

**CSIR-FRI/CU/VKA/2003/001**

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CONSUMER NEEDS IN AFRICA**

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**PAPER PRESENTED AT THE FOOD-AFRICA  
INTERNATIONAL WORKING MEETING  
YAOUNDE, CAMEROON  
5-9TH MAY, 2003**

**[http://www foodafrica.nri.org/enterprises/enterprisesabstracts/kwamevowotor.pdf](http://www.foodafrica.nri.org/enterprises/enterprisesabstracts/kwamevowotor.pdf)**

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**Abstract**

Due to increased rural to urban migration and expected rise in family incomes, urban families in keeping with existing trends, would eat more processed and/or value-added foods 25 years from now. These huge changes in African food consumption patterns would have enormous implications for the agro-food enterprises, agricultural production and food safety. These are challenges which could be met by broadening our thinking to cover research systems that will satisfy the wants and needs of both farmers and consumers. Value-addition through the development of agro-food industries and delivery of post-production technologies could serve as an important cornerstone for healthy rural economies. Unfortunately, little or only fragmented attention is paid today by most governments, donor agencies, and research institutes to value-addition to deliver food from the rural to the urban markets. There is the need to develop and improve dynamic partnerships between farmers and public, private and non-governmental organisations (NGOs) that could lower the costs of agricultural production and marketing, help African agriculture to compete more effectively in international markets, and perhaps most importantly, help the poor have access to the value-added food required for a healthy and active life.

## IMPROVING VALUE ADDITION TO MEET CONSUMER NEEDS IN AFRICA

### Introduction

Agriculture is the mainstay of most countries in Africa. Unfortunately, this has not received the necessary attention that it deserves in terms of development policy and expenditure. The crisis has been building up for almost three decades, with hunger and food production gap recognised as two of its interrelated components (Eicher, 1982). During the past three decades, per capita food production in Africa as a whole has shown a downward trend. The level of food production indices stagnated at around 99.4 in the first three years of the 1980s and gradually declined to 93.8 in 1990 (FAO, 1987), with a continuing deterioration in the ensuing years. In some African countries, the nutritional deficit in terms of daily per capita food calories supply has been as high as 12% annually (ECA, 2002). This has exposed a growing number of people, especially those in the rural areas, to lethal diseases, such as xerophthalmia, goitre, cretinism (Yaker, 1993), with some of the victims dying in excruciating circumstances. In the face of such shrinking food production, many countries in Africa have been confronted with two painful options. The first option is to rely on food aid, and the second has been to direct scarce foreign exchange resources to the importation of food. To address issues of malnutrition and poor food security, improving the value-addition process as well as development of new food products would be needed.

### Issues and concerns of agricultural production and agro- enterprises

There are a number of factors that are needed to boost food production and agro-processing in Africa apart from the lack of sound development policies and expenditure. Governments of many African countries and donor agencies have not paid much attention to these activities. Where they have done so, the focus has been mainly on reducing post harvest losses through improved technologies. In other cases a rather scattered island approach was taken. There are several implications for this and include:

Firstly, African populations have increased several fold estimated to a figure of 760 million in 2002 and will double by the year 2035 (ECA, 1987). As a result of this rapid population increases, there has been some people moving out of their traditional rural communities where they derived livelihood support such as food. Others, especially the youth, have embarked on rural to urban migration in order to avoid the acute rural poverty. As a result of this migration, urban tastes such as eating of more processed and/or value-added foods other than the traditional staples in their unprocessed forms in their former rural communities have been acquired. These changing patterns of food consumption, will lengthen the food chain making it much more complex. Also, with trends in globalisation, Africa's urban consumers will be making increasing choices where they may obtain their food from domestic producers, food processors, or will have their food products imported. In the midst of these, quality and quantity considerations will influence the final decision (Dowswell, 1998).

Secondly, food quality, operating within food systems at all levels including households, community, national and international levels has become a concern. In African markets, shops, restaurants, and homes these food quality concerns are related to contamination from agro-chemical residues, bacteria and parasites, mycotoxin, as well as those from biological agents such as rodents and insects.

Thirdly, in the development arena, there has been much concern for the time and drudgery women especially spend on various chores including food processing (Oniang'o, 1998). Although numerous attempts have been made in the introduction of improved technologies, these efforts have not met with much success. The improved technologies become only advantageous to men who tend to be more inclined towards mechanisation than women and therefore seize the moneymaking opportunities mechanisation offers. There is the need to intensify research and extension activities targeting women with simple, affordable, improved food processing technologies that will reduce excessive losses, high labour input and poor product quality. The technologies should create opportunities to increase the income and save the time of processors, especially the women, which can be devoted to other productive ventures.

Fourthly, lack and access to profitable markets tend to limit food production and agro-processing. Storage structures are poor and agro-processing facilities are obsolete. Packaging and handling services are wasteful and time-consuming. Furthermore, the transport network is outmoded and inefficient. The major obstacles

behind the ineffectiveness of this system are the region's topography, bad weather, excessive heat, vast deserts, untamed rivers, unsuitable railway lines, and poorly maintained and extremely rough roads in the food producing regions. Farmers would increase production and value-addition will be intensified if there is access to processing technologies and guaranteed markets for their produce. Root, tubers, bananas and plantains account for some 40% of total food supplies in terms of food energy for about one half of the population of sub-Saharan Africa (Oniang'o, 1998). Although production could be increased to meet future needs, farmers tend to limit production in order to minimize the risks of deterioration due to post-production losses and lack of profitable markets. Sweetpotato is one crop, which has a short shelf life in most countries of East and West Africa. Because of this, farmers keep the unharvested mature roots in the field until they are needed for consumption or sale. This practice, however, has problems because after maturation, pest infestations by the sweetpotato weevil (*Cylas* spp.) become severe and may cause production levels up to 50% (Hagemimana, 1998).

### **Opportunities and challenges for development and improvement in value-addition of food**

As food production increases due to the use of high yielding disease resistant varieties, then development of agro-processing enterprises through value-addition of the raw commodities will be needed to absorb the surplus yields. Oniang'o (1998) notes that value-addition of food requires conversion of commodities into processed goods that are usually more marketable than the raw unprocessed commodity. This is done in order to:

- (a) improve their digestibility
  - (b) enhance availability of the food beyond season of production, thereby stabilising supplies, prices and increasing food security at various levels
  - (c) permit diet diversity, and
- provide opportunity for nutritional improvement, e.g. through fortification and enrichment.

Nationally, value-addition can serve the following functions:

- (a) enhance household food security
- (b) put food in a form that can ensure its regular and sustained supply
- (c) facilitate easy movement of foods from production points to non-producing areas and markets
- (d) facilitate regional and international trade.

Other advantages of value-addition of food include trade links that can be formed between rural and urban areas as is observed in certain countries like Ghana. The growth in urban populations and the likelihood that urban incomes will improve could serve, as indices that there will be a rapid demand for value-added foods for non-food producing urban populations. With improvements in the standards of living, awareness about food quality will be created and the need for food producers to apply very high food quality standards will become very important. With an efficient urban-rural food distribution linkages the street food sector growing rapidly could serve as a point of entry. This point of entry could also be used as a means of introducing new food products to consumers.

Value-added food products could also lead to increased trade between countries. The development of *banku* mix (a mixture fermented maize and cassava powders) and the *fufu* mix (cassava, yam or cocoyam powder) by the Food Research Institute (FRI) in Ghana are classical examples (FRI, 2001) that can improve trade between some countries in West Africa. Apart from Ghana, *banku* is also consumed in neighbouring Togo and Benin and *fufu* is also eaten in these countries as well as Nigeria. Trade improvements between these countries could involve the harmonisation and implementation of existing regional trade agreements on taxation, pricing and cross-border regulations. There would be the need to ease or remove infrastructural and institutional barriers to facilitate easier movement of food.

Improvements in value-addition would involve training in food quality control in the form of pre-service training or as in-service training courses on the job. Such training could be organised at all levels: home, community, country and within international trade. In 2002, a rural level training programme, was organised, at three locations of cassava flour producing communities in Ghana, by the Root and Tuber Improvement Programme (RTIP), an International Fund for Agriculture (IFAD)-funded project, for cassava

flour processors. This was done in order to help improve food quality of the product, sanitation and hygiene in the processes.

Food fortification programmes should address the needs of poor people and the vulnerable groups. In this regard, it would be necessary to identify the requirements that would be affordable by and culturally acceptable to the majority of people in developing countries who continue to be at risk of micronutrient deficiencies. Collaborative projects are on-going in the development of cowpea-based value-added foods with high nutritive health values preferred by consumers and food processors between the Universities of Ghana and Georgia in the USA (Phillips *et al.*, 2003).

### **Some projects involved in value-added food projects in Africa**

There is a broad spectrum of projects involving both plant- and animal-based products. It is worth mentioning, at this point, some of the projects that have been successfully undertaken in Africa. Import substitution for well-defined market segments often offers opportunities for local agro-food enterprises development. For example, the Royal Tropical Institute (KIT), based in Amsterdam, The Netherlands, developed an approach to make weaning food from locally available cereals, pulses, and oil seeds following a simple and safe processing procedure. Pre-cooked porridge flour is produced by cleaning, roasting, mixing and milling the ingredients; the flour is then packed in plastic bags and labeled. Production units have been established in Benin, Burundi, Ghana, Malawi and Niger (CTA, 1998).

In root processing, there are experiences, which are success stories for agro-enterprises. Cassava can be used to make a fermented product such as *gari* (common in West Africa), a pre-cooked granulated flour akin to a convenience food. The nutritional value of this mainly carbohydrate product has been improved by the addition of soybeans (Phillips *et al.*, 2001). The importance of an intermediary cassava product such as *chikwangue* in the Congo lies in the fact that it is stable enough to be transported from rural production areas to the distant markets in Brazzaville. In Cote d'Ivoire, farmers produce *cossette d'ignames*, yam tubers that have been dried to give the yams a longer shelf life (CTA, 1998).

The value added to agricultural produce on its way from the farm gate to the consumer household through processing, storing and trading is very significant, usually amounting to several hundred percent! In the case of sunflower oil in Tanzania, the value added through extracting oil from seed amounts to no less than 200% to 300% (Deitz, 2003).

Milk when sold pasteurised to consumers in Kenya fetches a price that is three times the price of raw milk at the farm gate. The processing of basic food commodities (such as cereals and oilseeds) in rural enterprises will provide benefits to farmers either directly (e.g. through service milling) or indirectly (a reliable, local market).

Rural-based, small-scale food processing enterprises can retain some of the value added within the rural economy. Enterprises that offer processing services to farmers will also allow producers to take their share of the added value, thus giving them an incentive to expand their production. At the same time the entrepreneur can operate his/her unit with a much smaller amount of working capital.

### **The way forward to meet consumer needs in Africa**

As income grows, consumer demands change. Product quality plays a major role in value-addition to meet consumer needs. It relates both to the process and the product, and determines competitiveness in the market. Process and product quality is influenced by factors such as research (e.g. the availability and reliability of equipment, demand-led research or innovation), role of government, the supply of services and information, management and organisation, entrepreneurship development, management information services, training and organisation. Consumer demands also depend on research priorities (i.e. private and public), and these must change to meet these demands.

### **The role of research**

In most African countries, demand for imported food products is low. Research and development efforts within many of these countries are not sufficient to substantially increase agricultural productivity, and

opportunities for profitable private research investment are limited. The success of public research depends on financial resources and educational levels (human capital), as well as natural resource endowments, adequate infrastructure, and political stability among many factors. Due to constraints on many of these factors, most African countries often do not have the strong public research capacity needed to develop technologies suited for their needs.

For value-addition to improve to meet consumer needs, researchers should ensure farmer and end-user participation in the generation of technologies of the value-added products. They should develop, test and refine technologies based on user needs and the socioeconomic environment. Where technologies, which hold promise already exist, they should be identified to avoid reinventing the wheel. There should be a balance between adaptive and strategic research.

Research can apply the "systems" approach, a participatory approach that involves beneficiaries at all stages of the project cycle i.e. from problem/opportunity assessment to test and adapt new technologies, as opposed to "hypothesis testing" approach, which is based upon understanding how biological systems work and then applying the results of research to have an impact (Westby and Gallat, 1998). With the "systems" approach, the chances of achieving a positive impact on livelihoods are improved. Using a multi-disciplinary approach, the "systems" approach also recognizes the social, economic and technical factors that influence farmers' decision making and capacity for adopting new technologies. The "systems" approach draws on:

(a) needs assessment - a range of qualitative diagnostic survey methods such as rapid rural appraisal (RRA) and participatory rural appraisal (PRA) to facilitate communication between researchers and beneficiaries. and

(b) market analysis - to understand which markets farmers can access and conditions under which they can be produced at competitive prices. The concept can be carried through to such a degree that inputs from a wide range of disciplines can be arranged around the needs of the market.

A few recent improvements in product quality along the food chain are of interest. Cassava, for example, is a perishable produce that can be kept for only a few days after harvest. Based on needs assessment studies, an improved method for storing fresh cassava has been developed by the Natural Resources Institute (NRI) in the UK and transferred to farmers, traders, market women, restaurant owners and consumers.

For maize, the traditional production process for many intermediate food products, include fermentation. Research to improve or upgrade such as processes in fermentation involve the development of starter cultures to improve and control product quality and to increase food safety during processing. This is being carried out at the FRI in Ghana, which is being supported by the Danish International Development Agency (DANIDA).

### *The role of government*

In many African countries, governments who are the owners and managers of most food systems should pursue policies that promote the establishment of agro-industries in the rural areas. The private sector as a whole needs government support to respond to such policies. By improving traditional food processing in the rural areas, rural incomes may not only improve but also there will be affordable foods for the rural poor. Governments should demonstrate commitment to the agro-enterprises sector by providing funding for training and value-addition in food processing and extension. Extension should provide information support. This may be done in the form of print media, radio broadcasts or audiovisuals. Communication methods should put food processors at the forefront. Governments should also formulate policies that support food industries while addressing consumer concerns. Issues such as taxation and pricing, which affect the ability of consumers to afford value-added products should be seriously considered. Interventions ranging from simply teaching people how to combine staples appropriately, to setting up small-scale manufacturing facilities can succeed in improving both nutrition and income among the rural and urban poor.

### *Supply of services and information*

Enterprises need information and advice on a wide range of issues, such as markets, available technology, technology selection and access to credit in order to improve value-addition. It would be important for such

enterprises to build a network for the supply of information and services. For example, they should be aware of organisations providing credit and or management assistance and should build links with technical institutions providing information on product and process improvement. They should have access to databases on appropriate technology in order to be able to give enough advice on improvement on value-addition.

### **Management and organisation**

Good business management is indispensable for the successful adoption of an improved value-added technology. Simple as well as more complex processing technologies can be managed by both groups or cooperatives. There is the need to provide training in business management as well as equipment operation and maintenance.

Improvements in value-added technology often involve a change in the organisation of the processors and in the volume of raw materials to be processed if the new technology is to be economically viable. The individual, group or community involved needs to have sufficient management and technical experience to be able to run the operation successfully.

### **Entrepreneurship development**

Closely linked to the need for good management is the need to stimulate entrepreneurship. Enterprises should be encouraged to adopt a dynamic approach whereby they are constantly investigating ideas for new products and looking for new markets for existing products. Technology transfer in this case becomes a continuous process, which enables enterprises to respond to market conditions. It is important therefore not to base an enterprise on one product only, but rather outputting different price categories for different markets.

### **Training**

Providing training for processors in market analysis and product selection is very important in market analysis and product selection is crucial to successful enterprises involved with value-addition. Entrepreneurs need to have access to specialists, including equipment suppliers and manufacturers, to help them select the right process and equipment. Training is also important in how to conduct a feasibility study, formulate a business plan and seek appropriate credit.

### **Building sustainable partnerships with all stakeholders**

In building sustainable partnerships with all stakeholders, there is the need to create linkages and networking should be fostered among International Agricultural Research Centres (IARCS), National Agricultural Research Systems (NARS), Non-Governmental Organisations (NGOs), Universities, National Agricultural Extension Systems and Donors.

Donors, NGOs and host governments, working within existing frameworks, should complement each other's efforts and not work in competition with each other. Governments should endeavour to meet their research obligations.

Value-addition in the food-processing system should be addressed in an integrated manner. Clear linkages should be developed between fundamental research, adaptive research and technology transfer. The process should involve all stakeholders in a participatory manner.

There should be an effort to collect, collate and share food-processing information among stakeholders on a regular basis, through workshops, meetings, food processing fairs, etc., and in monitoring and evaluation of the food processing sector. This should include information on volume of produce or products, market prices, production cost, quality, demand and supply channels. This can be facilitated by NGOs and Governments and information on successful projects should be shared. For example, the work of the Natural Resources Institute (NRI) on developing needs assessment methodologies for non-cereal starch crops should be analysed in order to produce guidelines for needs assessment studies on food processing activities in general and value-addition in particular. This should be disseminated throughout Africa and the guidelines should be made available not only in English but also in French and Portuguese and should include video in these languages. Such fora of stakeholders could enable successful value-added projects to

lower costs of agricultural production and marketing to help African agriculture to compete effectively in international markets, and perhaps help the poor have access to value-added food required for a healthy and active life.

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