



## **Growing Inclusive Markets**

Business Works for Development • Development Works for Business

**CASE STUDY**

Sub-Saharan Africa • Nigeria

## **Food for Development in Nigeria**

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Sector • Agriculture, Food & Beverage, Consumer Products,  
Health Care

Enterprise Class • Foreign Company/MNC



## Executive Summary

The Tetra Pak Food for Development Office (FfDO) is an initiative of Tetra Pak, the global packaging corporation that was established to improve nutrition and health as well as alleviate poverty globally.

In 2004, the Nasarawa State Government (NSG), under the mandate of President Olusegun Obasanjo, the President of the Federal Republic of Nigeria, collaborated with Tetra Pak West Africa (TPWA) in the development of a state-wide school feed programme using Nutri-Sip, a maize-based meal supplement that had been developed and deployed in South Africa. Due to the limited availability of maize in Nigeria, the short-term production/localization of Nutri-Sip required a new product formulation. The replacement raw material, cassava, had to be properly researched and thus, the school feed programme commenced with the maize-based Nutri-Sip, imported from South Africa.

Delayed by the importation process, the government-led programme eventually kicked off in September 2005. However, logistical challenges attributed to distribution and operational financing slowed the pace of deployment considerably. As of December 2005, half of the targeted enrollee population of 150,000 had joined the programme, which was complemented by prior de-worming of the children. However, a change in the political leadership in both the federal and state governments led to the abrupt termination of the programme, stalling local production and the establishment of the proposed pan-Nigeria school feed programme. In 2008, having demonstrated and evaluated the nutritional benefits of Nutri-Sip, Tetra Pak West Africa transferred the rights to a local processor company interested in reinitiating the school feed initiative.

Today, although Tetra Pak West Africa (TPWA) is without a school feed scheme, they are contemplating new sustainable options for milk-based school feed programmes that encompass the lessons of the Nasarawa pilot and facilitate the implementation of the cow-to-consumer model that ensures that these programmes will not only serve the nutritional needs of the children, but also address poverty in the value chain. The cow/agriculture to consumer model is synonymous with the value chains in the development of agricultural consumer products.

## Introduction

*“The programme stopped, but the strategy from our perspective as Tetra Pak has not stopped. It’s not just Nasarawa State Government, we are looking at other options and we’re looking at other kinds of vehicles, other kinds of products.”*

Ibukun Daniels, Food for Development, Tetra Pak West Africa



Mr. Ibukun Daniels, Head of Business Development and Food for Development (FfD) representative for Tetra Pak West Africa (TPWA), the regional branch of the global company that develops, manufactures, and markets systems for processing, packaging, and distributing food, mused over the successes and failures of the pilot school feed programme as new initiatives were considered. For Ibukun, FfD involved his wearing a different hat in the Tetra Pak organization. As opposed to selling Tetra Pak machinery as his portfolio suggested; his FfD hat involved more of selling solutions that employed Tetra Pak machinery.

FfD initiatives in developing economies like Nigeria had their challenges that ranged from funding to implementation. The daily funding of school feed programmes such as those proposed by Tetra Pak were expensive and required long-term commitment; thus FfD programmes were either government- or donor-funded (international donor agencies, or non-governmental organizations (NGOs)). While Tetra Pak had expertise in developing food products that could easily be distributed in Tetra Pak cartons, FfD was not their major business focus and this left a vacuum in the deployment and administration of FfD programmes. However, the inclination of international agencies to fund such programmes in Nigeria was lacking as a result of Nigeria's supposed oil wealth.

*“How are we going to get funding for such a programme from an organization like the Bill Gates Foundation when his organization knows we have so much oil? We don't fall into the category of nations that qualify for food funding... The socio-economic status of the country significantly impacts access to donor funding.”*

Ibukun Daniels

With government as the only source of funding, the competition for budgetary allocations at the state level also constrained the development of such programmes as funding was highly competitive - governments were struggling to rebuild schools and fund education in general.

As Ibukun contemplated the various challenges, he also realized that even when funding constraints had been overcome, the scale of FfD programmes warranted the involvement of government agencies at the federal, local and state levels for implementation; and the coordination of this collaborative venture, in his opinion was a great task. Whilst the Nasarawa pilot not only helped TPWA understand the feasibility of FfD programmes in Nigeria, it also illuminated various operational problems that needed to be addressed. In spite of these, Ibukun knew that TPWA had to use these experiences in the development of a working FfD model for the future success of FfD initiatives.

## **NUTRITION IN NIGERIA & SCHOOL FEED PROGRAMMES**

Nigeria, Africa's most populous nation, located in Western Africa is a rich country with abundant natural and mineral resources. One of Nigeria's greatest exports is oil, being one of the leading members of the Organization of the Petroleum Exporting Countries (OPEC). In spite of its richness, Nigeria is plagued by an array of developmental challenges ranging from poor infrastructure to lack of access to quality basic healthcare.



In Nigeria, 40% of its children were chronically malnourished in 2005.<sup>1</sup> With a population of 150 million of which 47 % are under the age of 18; 36% of pre-school children (age 0 – 5) are underweight, 43% stunted<sup>2</sup>, and 9% wasting<sup>3,4</sup>. In addition to these growth disorders, cases of malnutrition increasing children’s vulnerabilities to diseases such as malaria, diarrhoea, acute respiratory diseases, etc. were prevalent.

In order to fight malnutrition in Nigeria, the 2002 National Policy on Food and Nutrition identified several strategies, one of which included the control of micronutrient deficiency through vitamin and mineral supplementation, food fortification and dietary diversification through initiatives like school feeding programmes. School feeding programmes in Africa such as those supported by national governments, the United Nations World Food Programme (WFP), NGOs and others are intended to improve the quality of and access to education for children in food insecure regions. These programmes may be considered as “*the single, most important long-term investment towards the future reduction of poverty and food insecurity on the continent.*”<sup>5</sup> In July 2003, the Hunger Task Force<sup>6</sup> proposed that in cooperation with the New Partnership for Africa’s Development (NEPAD), WFP, Food and Agriculture Organization of the United Nations (FAO) and United Nations Children’s Fund (UNICEF), school feeding programmes will link school feeding with agricultural development through the purchase of locally/domestically produced food, school gardens and the incorporation of agriculture into school curricula. Demand for locally produced food will be stimulated and trigger market mechanisms, particularly when concentrated on marginal rural areas where such mechanisms do not exist yet.<sup>7</sup> These strategies and the need to fight malnutrition have been instrumental in Nigeria’s interest in Food for Development (FfD) initiatives.<sup>8</sup>

## **Tetra Pak and Food for Development**

Tetra Pak develops, manufactures, and markets systems for processing, packaging, and distributing food. Known for its carton packaging, a concept that was conceptualized in 1943 by Dr. Ruben Rausing from Sweden with the development of milk packaging that required minimal raw material, while maintaining hygiene, Tetra Pak has grown into a multi-billion dollar global corporation in the food production industry (see Annex 1). As of 2008, Tetra Pak employed over 21,500 people in the more than 150 markets where it operates, and posted global net sales in excess of €8.8 billion (close to US\$12.3 billion). In Nigeria, Tetra Pak business operations are coordinated by Tetra Pak West Africa (TPWA) and FfD operations by the implementing office in country and the global FfD office in Stockholm.

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<sup>1</sup> Tetra Pak, 2005

<sup>2</sup> Stunted is a reduced growth rate in human development that is the evidence of malnutrition, especially in early childhood.

<sup>3</sup> Wasting is the involuntary loss of more than 10% of baseline body weight.

<sup>4</sup> Tetra Pak, 2005

<sup>5</sup> WFP, 2005

<sup>6</sup> A UN task force was established to fight hunger

<sup>7</sup> World Food Programme (WFP), 2009

<sup>8</sup> UNICEF, 2006



### **TETRA PAK WEST AFRICA (TPWA)**

TPWA began indirect operations in Nigeria in 1963 through the acquisition of a processing and packaging plant, Fan Milk, a local dairy company. Tetra Pak formally established local presence there in 1983. Based in Lagos, the TPWA office serves as the central office for the West African region.

TPWA operates in the milk and fruit juice category of the food and beverage market, where it competes with packaging technologies, such as polyethylene terephthalate (PET plastic bottles) and stand-up pouches, and against carton packaging companies like PurePak and EloPak. TPWA has built a presence in the region and has over 30 customers in the food and beverage industry that are serviced by more than 60 employees.

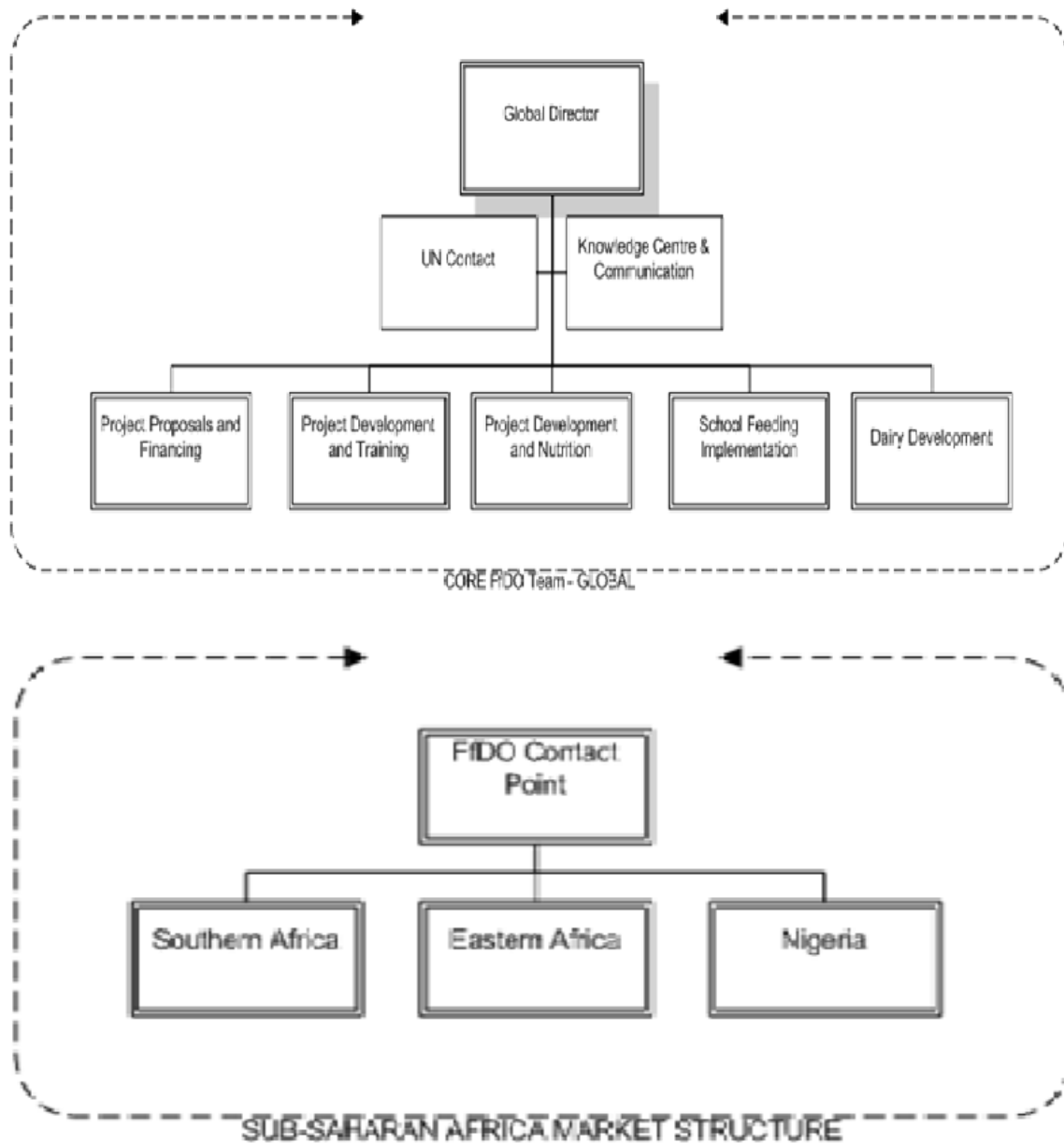
### **FOOD FOR DEVELOPMENT**

The Tetra Pak Food for Development Office (FfDO) was established in 2001 as a global initiative to address health, nutrition and poverty amongst the vulnerable members in society – namely children. Headquartered in Stockholm, the FfDO is comprised of personnel dedicated to the development and execution of FfD initiatives globally. These were complemented with FfD officers in each Tetra Pak office across the globe (see Figure 1).

Guided by its mission ‘to work with partners to promote socially, economically and environmentally sustainable agricultural, feeding and food development programmes, building on our core knowledge and experience’, the FfDO seeks to create public-private partnerships using its ‘cow/agriculture to consumer’ value chain model (See Figure 2). All FfDO initiatives are concentrated in three areas: health and nutrition, education; and poverty alleviation.



Figure 1: Food for Development Organization and Sub-Saharan Africa Operating Model

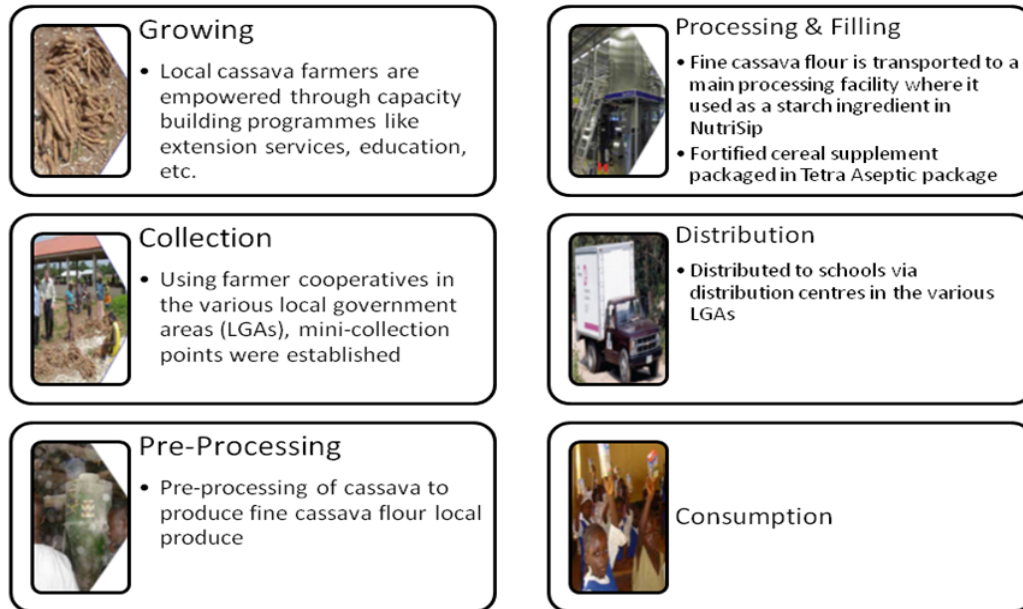


Source: company documentation

To achieve its FfD goals, Tetra Pak through its global offices and international partnerships, seeks to develop and produce nutritious feed supplements using locally sourced materials that are packaged in Tetra Pak cartons and distributed to school children in participating countries. While Tetra Pak does not directly sell the school feed supplements, it seeks to partners with governments or donor agencies that fund these programmes acting as a catalyst for increasing the demand for Tetra Pak cartons.



**Figure 2: Agriculture-to Consumer Model**



Source: company documentation

The FfDO engages in two types of partnerships - institutional and programme. Globally, the United Nations Development Programme (UNDP), Global Alliance for Improved Nutrition (GAIN), and the World Initiative for Soy in Human Health (WISHH), and Bill & Melinda Gates Foundation work with FfD institutionally; whilst programme partnerships are developed locally with governments and other entities in the development and implementation of initiatives.

School feed programmes are long-term projects that comprise of: production of the feed, acquisition and distribution by an implementing entity, and impact assessment of the programme. Due to the relatively high costs, school feed programmes are usually government- and/or donor-funded. They typically include the payment of the feed and the establishment of administrative and logistics structures to facilitate distribution to schools. Production and packaging of the school feed on the other hand, is usually conducted by existing Tetra Pak customers with the appropriate plant technology and capacity. Depending on the programme and country, various funding models are adopted. Since inception, the FfDO has been involved in school feed programmes in more than 45 countries including China, Nigeria, Bangladesh, and Indonesia; and developed highly fortified nutritional meal supplements such as Nutri-Sip (see Table 1 below).

## Food for Development in Nigeria



**Table 1: FfD Projects and Funding Models**

Country	School Feed Product	Financing	Distribution	Impacts
<b>Nasarawa</b>	Fortified meal supplement	Government	Government, USAID support	<ul style="list-style-type: none"> <li>• 260,000 children fed</li> <li>• Improved school participation amongst children</li> </ul>
<b>Kenya</b>	Milk	Government		<ul style="list-style-type: none"> <li>• 4.3 million children fed</li> <li>• Development of dairy industry</li> </ul>
<b>Bangladesh</b>	Milk	United States Department of Agriculture (USDA)	Land O'Lakes	<ul style="list-style-type: none"> <li>• Approx 2250 jobs created</li> <li>• School attendance increased from 70% to over 90%</li> </ul>
<b>Indonesia</b>	Milk	Local Governments, USDA	Yayasan Bina Putra Sejahtera (NGO)	<ul style="list-style-type: none"> <li>• 177,000 receiving milk in 1802 schools</li> </ul>
<b>China</b>		Private sector	Government	<ul style="list-style-type: none"> <li>• Raw milk production increased by 19%</li> <li>• Dairy cattle stock increased by 50%</li> <li>• Dairy farmers incomes increased by 58%</li> <li>• 200,000 direct &amp; indirect jobs created</li> </ul>
<b>Guatemala</b>	Milk	Government	Government	
<b>Romania</b>	Milk	Government	Government	<ul style="list-style-type: none"> <li>• 2.67 million children fed</li> </ul>
<b>Iran</b>	Milk	Government	Government	<ul style="list-style-type: none"> <li>• 10 million children fed</li> <li>• Improved scholastic and academic performance</li> <li>• Reduction in absenteeism</li> </ul>

Source: compiled from country cases on <http://www.tetrapak.com>

The origins of FfD in Nigeria date back to the November 2003 forum hosted by the Swedish Trade Mission in Lagos. At that meeting, Tetra Pak representatives presented a paper on the success of the Nutri-Sip<sup>9</sup> school feed programme in South Africa and dairy development prospects in Nigeria. Pleased with the outcome, the Swedish Ambassador scheduled an official presentation to the Federal Government of Nigeria, represented by President Olusegun Obasanjo. Although this Government presentation did not take place until February 2004; upon listening to the ideas proposed by the global Tetra Pak team on rebuilding the dying dairy industry and the potential economic benefits such as job creation and industrial rural development, the farmer in President Obasanjo immediately anticipated the potential contributions of TPWA. To expedite action, President Obasanjo set up a National Dairy Development Committee (NDDC) under the chairmanship of the Executive Governor of Nasarawa State, Alhaji (Dr.) Abdullahi Adamu and immediately charged the NDDC with the initiation of a pan-Nigeria milk school feed programme.

<sup>9</sup> Nutri-Sip, a fortified maize and soy-based drink containing supplements and vitamins such as Bioflavonoid Vitamin P that decreases risks associated with diarrhoea. Nutri-Sip was originally produced in South Africa where it was employed in a school feed programme.





Without any knowledge of the dairy capacities in the country, the newly formed NDDC turned to TPWA engaging them in the evaluation of local dairy capacities. The results of the study presented to the NDDC in June 2004 revealed that the local dairy industry was highly fragmented and incapable of supporting school milk needs of one state<sup>10</sup>. While Nigeria's demand for milk was relatively high, the limited availability of sufficient numbers of milk producing cows resulted in the importation of milk powders that are subsequently processed and packaged locally.

*“Every milk product you take today is recombined. It's from milk powder - the yoghurt, the evaporated milk - they add water and then process it and then put it in tin cans, plastics, cartons, bottles etc. It is around the neighbourhood of US\$2billion imports every year.”*

Ibukun Daniels

Unable to commence a milk-based school feed programme, the NDDC proposed the use of locally produced Nutri-Sip to jump start the school feed initiative whilst parallel programmes to cultivate the dairy industry were developed. However, this plan for Nutri-Sip localization was short lived due to the competitive demand for maize by established food processors that led to the search for alternative starch-based products such as cassava.

While Nigeria's cassava production capacities exceeded 38 million tons annually, the proposed substitution of maize for cassava required Nutri-Sip redevelopment and reformulation processes that made the launch of a cassava-based Nutri-Sip school feed programme unlikely in the short-term. Thus, given the time constraints, President Obasanjo ordered the commencement of a pilot school feeding programme in Nasarawa state using imports of the maize-based Nutri-Sip to be launched in January 2005, while the cassava-based product was being developed. The Memorandum of Understanding (MOU) for the pilot was signed on 31 November 2004. The partnership model revolved around the State Government supported by TPWA, Solae and other local producers as seen in Figure 3 below.

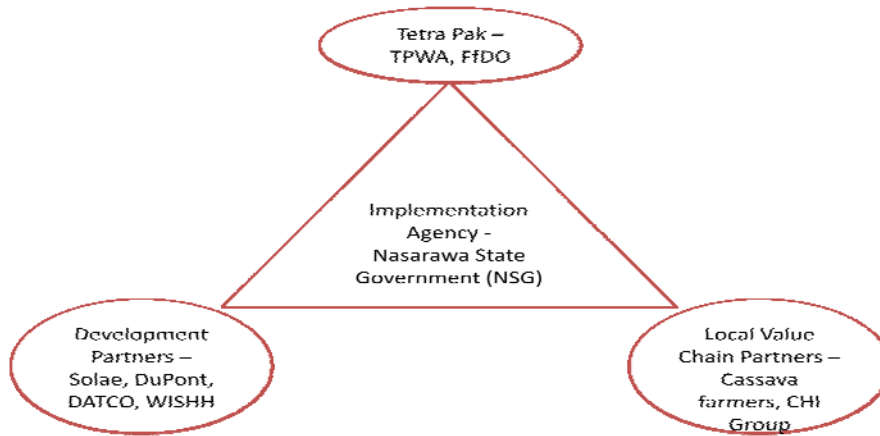
Under the terms of the MOU with the Nasarawa State Government, TPWA had overall responsibility for technical support in the management and administration of the school feed programme. In this capacity, TPWA provided a part-time FfD manager to provide technical assistance in the day-to-day operations and a school feed implementation expert working remotely bringing global expertise on school feed logistics and administration.

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<sup>10</sup> Nigeria is made up of 36 States and the Federal Capital Territory (FCT).



**Figure 3: Nasarawa School Feed Programme Strategic Model**



*Source: company information*

Thus, the model for implementation included the school feed implementation agency, development partners and local value chain partners. Development partners had the responsibility for the formulation of a local cassava-based Nutri-Sip; local value chain partners were to be responsible for growing and processing the cassava into Nutri-Sip.

### **THE NUTRI-SIP PILOT**

Nasarawa state, located in the middle belt region of Nigeria (see Figure 4 below for state information), is one of the Nigerian states whose children are affected by malnutrition - 31.4% of children below five are stunted and exhibit a high prevalence of nutrition deficiencies.<sup>11</sup> Nasarawa is divided into 13 local government areas (LGAs) under which schools are registered and monitored.

The Nasarawa state school feeding programme was the first step in a wider effort by President Obasanjo to make school feeding available to children across the country. The President mentioned that almost half of children ages 7-13 in Nigeria were underweight, and he repeated his intention to improve the nutritional situation for Nigeria’s children through school feeding programmes throughout the country. The goal was to reach 27 million children nationwide within 10 years. The Nasarawa pilot addressed the immediate nutritional needs of children and demonstrated the relationship between good feeding and academic and cognitive performance.

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<sup>11</sup> Tetra Pak, 2005



**Figure 4: Map of Nigeria with location of Nasarawa highlighted**



Nasarawa State, the home of solid minerals, was created on October 1, 1996. Occupying a total land area of 27,117 km<sup>2</sup> (10,469.9 sq mi), Nasarawa's population is slightly over 2 million. Nasarawa is well endowed with the following solid minerals: Barytes (Azara), Salt mines (Keana), (Awe) and (Azara) gypsum in (Awe and Azara). With a predominantly agrarian economy, Nasawara is known to produce various crops including: yams, maize, rice, guinea corn, beans, tomatoes, acha, groundnuts, cotton, millet, cassava, oranges, banana, apples and wheat.

Source: [http://en.wikipedia.org/wiki/Nasarawa\\_State](http://en.wikipedia.org/wiki/Nasarawa_State)

Since the presidential directive to implement the school feed programme in Nasarawa, Governor Adamu, on behalf of the Nasarawa State Government (NSG), established the Nasarawa State Feeding Programme Committee (NSFPC) which was responsible for programme management and administration activities. The state-funded programme was made possible from the NSG share of the oil revenue derivation.<sup>12</sup>

### **FFD PILOT CONSTRAINTS**

The pilot implementation was limited by challenges ranging from importation delays to operations and human resource issues in an accelerated pilot programme, and the eventual abrupt termination of the pilot.

Projected to have commenced in January 2005, the Nasarawa School Feed programme was not formally launched until September 2005, after a nine month delay attributed to importation delays of the maize-based Nutri-Sip from South Africa.

With six port harbours, the importation of containers into Nigeria was a long-winded process that involved banks, clearing agents, shipping companies, customs and the Nigerian Ports Authority (NPA). The clearance of goods required assorted documentation (nine in total), various approvals and lasted up to 41 days. This delayed clearance of goods, in some instances beyond the expiration date of the products, increased the unit cost of Nutri-Sip.

Following the clearing delays, Governor Adamu, under political pressure to substantiate the expenditure of public funds, was eager to commence programme rollout and therefore approved the implementation of an accelerated pilot model by the NSFPC. Under this implementation model, 10,000 weekly enrolments were planned; however, by December 2005, only 75,000 children (half of the estimated target of 150,000 children) had been

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<sup>12</sup> Nigeria's oil revenues are distributed to all states based on a derivation formula.



enrolled due to a myriad of constraints ranging from human resourcing to operations management.

Aspects of operations management required in the implementation of the school feed programme involved logistics, finance and community development.

### ***Logistics***

Logistics functions included import processing, agent relationship management and inventory management across the various storage warehouses in the local government offices across the state. The establishment of these relationships with the local governments (LGs) was a joint effort between the logistics and community development teams that entailed collaboration with the health and education units of the various LG offices. To support effective distribution, the state government acquired five project vans for the programme. While logistics support was critical to the successful distribution of school feed to the various stores set up in the various local governments, planning and project management skills amongst the local team members were lacking; thus to ensure programme success, the limited Tetra Pak resources assigned to the project gradually transformed roles from technical assistance to project management.

### ***Finance***

This team was responsible with providing the programme with the necessary financial needs for day to day operations such as petrol, etc. In addition, they were responsible for liaison with the state Ministry of Finance and banks in the processing of letters of credit (LoCs) for importation. The limited availability of finances to support the programme combined with government bureaucracies often led to delays in the distribution of Nutri-Sip.

*“Distributing the products around Nasarawa state was a big challenge. You had to get the vehicles, if the vehicles are there, there was a lot of bureaucracy getting fuel for the vehicles.”*

Ibukun Daniels

### ***Community Development***

This supporting team was to provide the community with capacity building information on the benefits of health and nutrition and to gain acceptance of the programme from the community. It involved interacting with local community leaders, chiefs and other organizations with interests in community development. One such organization was GlaxoSmithKline who responded to the needs of the NSFPC in the provision of Zentel, a de-worming agent to the Nasarawa state government at highly subsidized costs. Due to the high prevalence of worm infestation in the children of Nasarawa, a corresponding de-worming programme had to be conducted by the NSFPC to ensure that the nutritional benefits of the programme were attained.

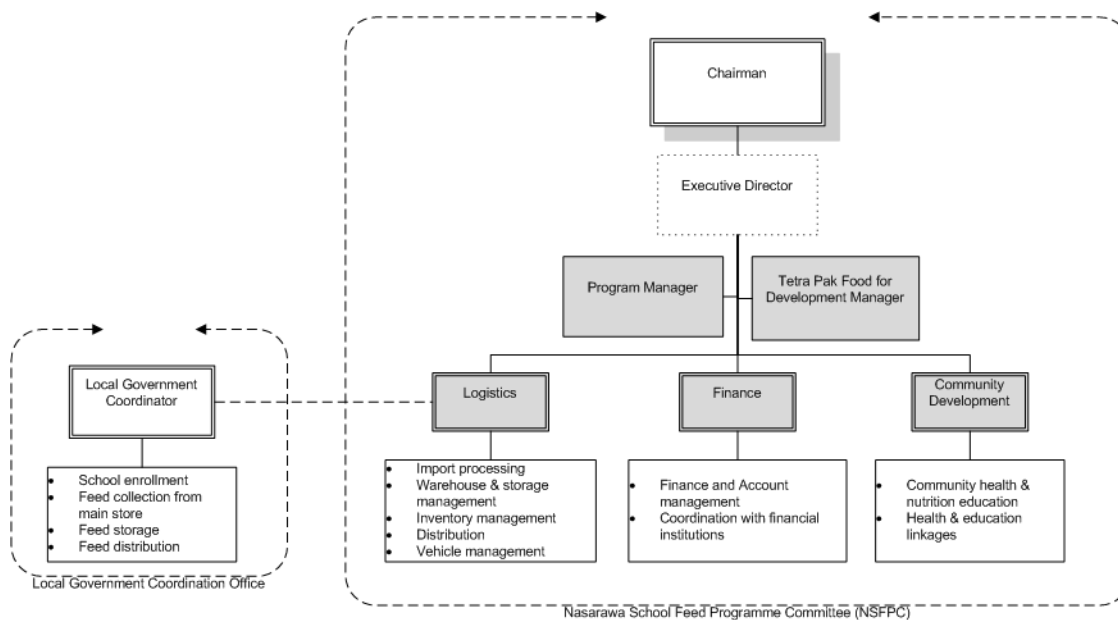
*“If you are focusing on nutrition you have to be sure that in the first place, you don't have infections or infestations exacerbating more the problem of nutrition - like*



*worms. The first thing we did was we needed to deworm all the school kids that were enrolled.”*

Ibukun Daniels

**Figure 5: Nasarawa School Feed Operating Structure**



Source: Olayinka David-West

Once the impacts of the Nutri-Sip pilot became visible, other NGOs working in the region contributed to improve community living conditions through initiatives such as the provision of boreholes to improve access to clean water.

*“The boreholes were not sunk by Tetra Pak or the Government; they were NGOs who saw that something is happening here, we are interested in sinking 20 boreholes; who is the guy that is going to sink the boreholes? This is the guy..OK sink’. A lot was coming in.. and the program halted. Everyone was bringing money - the money was not going to pay for the Nutri-Sip, but to support the programme. Nasarawa State Government was fully responsible for the purchase of the Nutri-Sip.”*

Ibukun Daniels

In support, the United States Agency for International Development (USAID), committed financial resources to the improvement of operational efficiencies in the administration of the programme for the acquisition of computers and the payment of personnel wages; but the funds remained unutilised as the project ended.



The administration of school feed under the Nasarawa School Feed pilot scheme lasted until February 2008 when the last meal supplements were administered to 260,000 children in 512 schools.<sup>13</sup>

### **MAKING A LOCAL NUTRI SIP PRODUCT**

Whilst the maize-based school feed programme was under the administration of the NSFPC, TPWA was responsible for making the product locally.

The localization of Nutri-Sip was not only critical to the sustainability of the school feed programme, but was also one of the main objectives of the FfDO in the implementation of



Nutri-Sip (Source: company documentation)

school feed programmes - poverty alleviation through agricultural development. The proposed agriculture to consumer value chain, an increased demand for cassava that required the inclusion of local cassava farmers to grow the raw material was the starting point of the value chain. With a steady demand for cassava, farmers would be assured of steady markets and increased sales that could ultimately increase incomes and livelihoods. In addition, the local production of Nutri-Sip warranted the establishment of Ultra High Temperature (UHT) processing capabilities that would increase industrial capacity and create new jobs.

The proposed substitution of cassava for maize required the reformulation of a new fortified drink that involved quality cassava processing and drink mixture formulation. Whilst the reformulation of the meal

supplement posed no challenges, the acquisition of quality processed cassava was somewhat difficult. Although a large cassava producer, existing processing capabilities were somewhat primitive and incapable of producing the high-grade cassava flour required for UHT processing. Although the localized Nutri-Sip was never produced en masse, the limitation of access to high-grade cassava was overcome with the establishment of a modern cassava processing plant by The Dutch Agricultural Development and Trading Company (DATCO).

The development processes involved in the formulation of school feed programmes involved a group of global producers of micronutrients and fortification vitamins. The reformulation process was made possible with the assistance of partners like Solae, DATCO, DuPont and WISHH.

- *Solae*: The Solae Company, a member of the DuPont group of companies, is involved in the innovative development of soy technologies for food and other nutritional products. With its leadership in research and development in soy-based foods, the

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<sup>13</sup> Aselema, 2008



Solae Company was engaged by FfD to develop the cassava-based Nutri-Sip formula. In addition, the Solae Company supplied the soy-based ingredients (micro-nutrients) that were used in the Nutri-Sip meal supplement.

- *DuPont*: Founded in 1802, DuPont is a global leader in scientific innovations. With a wide range of products and services in agriculture, nutrition, electronics, communications, safety and construction, etc., DuPont has progressively created sustainable solutions for a better, safer and healthier life. In the Nutri-Sip project, DuPont was engaged to develop the processing procedure for the cassava flour suitable for UHT processing.
- *The Dutch Agricultural Development and Trading Company (DATCO)*: A Netherlands-based agricultural company established modern processing facilities for the Nigerian cassava processing industry to make it more sustainable. Aimed at supporting small-scale farmers in cassava processing, DATCO established modern processing facilities capable of producing high-grade cassava flour for UHT processing in three states.
- *The World Initiative for Soy in Human Health (WISHH)*: This is an initiative of the American Soybean Association (ASA) that seeks to export the benefits of U.S. soy proteins to developing countries. The soy-based protein used in the Nutri-Sip formula were developed and supplied by WISHH.

In anticipation of Nutri-Sip localization, TPWA invited an existing customer, CHI Group, into the discussions as the commercial partner to produce Nutri-Sip in Nasarawa. The CHI Group were highly interested in this venture but needed government assurances before making the prerequisite investments in establishing a processing plant in Nasarawa.

### ***Localization Constraints***

This substitution of maize for cassava involved the reformulation of the entire Nutri-Sip meal supplement that required the pre-processing of cassava into fine grade flour for ultra high temperature (UHT) processing. Initial constraints encountered during localization involved the identification of a processing facility capable of producing fine grade flour and the establishment of the DATCO facility reduced the risks of this process.

This reformulation of the cassava-based Nutri-Sip was completed in 2007, however upon calculating the price of local production versus importation, it was estimated that the projected cost would be almost double the imported alternative<sup>14</sup> (see Annex 2 for cost estimates). Having demonstrated the feasibility of a cassava-based Nutri-Sip, the projected cost of local manufacture had a severe effect on the entire process.

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<sup>14</sup> The imported costs were between N30 - 35 (US\$ 0.22 - 0.26); whilst locally production costs were estimated between N55 - 60 (US\$ 0.45 - 0.49).



This significant increase in operating costs is attributed to energy costs incurred by Nigerians (businesses and individuals) as a result of infrequent power supply<sup>15</sup>. In view of the realities of local production, Ibukun confessed that additional analysis of the value chain was necessary to get the product to an optimal price point that would be affordable to funding governments. Other than government affordability, this analysis was also critical to ensure private sector engagement from plant operators such as CHI Group that had commercial interests in participating.

Although commercial production of Nutri-Sip never commenced in Nigeria, the CHI Group acquired the local rights from TPWA with the intention of selling the product to state governments.

## **FfD & Public-Private Partnerships (PPPs), the Actors**

Public-private partnerships (PPPs) have evolved as a revolutionary mechanism in the delivery of government services through the establishment of a private business venture operated in partnership with the government. With its array of institutional partners, the conceptualisation and implementation of the cassava-based Nutri-Sip and the Nasarawa pilot involved a PPP between government, TPWA and other participants.

### **THE MAIN ACTORS**

#### ***Government***

*“At the initial stage, once the federal government agreed let's do a pilot; the state government had the money; it had to cascade down to the local government. They had to get an understanding of what this whole thing is all about. From day one they were involved so they knew it was coming up and you had their buy in.”*

Ibukun Daniels.

The implementation of FfD programmes directed towards end consumers like children involved at least two of the three tiers of government - federal, state and local.

At the **federal level**, the role of the federal government (FG) was evident in two areas: 1) as a customer of school feed initiatives; and 2) from the policy perspective, the involvement of the government was central to agricultural development initiatives. Contemplating the role of government, Ibukun mused on the policies that stimulated the industrial development capacity of the fruit juice industry following the government's ban of imported fruit juices. Due to the dominance of imported fruit juice products, in 2002 the Government made a blanket decision to ban the importation of fruit juices. This subsequently stimulated the development of local capacities from concentrates that now dominate the market; giving rise to brands such as

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<sup>15</sup> The erratic power supply in Nigeria mandated the use of alternative private power generation schemes using either diesel or gas that increased production costs significantly.





Chivita, Dansa, Fuuman and the participation of global players like Coca Cola with the Five Alive brand of products.

While **state governments** (SG) were free to exercise their autonomy, the likelihood of deploying school feed programmes was not without contention for already competitive budgets.

*“It’s not such an easy thing to get a state to invest so much when some states will tell you that ‘we’re struggling to rebuild our schools, we’re struggling to fund education and all that...’”*

Ibukun Daniels

Independent of the funding, school feed programmes were state controlled and coordinated there. In the Nasarawa pilot, the NSFPC was the coordinating agency constituted by the state government. The implementation of a school feed programme involved, but was not limited to the following: operation and maintenance of vehicles, operation and maintenance of facilities - warehouses, offices, staff accommodation, engagement of programme personnel, and the administration of the de-worming programme. The NSG provided five project vehicles that facilitated distribution to the local governments, accommodations for the expatriate staff involved in the school feed and localization process, office space for the NSFPC, and local personnel.

The **local government** (LG) is the arm of government closest to communities and central to the implementation of FfD initiatives. Although the programme was centrally supported by the federal and state governments, the support of the local government that was central to the programme success had to be sought by the NSFPC team.

*“Yes, we had to go through the local government (LG). That’s one of the initial things to do. First you get to the LG, speak to the health unit and the education unit... you had to sell it to them.”*

Ibukun Daniels

Thus, in the administration of the school feed programme, the NSFPC established coordinating desks in each of the 13 LG offices in Nasarawa state. The appointed coordinating officers enrolled participating schools within the LG, managed feed stockpiles, liaised with the central NSFPC office, organized community education schemes, etc.

### ***FfDO/TPWA***

In keeping with its FfD objectives, TPWA representatives were usually responsible for the conceptualisation and sale of prospective initiatives to governments.

*“Normally they won’t think about it because of the cost. So it’s us that have to make them want it. It’s like pitching a sale. You have to create and communicate the value of such programmes especially in relation to the overall benefit to the children. That’s our job; you need to be able to show them why they need it.”*

Ibukun Daniels



Although most of the FfD initiatives were milk-based, increased cases of micronutrient deficiency risks also known as hidden hunger led to the development of highly fortified meal supplements like Nutri-Sip. Originally developed from maize, local availability of raw materials required the adaptation of the formulations with resources from global and local partner organizations such as Solae, DuPont, WISHH, and DATCO. While the FfD was a not for profit venture, its programmes always had a preference for Tetra Pak packaging that helped give the leading producer of hygienic UHT processing equipment and packaging systems additional market visibility.

*“With FfD projects, whatever concept we present, we try to pack the products in our packs. We prospect for the business, get the business, we get somebody to fund a programme, but the product is in our packs. So that's basically what we get. At the end of the day the products in our packs, it gives us visibility and even though we are not making any profit from getting the product in our pack, but at least it gives us visibility and recall also the FfD office is fully involved in the coordination of various other activities and NGO support for such programmes. From the CSR Perspective, we are very proactive.”*

Ibukun Daniels

As part of its core business, Tetra Pak sold food processing and filling machines and its trademark packaging systems. However, in support of the sustainability of FfD programmes, packaging systems were sold at highly discounted prices.

Once an agreement has been reached on the format of the school feed programmes with funding authorities such as government, TPWA remained involved in the implementation through the provision of personnel and other implementation resources. For example, in the Nasarawa pilot, TPWA not only paid the salaries and travel costs (domestic and international) of support staff, but also supplied power at the team accommodations in Nasarawa.

## **EXTERNAL IMPLEMENTATION PARTNERS**

As an international corporation, Tetra Pak was an expert in coordinating partnerships - globally and locally. Whilst the majority of the global partners assisted in the research and development of the local cassava-based formulation, local partnerships were also formulated for programme implementation and delivery. In addition to the NSG and TPWA, the implementation of the Nasarawa pilot also involved resources from the following actors:

- *Processor(s)*: The role of food packaging companies that had access to Tetra Pak technologies (processors) were a critical part of the school feed initiative. These organizations produced the school feed that was ‘sold’ to the government. Whilst the imported maize-based product was manufactured by Good Hope International (GHI), South Africa; TPWA had identified the CHI Group, a local company, as a prospective partner in the local production of the cassava-based formulation. Whilst the CHI Group had interests in the project and considered establishing a plant in Nasarawa,



this was only dependent on the commercial viability based on governments' commitment to the programme. Although this commitment was never obtained, the CHI Group acquired the local rights to Nutri-Sip from TPWA in the hope that local production and school feed programmes can be set up.

- *GlaxoSmithKline (GSK)*: A global pharmaceutical company that produces medicines and consumer healthcare products. In the production of consumer healthcare products - Ribena and Lucozade - GSK is an established customer of TPWA. Thus, when approached for assistance in the treatment of worms, GSK made Zentel, a broad spectrum de-worming agent, available to the programme at a reduced cost. Payment for Zentel was borne by the NSG through the NSFPC. The development of drugs such as Zentel and other tropical medicines were part of GSKs social responsibility to providing medicines and improved healthcare for the developing world.
- *The United States Agency for International Development (USAID)*, the U.S. Government agency responsible for non-military aid, is involved in a series of development programmes across the globe. In Nigeria, USAID programmes range from banking reform to agricultural development. A global partner of FfD, in Nasarawa, USAID committed funds in support of the programme administration and implementation that included the payment of personnel salaries, the purchase of office equipment and computers, etc. Prior to the abrupt termination of the programme, US\$500,000 had been approved for the project, but the funds were never disbursed since the programme was terminated.
- *Clearing & Forwarding Agents*: Clearing and forwarding agents were employed by the NSG to facilitate the clearance of the imported Nutri-Sip from the Lagos ports. For a fee, these agents interacted with the various ports authorities, NSFPC officials to ensure clearance of goods from the ports and onward delivery to Nasarawa.
- *Banks*: The letters of credit (LoC<sup>16</sup>) documentation required for the importation of Nutri-Sip were processed by local banks representing the Nasarawa state government (the local buyer) and foreign banks representing Good Hope International (the foreign seller). In addition, all freight and custom clearance payments were paid to local banks who acted as receiving agents on behalf of the ports authorities.

## **OTHER PARTNERS**

- *The Global Alliance for Improved Nutrition (GAIN)*: An alliance that was established in 2002 by a special session of the UN General Assembly to fight malnutrition. GAIN's mission is to "reduce malnutrition through food fortification and other strategies aimed at improving health and nutrition of populations at risk." One of GAINs objectives is to effectively measure the impacts of nutrition projects using a set of 17 indicators. For the measurement of the Nasarawa project, GAIN engaged the

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<sup>16</sup> Letters of credit are typically issued by financial institutions in international trade. They are risk mechanism that protects both the seller and the buyer in an international trade transaction where the exporter (seller) is paid upon redeeming the LoC.



Helen Keller International, non-profit organization devoted to reducing malnutrition, which conducted the assessment study of Nutri-Sip.

## Improved Nutrition

### **SOCIAL RESULTS**

At the time of the last distribution in February 2008, Nutri-Sip had been administered to a total of 260,000 children. Although the full benefits of the cow/agriculture-to-consumer model that included the development of local agriculture and processing capabilities had not been realized in Nasarawa, some visible social and behavioural changes were realized amongst the children and their communities.

*“In fact the kids used to want to go to school more often because they were going to get this to drink.”*

Ibukun Daniels

In addition to the increase in school attendance, the impact assessment study conducted by GAIN also found that the children had improved levels of micronutrient and vitamin deficiency, energy, growth, and cognitive skills. Other improvements included attitudinal changes to education from the community that was evidenced by increases in female enrolments, full school-day attendance, and timely return from vacation breaks, and parental enforcement on school attendance; whilst absenteeism reduced. In combination with the deworming programme, the Nutri-Sip pilot effectively facilitated the improvement in health of the enrolled children.

### **ECONOMIC RESULTS**

Whilst selling FfD cartons at cost, there were no direct economic benefits for Tetra Pak; however, the inherent brand value gained from the distribution of packages served as a proxy.

Following the change in political leadership at both the federal and state government levels in 2007 and the abrupt ending of the Nutri-Sip pilot in 2008, TPWA transferred the rights of the localized Nutri-Sip formula to the CHI Group, which had commercial interests in continuing with the initiative. Although the transfer to CHI excluded royalty payments in the event of establishing a Nutri-Sip school feed programme, this further demonstrated the proof of the not-for profit nature of FfD initiatives.

### **ENVIRONMENTAL RESULTS**

While recycling is a global initiative of the Tetra Pak organization, in Nigeria research activity has commenced to identify possible partners that will help in the recycling efforts.

## Beyond Nutri-Sip – the future of FfD initiatives

Although Nutri-Sip school feeding programmes were no longer under the control of TPWA, Ibukun and the FfD team went back to work on milk-based alternatives that will jumpstart the import-dependent dairy industry. Some proposals reviewed included the importation and



rearing of large quantities (about 5,000 to 10,000) per farm of free bearing cattle each capable of producing about 20 litres of milk daily. This quasi-commercial model would involve participating dairy farms in the production of milk for school feed programmes; and sale of excess capacities to existing milk producers. The benefits of this model include the development of a sustainable school feed programme that will also impact the local economy through industrial development.

*“You will link a dairy production plan with a school feed plan and when you have cows - a large number of cows - and then you have surplus raw milk you will have to sell some of that surplus raw milk to processors. So while they are running the programme, they have more than enough milk so rather than importing the milk, they buy the surplus milk from you. That sort of programme will pay back itself.”*

Ibukun Daniels

However, with the experiences from the Nasarawa pilot, Ibukun was aware that the establishment of any programme needed to be complemented with effective technical assistance to facilitate its successful implementation. Some of the initial thoughts that came to mind included 1) the reduced role of government in logistics and operational activities; 2) complete implementation of the organization structure; and 3) seeking efficiencies in the value chain.

Where TPWA had left most of the logistics functions to the government in the Nasarawa pilot, Ibukun knew that in the case of the local production and implementation of any school feed programme, direct government intervention would have to be limited due to bureaucratic inefficiencies. Thus, production and all necessary logistics would have to be managed by the private sector. Where government resources could not be avoided in the school districts, Ibukun was certain that fulltime resources from TPWA supported by executive level capacities from the government were also required to reduce or eliminate all the red tape previously encountered. Finally, while power generation costs were unavoidable, production efficiencies in the production process through effective waste management could result in optimal production that would ultimately increase yield. In the optimization of the value chain, no clear answers were evident; Ibukun knew that production and distribution costs from pre-processing to manufacture had to be effectively managed especially with the ongoing discussions of the deregulation of the downstream petroleum sector that would eliminate Government subsidies on petrol.

*“From the value chain perspective, we are working backwards from the market. If this product is going to sell at this cost, what will be the distribution costs, how do you drive off costs from the distribution and then back into the production - what? If you are using diesel, how do you drive diesel costs out? If you are using our kind of machinery, an index would be waste. How do you prevent waste?”*

Ibukun Daniels



## References

### INTERVIEWS

- Ibukun Daniels, Head of Business Development and Food for Development (FfD) representative for Tetra Pak West Africa – Lagos, Nigeria, 26 Sept. / 9 Oct. 2009

### PUBLICATIONS

- World Food Programme (WFP). (2009). *Home Grown School Feeding: A framework to link school feeding with local agricultural production*. Rome: World Food Programme.

### WEBSITES

- Aselema, A. (2008, April 06). *Govt to continue with school feeding system*. Retrieved 27 September, 2009, from Nasarawa State Website: <http://www.nasarawastate.org/articles/268/1/Govt-to-continue-with-school-feeding-system/Page1.html>
- Holm, U. (2007, October). *Tetra Pak Food for Development*, [http://www.larae.org/hm/congresso/cas\\_tetrapark.pdf](http://www.larae.org/hm/congresso/cas_tetrapark.pdf). Retrieved 14 July, 2009.
- Tetra Pak. (2005, September). *Nasarawa State School Feeding Programme*, from [http://www.tetrapak.com/Document%20Bank/FfDO/ffdo\\_Nasarawa\\_programme\\_final.pdf](http://www.tetrapak.com/Document%20Bank/FfDO/ffdo_Nasarawa_programme_final.pdf). Retrieved 14 July, 2009.
- UNICEF. (2006, June). *Information Sheet, Nutrition*, [http://www.unicef.org/wcaro/WCARO\\_Nigeria\\_Factsheets\\_Nutrition.pdf](http://www.unicef.org/wcaro/WCARO_Nigeria_Factsheets_Nutrition.pdf). Retrieved 28 August, 2009.
- World Food Programme (WFP). 2005). *World Food Programme (WFP) Support to NEPAD: Period of Report August 2004 – April 2005*, <http://www.un.org/africa/osaa/2005%20UN%20System%20support%20for%20NEPAD/WFP.pdf>. Retrieved 27 September, 2009.



## Annexes

### Annex 1: Brief History of Tetra Pak

1943 - The Tetra Pak package conceptualised by Dr. Ruben Rausing

1951 - AB TetraPak was founded in Lund, Sweden by Dr. Ruben Rausing and Erik Wallenberg as a subsidiary of Akerlund & Rausing.

1951 - First Tetra Pak machine for tetrahedron-shaped cartons was delivered to a Lund dairy, an evolution that competed with bottled milk.

1959 - Completed the development of aseptic packaging and commenced the exportation of its machines that by

1959 - Annual production capacity had exceeded one billion in 8 countries.

1961 - Aseptic processing and packaging involved the brief heating the milk at extremely high temperatures (ultra-high temperature processing or UHT) in a closed system followed by force-cooling back to room temperature perfected.

1961 - Introduction of first ultra hygiene machine for bacteria-free milk

60's and 70s - This revolution exploded into the development and distribution of varied packages

1981 - Tetra Pak Brik Aseptic system was approved by the US Food and Drugs Authority (FDA) for the packaging of wine.

1990s - Tetra Pak strengthened its position in the food processing equipment through the acquisitions of Alfa-Laval, equipment and plant suppliers; and Tebel MKT, manufacturer of cheese processing equipment

2008 - Tetra Pak had various packaging products, operated in more than 150 markets with global net sales in excess of €8.8 billion and over 21,500 employees.

*Source: compiled from [www.tetrapak.com](http://www.tetrapak.com)*



## Annex 2: Nasarawa Pilot Feed Cost Estimates

These estimates are compiled using reported figures from Dec 05, Jun 06, Dec 06, and Feb 08.

Date	Children Fed	Supplements/ Child	Unit Cost NGN	Monthly Cost (NGN)	Monthly USD Equivalent
Dec 05	75,000	20	35	52,500,000	397,268
Jan 06	75,000	20	35	52,500,000	397,268
Feb 06	75,000	20	35	52,500,000	397,268
Mar 06	75,000	20	35	52,500,000	397,268
Apr 06	75,000	20	35	52,500,000	397,268
May 06	75,000	20	35	52,500,000	397,268
Jun 06	170,000	20	35	119,000,000	900,473
Jul 06	170,000	20	35	119,000,000	900,473
Aug 06	170,000	20	35	119,000,000	900,473
Sep 06	170,000	20	35	119,000,000	900,473
Oct 06	170,000	20	35	119,000,000	900,473
Nov 06	170,000	20	35	119,000,000	900,473
Dec 06	200,000	20	35	140,000,000	1,059,380
Jan 07	200,000	20	35	140,000,000	1,059,380
Feb 07	200,000	20	35	140,000,000	1,059,380
Mar 07	200,000	20	35	140,000,000	1,059,380
Apr 07	200,000	20	35	140,000,000	1,059,380
May 07	200,000	20	35	140,000,000	1,059,380
Jun 07	200,000	20	35	140,000,000	1,059,380
Jul 07	200,000	20	35	140,000,000	1,059,380
Aug 07	200,000	20	35	140,000,000	1,059,380
Sep 07	200,000	20	35	140,000,000	1,059,380
Oct 07	200,000	20	35	140,000,000	1,059,380
Nov 07	200,000	20	35	140,000,000	1,059,380
Dec 07	200,000	20	35	140,000,000	1,059,380
Jan 08	200,000	20	35	140,000,000	1,059,380
Feb 08	260,000	20	35	182,000,000	1,377,194
<b>Total Estimated Spend</b>				<b>3,171,000,000</b>	<b>23,994,957</b>

Source: compiled from interviews





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The case was completed in March 2010 and released in 2011.

The information presented in this case study has been reviewed by the company to ensure its accuracy. The views expressed in the case study are the ones of the author and do not necessarily reflect those of the UN, UNDP or their Member States.

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