COMPUTERISATION OF MARKET PRICES ANALYSIS OF FOOD COMMODITIES FOR IMPROVED ASSESSMENT OF LEVEL OF FOOD SECURITY

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CERTIFICATION

This project has been approved by the undersigned, as meeting the requirement of the Department of Mathematics/Computer Science, Federal University of Technology, Minna, Niger State, Nigeria.

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DEDICATION

Special dedication to ALMIGHTY God, the EL-SHADAI;
and to:-

OYEMEKUN GRAMMAR SCHOOL
and
Late CHIEF RUFUS A. OGUNLADE (a.k.a. Ologba)

(The Unique Symbols of Excellence, and Undying Thirst for Learning, Knowledge and Power).

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ABSTRACT

Food is essential to life, indeed it is anchor for life. This assertion is exemplified by the complex interplay between MAN, FOOD and life. It further buttresses the significance of the sensitive subject of FOOD SECURITY defined by availability of, and accessibility to Food. Poverty, described as a common feature of low-income economies is one of the major factors of food insecurity. How purchasing power due to poverty reduces level of accessibility to what is available for consumption. Therefore, where there is poverty, there could still be hunger even when food is available. This situation can be work when less in produced and prices becomes higher. Pricing becomes a major factor especially where incomes are low and food supplies are insecure. Provision of timely and accurate information on market prices of agricultural food commodities between very relevant. Such information is expected to private opportunity for the people to make food buying choices and maximize their limited resources, while enhancing their level of accessibility to what is available in the market for consumption.

On the other hand, government is able to monitor and ascertain the flow of distribution of food commodities across markets and the degree of accessibility. It also serves as a veritable source of information to government for strategic planning on Food Security.

Indeed as these can be achieved through regular provision of information on market prices, purchasing ability or accessibility to available food increases and a state of Food Security attained. The level of Food Security can therefore be assessed in live with the dictates of market prices.

Hence, automation of collected market prices of Agricultural Food Commodities data rather than the slow, under some and less accurate manual method of analysis would allow for regularity, timeliness and precision of information and opportunity for thorough assessment and attainment of Food Security.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 HISTORICAL BACKGROUND OF THE FEDERAL MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT

The Federal Ministry of Agriculture and Rural Development was created in 1966 in realization of the need of the Federal Government to play a leading role in Agricultural Development. The Ministry then consisted of five departments namely – Fisheries, Agriculture and Natural Resources including produce inspection, Agricultural Research, Forestry and Veterinary Research.

The period from 1970-1985 was characterized by a much greater involvement of the Federal Government in Agricultural Development efforts. Several Agricultural Development institutions were created; and many special programmes and projects were launched. Thus, the Federal government assumed a direct role in agricultural development and provided the necessary leadership. Beginning from 1985, the role of Government in Agricultural development was rationalized and limited to promotional activities. In 1996, the Department of cooperatives was transferred from Federal Ministry of Labour and Productivity to the Federal Ministry of Agriculture. The recent creation of the Federal Ministry of Environment by the present administration has led to the movement of the Federal Department of Forestry and the Nigerian National Parks Services (NNPS) from the Federal

Ministry of Agriculture and Rural Development to the Federal Ministry of Environment. Also the three (3) Universities of Agriculture are now relocated to the National Universities Commission (NUC). The Agricultural National Land Development Authority (NALDA) has been abolished.

The Federal Ministry of Agriculture and Rural Development now has twelve (12) departments, namely.

(i) Department of Agriculture

(ii) Department of Livestock and Pest Control Services

(iii) Department of Fisheries

(iv) Department of Agricultural Land Resources

(v) Department of Agricultural Services

(vi) Department of Cooperatives

(vii) Department of Planning Research and Statistics

(viii) Department of Administration

(ix) Department of Finance and Accounts

(x) Department of Strategic Grains Reserve

(xi) Federal Fertilizer Department

(xii) Department of Rural Development

The Ministry is supported by key institutions such as:

(a) Nigerian Agricultural Cooperative and Rural Development Bank (NACRDB).

(b) Nigerian Agricultural Insurance Corporation (NAIC)

(c) Agricultural and Rural Management Training Institute (ARMTI)

(d) National Centre for Agricultural Mechanisation (NCAM)

(e) 15 Agricultural Research Institutes

(f) Three (3) Colleges of Cooperatives

(g) Three (3) Colleges of Land Resources Technology

1.2. FOOD SECURITY.

1.2.1 FOOD: AN ANCHOR OF LIFE:

There is an inseparable triparty between Man, food and life. This has been aptly buttressed by Proverbs, dictums and several Old sayings; amongst which are "Health is wealth"(access to available food and indeed good feeding practice enhances good health and improved living standard). "A

hungry man is an angry man". "No greater idol as throat, daily demanding the libation of Oil and Sacrifice of food".

"No doubt, the enjoyment of food is one of life's pleasures. For those who have an adequate food supply eating is about far more than survival.

Eating together is an important part of daily family life and of social events, celebrations and festivals". Ironically, though, millions of people across the world find it impossible to get a sufficient amount and variety of safe food each day. Others may have access to enough food, but still lack the knowledge to make good dietary and life style choices to get the best from their food. Both situations can lead to poor nutrition, diseases and poor health. (Get the best from your food -A publication series of the Food and Agriculture Organisation (FAO) of the United Nations).

1.2.2 DEFINITION:

Food security is defined as access by all people at all times to sufficient food for a healthy and productive life.

1.2.3. CONCEPT:

The attainment of a state of Food Security would not only translate to adequate food production and availability in the market for consumption,

but essentially people must have access (able to afford) to sufficient food that will guarantee them a healthy and productive life.

Food security would not necessarily imply food self-sufficiency (that is, producing enough locally). As a nation can always supplement domestic food production with import to achieve food security, provided the nation has adequate financial resources for such importation.

The key element of Food Security is adequate access by all people to food at all times.

It therefore implies that apart from encouraging food availability either wholly through local production, or in other cases supplemented by imports, the people as a must should be economically empowered to guarantee adequate access to available food. Otherwise, there is food insecurity.

1.2.4. GLOBAL PERSPECTIVE:

As we are much aware, food remains a basic and vital requirement for human existence. It is in the height of this importance that the subject of food availability remains an issue for global concern. Since the creation of man, food continues to be a major anchor for survival, happiness, peace, economic and political stability in any society. It is a weapon for social, economic and political re-engineering and cohesion.

The A 2020 vision for food, Agriculture and Environment, c/o IFPRI Washington, DC had reported as follows: Indeed, there is enough food to feed everyone in the world if it were evenly distributed. But it is not. Today, more than 700 million people in the developing world do not have access to sufficient food, and over 1.1 billion people are currently living in poverty. One hundred and eighty million children are under weight and diseases of hunger and malnutrition are wide spread.

According to the 1994 UNDP Human Development Viewpoint (HDV), "The challenge of sustainable food security is immense and it is growing. One billion people (20% of the Global population) are too poor to obtain enough food to sustain normal work. Half a billion are too poor to obtain the food needed for healthy growth of children and minimal activities of adults. Given the likely population increases, the world food output must triple over the next 50 years if the world's people are to have a nutritionally adequate diet".

It is however, becoming increasingly clear that Hunger and Poverty are closely linked.

Poverty is the root cause of hunger. Paradoxically, hunger is most wide spread where food is produced in rural areas, the home of the vast majority of the world's poor. The poor are hungry because they don't have

the assets/incentives to produce enough food, or don't earn enough to buy the food they need. And this points to the solution that to fight hunger and indeed food insecurity; the poor must be enabled to produce food or empower then to buy food. This does not only end hunger, it also allow the poor contribute to, rather than drain their local and national economies. And as many may now understand, if Rural Poverty is reduced, then Urban Poverty can be curbed as well and consequently with positive implications on National Food Security.

Even the most disadvantaged and poor groups, including the woman, ethnic and indigenous peoples, small and marginal farmers, refugees and the displaced; can boost their countries economies if empowered to do so. They have the capacity and the will; they need the opportunity and the means. There is now also a clear appreciation of the complex interactions between population growth, environment, productivity, poverty and social conflicts.

For instance, these questions are pertinent. Are not civil strife and mass displacement of people often the result of the dangerous consequence of poverty and diminishing natural resources?

Does not rural hunger engender migration towards cities; and in turn does not urban hunger induces violence and social tension?

Does not poverty fuel environmental degradation, and environmental degradation fuel poverty in a downward Spiral of deprivation-deprivation that can instigate political unrest?

The point is clear that the fight against hunger and poverty would be deficient and possibly perilous without simultaneously working to protect and nurture scarce natural resources.

It is evident that conventional solutions tried in the past often become part of the problem.

In a world, however in which every fifth person is poor, and in which resources are limited, the challenge must centre on action - action to fight hunger decisively for its eradication.

National and International Institutions with the mandate to fight hunger sometimes lack the necessary focus. Priorities are not spelt out as well as they need to be, and when they are, they are often not rigorously pursued. Too many good ideas and programmes remain too isolated, their features never replicated, their inspiration never spread throughout the world. As a result, most people do not know that there are solutions to hunger and poverty, that indeed there have been achievements. Hence, the sense of fatalism, frustration and fatigue that looms large in the conscience of the public.

Many believe that today's global food surpluses and the accompanying lower food prices are a sufficient guarantee of world food security even for low-income developing countries and people. This has led to decline in international investment in agriculture by bilateral and multilateral donors, and by developing countries governments. It is often over looked that food production is a major source of income for the poor, and that the prospects for overall economic development are linked with agricultural progress. It has however been observed that in the years ahead, farmers in the developing world will be faced with several immense challenges; by the year 2020; among others:-

(i) They must provide food at affordable prices for 2.5 billion more people-almost 100 million more people every year, the largest annual population increase in history.

(ii) They must increase the food supply from the presently cultivated land because there is little new land left that can come into production.

(iii) They must meet a dramatic increase in the demand for cereals and coarse grains as feed for livestock because, as cities and incomes grow, more people will consume livestock products

(iv) They must provide jobs for the rapidly expanding labour force, particularly in low-income developing countries where most of the increase in population will occur.

(v) They must prevent further environmental degradation of the natural resource base.

Indeed, the global agenda for fighting hunger and poverty is often perceived to be in the confines of the public sector (government) and multilateral process; far out of the reach of civil society. Yet, civil society has deep concern with poverty, hunger and environment but without access to the official development agenda, their actions have to be pursued apart. As a result, there are two agendas, parallel and not linked.

At this time, it is pertinent that deliberate efforts are geared towards bringing the civil society into the process of setting the global development agenda. It is now time to give civil society institutional space.

The time has come to merge the common missions of the public sector, multilaterals and civil society into one strategy for fighting hunger and poverty and enhancing level of food security. The

result of this synthesis will be synergy. The combined efforts will produce out comes which will exceed the sum total of their parts.

RURAL POPULATION BELOW THE POVERTY LINE IN 135 DEVELOPING COUNTRIES (1992 –1993) (CONSIDERED TO BE HIGHLY VULNERABLE TO FOOD INSECURITY)

	Population			Rural Population Below Poverty Line	
	Total Millions	Rural Million	Rural Population as % of total Population	Millions	As % of Rural Population
Asia	2993.75	2119.63	70.80	650.85	30.71
Africa	476.80	355.66	74.59	218.46	61.42
Near East and North Africa	321.26	141.43	44.03	50.49	35.70
Latin America and the Caribbean	458.06	123.47	26.95	75.17	60.89
Total 135 Countries	4249.86	2740.19	64.48	994.97	36.31

Source: Conference on Hunger and Poverty: Popular Coalition for action. Brussels, November 1995.

1.2.5. INTERVENTIONS:

The challenge of adequate food production and supply and the eradication of hunger and poverty particularly in the developing world remains a major source of global concern. In recognition of the attendant problems of Food Insecurity, governments of developing countries have over

the years essentially initiated projects/programmes that will raise the level of food production and empower the poor. It is however obvious that despite there efforts, in many countries, much is still yet to be desired. National institution with the mandate to fight hunger and poverty sometimes lack necessary focus. Priorities are not spelled out as they need to be, and when they are, they are often not rigorously pursued. It is strongly believed that the efforts of the National governments alone will not suffice. Rather the collective will of the civil society, Bilateral and Multilateral institutions Non-Governmental Organisations (NGOS), Community Based Organisation (CBOS) among others.

It is gratifying that Institutions such as the Food and Agriculture Orgainsation (FAO). International Fund for Agricultural Development (IFAD), United Nations Development Programme (UNDP) World Bank (WB), United Nations Children Education Fund (UNICEF),

The Canadian Hunger Foundation Agency (CHF), Japanese International Cooperation Agency (JICA) International Food Policy Research Institute (IFPRI), United States Agency for International Development (USAID) among others; have all contributed immensely to the development and implementation of the global food security agenda.

Indeed, these combined efforts in the areas of the funding organization of International workshops and conferences and

technical/advisory supports have been able to produce outcomes, which have largely exceeded various individual efforts at country levels.

1.2.6. THE NIGERIAN SITUATION

Grave food supply difficulties persists in Nigerian and the sub-region with adverse consequences for food security. The food situation is worsening owing to increasing population, shortage of fertile land, high prices of available staples and constraints on food production. This has resulted into high incidence of hunger and malnutrition, a situation in which children and women especially pregnant women and lactating mothers are most vulnerable. Predictions of future food needs based on current population growth and food production emphasize the seriousness of the problem.

Going by the Food and Agriculture Organisation (FAO) assessment, more than half of Nigerian children or 52.3 percent of the national population were stunted in growth owing mainly to declining intake of food nutrients. The damage caused by malnutrition is incalculable as learning ability decreases, the labour force weakens, work production and quality declines and thus compromise the human potentials for development.

It is evident that among the millions of malnourished children, in Nigeria and other countries, there are talents and abilities that end up hidden away as a result of poverty.

According to World Bank report in 1999 Nigeria's Human Development Index (HDI) was only 0.416 with nearly 70% of the country's

population of above 120 million living below poverty line. National averages indicate that life expectancy at birth stands at 51 years, nearly 40% of Nigerian Children under 5years suffers from malnutrition, over 50% of the country's population lack access to safe drinking water and only 40% of the population are literate. With only about 40% of the Nigerian population living in urban areas, rural dwellers are among the hardest hit by these problems, with about 70% of their population having no access to portable water, no health facilities and no electricity.

Indeed, poverty, fast growing population, agricultural stagnation and resource degradation coupled with policy failures arising from poor implementation and social unrest have posed serious threat to National and Household Food and Livelihood security in Nigeria and the sub-region.

Judging by the degree of sensitivity and intensiveness of the problem of Food insecurity, it is highly improbable that any single program or process will provide a complete answer to the food problem. It is therefore most expedient that a holistic and pragmatic approach covering all alternatives and bringing our ingenuity to bear in the struggle is evolved.

Among others, there is need for:-

* Organisation of applied nutrition programmes aimed at educating Rural and Urban communities; especially in the areas of growing highly nutritious food crops, and selecting them for their consumptions,

* Provision of adequate support to Nigerian farmers, especially the poor peasants in the areas of farming inputs and micro-credit facilities to boost food production,
* Improved pricing for agricultural produce, towards encouraging increased food production;
* Improvement in the socio-economic well being of farmers to boost their purchasing power and their physical and emotional development,
* Economic empowerment of the consuming populace through provision of gainful employment for the unemployed and increase in the salary and wages of workers towards enhancing their purchasing power.
* Orientation/sensitisation through awareness campaign on market prices situation to enable the people have adequate knowledge of markets with the most competitive prices. Especially in a milieu like ours, where prices are strongly determined by market forces.
* Emphasis on the development of buffer stock for grains, other food items; should be further intensified during harvesting periods, to augment possible shortages during post harvest periods;
* Emphasis on the development of Rural Health to maintain and sustain active and productive Rural population. This is necessary considering the strategic role of Rural communities in Agriculture and Food

production. For example concerted efforts must be evolved in the fight against the verminous killer disease called AIDS. to enhance peoples productive years and life expectancy;

* Existence of peaceful, conducive and cohesive atmosphere with guarantee for security of life and safety of properties to allow for increased productivity; standard of living and higher life expectancy;
* Increased mobilization of custom and excise, other boarder security agencies for the effective control on illegal smuggling of processed and unprocessed agricultural produce across Nigerian boarders which has often led to adverse food scarcity and abnormal rise in market prices.
* Increased funding for the agricultural sector to boost the development of initiatives in the areas of Agricultural Training, Research and Extension towards increased productively.

It is however important to mention that successive governments in Nigeria has evolved strategies towards increased food production, reduction of poverty level, provision of rural infrastructures, among others.

Ironically, majority of these initiatives were jettisoned by poor Implementation, inconsistencies in government resulting from political instability, poor funding, among others.

As a result, food production, rural development and poverty alleviation only witnessed marginal improvement.

It is hopeful that the gains of democracy as manifested in the present administration of president Olusegun Obasanjo which include improved economic empowerment of the people through increased workers salary, the National Poverty Eradication Programme (NAPEP), Special Food Security Programme (SFSP), among others; would translate into increased food production, rural transformation, reduction in poverty level and ultimately enhanced food security.

1.3. STATEMENT OF PROBLEMS.

The importance of a nationwide Market prices Information report on agricultural food commodities cannot be overemphasized, as it provides opportunity for end users including governments, private sector, researchers, policy analyst, academicians, bilateral and multilateral donor institutions, Non Governmental Organisations (NGO's), Community Based Organisations (CBO's) among others to have an on the spot assessment of Market prices situation of food commodities across the States of the Federation and the Federal Capital Territory (FCT). It also allows for projection of possible attendant positive or negative implications for food security.

It is suffice to add that in view of its sensitivity and relevance, Market food prices information report should be accorded topmost priority by the diverse stake holders including governments, private sector, researchers, policy analysts, farmers, donor agencies, NGO'S, CBO'S, households among

others. Market food prices should be as a matter of necessity be collected in local and urban markets and processed appropriately on regular basis

Ironically, despite the increasing importance of the Market Prices Information as a veritable source for assessing level of food availability its supply and demand and ultimately providing insight into level of NATIONAL FOOD SECURITY, analysis of collected data in many cases are still bedeviled by the lack of timely and efficient methods.

The common Manual Method of data collection and analysis are cumbersome, mentally tasking, time consuming and highly deficient in precision. The reason for the popularity of Manual Method of Data analysis is not far fetched. Amongst others:

(i) awareness on Modern techniques of data analysis has been quite poor;

(ii) access to improved information technology facilities has been quite low;

(iii) Not many institutions in the country has computer facilities; where they are available they are often in few numbers while majority of them are hardly compliant with the dynamism of global information technology.

(iv) Fewer subject matter oriented problem solving application software packages are available. Hence, data analysis had depended largely on the cumbersome manual analysis method, which often takes long

periods of days or months to conclude. Serious limitations are often encountered in the manual analysis of considerably large size of data. Among others, it could be froth with errors; analysis process is relatively slow and limited by the level of knowledge and skill of the analyst. Several sheets of paper are required for analysis and final presentation of analysed data. This makes processed data unnecessarily bulky and cannot be moved around Processed information can easily be lost as sheets of paper containing analysed data can be wrongly handled or misplaced. Processed information can hardly be preserved over a long period of time.

1.4. OBJECTIVE OF THE STUDY.

Computerisation of market prices analysis of Food Commodities would require the use of computer in the analysis of collected market prices data.

The subject of Food Security is of enormous importance both to the government and the entire civil society. It therefore becomes expedient that all relevant tools for food projection and assessment must be adequately sharpened to produce desired result. In Nigeria, every household is directly affected by whatever projection or assessment made to determine prevailing level of Food security. This therefore corroborates the importance and sensitivity of data collected on market prices of food items nationwide which

is used to assess level of food availability and accessibility to the people as determining factors of the state of Food Security.

Objective and sound assessment would require the collection and efficient analysis of adequately representative large volume of data nationwide. Due to large volume of data being analysed and using the manual method which among others is cumbersome, very slow and froth with analytical errors; oftentimes result of analysis is delayed and when available it is deficient in precision. Hence, may result into inaccurate assessment of prevailing level of food security. Sensitive decisions with far reaching implications are often time bound. Therefore, when analysis is slow and delayed the result may easily become outdated and would no longer able to meet appropriate needs.

Government in view of her serious concern and sensitivity on matters of food security would require timely and efficient information based on analysed market prices data of food commodities to facilitate relevant policies on food production and supplies. It therefore becomes imperative to have a system that produces speedy, timely and accurate results as the computer.

As the organ of the Federal Government with the mandate and activities on food matters and indeed Food Security, the Federal Ministry of Agriculture and Rural Development (FMA&RD) would require a better and

more efficient system of analyzing collected market price data, rather than the existing manual method of analysis being used.

Thus this study strongly advocates the urgent need to consider a better and more efficient computerised system of data analysis in preference to the old manual method.

This is to enhance timely and accurate assessment of prevailing level of food security in the country as revealed by the market prices information report.

1.3 SIGNIFICANCE AND SCOPE OF STUDY.

The Federal Ministry of Agriculture plays the sensitive and all important role of coordinating and providing supportive services and enabling environment for massive food production and supplies to the teeming Nigerian population. Therefore, the subject of food security becomes one of the most important agenda of the Ministry. As a matter of responsibility, the Ministry is obliged to regularly monitor and assess the food situation in the country and report to government appropriately for policy direction and for urgent intervention where necessary.

In view of the importance of Market prices Information as a veritable tool for assessing level of food security, adoption of computerized method of analysis in place of manual method would facilitate efficiency and regularity of the efforts of the ministry towards meeting up with immediate and long term challenges of the National Food Security agenda.

To have a true situation report on the Food Security situation in Nigeria, relevant data should have a nationwide scope covering the thirty-six (36) States and the Federal Capital Territory.

Therefore, this study considers prices from rural and urban markets in the 36 states of the Federation; and the Federal Capital Territory.

1.5. LIMITATIONS.

Data collection, compilation and analysis is a highly cost intensive exercise. Therefore, inadequate funding is a limiting factor in the gathering of Market Prices Data; especially with the wide area of coverage.

Inadequate cooperation from market people particularly their unwilling attitude towards regular response to information requests.

Despite these constraints, the Ministry has never relented at ensuring that data are collected timely and are adequately representative to meet appropriate needs. Hence, this study is considering a well-gathered and adequately representative data.

1.7 DEFINITION OF TERMS.

COMPUTER SYSTEM:

Is an integrated electronic machine, which accepts data from an input device and performs logical operations in accordance with a predestined set of rules.

COMPUTERISATION:

Is the designing and implementation of a computer based data processing system that enhances the efficiency and fast retrieval of records

DATA:

Are either qualitative or quantitative information collected by an enumerator, which can be fed into the system to produce results.

MANUAL SYSTEM:

Specifically refers to non-computer operated group of activities.

DATABASE:

Is a collection of data file interpreted and organized into a single file system which is so arranged to minimize duplication of data and reduces cost.

DATABASE MANAGEMENT:

Is the software used for the management and retrieval of data stored in a D base environment.

COMPUTER NETWORK:

A number of computer system linked together so that each has the capability of communication with each other.

HARD WARE:

Is the physical components of the computer system.

SOFTWARE:

A set of program which is coded in such a way as to function and control the hardware.

PERI PHERAL EQUIPMENT:

All components that are external to the computer system but are made to function along with it.

PROGRAM LIBRARY:

The source of programme that is coded by the writer.

FILE:

A collection of related records

HYPOTHETICAL DATA:

Data that are literally used by the writer in testing the operations of the system.

CHAPTER TWO

2.0. MARKET PRICES INFORMATION SYSTEM AND FOOD SECURITY.

Choosing wisely is especially important when incomes are low and food supplies are insecure. This phenomenon, apart from being instructively economic, based on general economic theory and principles is often religiously preached and practiced in low-income economies of the developing World of which Nigeria is among.

In capitalist economies as ours, prices of goods and services are often determined by the prevailing market forces of demand and supply.

Under this situation, very low supplies resulting in scarcity of goods and services with resultant increasing demand, would lead to increase in prices, while increased supplies and low demand apparently results into decrease in price.

However, it is rather common to experience constant rising prices due to the usual situation of insufficiency in production and supplies. This is not without adverse implications in a poor economy like ours where majority of people are poor and cannot afford basic daily needs (including food) largely as a result of inaffordable prices, which are often beyond their reach.

Therefore, PRICING which is a significant factor of INAFFORDABILITY is one of the most basic reasons for FOOD

INSECURITY. This is strongly corroborated by the statement credited to the World Bank on FOOD PRICES and FOOD SECURITY; which explains thus;

"of all known variables, none serves as a better barometer of national and household food security than food prices. High rates of increase in consumer food prices are an indication of aggravating food supply-demand deficits and, as such, of aggravating household food security. Wide seasonal fluctuation in food prices is an indication of inadequate seasonal equilibrium of food supply and demand through food processing and storage operation.

Wide spatial disparity in food prices is an indication of in efficient food price communication mechanism among various markets. Wide differentials between consumer and producer food prices are indicative of an inefficient food marketing system which engenders high marketing cost and/or excessive profit margins to middlemen. The issues involved here largely revolve around the use of PRICES to promote increased food production and supply and at the same time promote the increased consumption of food by households" (World Bank 1991)

To curtail the adverse effect of unwanted rising prices of food and other items, one of the most basic strategy for adoption is the principle of comparative advantage in production whereby individuals/groups engage especially in those activities for which they have the most advantage of facilities (Men, Money and Materials) to enable Maximum capacity utilization which expectedly would result into increased production.

Similarly, it is advantageous to encourage the people to have adequate knowledge of those markets with the most competitive prices for goods and services. These, will discourage monopoly and restrictions but encourage choice marketing and provide the opportunity to purchase goods and services at reasonable and affordable prices. In addition, knowledge of prices across markets enable government to:

(i) Monitor and evaluate trend of food production across the country and its availability in markets for consumption and consequently provide useful insight into the level of FOOD SECURITY.

(ii) Through knowledge of prevailing market prices, food policies and strategies for implementation are developed by government. For instance, in 1992 it was the decision of the Federal Government of Nigeria through its implementing organ, the Federal Ministry of Agriculture and Rural Development to purchase and distribute grains, pulses and vegetable oils to all the states and FCT, as a relief assistance towards cushioning the effects of rising and unaffordable prices of food items in the country. This was made possible through the Information provided by market Prices Report.

(iii) Government can also mop up excess produce in the markets especially during harvesting periods, to serve as buffer stock during periods of scarcity.

2.1 Market Prices of Food Commodities in Nigeria as Related to Federal Ministry of Agriculture and Rural Development

2.1.1 MANAGEMENT FOCUS:

The Federal Government Policy on disengagement from direct food production (a major objective of the Structural Adjustment Programme on Agriculture) is aimed at self-reliance and self-sufficiency in food production. In this regard, agriculture being essentially a private sector affair will rely more on the private sector for food production, intra and inter seasonal stabilization of food stocks and prices through appropriate storage structures well managed. Government is thus left to play stimulatory and policy formulation roles while ensuring condusive environment for investment. For the sake of emphasis, it is pertinent to re-iterate that market prices information system was initiated and developed as one of the programmes that would prove timely and reliable for provision of useful information on Food Marketing and Storage in Nigeria.

The exercise is to provide routine information on food stocks level, market price trends, on the spot assessment of general prices distribution of food items, also projections on future market prices. This will expectedly assist in the assessment of the status of National Food Security as it will facilitate effective distribution of basic staples from surplus producing areas to deficit producing states and hence reduce food wastages to the barest minimum while enhancing household food security.

The cooperation of all, and indeed the coordination efforts on Data management and publication via data harmonization by relevant departments of the Ministry will no doubt assist to produce regular, reliable and informative document that is generally acceptable both in content and scope.

2.1.2. THE CONCEPT.

The Market Prices Information System (MIS) is one of the main prerequisite inputs into the crop Monitoring and Early Warning System which Started in 1988. It involves the following:

(a) Periodic collection of market prices of selected food items.

(b) Determining market arrivals

(c) Estimating planting materials, their quality or extent of deterioration et cetera.

(d) Estimation stock at farm, state and national levels for establishing current status of Food Security

(e) Timely collection of current information on market prices in rural and urban market nationwide. The initial take-off of the crop Monitoring and Early Warning System project was in five (5) pilot states. The number of states covered was later increased to fourteen (14) and thereafter to twenty-one (21) and finally to the former thirty (30) states of the Federation, including the Federal Capital Territory (FCT). The Market Prices Information System (MIS) was developed to assist in the National Food Security and storage system aimed at

creating 1,000,000 tones of storage capacity. The service is to provide routine information on inventories and stock, market trends, spots and future price for basic staples and for purposes of inter and intra seasonal stabilization of food stocks and prices. In addition, it is to assist in the free flow of farm produce from surplus producing areas to deficit states on the assumption that there is only one Nigerian market with no barrier to entry or free flow of food stuff across the state boundaries.

The MIS as a fact-finding exercise is necessary because;

(i) It provides a catalogue of information on Agriculture that will be subsequently useful for the purpose of planning.

(ii) It enhances the creation of more market facilities in the areas with high food production.

(iii) It affords government opportunity for periodical review and study of Prices and production costs of various agricultural commodities to serve as a realistic basis for monitoring their trends relative to non-agricultural commodities.

(iv) It is an avenue for dissemination of up-to-date information on general development in the agricultural sector, particularly food situation.

(v) It is a medium for comparing the general trends of prices of agricultural commodities, monthly and on inter state basis as the case may be.

(vi) It is an essential component of crop monitoring, Early Warning and food security system.

2.1.3. DATA COLLECTION.

Periodic collection of Market Prices data of food items is carried out by officers of the Field Projects Monitoring Units (FPMUS), Projects Coordinating Unit (PCU) through the Agricultural Development Projects (ADPs), Fisheries, livestock and Pest control services Departments. The names of Food commodities, their respective units of measurements, e.g. 1 kilogram (KG) for solid Food items and 1 litre for liquids (palm oil, groundnut oil). To capture as much as possible the real price outlook in the market, retail price of respective food items are collected in selected rural and urban markets across the states of the Federation and the Federal Capital Territory.

Collected data are forwarded to the Planning, Research and Statistics Department where they are compiled and analysed. Inferences are drawn from the result of the analysis, which are used for the purpose of decision making.

CHAPTER THREE.

3.0. SYSTEM ANALYSIS.

At this stage it is expedient to carry out a detailed investigation into the problem areas of the existing system, this is in order to facilitate the Development of a workable and more efficient system that is computer oriented.

The existing system is manually operated. Field officers in the ministry's states field offices and the Federal Capital Territory (FCT) routinely visit Rural and Urban markets to collect market price of food items using a uniform Data Collection Format designed by the Ministry.

Collected data are forwarded to the Ministry's headquarters, Abuja for harmonization and collation for processing by the Planning, Research and Statistics Department.

A tabulated Data Sheet is ruled out under the following headings – serial number; Commodities (names of food item, e.g. Rice); Unit (Unit of measurement of food item); name of State (from which respective data were collected) Price Figures for each Food item is listed under each of the States represented in the table. Final information provided by this table is manually analysed.

3.1. DEMERITS OF THE MANUAL METHOD:

The following shortcomings were observed with the manual method.

(i) Because of the large size of data involved, the manual analysis of

data is cumbersome, prone to human errors, and are often time consuming;

(ii) The same analytical process is done repeatedly which otherwise could be done iteratively using the computer;

(iii) Many large sizes of tabulated sheets are kept in the cabinet and cannot be easily transferred. In cases where the sheets are not carefully handled, they are either torn or mutilated which in some cases leads to loss of vital facts;

(iv) Many hands are involved especially in the process of transferring figures from the Data Collection Format into tabulated sheets. At times, a situation of in efficiency and error may occur depending on the skill and state of mind of those involved;

(v) Release of analysed data as information to end users is delayed, this is in view of the delays encountered in the course of the various processes involved;

(vi) In cases where tabulated data sheet containing recorded data is misplaced, even when it is possible to retrieve the same data using the original Data Collection Format, it can take a much longer time as the whole process would have to be repleated all over again;

(vii) It could be easier at times to lay hand on manually compiled and analyzed data, and therefore prone to human distortions or manipulations. Rather, data entered straight into the computer system

can enjoy considerable confidentiality and maintain its originality and precision as access could be effectively controlled.

3.2. MERITS OF THE MANUAL METHOD:

However, setting up and operating the manual method can be considerably cheaper than those of the computer; as no major equipment or facilities are required, except existing human resources which are often not newly sourced in the case of existing offices.

Secondly, analytical procedures using the computer would require greater skill and professionalism than in the manual method which further makes the manual method cheaper.

Generally Speaking, Convenience, efficiency and overall benefits associated with the use of the computer system may far out weigh the manual method. Moreover, global dynamics in information technology is almost making the manual method (often associated with so much drudgery) to become obsolete in favour of the computer. Hence, the proposed system using the computer is considered better and more favoured.

3.3. BENEFITS OF THE PROPOSED SYSTEM:

The benefits associated with the use of computer over the manual method is further buttressed as follows:-

(i) SPEED:- The most obvious benefit using the computer is the

ability to carry out operations with speed. The computer is able to perform calculations and general processing of data more quickly than the alternative manual method can.

(ii) ACCURACY:- Higher degree of precision can be expected from analysis done by the computer over the manual method.

(iii) RELIABILITY:- Modern electronic computer performs at higher level of reliability as equipment failures are less common.

(iv) RETENTION:- The computer is able to store and search massive assemblage of data and programs.

The content of files in the system does not fade or mutilated or lost over time, therefore can be used time and over again.

(v) ECONOMY:- The advantage of speed and accuracy can often be translated into Naira savings realized. Usually, the per unit cost of processing data or doing computation using the computer is considerably lower than the manual methods. Also, accurate records can reduce the frequency of bad decisions that are made because of unreliable or unavailable information.

(vi) WIDE APPLICABILITY:- A computer can be used to solve a wide variety of problems that arise in science and business. The boundaries of what the computer can accomplish are limited only by the ability and imagination of its users.

CHAPTER FOUR

4.0 SYSTEM DESIGN AND SOFTWARE DEVELOPMENT

The system design would involve taking appropriate decision based on observation and findings about each of the integral Unit of the desired component; files to be maintained, planned inputs, data processing methods and procedures linking the input with output.

Basically, the design of the new system is being carried out based on the following objectives:-

(i) specification of the logical design elements:

These include detailed specification for the new system describing features such as input, output, procedures, files and database required to meet the needs of the new system;

(ii) to ensure that the system adequately accomplish users objectives;

(iii) have the ability to perform appropriate procedures correctly, present proper form of information which are result oriented and reliable.

(iv) User friendly and meeting required expectation;

(v) Provide software specification.

Similarly, in ensuring that the system functions effectively, the following criteria are also considered.

1. Efficiency: this ensures that data are entered correctly and validated.

2. User Friendliness: This allows the operator a choice of different operations for implementation.

3. Maintainability: To ensure optimal performance at all times, a basic criteria is maintainability which recommends regular servicing of the hardware as well as replacement of deficient parts and also ensuring that appropriate spare parts are used at all times.

4.1 LANGUAGE SELECTION FOR SOFTWARE DEVELOPMENT

For the development of application software, among relevant and commonly used computer languages are the BASIC, FORTRAN, PASCAL COBOL and DBASE. However, for the purpose of this study, the Dbase IV has been selected. The choice of Dbase IV is as a result of its useful and powerful features which appropriately serve the purpose of this study. Among the features of the Dbase IV are;

(i) Information Storage and Retrieval:-

The Dbase IV handles storage, retrieval and organization of information in an efficient manner and in a much better way than other Micro-computer Database Management System.

(ii) Programming Commands:- Dbase IV commands are short easy to coordinate and remember.

(iii) Debugging:- This is for tracking unwanted programme bugs.

(iv) Report Generation:- It allows for customization of report.

4.2 DESIGN OF THE NEW OUTPUT SYSTEM

4.2.1 INPUT

The new system requires complete computerisation of the entire process of analysis. Relevant data would include information on food commodities, unit of measurement, prices, names of states where data were collected. This will collectively form the database.

The new input form always prompts the user a question or questions and waits for response. This is done either by pressing key strokes or typing in a word.

4.2.2 OUTPUT

On successful response to the questions asked, the computer will now prompt the operator to a menu list of options to select from. These options would include add record, generate report or quit depending on the alternative options selected by the operator.

The computer now responds to any of these options.

4.3 CREATING FILES

This would require the creation of a database structure where data are grouped into data names, types and width. Subsequently, programs are written in modules to generate required output. Highly related elements are kept in the same module to maximize cohesion. The following are the field names; type and width.

All these formed the database files.

4.4 DATABASE STRUCTURE

FIELD NO.	FIELD DESCR	FIELD NAME	FIELD WIDTH	DATA FORM
1.	PERIOD	PERIOD	8	DATE
2.	FOOD ITEM CODE	FOOD CODE	6	NUMERIC
3.	FOOD ITEM DESCR	FOOD ESCR	16	CHARACTER
4.	UNIT	UNIT	12	NUMERIC
5.	PRICE	PRICE	5	ALPHANUMERIC
6.	STATE	STATE	12	CHARACTER
7.	SOURCE	SOURCE	10	CHARACTER

4.5 DOCUMENTATION

The purpose of documentation is an indication of a system operational status, which involves initial investigations, documents and system proposals. Its main aim is for records against the future. Other purposes include the following:

(a) Analyzing: With the proper documentation of records, the management is able to effectively analyse in details the objective of the program.

(b) Aid to completeness: This ensures that a specified job is not unduly repeated so that the pattern stated for its completeness is fully adhered to.

(c) Aid to Design: It aids design and re-designing of a new or existing system, in that there are already laid down procedure to follow so as to achieve defined objectives.

(d) Aid to Training: It aids the trained or the newly employed staff to get familiar with the standard or procedure of the system he is working with. Documentation contains vast number of parts those that are notable include:-

1. THE PROGRAM SPECIFICATION: This includes the general description of the individual program together with a brief synopsis of the overall system, showing how the programs fit into each other.
2. THE PROGRAM LISTING:- This contains both the source symbolic program language and the resultant object or internal machine language, together with all memory allocation in relative and absolute form.
3. THE OPERATING INSTRUCTION: This specifies the series of operating instructions encoded, which explains what each means, so that the operators can be able to follow the procedures of the new system. It also includes all documentation necessary for the satisfactory operation for: user written programs.

4.6 OPERATION OF APPLICATION PROGRAM

In this section, the author of this project work takes a brief tour of the system by testing the operational standard.

This system is titled FOODCOMP and it is structured into subroutines to be executed, each routine will perform a different operation.

The main menu would serve as the controlling program from which the user can select options to work on. A user goes into the system by typing Dbase at the Dos prompt, C:> and press enter key.

This immediately invokes the Dbase compiler. At the prompt C:\dbase >, type dbase and press Enter key, again. Press Esc key and choose 'Yes' and press Enter key to get to dbase prompt.

At the dbase prompt, insert a working diskette in drive A and set default to A. Press Enter key. Again, type DO.FOODCOMP and press Enter key, the system responds with a Menu providing the options of subroutines to be executed. From the Main Menu the user is able to select among the following modules of activities;

A Add Record

E Edit Record

D Delete Record

V View Record

S Search Record

R Report Record

Q Quit Record

4.7 COST ANALYSIS

The estimated cost of implementing the design is as follows:-

(1)	Hardware - Compaq 4/25C Model (i) processing speed of 486DX-33HX (ii) capacity – 540MB with 256KB cache and 8MB RAM (iii) 1.2MB 5.25" floppy disk drive (iv) 1.44MB 3.5" floppy disk drive		₦350,000.00
(2)	Implementation (installation)		₦45,000.00
(3)	Maintenance		₦30,000.00
(4)	Dot Matrix Printer		₦50,000.00
(5)	Stationery		₦15,000.00
(6)	Uninterrupted Power Supply (UPS)		₦40,000.00
(7)	Training		₦40,000.00
	Total	=	₦575,000.00

CHAPTER FIVE

5.0. SYSTEM IMPLEMENTATION.

The system Implementation would involve changing from the old system (Manual) to a new one (Computerised) and making the new one adequately and effectively operational.

Steps towards the new system would include:-

(i) Ensuring that Ministry's management have clear knowledge of the type of implementation either parallel, direct or pilot.

(ii) Preparatory work towards the adoption of the new system.

(iii) Operation of the new system.

(iv) Periodic review of the new system.

Under the system implementation, basically the following are pertinent:-

(a) HARDWARE and SOFTWARE SUPPORTS

(b) TRAINING of QUALIFIED PERSONNEL

(c) SYSTEM CHANGEOVER

(a) (i) HARDWARE.

These are the physical devices found in computer system. These devices would play important supportive roles in the execution of application program. They include:-

(i) Micro-computer (PC) configuration of IBM compatible

(ii) 3.5" and 5.25" floppy drive and floppy diskettes are also required to process the job.

(iii) Computer stationery such as computer papers for processing hardcopy of the processed data.

(iv) An Uninterrupted Power Supply (UPS) Stabilizer for regulating power supply.

(v) The laser printer or dot matrix printer for print out.

(a)(ii) SOFTWARE.

Software refers to all the various programs that may be used on a computer system together with their associated documentation.

The software is so important, as programs put life into hardware.

Apparently, without the software a computer system cannot function. the software support required for the execution of the program are the Operating System and Database Management System Software.

The Disk Operating System (DOS) uses program and procedure written to run a computer system. It is a series of programs such that when executed controls the operation of the computer.

The DOS functions as follows:-

(i) Communicates with computer operators by means of the keyboard.

(ii) Supervises Multi-programming operators such as running of each program, protecting each program's working store from overwriting.

(iii) Allocates peripherals to programs and check for availability

A database is a collection of data in files and arranged in such a way that it is independent of any particular program or application. The arrangement eliminates data redundancy. Access to files is provided by Data Base Management System (DBMS).

A Database Management System is an organized collection of inter-related data and set of programs to access that data.

The aim of a Database Management System is to create an environment that is efficient and convenient for retrieving information from stored database.

(b) TRAINING OF QUALIFIED PERSONNEL.

Qualified personnel who would operate the new system would require adequate training. Such personnel would include computer operators, data processing officers, data processing assistants, and others. The training will include the storage, retrieval, editing and probing of data. During the training, some days will be set aside to make sure that all the people concerned are taught some basic commands of the packages and the various procedural aspects involved.

(c) SYSTEM CHANGE OVER.

This involves changing over from the old system to the newly developed one. This is done when the system proved satisfactory and every other implementation activities are completed.

There are diverse approaches to changing over, among which are Direct, Parallel running, Pilot running and Staged changeover. However, for the purpose of this study and particularly due to the similarity between the manual and computerized system, it has been suggested that both be run side by side for a period of time;

This method of conversion is called PARALLEL RUNNING By this, the old system is gradually phased out. This method of conversion also offers the opportunity of comparing the result of the old manual system and the new computerized system.

5.1. RECOMMENDATION:

No doubt, the Ministry and indeed other users both Locally and International would benefit immensely from the various advantages and opportunities of the new system.

Indeed, it is expected that the new system will assist the Ministry in the enhancement of her strategic planning on food production, processing marketing distribution and future forecasts.

The adoption is therefore strongly recommended without delay.

5.2. CONCLUSION:

The principal objective of this study is to evolve a new idea that will provide needed improvement on the old system. This study has been done taking a panoramic view of the entire system, including its mandates particularly in reference to Food Security. Also, Facilities available especially

in terms of Human and Material Resources and the flexibility of the Management to imbibe new ideas.

It is encouraging that the Ministry poses the capability to adopt the new system without delay. However, it is suffice to add that this study is not absolutely a measure of the present status of the Federal Ministry of Agriculture and Rural Development especially in terms of her responsiveness to the needs of government, the people and the International community.

This study as an educational research work is basically expected to project and further enhance the existing efforts of the Ministry.

It should also be noted that the areas high lighted and the recommendations made in this study is not exhaustive in terms of improving the data generation capability of the Ministry. It is therefore strongly suggested that further research are conducted from time to time to adequately meet local information needs for the sector; and also inline with the global dynamics of Management Information System.

APPENDIX

MAIN PROGRAM

```
SET TALK OFF
SET STATUS OFF
DO WHILE .T.
CLEAR
SET COLO TO G/B+
@ 1,10 SAY 'WELCOME TO COMPUTERISED AGRICULTURAL
MARKET PRICES DATA PACKAGE'
@ 2,10 SAY 'DESIGNED BY MR E.A. OLALEYE
@ 3,10 SAY 'MAT. NO. PGD/MCS/98/99/865
@ 4,10 SAY 'PGD IN COMPUTER SCIENCE'
@ 5,10 SAY 'FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA'
@ 6,10 SAY 'REMARKS:- THE PROGRAM IS WRITTEN TO SOLVE THE
       PROGRAM'
@ 7,31 SAY 'OF FOOD COMMODITIES PRICES DATA STORAGE
      AND RETRIEVAL'
@ 8,10 SAY 'DATE WRITTEN:- APRIL 2002
@ 9,10 SAY 'ENTER CHOICE TO GO THROUGH THE PROGRAM OR
       QUIT'
CHOICE = ' '
SET COLO TO W/B+
```

```
@ 11,10 TO 15,70 DOUBLE
@ 12,12 SAY 'ADD'
@ 12,18 SAY 'DELETE'
@ 12,26 SAY 'EDIT'
@ 12,35 SAY 'VIEW'
@ 12,42 SAY 'SEARCH'
@ 12,53 SAY 'REPORT'
@ 12,60 SAY 'QUIT'
SET COLO TO R+
@ 12,12 SAY 'A'
@ 12,18 SAY 'D'
@ 12,26 SAY 'E'
@ 12,35 SAY 'V'
@ 12,43 SAY 'S'
@ 12,53 SAY 'R'
@ 12,60 SAY 'Q'
SET COLO TO W/B+
CH = SPACE (1)
@ 14,35 SAY 'ENTER CHOICE' GET CHOICE PICT '!'
READ
DO CASE
CASE CHOICE      =      'A'
```

```
DO FOOD COMPADD
CASE CHOICE      =      'D'
DO FOOD COMPDEL
CASE CHOICE      =      'E'
DO FOOD COMPEDIT
CASE CHOICE      =      'V'
DO FOOD COMPVIEW
CASE CHOICE      =      'S'
DO FOOD COMPSEAR
CASE CHOICE      =      'R'
DO PRICET
OTHERWISE
QUIT
ENDCASE
ENDDO
SET TALK ON
SET STATUS ON
RETURN.
```

ADD SUB – PROGRAM

```
SET TALK OFF
DO WHILE .T.
CLEAR
MPERIOD = CTOD (' / / ')
MFOODESCR = SPACE (12)
MSOURCE = SPACE (20)
STORE 0 MFOODCODE, MUNIT, MPRICE
@ 4,10 TO 20,66 DOUBLE
@ 5,31 SAY 'FOODCOMP'
@ 6,31 TO 6,45 DOUBLE
@ 7,12 SAY ' FOODCODE GET MFOODCODE PICT '599999'
@ 7,35 SAY 'FOODESCR GET MFOODESCR
@ 9,12 SAY 'PRICE (₦)' GET MPRICES PICT '99999999999999'
@ 9,46 SAY 'WHICH PERIOD' GET MPERIOD
@ 11,12 SAY 'UNIT (KG)' GET MUNIT PICT '999999999999'
@ 13,12 SAY 'STATE GET STATE PICT  '99999999999999'
@ 15,12 SAY 'SOURCE' GET MSOURCE
READ
CH = SPACE (1)
@ 17,12 SAY 'DO YOU WANT TO ADD THIS RECORD (Y/N)? GET
CH PICT '!'
```

```
READ
IF CH – 'Y'
USE FOODCOMPDATA
APPEND BLANK
REPLACE FOODCODE WITH MFOODCODE, UNIT WITH MUNIT
REPLACE PRICE WITH MPRICE, PERIOD WITH MPERIOD
REPLACE STATE WITH MSTATE, SOURCE WITH MSOURCE
REPLACE FOODESCR WITH FOODSECR
ELSE
ENDIF
ANS – SPACE (1)
@ 19,20 SAY 'DO YOU WANT TO ADD MORE RECORD (Y/N)?' GET
        ANS PICT '!'
READ
IF ANS = 'Y'
LOOP
ELSE
CLEAR
EXIT
ENDIF
ENDDO
SET TALK ON
```

DELETE SUB – PROGRAM

```
SET TALK OFF
USE FOODCOMPDATA
DO WHILE .T.
GO TOP
CLEAR
MPERIOD = CTOD (‘  /  /  ‘)
@ 3,10 TO 20,68 DOUBLE
@ 4,31 SAY ‘FOODCOMP
@ 5,31 TO 5,45 DOUBLE
@ 6,15 SAY ‘WHICH PERIOD’ GET MPERIOD
READ
LOCATE FOR PERIOD = MPERIOD
IF .NOT. FOUND ( )
@ 7,15 SAY ‘RECORD NOT FOUND’
ELSE
@ 8,12 SAY ‘FOODCODE:- ‘GET FOODCODE
@ 8,35 SAY ‘FOODESCR:- ‘GET FOODESCR
@ 10,12 SAY ‘PRICE (₦):- ‘GET PRICE
@ 12,12 SAY ‘UNIT (KG):- ‘GET UNIT
@ 14,12 SAY ‘STATE:- ‘GET STATE
@ 16,12 SAY ‘SOURCE:- ‘GET SOURCE
```

```
CLEAR GETS
CH = SPACE (1)
@ 17,12 SAY 'DO YOU WANT TO DELETE THIS RECORD (Y/N)?'
        GET CH PICT '!'
READ
IF CH = 'Y'
DELETE
PACK
@ 18,12 SAY 'RECORD IS DELETE'
ENDIF
ENDIF
ANS – SPACE (1)
@ 9,12 SAY 'DO YOU WANT TO DELETE RECORD (Y/N?' GET ANS
        PICT '!'
READ
IF ANS = 'Y'
LOOP
ELSE
CLEAR
EXIT
ENDIF
ENDDO
```

```
CLOSE DATABASE

SET TALK ON

RETURN
```

EDIT SUB – PROGRAM

```
SET TALK OFF
USE FOODCOMPDATA
DO WHILE .T.
GO TOP
CLEAR
MPERIOD    =      CTOD('  /  /  ')
@ 3,10 TO 20,68 DOUBLE
@ 4,31 SAY FOODCOMP
@ 5,31 TO 5,45 DOUBLE
@ 6,15 SAY 'WHICH PERIOD' GET MPERIOD
READ
LOCATE FOR PERIOD = MPERIOD
IF .NOT. FOUND ( )
@ 7,15 SAY 'RECORD" NOT FOUND"
ELSE
@ 8,12 SAY ' FOODCODE:- 'GET FOODCODE
@ 8,35 SAY 'FOODESCR:- 'GET FOODESCR
@ 10,12 SAY 'PRICE (₦):- 'GET PRICE
@ 12,12 SAY 'UNIT (KG):- GET UNIT
@ 14,12 SAY 'STATE :- 'GET STATE
@ 16,12 SAY 'SOURCE:- 'GET SOURCE
```

```
READ
ENDIF
ANS = SPACE (1)
@ 19,12 SAY 'DO YOU WANT TO EDIT THIS RECORD (Y/N)? 'GET
ANS PICT '!'
READ
IF CH = 'Y'
LOOP
ELSE
CLEAR
EXIT
ENDIF
ENDDO
CLOSE DATABASE
SET TALK ON
RETURN
```

VIEW SUB – PROGRAM

```
SET TALK OFF
USE FOODCOMPDATA
DO WHILE .T.
GO TOP
CLEAR
```

```
MPERIOD = CTOD (‘   /   /   ‘)
@ 3,10 TO 20,68 DOUBLE
@ 4,31 SAY ‘FOODCOMP
@ 5,31 TO 5,45 DOUBLE
@ 6,15 SAY ‘WHICH PERIOD’ GET MPERIOD
READ
LOCATE FOR PERIOD = MPERIOD
IF .NOT. FOUND ( )
@ 7,15 SAY ‘RECORD NOT FOUND’
ELSE
@ 8,12 SAY ‘FOODCODE:- GET FOODCODE
@ 8,35 SAY ‘ FOODESCR:- ‘GET FOODESCR
@ 10,12 SAY ‘PRICE (₦):- ‘GET PRICE
@ 12,12 SAY ‘UNIT (KG):- ‘GET UNIT
@ 14,12 SAY ‘STATE: - ‘GET STATE
@ 16,12 SAY ‘SOURCE:- GET SOURCE
CLEAR GETS
ENDIF
ANS = SPACE (1)
@ 18,12 SAY ‘DO YOU WANT TO VIEW ANOTHER RECORD (Y/N)?
        ‘GET ANS PICT ‘!’
READ
```

```
IF CH = 'Y'
LOOP
ELSE
CLEAR
EXIT
ENDIF
ENDDO
CLOSE DATABASE
SET TALK ON
RETURN
```

SEARCH SUB- PROGRAM

```
SET TALK OFF
DO WHILE .T.
CLEAR
USE FOODCOMPDATA
MPERIOD = CTOD ( ' / / ')
STORE 0 TO MFOODCODE, MPRICE, MUNIT, MSTATE
@ 3, 10 TO 20, 68 DOUBLE
@ 4, 31 SAY 'FOODCOMP'
@ 5, 31 TO 5, 45 DOUBLE
@ 7, 13 SAY 'FOODCODE' GET MFOODCODE
READ
LOCATE FOR FOODCODE = MFOODCODE
IF FOUND ()
@ 9, 13 SAY 'PERIOD/MONTH, GET PERIOD
@ 9, 38 SAY 'FOODESCR' GET FOODESCR
@ 11, 13 SAY 'PRICE ' GET PRICE
@ 13, 13 SAY ' UNIT (KG)' GET UNIT
@ 15, 13 SAY 'STATE' GET STATE
@ 17, 13 SAY 'SOURCE' GET SOURCE
READ
ELSE
```

```
@18, 13 SAY 'RECORD NOT FOUND'
END IF
CH= SPACE (1)
@ 19, 13 SAY ' DO YOU WANT TO CONTINUE TO SEARCH MORE
RECORD (Y/N)?' GET CH PICT '!'
READ
IF CH='Y'
LOOP
ELSE
CLEAR
EXIT
END IF
ENDDO
CLOSE DATABASE
SET TALK ON
RETURN
```

```
SET TALK OFF
SET SCOREBOARD OFF
SET DECI TO 0
DO WHILE .T.
SET PRINTER ON
SET DEVICE TO PRINTER
@ 0,0 SAY CHR(15)
sr=0
sn=SPACE(1)
rw=8
STORE 0 TO stot,sno,mav
USE FOODCOMM
GO TOP
DO WHILE .NOT. EOF()
ON ESCAPE EXIT
@ 1,18 SAY "AVERAGE MARKET PRICES OF BASIC FOOD COMMODITIES IN NIGERIA FOR THE MONTH OF OCTOBER, 2001"
@ 2,18 SAY "                    (=N=/100KG/20 LITRES/LIVE ANIMAL/CRATE) "
@ 3,18 SAY "============================================================================="
@ 4,3 SAY " "
@ 5,1 SAY "
                        NAT."
@ 6,1 SAY "S/NO COMMODITIES     UNIT      AB      AD      AK      BN      CR      ED      EN      IM      JG      KD      KN      KT      KG      KW      LA      NG      OG      P
L      TR      YB      PCT      AVRG."
@ 7,1 SAY "=================================
==================================="

DO WHILE .NOT. EOF()
 sr=sr+1
 sn=LTRIM(STR(sr))
 @ rw,1 SAY sn
 @ rw,6 SAY COMMOD
 @ rw,22 SAY UNIT
* rw=rw+1
 stot=stot+AB
 IF AB<>0
  sno=sno+1
 ENDIF
 @ rw,30 SAY AB

 stot=stot+AD
 IF AD<>0
  sno=sno+1
 ENDIF
 @ rw,37 SAY AD

 stot=stot+AK
 IF AK<>0
  sno=sno+1
 ENDIF
 @ rw,44 SAY AK

 stot=stot+BN
 IF BN<>0
  sno=sno+1
 ENDIF
 @ rw,51 SAY BN

 stot=stot+CR
 IF CR<>0
  sno=sno+1
 ENDIF
 @ rw,58 SAY CR
```

62

62

```
stot=stot+ED
IF ED<>0
 sno=sno+1
ENDIF
@ rw,65 SAY ED

stot=stot+EN
IF EN<>0
 sno=sno+1
ENDIF
@ rw,72 SAY EN

stot=stot+IM
IF IM<>0
 sno=sno+1
ENDIF
@ rw,79 SAY IM

stot=stot+JG
IF JG<>0
 sno=sno+1
ENDIF
@ rw,86 SAY JG

stot=stot+KD
IF KD<>0
 sno=sno+1
ENDIF
@ rw,93 SAY KD

stot=stot+KN
IF KN<>0
 sno=sno+1
ENDIF
@ rw,100 SAY KN

stot=stot+KT
IF KT<>0
 sno=sno+1
ENDIF
@ rw,107 SAY KT

stot=stot+KG
IF KG<>0
 sno=sno+1
ENDIF
@ rw,114 SAY KG

stot=stot+KW
IF KW<>0
 sno=sno+1
ENDIF
@ rw,121 SAY KW

stot=stot+LA
IF LA<>0
 sno=sno+1
ENDIF
@ rw,128 SAY LA
```

food_prc.PRG 05/01/02

```
 stot=stot+NG
 IF NG<>0
  sno=sno+1
 ENDIF
 @ rw,135 SAY NG

 stot=stot+OG
 IF OG<>0
  sno=sno+1
 ENDIF
 @ rw,142 SAY OG

 stot=stot+PL
 IF PL<>0
  sno=sno+1
 ENDIF
 @ rw,149 SAY PL

 stot=stot+TR
 IF TR<>0
  sno=sno+1
 ENDIF
 @ rw,156 SAY TR
 stot=stot+YB
 IF YB<>0
  sno=sno+1
 ENDIF

 stot=stot+FCT
 IF FCT<>0
  sno=sno+1
 ENDIF
 @ rw,170 SAY FCT

 mav=stot/sno
 @ rw,177 SAY mav
 REPL NAVR WITH mav
 SKIP
 IF rw>45
  EJECT
 ENDIF
 IF EOF()=.T.
  EXIT
 ELSE
  stot=0
  sno=0
  rw=rw+1
  LOOP
 ENDIF
ENDDO
 CLOS ALL
 EXIT
ENDDO
 CLOS ALL
 SET PRIN OFF
 SET DEVI TO SCRE
 EXIT
ENDDO
```

AVERAGE MARKET PRICES OF BASIC FOOD COMMODITIES IN NIGERIA FOR THE MONTH OF OCTOBER, 2001

(=N=/100KG/20 LITRES/LIVE ANIMAL/CRATE)

S/NO	COMMODITIES	UNIT	AB	AD	AK	BN	CR	ED	EN	IM	JG	KD	KN	KT	KG	KW	LA	NG	OG	PL	TR	YB	PCT	NAT. AVRG.
1	YAM TUBER	100kg	5000	4000	0	2980	3450	5300	0	3400	5100	6675	3350	6500	2550	0	4413	0	0	1782	0	4700	0	4229
2	YAM FLOUR	100kg	0	1775	0	2272	4400	10250	0	0	5600	3275	3200	3600	3100	5000	4413	950	0	0	0	3400	2075	3808
3	CASSAVA TUBER	100kg	600	0	825	333	380	1800	1200	1100	3625	1288	1000	2000	1250	0	0	0	0	1012	0	2300	1075	1319
4	CASSAVA FLOUR	100kg	0	1632	0	2272	4000	3900	0	0	5200	2475	1675	5000	1650	0	3110	425	0	2183	1560	4100	1875	2737
5	GARRI (YELLOW)	100kg	3200	0	3400	2500	6300	3400	1700	3450	6400	2575	1775	3000	2900	0	4025	4400	0	0	2200	2900	3225	3374
6	GARRI (WHITE)	100kg	3200	2375	3400	2500	4850	2750	1700	3450	6000	2450	1775	3000	2700	4237	3963	4400	0	3305	2700	2900	3000	3233
7	RICE (LOCAL)	100kg	6000	4400	4400	4981	5200	6850	0	4250	11200	4775	4300	5500	4100	5100	4375	4000	7725	4731	5400	5400	5060	5387
8	RICE (FOREIGN)	100kg	6500	5400	4650	5000	7200	8400	5600	7050	13600	6883	5570	6600	5000	5800	4875	5400	10150	0	6600	6100	5700	6604
9	MAIZE (WHITE)	100kg	3000	0	0	2307	5000	3300	2500	2650	5200	1850	2350	2200	2500	2275	1788	2000	3000	1899	2400	1900	1951	2635
10	MAIZE (YELLOW)	100kg	3000	0	0	2304	5000	3600	2500	2650	5200	2000	2350	2200	2500	2375	0	2000	3000	0	2250	1900	1951	2752
11	SORGHUM	100kg	0	1588	0	2307	3500	0	2800	0	4000	2288	2250	2080	2600	3475	2238	1900	3800	1895	1950	1900	2301	2522
12	MILLET	100kg	0	1663	0	2596	0	0	0	0	4050	2425	2250	2080	2450	3925	0	2400	0	2037	1950	1900	2115	2449
13	WHEAT	100kg	0	0	0	0	0	0	0	0	7200	4767	3350	3500	0	0	0	3100	0	0	0	0	2865	4147
14	COWPEA (BROWN)	100kg	5000	3350	6450	4519	6500	8600	4500	4800	7600	4775	4825	4000	3400	5950	4950	4000	7850	4413	4200	3900	4258	5135
15	COWPEA (WHITE)	100kg	5000	3150	6150	4230	5500	7250	0	4150	7600	4339	3950	4000	3400	5075	4445	4000	6500	4258	4200	4000	3908	4760
16	SOYABEAN	100kg	4000	0	3275	2307	2800	5400	0	7625	8000	3025	2750	3600	3400	3612	0	2800	0	2729	0	4000	4317	3978
17	GROUNDNUT	100kg	4313	3250	7900	5000	6000	5525	0	0	7200	3783	3350	3200	2750	0	3350	4000	0	3121	3600	3500	2875	4277
18	PLANTAIN	100kg	350	0	860	2916	0	4700	550	172	0	2760	6000	8000	2000	0	0	0	0	0	0	7800	1125	3103
19	BANANA	100kg	400	0	715	1818	0	2900	450	155	0	1771	3375	6000	2000	0	0	0	0	0	0	6300	850	2228
20	SWEET POTATO	100kg	1300	0	0	2142	3000	0	1900	0	3800	1600	1000	2400	1200	0	0	650	0	0	850	3200	0	1920
21	IRISH POTATO	100kg	1500	1925	0	2867	2900	0	5000	0	3575	0	2950	5000	3900	0	0	600	0	2450	0	5700	0	3197
22	PALM OIL	20 Litre	500	825	0	825	500	700	650	625	1085	0	1100	1100	1025	785	850	1250	875	1225	1050	1300	1158	917
23	GROUNDNUT OIL	20 Litre	1200	1263	0	962	1300	1700	0	1400	1700	0	1475	1200	1075	1700	1100	1450	1288	1450	1150	2500	1970	1438
24	EGGS	B/Crate	250	245	176	220	270	210	220	155	210	225	210	210	180	200	230	240	158	205	220	0	283	216
25	CHICKEN (LIVE)	Liv. wt	400	123	278	156	365	550	350	225	180	350	194	135	275	210	365	200	0	325	237	250	463	282
26	GOAT (LIVE)	Liv. wt	1800	1033	2188	1461	2525	3000	9000	0	1350	2400	1150	1675	2250	0	3650	2000	0	1475	875	1200	4113	2397
27	SHEEP (LIVE)	Liv. wt	1500	1683	1825	1540	2150	3000	6000	2150	3075	4825	1375	1888	1600	0	4500	2500	0	1750	1125	1600	4025	2532
28	BEEF	100kg	0	21250	19875	17000	0	15000	0	0	21520	16500	15750	15000	20000	16000	19000	0	0	15183	0	15000	17775	17490
29	MACKEREL FISH	100kg	0	0	0	0	14000	7000	5200	0	0	12000	8000	0	10000	9000	0	0	0	8500	0	13000	12150	9885

Caps

WELCOME TO COMPUTERISED AGRICULTURAL MARKET PRICES

DATA PACKAGE

DESIGNED BY MR. E.A. OLALEYE

MAT. NO. PGD/MCS/98/99/865

POST-GRADUATE DIPLOMA IN COMPUTER SCIENCE

FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA, NIGER STATE

REMARKS:- THE PROGRAM IS WRITTEN TO SOLVE THE PROBLEM

OF FOOD COMMODITIES DATA ANALYSIS

DATE WRITTEN: APRIL, 2002

ENTER CHOICE TO GO THOUGH THE PROGRAM OR QUIT

ADD DELETE EDIT VIEW SEARCH REPORT QUIT

ENTER CHOICE

FOOD COMMODITIES PRICES

WHICH PERIOD? 30/10/2001

FOOD CODE: 102 FOOD DESCRIPTION:- RICE (LOCAL)

PRICE (₦):- ₦6,000

UNIT (KG):- 100

STATE:- ABIA

SOURCE:- PRSD- FMARD

DO YOU WANT TO DELETE THIS RECORD (Y/N)? N

DO YOU WANT TO DELETE MORE RECORD (Y/N)? N

FOOD COMMODITIES PRICES

FOOD CODE 101 FOODESCRIPTION:- FISH (MACKEREL)

PRICE (₦) 8,000 WHICH PERIOD? 30/10/2001

UNIT (KG) 100

STATE:- KANO

SOURCE PRSD FMARD

DO YOU WANT TO ADD THIS RECORD (Y/N)?

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