cent as at study period. This generated unanticipated cost increases for agricultural activities and increased finance requirements for small farmers with access to finance by smallholder farmers becoming a mirage. Targeted approaches by government include the establishment of the Nigerian Agricultural and Cooperative Bank (NACB), Peoples Bank of Nigeria (PBN) and the promotion of the Family Economic Advancement Programme (FEAP) subsequently consolidated to form the Nigerian Agricultural, Cooperative and Rural Development Bank (NACRDB) Limited. The distribution of branches of NACRDB clearly reveals that the bank enjoys quite an appreciable level of outreach nationwide (Olaniyan *et al*, 2003) especially in Nigeria's cotton belt. In particular, NACRDB has 31 branches in the North Eastern region, 35 branches

in the North Central and 39 branches in north-western regions. Another financing arrangement in the agricultural sector is the Agricultural Credit Guarantee Scheme (ACGS). But, the share fluctuates quite widely with considerable instability during 1985-2005, a trend that clearly demonstrates substantial uncertainties for cotton farmers who depend on ACGS credits (Table 3).

Table 3: Operations of Agricultural Credit Guarantee Scheme Fund.

	Value of loans Guaranteed (N million)		
Year	Cotton	Total cash crops	Percentage
1985	41.9	6050.7	0.7
1990	1453	8986.3	16.2
1995	6875.5	13499.3	50.9
2000	1310	4928	26.6
2001	7715	167669	46.6
2002	660	13214.4	5.0
2003	1640	10961	15.0
2004	4880	18185	26.8
2005	360	50545	0.7

Source: Computed from Central Bank of Nigeria, (2001), Statistical Bulletin, Volume 12, December. Central Bank of Nigeria, (2005), Statistical Bulletin, Volume 16, December

An indication of Nigeria's trade policy on cotton includes tariff applied on cotton seeds (Harmonised System Code 120720) and those on cotton and cotton products (HS Codes 520100-521225 or Chapter 52). For cotton seed, the tariff ranged from 15 to 25per cent between 1988 and 2001 but consistently fell to 20per cent in 2001 and 5per cent in 2005 (Table 4). For cotton and related products, the average rates ranged from about 47per cent to 82 per cent, but about 15per cent in 2005 This average rate is high compared to 7.4per cent in the EU in 1999 (WTO, 1999) is about the threshold of international tariff spike.

Table 4: Applied Tariff (MFN) rates in Cotton 1988-2006 (in percentages).

HS chapters Year	120720 Cotton seeds	Average (520100-521225)[2] Cotton
1988	15	81.6
1995	25	46.7
1996	25	46.7
1997	25	46.7
1998	25	46.7
1999	20	48.7
2000	20	48.7
2001	20	48.7
2002	20	50.5
2003	20	50.5
2005	5	14.62
2006	5	14.62

Source: Customs, Excise (Consolidated) Tariffs 1988-2001; Federal Government of Nigeria, Nigeria Customs and Excise Tariff 2005-2006

[2] HS Codes 520100-521225 are applied to cotton and cotton products in the Nigeria according to Customs, Excise (Consolidated) Tariffs Document.

Government's commodity marketing boards which provided inputs to farmers and solely bought their cotton at own fixed prices were the earlier attempts through which the government intervened in the organisation of cotton production in the post-independence period. However, most of the farming communities interviewed in the five states did not bemoan the scrapping of the commodity marketing boards (CMB) system in 1986 despite the important role it played in the provision of high quality seeds, agrochemicals and guaranteed but preset prices. Farmers believed that the pricing system of the board was unfavourable because prices set were too low and designed to provide just enough income to keep them growing cotton, while farmers had to wait several weeks for payment and the time of selling cotton at the gazetted markets made them lose income.

Impact of Cotton Production and Trade on the livelihoods of Poor Communities

Table 5 shows the volume of annual production of cotton per hectare of cultivated land in the cotton belt between 2000 and 2005. Katsina appears to lead the rest with annual production of between 900 and 3200 metric tonnes per hectare. This was followed by Kano and Zamfara which have annual production ranges of between 700 and 1300 mt per hectare. Jigawa and Kaduna state followed behind. The largest production of cotton per hectare featured by Katsina can be traced to the cultivation of cotton by more local government areas than other states and production efficiency. For example, though total annual production in Kaduna state doubles that of Katsina, yield per hectare was lower than the latter's because total land cultivated is also relatively higher, pointing to inefficient farming practices or reducing fertility of cultivated land. Annual yield in all the states also fluctuated, induced mainly by unstable cotton prices which is the most potent determinant of supply identified by the farmers. Katsina and Kano which has consistent data over the period exemplify the fluctuations as cotton yield per hectare respond to falling prices and farmers shift to other cash crops.

Table 5: Cotton Yield per Ha (MT).

	Katsina	Kaduna	Zamfara	Kano	Jigawa
2000	1200	1000	1000	900	0
2001	0	1000	0	800	0
2002	1200	0	0	1300	1000
2003	900	0	700	700	0
2004	2000	0	1300	1000	1300
2005	3200	0	1200	0	0
Average 2000-2005	1400	300	700	800	400

Source: Extracted from various Crop Area and Yield (CAS) reports produced by various ADP offices in the states; National Bureau of Statistics, Statistical Bulletin, 2005.

Farmers interviewed in the five states generally expressed dissatisfaction and deep frustration regarding the context within which they produce and market cotton asserting that cotton production does not provide them with sustainable livelihoods let alone alleviate their vulnerabilities. Elements of these concerns are analysed under the components of livelihoods assets in what follows.

Natural and Physical Assets: Farmlands, improved seeds and the environment.

Allocation of farm land is under the control of the extended family system, and authority to allocate land is reposed in the extended family arrangement. Culturally, men have better access to land. Cotton production is traditionally considered as a man's business while women farm various crops bringing out a sort of division of labour. Thus, the very few female cotton farmers in the cotton belt use hired or commercially-acquired land. The average size of cotton farm of a male cotton grower is one hectare. It is only in Jigawa state that the average holding is less than 0.4 hectare due to pressure on land, which in turn leads to life-threatening land disputes.

The use of improved seeds is the corner-stone of sustainable cotton production and sustainable livelihoods. Farmers affirmed that access to quality seeds at the right time is probably more problematic than the cost of improved seeds because the cultivation of one hectare of cotton does not require more than 30 kg of seeds. Farmers explained further that the CMB in collaboration with the Institute of Agriculture Research (IAR), Zaria, and the National Seeds Service (NSS) maintained a relatively efficient system of annual delivery of improved seeds and other inputs to them at the time of cultivation such that they had access to different varieties recommended for different ecological zones such as samcot 9, 10, and 11 whose costs were deducted from the sales of cotton to the CMB. However, the scrapping of CMB has led to a state of anarchy in the system thereby constraining access to improved seeds as farmers buy seeds whose varieties are from unknown sources from the open market. The seeds have poor germination rate and poor yield because agents usually add water to the bags of the seeds to increase their weight. At the time of field visit, the NSS still provides farmers improved seeds but has continuously failed to buy back required seeds from farmers, due to delayed release of funds, before they sell to the ginners who lack the know-how to preserve the quality of the seeds.

Cotton production practices world-wide have been identified as contributing to severe environmental damages. Cotton is believed to be the most toxic crop on the planet that occupies only 3per cent of the world's farming acreage, yet sprayed with up to 35per cent of the world's chemicals. In Nigeria's cotton belt, farmers agree that the pattern of organisation of cotton production is dominated by small-scale farming that does not use aerial spraying of chemicals; in any case, agro-chemicals are very expensive, and they do not over-use them in the farms. Local government area's Pest Control Department engage in aerial spraying only during mass infestation. However, farmers obtain agrochemicals from incredible sources, sometimes from road side traders, which can jeopardise the environment, though no major incidence of poisoning or disappearance of some species due to the use of chemicals has been reported. In addition, most farmers consulted use both organic and inorganic fertilisers to complement each other though the use of

organic fertiliser, which is environmentally friendly, is considered inconvenient and most uncertain since about 10 trucks of organic fertiliser are required to treat a plot of land instead of a few bags of chemical fertiliser.

Access to Financial Assets.

Lack of finance limits the extent to which farmers use inputs such as labour, fertilizer and insecticides. Farmers interviewed in all the five states identified lack of finance and credit as a major constraint to cotton production. Farmers disclosed that it costs between US$300 (Tsafe LGA Zamfara) and US$400 (Katsina LGA and Karaye LGA) to cultivate cotton on one hectare of land incurred mostly on labour followed by agrochemicals. In most villages, farmers rely on sales of domestic animals, and the produce of previous harvest and savings from dry season off-farm activities in trading and casual work to raise funds required for planting cotton. Very few farmers have access to state governments' credit system which has very limited coverage and impact. In Katsina State for example, where the government participates in the Agricultural Credit Guarantee Scheme Fund,[3] the fund is too little, increased from US$0.5million to about US$1.6million in 2003, and is earmarked for the support of all small-scale agricultural and non-agricultural activities. The state's sub-committee for Boosting Cotton Production also provides annual support to very few cotton farmers who participate in ADP's seed production project as out growers at the equivalent of US$700 per farmer, a package that includes 2 work bulls, 1 Ox cart, fertiliser, chemicals and seeds.

Access to Human capital Assets: Extension and Research Services.

The success of farming activities is dependent on access to extension and research services the absence of which translates into poor farming practices and poor quality output which in turn constrains farmers' access to lucrative markets. Cotton producers in the cotton belt access extension services through the ADP system, which, however, suffers from funding constraint since the phasing out of support from international donors that in turn has created fundamental problem of mobility and inadequacy of extension workers. The ADPs cannot employ more extension workers due to the embargo placed on employment by the government, thus reducing the ratio of extension workers to farmers from 1:1200 at the time of study to below the international standard of 1:800 in all ADP systems in the five states. Discussions and interviews with farmers reveal that research and extension services hardly extend beyond their narrow discipline to include farmers' 'wider context' problems relating to socio-economic, marketing and environmentally-sound farming issues. In marketing of cotton for instance, farmers in all the states use cheap plastic bags for packaging; which melts at ginning point and cause deterioration to the quality of cotton as well as its local and international price. In addition, farmers' production decisions are not shaped by their interaction with extension services as extension staff have not been able to help farmers deal with the problem of basing their extent of cotton cultivation in any particular year on the price of cotton in a previous season which usually lead to booms and bursts and whose risks only few farmers can successfully cope with. This problem appears to be a potent

[3] Federal Government contributes 50per cent, State Government 25per cent and participating cooperatives, US$2000 each to the Fund.

source of the high prevalence of poverty among small cotton growers.

Social capital Assets.

Because cotton farmers can hardly access formal assistance for additional financial resources, reciprocal social relationships provide a vital alternative the most important of which is the extended family network. Migration to urban centres during the dry season is common among young males of the extended family system who migrate to capital cities and the Federal Capital Territory to work in such activities as shoe shining, nail cutting, mobile tailoring, and petty trading in vegetables, fruits and other manufactured consumables such as evaporated milk, sugar, toothpastes, sweets, among others. The little savings from these and other menial jobs constitute a vital source of meeting the financial cost of cotton cultivation during the rainy season. Young males also provide labour for the family farm during the same period. Folks of Al Majiris[4] engage heavily in land preparation and planting.

Cotton farming requires sophisticated interactions and business relationships with company agents and middlemen, necessitating the development of professional ties among cotton producers beyond the primary relationships of family and kinship thereby extending to the formation of strong and well-organised cotton producers associations in every village. However, these associations have limited influence on means of achieving sustainable livelihoods of members because their activities are localised; whereby no networking activity exists with their counterparts in neighbouring local government areas. For example, only one secretary of cotton growers association in Karaye LGA, Kano has ever visited his counterpart twice in Katsina state only because the journey is less than 30 minutes by road and on the invitation from Katsina State Government. The National Cotton Association of Nigeria (NACOTAN) is the national body for cotton growers with 5 zonal offices in the cotton belt but most village farmers in their discussion were not aware of its mission or activities. Some leaders of farmers' associations who help farmers find better marketing agents are actually agents of big traders, and do so for own gain rather than for members' interests. The ADP system including its Women in Agriculture (WIA) unit which provides an indispensable support for active women farmers in the farming communities by ensuring that they receive a fair share of ADP services and resources though made considerable attempts to support cotton associations, it has limited links with them in terms of the number of such associations that it works with and the scope of operation which is mainly in the area of selection of out-growers for multiplication of improved seeds.

The cotton growers associations are powerless institutions that lack fundamental organisational skills and capacity, partly because they are scattered and isolated from their next door counterpart in the next LGA, to deal with the cotton cartels which seemingly has a vital regional influence. This lack of effective networking among cotton farmers associations disables and cripples their collective bargaining possibilities thus making individual member-farmers vulnerable to middle men antics often fostered by a marketing practice that ensures that individual farmers offer their cotton for sale in instalments at different

[4] Children recruited in community based Islamic education system prevalent in Northern part of Nigeria.

times of the season in an effort to maintain specific income-smoothing strategies that attempt to strike a balance between immediate needs and speculation about the possibility of price increase towards the end of the season. This practice limits the effective organisation of farmers, according to the leaders of the farmers association in Daudawa, Funtua LGA, and their ability to deploy collective bargaining for the well-being of the entire cotton farming community.

The scattered farmers' associations also lack effective advocacy skills and political power to exert any meaningful pressure on their political and market contexts in favour of their livelihood agenda. Most of the farmers' associations are not even aware of the potential of advocacy in achieving significant change in their favour. There is no evidence of sympathy and support from any activist group or civil society movement in the belt. Farmers also have minimal representation beyond their farming communities. Only in Ikara village, Kaduna State, was the leader of the cotton farmers able to form a coalition of farmers at the LGA level.

Market Access and Cotton value chain.

The issue of access to market and favourable prices emerged foremost in the discussions with farmers' groups and government officials in the five states. The sole problem noted by farmers in Jigawa and Kaduna states is the manipulation of cotton price by local marketers and middle men. The farmers asserted that they may not require too much assistance to profitably produce if the prices they receive reflect the true cost of production and can engage in sustainable cotton production. Even when farmers and ginners are aware of the existence of international cotton market as a possible alternative to the unfavourable pricing in the domestic market they are not conscious of the dynamics and processes of international cotton trade and the opportunities that exist to achieve a change in favour of local producers. For example, NACOTAN does not have contacts with their counterparts outside the country.

Operators in the cotton value chain include farmers, agents/middlemen, ginners, and textile factory owners. Commodity marketing boards previously possessed monopoly and monopsony powers regarding inputs and outputs which have been transferred to a cartel of ginners and owners of textile factories who set the reference price that often constitutes the highest price obtainable in the cotton market. Once cotton price is set, agents and middlemen then compete with each other to maximise their gains and as a result offer farmers low prices. Thus, the cartel is able to control the most lucrative point in the cotton value chain. The mechanism of setting the price by the cotton cartel is such that ginners and textile factory owners establish offices in the production villages to eliminate transport cost for farmers and to provide some production inputs in kind as a prepayment for seed cotton. Farmers believe that this arrangement, though similar but slightly better than that of the CMBs, makes them cultivate cotton and eventually create livelihoods opportunities for cotton traders, ginners and factory owners who control the value chain and the process of uneven distribution of the benefits because they determine the price irrespective of the dictates of market forces. Ginners are never able to obtain all the cotton required to fully support their production capacity but this never raises the price of cotton. A marketing manager of one cotton and agricultural processing

plant confirmed this, saying that the production capacity of his ginnery was MT250,000 per annum while the company hardly obtains more than MT40,000 from the local market. Paradoxically, this annual shortage does not translate into higher prices for small-scale farmers. Farmers also cite the issue of annual and within-year instability of the price of cotton, asserting that farm gate prices fluctuated widely within the band of US$150-US$600 per 1 metric tonne of cotton in the last five years. At the ginnery, one metric tonne of cotton lint, which is 35per cent of raw cotton after processing, and provides 90 per cent of the economic value of cotton, sells for between US$1100 and US$1800. Ginners also claim that payment for cotton lint was usually partly the cash they receive at the time of delivery of lint to textile factories while the remaining part takes months to settle or is paid in kind.

Livelihood outcomes and Alternative Livelihood Strategies.

Despite unfavourable and unstable prices, interviews about farmers expenditure patterns revealed that farmers use revenues from cotton sales largely for social ceremonies particularly the wedding of their daughters considered as household's number one priority and which is by far more expensive than wedding of the son. School fees, health care and reinvestment in cotton production (for buying new equipment and expansion of cultivated land) were frequently mentioned during discussions. Farmers also buy electronics such as TV, cassettes, and of recent mobile phone handsets during good seasons. Nonetheless, the combination of unfavourable and unstable prices has meant that small cotton farmers should seek alternative livelihood strategies beyond cotton farming. Most cotton farmers seek alternative livelihood strategies from within the rural farming system rather than migrate to urban centres. These include the adoption of crop mixture and a shift to a second cash crop in the area. Farmers shift to farming maize (in Kano state), pepper (in Jigawa state), and groundnuts, millet and maize (in Zamfara). However, farmers in Katsina continue to farm cotton irrespective of the price and the effect it has on their livelihood, thus making them the most vulnerable group. Even so, the shift to alternative farming such as maize still faces daunting constraints such as the essential use of fertilizer. Household's young males in all the study areas embark on migration to urban centres to work during the dry seasons, bringing back little savings from menial jobs to advance as part of the financial cost of cotton cultivation during the rainy season in addition to the provision of labour for the family farm during the same period.

Vulnerabilities and Opportunities.

Farmers in poor farming communities in the cotton belt believed that they are susceptible to certain vulnerability conditions that cripple their efforts to achieve sustainable livelihood outcomes. These issues include natural disasters, such as desert encroachment and climatic change (especially in the case of Jigawa farmers), growing population, and democratic governance, among others. Opportunities are being created to mitigate the effects of the sources of these vulnerabilities. These include the massive re-forestation programme and the wind break system installed along the road sides in Jigawa state; the Fadama user project funded by African Development Bank and World bank which targets conflict resolution that frequently occur between farmers, pastoralists, fisher men and hunters; and the Jigawa Wet land project (JWL) funded by DFID which is

implementing a community-based initiative to combat Typha invasion. Jigawa and Katsina state governments are also seriously rejuvenating their cotton sector. In Jigawa State, the government is embarking on direct production of improved seeds, and the establishment of ginning machines and textile factories as part of a comprehensive cotton development strategy.

SUMMARY AND CONCLUSION

The sustainable livelihood framework is applied to the context of cotton production and trade in Nigeria's cotton belt comprising five constituent states with focus on small cotton farmers' livelihood strategies. The key finding of this paper is that the farmers are vulnerable to natural and environmental disasters and policy shocks to which some programmes and projects are targeted. However, due to inadequate funding from government and inability to sustain efforts of multilateral development organisations, such programmes and projects could not have the required impact on the livelihoods of cotton farmers in the study area. Farmers associations that are expected to alleviate their problems are also weak and limited in their world view and sometimes leaders of the associations appropriate the greater benefits. Thus, it can be affirmed that institutional interventions to reduce vulnerabilities have been less successful in dealing with the restoration of small cotton farmers' economic and social capital assets, leading to the exclusion of the poor. These perpetual struggles to cope have created diversification of livelihood portfolio that impact on household relations and cohesion even when these alternative livelihood strategies appear inadequate. This suggests that the SL approach needs to be considered in poverty reduction strategies to successfully combat poverty.

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