NOTES TECHNIQUES

TECHNISCHE NOTA'S

TECHNICAL NOTES

NOTAS TÉCNICAS

An Assessment of the Impact of "The Structural Adjustment Programme" on the Poultry Industry in Nigeria

Esther Eronmwon Guobadia*

Key words: Poultry - Structural Adjustment Programme (SAP) - Nigeria

Summary

The "Structural Adjustment Programme" (SAP) was introduced in 1986 to restructure and diversify the productive base of Nigerian economy, increase domestic food production, agricultural raw materials and enhance non-oil exports.

Poultry farmers under SAP have witnessed a downward trend in their production and have therefore stated that SAP is an ill-wind that blows nobody any good since it has increased their problem rather than solve them.

This study was therefore carried out to assess the effects of SAP on poultry production in Nigeria between 1985 - 1990.

It was observed that the Structural Adjustment Programme has had tremendous effects on poultry industry in Nigeria.

The farmers have not adjusted favourably to the effect of SAP with 75% of them operating between 20 - 50% and 19% below 20% of production capacity. Currently, the industry is being operated below 30% mainly due to the high cost of chicks and inputs some of which have risen to over 1000%. Productivity of the birds has also been affected with about 30% reduction in the number of eggs laid per bird per year. Age at maturity has also increased to about 30% among broilers. Farmers found it difficult to buy feed and drug resulting in increased mortality of about 80% among broilers. The rise in the prices of product of about 500% does not match the increase cost of production. Recommendations are therefore made to help stabilise the poultry industry.

Résumé

Le programme de l'ajustement structurel (PAS) fut introduit en 1986 pour restructurer et diversifier la base productive de l'économie nigériane, accroître la production locale de l'alimentation, la consommation agricole de base, ainsi que réactiver le secteur non-pétrolier.

Sous le Programme d'Ajustement Structural (PAS) les producteurs de volaille ont connu une considérable baisse de leur production. Ils ont alors déclaré que le programme est un mauvais vent qui n'amène rien à personne, ayant compliqué leurs problèmes au lieu de les résoudre.

Cette étude a donc été entreprise pour estimer les effets du PAS (SAP) sur l'élevage de volaille au Nigéria entre 1985 et 1990. Elle a permis de constater que le progamme a eu des effets négatifs considérables sur l'industrie de la volaille au Nigéria.

Avec 75 pour cent des exploitants produisant entre 20 et 50 pour cent et 19 pour cent au-dessous de 20 pour cent de leur capacité, les producteurs ne se sont pas alignés favorablement sur le programme. Actuellement, l'industrie n'atteint même pas 30% de sa capacité, surtout à cause des coûts très élevés des oiselets et des consommations, lesquels ont augmenté jusqu'à 1000 pour cent. Et avec une baisse de 30 pour cent sur le nombre d'oeufs par oiseau et par an, la productivité des oiseaux est également touchée. Parmi les poulets, l'âge de maturité a connu un accroissement de 30 pour cent environ. Les producteurs trouvaient de plus de plus de difficultés à se procurer des aliments et des médicaments, ce qui entraîne une mortalité moyenne de 80 pour cent.

L'accroissement des prix des produits, 500 pour cent en moyenne, n'égale pas l'augmentation des coûts de production. Des recommendations sont donc proposées dans le but de stabiliser l'industrie de la volaille.

Introduction

The poultry industry constitutes an important agricultural enterprise in terms of profitability and quick economic returns in Nigeria (14). The industry also plays a major role in protein production in the livestock subsector of the Nigerian economy (6). This subsector provides about 36.5% of the total protein intake of Nigerians (3). It also contributed about ₦5.1 billion in 1985 which represented about 5.9% of the G.D.P. of Nigeria. In addition, poultry business requires less initial capital to start and the meat and egg produced

* Faculty of Agriculture, Delta State University, Abraka - Delta State, Nigeria.
Received on the 29.08.94 and accepted for publication on the 27.11.95.

from chicken are widely accepted as source of protein (5).

In 1986, Nigerians overwhelmingly rejected the International Monetary Fund (I.M.F.) loan as a means of resuscitating the ailing economy. There were very few other viable options left to tackle the economic problems. Thus by June, 1986, the Federal Government of Nigeria introduced the Structural Adjustment Programme (SAP) whose management strategy is an embodiment of I.M.F. conditionalities.

Critical examination of available evidence on the progress of SAP (7) shows that the performance of the agricultural sector has not only fallen short of expectation with regards to provision of food, it has given much cause for concern regarding the ability of this sector to improve the quality of life in the rural areas of the country.

Poultry industry had been the most developed of all the arms of agricultural sector, but with the introduction of SAP the prices of all imported poultry have increased substantially. This was in response to the devaluation of the local currency as a result of SAP. The ban on grain importation also made matter worse since maize from local source contributed only about 20% of the quantity required in the production of feed. It was stated that the shortfall in grain and maize in particular has resulted in an escalation of prices from ₦1.250 per tonne in December, 1990 to ₦2.500 in February 1991 an increase of about 85% (12). It was also reported that SAP has led to the closure of many poultry farms while some are going bankrupt, yet the surviving ones were merely managing to remain in business (11).

Methodology

The research was carried out in four (4) locations in Nigeria. Delta State in the South; Oyo State in the West; Kaduna State in the Northern part of Nigeria and Anambra State in the East. Six farms per region with a capacity of between 500 - 20.000 birds prior to and after the introduction of SAP were used for this study making a total of twenty-four farms as the representative sample. Information considered and analysed were:

1. Coping with the Structural Adjustment Programme by the farms.
2. Average prices of poultry products.
3. Average egg laying and cost.
4. Average age at maturity of birds.
5. Average percentage mortality of birds.
6. Average prices of some common poultry inputs used by farmers.

List of poultry farms in the four States were obtained from State Ministries of Agriculture and the extension and veterinary staff of these Ministries. Each State was divided into Agricultural zones and a random sample was selected from each zone.

The main source of data collection was the use of questionnaire. Interview with farmers using structured questionnaire was also done.

Results

1. Adjustment to "SAP" by poultry farmers.

Out of the 24 poultry farmers sampled in the 4 States, 1.4 (6%) had no appreciable change in the number of birds in their farms. 18 (75%) of the farmers were operating at between 20 - 50% of their capacity level. While 4.6 (19%) of the total number were operating at below 20%. There was a general claim by all the farmers that they were still in the business because they were highly committed to the survival of the industry despite the fact that there was no longer profit as obtained before the introduction of SAP.

It was observed that almost all the farmers were operating below capacity. These farmers attributed this to the high cost of feed and drugs. As stated (7) the high cost come from the ban on wheat and grain importation and the consequent increase in the cost of maize produced locally. The cost of drugs has also increased substantially in response to the devaluation of the local currency due to SAP.

2. Average prices of poultry products.

The average prices of poultry products pre and post the introduction of the structural adjustment programme in the four states of Nigeria are presented in Tables 1a and b.

The average prices of a unit of twelve eggs ranged from ₦6.2 in Delta State to ₦6.4 in Anambra State in 1985, while the corresponding average prices in 1990 were ₦16.6 and ₦15.0 in the two states, an increase of 167.7 and 134.4 percent respectively between 1985 and 1990. There were also variations in the prices of day old broilers, table broilers, day-old pullets, culled layers, cockerels and mature cocks between 1985 and 1990. These price variations were more marked with day old pullets with a mean percentage increase of over 1000%. This was followed by day old broiler with 925% increase; day old cockerels 881.1% increase and mature cocks with 664.6% increase. Others were culled layers and table broilers with 579.3% and 466.2% increase respectively.

3. Average egg laying parameters and cost

The statistics relevant to egg laying are presented in table 2. The average period of laying ranged from 54.5 weeks in Oyo State in 1985 to 55.0 weeks in Kaduna State. The corresponding values in 1990 were 45.1 weeks in Oyo and 41.7 weeks in Kaduna State with a mean percentage decrease in weeks of laying, in the 4 States of 19.4. The mean number of eggs laid per bird per year were also lower in 1990 after the introduction of the "Structural Adjustment Programme" as compared to 1985 before the introduction SAP. Records show that there was a 28.9% decrease in the mean number of eggs laid per bird per year. The mean cost of feed input per 12 eggs had also increased in 1990 as compared to 1985 with an increase of 1097.2% in the mean cost of feed input per 12 eggs.

Table 1a: Average prices of poultry products

States	Eggs in units of 12 (NAIRA)		Day old broiler (NAIRA)		Table broiler (NAIRA/KG)	
	1985	1990	1985	1990	1985	1990
DELTA	6.2±0.04	16.6±0.01 (167.7)	1.2±0.08	13.2±0.08 (1000)	16±0.02	100±0.02 (525)
OYO	5.2±0.09	12.6±0.03 (142.3)	1.0±0.08	10.5±0.04 (950)	14±0.02	80±0.02 (471.4)
KADUNA	7.4±0.05	15.1±0.08 (104.1)	1.25±0.07	12.2±0.04 (876)	14±0.02	75±0.04 (435.7)
ANAMBRA	6.4±0.03	15.0±0.02 (134.4)	1.30±0.05	13.3±0.05 (923.1)	15±0.01	80±0.01 (433.3)
MEAN ± SD	6.3±0.02	14.8±0.03 (134.9)	1.2±0.06	12.3±0.06 (925)	14.8±0.06	83.8±0.03 (466.2)

Average % Increase in Parenthesis

Table 1b: Average prices of poultry products

States	Day old pullets		Culled layer		Day old cockerel		Mature cocks	
	1985	1990	1985	1990	1985	1990	1985	1990
DELTA	0.9±0.02	15.0±0.02 (1566.7)	11.59±0.02	80.2±0.03 (592)	0.70±0.02	6.0±0.02 (757.1)	15.0±0.03	120.6±0.01 (704)
OYO	0.70±0.03	13±0.03 (1757.1)	8.6±0.03	65.3±0.01 (659.3)	0.60±0.03	42.0±0.01 (690)	12.0±0.08	90.0±0.02 (650)
KADUNA	0.80±0.04	13.0±0.02 (1525)	9.3±0.04	60.6±0.01 (551.6)	0.30±0.02	4.1±0.01 (1266.7)	11.50±0.02	92.4±0.03 (703.5)
ANAMBRA	0.80±0.03	14.0±0.04 (1650)	10.6±0.03	65.6±0.03 (518.9)	0.60±0.04	6.50±0.02 (983.3)	13.5±0.03	95.3±0.01 (605.9)
MEAN ±SD	0.80±0.02	13.8±0.04 (1725)	10.0±0.02	67.9±0.03 (579)	0.53±0.04	5.2±0.04 (881.1)	13.0±0.01	99.4±0.01 (664.6)

Average % Increase in Parenthesis.

4. Average age at maturity of broilers, layers and cocks

Numerous estimates of genetic parameters of age at sexual maturity, body weight, egg number and egg weight have been reported in literature (3), and (4). In this study the average age of birds at maturity had been computed for broilers, layers and cocks and is given in Table 3. It ranged from 7 weeks in 1985 to 8 weeks in 1990 in Enugu State among broilers with a percentage increase in weeks of 33.8. Among the layers, there was also an increase number of birds in the number of weeks the birds come to lay between pre-SAP and post-SAP. In Delta State, the average age of birds at point of laying was 18.3 in 1985, while in 1990, the age at point of lay was 25.2 weeks with a percentage increase of 37.7. This same trend was also observed among the cocks which recorded an average of 17.3 weeks in 1985 an 21.3 weeks in 1990 in Kaduna State with an average % increase of 23.1.

5. Average percentage of mortality of birds

The average and mean percentage mortality of birds in various States during the studied period is given in table 4. The mean percentage increase in mortality among broiler chicks between 1985 and 1990 was 77.7% The comparative value of mature broiler during the studied years was 16.8%. The value for pullets, growers and layers were also increased after the introduction of SAP. Whereas the mean increase in the percentage mortality for pullets was 23.4%, those of grower and layers were 20.2 and 24.1% respectively.

6. Average price of some common poultry input

The average prices of some common poultry input used by farmers and their percentage increases between 1985 and 1990 are presented in Table 5.

SAP has brought about the devaluation of the naira from its September 1986 rate of US $1 to ₦1.569 to the price in 1990 of US $ to ₦8.393 (10). The effect of this was the rise in prices of virtually all goods and services. The worse hit have been imported good produced locally with high contents of imported raw materials. Table 5 shows the percentage rise in prices which ranged from about 120 to over 500.

Before the introduction of SAP in 1985 the prices of automatic feeder, drinker 25kg of layers' mash, 100mg of Duocoxin ® and a vial of NDVK were ₦150.3, ₦20.2, ₦16.6, ₦16.6, ₦15.8 and ₦15.4 respectively. Their corresponding prices after the introduction of SAP (1990) were ₦806.0 for automatic feeders with a percentage increase in price of 436.3%. Others are drinker ₦631 with 212% increase in price, Layers' mash ₦621.1 with 274.1%. The price of Duocoxin ® also increased with 255.7% being sold in 1990 at ₦56.2 as against the price of ₦15.8 in 1985. A vital of NDVK also sold at ₦60.0 in 1990 as against the ₦15.4 price in 1985.

Table 2: Average egg laying and cost

States	Period of lay (weeks)		No. of eggs laid/bird/year		Cost of feed Input/12 eggs	
	1985	1990	1985	1990	1985	1990
DELTA	53.4±10.0	42.6±1.6 (19.6)	173±21.1	121.2±13.4 (29.9)	0.91±0.29	10.4±1.31 (1042.9)
OYO	54.5±12.0	45.1±11.0 (17.2)	206±33.2	145±22.4 (29.5)	0.56±0.3	7.6±1.0 (1257.1)
KADUNA	55.0±11.0	41.7±0.7 (24.2)	221±27.0	153.5±16.3 (30.5)	0.55±0.21	6.8±1.5 (1136.3)
ANAMBRA	56.0±11.0	46.3±0.5 (17.3)	177±37.5	132.6±27.3 (25.1)	0.82±1.31	9.1±1.2 (1009.8)
MEAN ±SD	54.5±11.0	43.9±0.9 (19.4)	194.3±29.2	138.2±18.3 (28.9)	0.71±0.8	8.5±1.2 (1097.2)

Average % Decrease in Parenthesis.

Table 3: Average age at maturity of broiler. layer and cocks

States	Broiler (weeks)		Layer (weeks)		Cocks (weeks)	
	1985	1990	1985	1990	1985	1990
DELTA	8.3±0.6	10.3±1.2 (24.1)	18.3±0.6	25.2±0.5 (37.7)	17.2±1.6	22.4±11.3 (30.2)
OYO	7.1±0.1	8.7±1.6 (22.5)	18.7±0.6	22.7±0.1 (21.4)	16.3±0.6	21.6±10.2 (32.5)
KADUNA	7.0±0.6	9.0±2.2 (28.6)	18.2±1.3	24.4±1.2 (34.1)	17.3±0.4	21.3±8.2 (23.1)
ANAMBRA	7.4±0.8	9.9±1.8 (33.8)	19.4±1.4	23.6±1.4 (21.6)	19.2±1.3	22.0±1.6 (14.6)
MEAN ±SD	7.5±0.4	9.5±1.9 (26.7)	18.6±0.9	24.0±0.7 (29.0)	17.5±0.8	21.8±6.6 (24.6)

Average % increase in Parenthesis.

Table 4: Average percentage mortality of birds

States	Broiler chicks		Mature broiler		Pullets		Grower		Layer	
	1985	1990	1985	1990	1985	1990	1985	1990	1985	1990
DELTA	11.86±3.2	20.4±3.8 (72.6)	9.36±3.8	12.3±3.0 (31.4)	14.5±6.8	18.3±5.2 (26.2)	8.3±5.2	10.3±6.3 (24.1)	14.5±5.2	15.6±5.1 (7.6)
OYO	10.20±6.9	18.2±1.8 (78.4)	7.9±3.5	10.3±6.3 (30.4)	8.9±4.2	9.2±1.2 (3.4)	8.3±4.9	8.8±5.8 (6.0)	10.3±4.9	13.1±4.8 (27.2)
KADUNA	11.10±4.2	19.1±6.1 (72.1)	11.74±3.8	12.8±1.6 (9.0)	11.25±5.8	13.4±1.8 (19.1)	8.6±6.9	11.2±4.1 (30.2)	12.8±4.1	16.2±3.6 (26.6)
ANAMBRA	10.30±7.8	20.0±5.2 (94.2)	8.8±4.3	11.6±2.2 (31.8)	9.8±6.6	14.1±2.2 (43.9)	10.3±3.8	12.6±5.0 (22.3)	7.3±3.0	10.6±4.2 (45.2)
MEAN ±SD	10.8±5.2	19.2±34 (77.7)	9.5±3.4	11.1±5.1 (16.8)	11.1±5.8	13.7±1.9 (23.4)	8.9±5.1	10.7±5.5 (20.2)	11.2±4.5	13.9±4.9 (24.1)

Average % Increase in Parenthesis.

Discussion

Nigeria's "Structural Adjustment Programme" (SAP) has had tremendous effects on the country's poultry industry.

It was observed that most of the farms studied were operating below capacity during SAP as compared to the pre-SAP period. This they attributed to the high cost of feed, drugs and other inputs brought about by the devaluation of the naira and the ban on grains importation as had been observed (12).

The prices of day old broiler, day old pullet, day old cockerel, as well as table broiler, culled layer and mature cock had also increased under SAP as compared to the period before SAP. This may be due to the high cost of production. The high prices were more marked among the day old chicks compared to the table birds. This also may have been due to the ban on importation of chicks during the post SAP times. The local production of chicks is unable to meet the local demand resulting in the increase in prices of chicks.

The mean duration of egg laying during the SAP period is lower than the estimate of 50 weeks (1). The

Table 5: Average price of some common poultry input.

Inputs used by farmers	Prices 1985(₦)	Prices 1990(₦)	Percentage Increase
1. Feeders for:			
Chicks	10.8±0.3	24.6±0.7	127.8
Adult birds	150.3±1.3	806.0±0.5	436.3
2. Drinkers:			
Chicks	8.6±8.2	25.2±7.2	193.0
Adult birds	20.2±8.5	63.1±0.6	212.4
3. Feed: (25kg)			
Chicks Mash	18.3±1.7	64.2±1.3	250.8
Grower Mash	14.2±1.3	55.4±3.2	290.1
Layer Mash	16.6±1.4	52.1±0.4	274.1
Broiler Starter Mash	20.7±6.2	72.7±1.4	251.2
Broiler Starter Mash	19.4±5.3	68.3±3.2	252.1
4. Drugs:			
100gm of Duocoxin	15.8±0.7	56.2±0.4	255.7
100g of Oxytet	12.2±0.5	45.5±0.2	273.0
100g of Vitamin Mix	11.5±1.2	52.1±0.6	353.0
5. Vaccine: A Vial: Newcastle Disease Vaccine (Koymarov) N.D.V.K.	15.4±0.6	60.0±0.2	290.0
Fox Pox Vaccine	14.3±0.1	80.4±1.2	462.2
Infectious Bursal Disease Vaccine (IBDV)	12.6±0.3	83.4±1.6	561.9

Source: Ex - Warri. Ibadan. Kaduna and Enugu.

same trend was also recorded for the average number of eggs laid per hen per year which were generally lower than that normally expected in commercial production; above 200 eggs per hen per year (1).

Feed consumption per bird of 0.94 to1.05kg and 1.29 to 1.44kg per broiler chickens (0 - 6 weeks) and 2.76 to 3.12kg at the finisher stage (7 -12 weeks) had been reported (1), (13). These values are below those observed during the SAP period. The low quality of feed produced by millers due to the high cost of raw materials could be attributed to this.

The age at maturity for broilers, layers and cocks was also increased in all the States. The maturity age of 18 weeks for layers, 16 weeks for cocks and 8 weeks for table broiler had been obtained (1). These values are far below those obtained in this study during the SAP period, which averaged 9.5 weeks for broiler, 24 weeks for layers and 21.8 weeks for cocks. Diets had been shown to affect age at maturity (13). The high cost of feed and the reduction in the quality as a result of production cost may have had direct effect on age at maturity of the birds.

The mortality rates of all the group of birds were much higher than the 5% usually expected in commercial poultry of production (13). The increase in mortality rate during the SAP period particularly among the broiler starter is expected since these require high protein feed at this time and mortality is normally drastically reduced for birds after about six weeks of age (1).

The cost of poultry input were also greatly affected by the introduction of SAP. While the price of imported material had increased by over 400%, those that are produced locally but have imported raw materials had increased by over 200 %.

Conclusion and recommendation

From the foregoing, it is clear that the Nigeria's Structural Adjustment Programme has had tremendous effects on the country's poultry industry. The future of the industry appears bleak and so urgent steps must be taken to reverse it downward trend. The consequences of a neglect of this sector of agriculture are serious. Many families and dependant will loose their means of livelihood, which will worsen the economic status of many urban and rural communities. Poultry which provides an acceptable form of animal protein to most people throughout the world will become more scarce and unavailable to Nigerians.

It is therefore necessary to re-appraise the relevance of the Structural Adjustment Programme (SAP) to the Nigerian economy with particular reference to the escallating cost of poultry inputs and products.

As a way of reducing the cost of feed, farmers and individuals should be encouraged to go into large grain farming. However, for such a progamme to be successful, it has to be well funded by Government.

Improvision of a number of poultry input like feeders using locally made materials would go a long way to reducing their cost.

The Government and private sector should encourage the pharmaceutical companies and veterinary Research Institute to produce more poultry drugs and vaccines by providing adequate funds and ensuring that these funds are well utilised.

It is hoped that with the implementation of the recommendations made above that poultry industry in Nigeria will play an important role in the economy of the country.

Literature

1 Batatunde, G.M. & Fetuga, B.L., 1976. Determination of minimum Crude Protein requirement of broilers starter and finisher in the tropics. Nigeria Journal of Animal Production **3**(1): 126-138.

2. CBN/NISER, 1992. The impact of Structural Adjustment Programme on (SAP) on Nigeria Agriculture and Rural life. The National Report Vol. **1** and **2**.

3. Chandary, M.L. Sandliu, J.S. Brah, G.S., 1984. Variance Component analysis of Fertility and hatchability in white leghorn. Z. Tierzuchtg Zuchtsbird. 101: 359-366.

4. Crittenden, L.B. & Bohren, B.B., 1961. The genetic and environmental effects of hatching time, egg weight and holding time on hatchability. Poultry Sc. 40: 1736-1950.

5. Ikpi, A.E. & Akinwumi, J.A., 1979. The future of Poultry Industry in Nigeria, Proceedings of First National Seminar on Poultry Poduction. Zaria, Nigeria. p. 19.

6. Imoudu, P.B., 1994. Input constraint in the Poultry Industry in Nigeria: The challenge of the Decade. A paper presented at the 19th Annual Conference of the Nigerian Society for Animal Production. (1993).

7. Kolawole, M.I., 1987 Financial Management of Farm Enterprises. Paper presented at the 4th Annual Conference of Farm Management Association of Nigeria. University of Technology, Owerri, Nigeria.

8. Nigeria 1986. Structural Adjustment Programme for Nigeria. Federal Government of Nigeria Printers.

9. Nigeria 1988. Progress Report on the Structural Adjustment. Federal Government of Nigeria Printers.

10. Odum, O., 1991. The effect of the Structural Adjustment Programme (SAP) on artifical Fisheries in Nigeria. Abraka Journal of Agriculture. (1) 51-57

11. Ojo, M.O., 1988. Structural Performance on Policy under Structural Adjustment Programme (SAP) in Nigeria. A paper presented at the 1988 Annual Conference of Nigerian Economic Society. (1994).

12. Okubana, A.O., 1991. Structural Adjustment Programme (SAP) and Poultry Industry in Western Zone of Nigerian Journal of Animal Production Res. Vol. **1**(2) 131-140.

13. Olomu, J.M., 1976. Determination of Optimum Protein and energy levels in broilers Chicks in Nigeria. Nigeria Journal of Animal Production. **3**(1): 177-183.

14. Olufunwa, M.A., 1991. Poultry Enterprises in Nigeria - A review Journal of Animal Production Research **1**(2) pp. 193-199.

Esther Eronmwon Guobadia, Nigerian, DVM-M.Sc. Department of Agriculture, Delta State University, Abraka - Nigeria.