NIGERIAN COUNCIL OF FOOD SCIENCE AND TECHNOLOGY (NiCFoST)

FOOD SCIENCE AND TECHNOLOGY PROFESSIONAL PRACTICE UPGRADE/SPECIALIZED CAPACITY DEVELOPMENT PROGRAMME FOR FOOD SCIENCE AND TECHNOLOGY PROFESSIONALS

PAPER 4A

The Role of Professional Food Scientists and Technologists in the Nigerian Food and Agriculture Policies

1.0 Background

When human beings abandoned the hunting and gathering lifestyle and settled to commence the cultivation of crops especially cereals (Kunze, 2014) about 12,000 years ago, an immediate outcome of this was the increased volume of harvest often above what is needed in the immediate community where the food is produced. This brought up new problems such as need for preservation in order to prevent post-harvest losses, control of food safety and quality, packaging and trade or exchange of goods. Most communities operated based on their areas of strength and comparative advantage and will have excess of one commodity but lack others which they can get by trading what they have in exchange for the ones they need. This involves movement of food to distant market destination which is still practiced to this day on a massive global scale.

As cultivation of food evolved, different kinds of constraints began to emerge. First the cultivation itself must be properly managed with sufficient care in order to achieve high yields of produce. Different challenges that relate to the production, utilization and trade of the food required varied approach to provide the required solutions. Challenges that follow food supply systems have continued to the present times. Therefore, governments globally are always ready

to formulate policies that protect their food supply systems. These policies are critical for ensuring food security. These policies address the major components of food security namely: availability, accessibility, affordability, wholesomeness (food safety and nutrition) in part or collectively. The policies could cover the full scope of both locally sourced and imported foods. At the international level, the global governance of food is achieved through the World Health Organization (WHO), Food and Agriculture Organization for the United Nations (FAO), the Codex Alimentarius and the World Trade Organization (WTO). The landscape of international food policies and legislation keeps changing and steadily comes under the impact of conflicts and political factors. Oftentimes what is being regulated is just as important as what is left out (Steier, 2016). Some international treaties are in force but pressure for considerations because the ever-changing patterns of comparative advantage remain constant. These treaties include: TRIPS (Trade-Related Aspects of Intellectual Property Rights), SPS (Sanitary and Phytosanitary Measures), Protection of New Varieties of Plants (UPOV) which have come to be of special note are areas of international intellectual property infrastructure and agricultural innovation which is generating increased attention but must be aligned to the World Intellectual Property Organization (WIPO) and the General Agreement on Trade and Tariffs (GATT) and other leading global treaties. These are requiring more critical evaluations of food systems regulations and especially the governance of GMOs in light of environmental protection, agrobiodiversity and regulatory integrity. Typically, whenever a food commodity acquires global significance inconsistencies and dissensions begin to emerge.

At the national and sub-national levels, the interplay of forces and interests also exist and government must provide guidance through the provision of appropriate policies in the interest of national food security.

2.0 Importance of food and agricultural policies

The importance of the food supply system draws from its existential implications for civilisation throughout the ages. The movement of food and agriculture related materials contributes hugely to international trade. This in itself demonstrates the delicate interdependence of distant locations for food security and sustenance. This involves distributing foods in diverse and complicated ways (Roberts, 2016). Thus, human civilization thrives in its dependence on development of a protected and predictable food supply system (Rollin, 2016).

The food supply systems have become very complicated has made many countries to develop legal frame works that cove food and agriculture and related matters. They usually set on policies developed to promoting and regulating agriculture, nutrition, agribusiness and food safety.

As the saying goes “when you act without principles you are bound to contradict yourself”. Therefore, all over the world, governments and organized bodies including communities and associations will formulate policies which become the principle or ‘guide rails’ for their legislation, development plans and decisions.

When policies are carefully developed, it ensures that providing solutions to problems will be focused for the predetermined best outcomes. It ensures that activities are deliberate and designed for optimized outcomes over a period of time before the policy is outdated or reviewed.

Policies are focused to close gaps observed in the process of development. They could also be used to promote progress or growth in areas of interest. Policies are usually made by experts and people who are very knowledgeable in the issue or subject of focus. The drafting of policy documents would be done to address to specific issues. The goals and objectives will be clearly documented. Also, the strategies or proposed plans for achieving the expected outcomes would also be

properly captured. There would be specific key performance indices and a mechanism for monitoring and evaluation.

Agriculture policies could be addressing the broad area of food security or specific problematic areas like food safety, promoting aspects of food trade and exports. They could be focused on targeting certain commodities or promoting the support of famers with inputs and mechanization. Food and agriculture policies do very well when they are institution-based (López-Gracia, 2016). There exists some success stories with policies based on massive support focused on agricultural production like the (Government of Malawi, Ministry of Agriculture and Food Security, 2011 -15). Indeed, the limited but very remarkable success of Malawi is referenced in Nigeria's Agriculture Transformation policy document (Federal Government of Nigeria, Federal Ministry of Agriculture and Rural Development, 2012). But it has also been clearly demonstrated that agriculture policies may give best results when they address issues by following a value chain approach (Federal Government of Nigeria, Federal Ministry of Agriculture and Rural Development, 2012). In this way the different segments connected to the issue of interest will be addressed almost at the same time. This ensures that problems solved in some segments will not create further problems in other segments. Therefore, it is imperative that the best persons qualified for policy formulation and drafting are engaged for this purpose. Food and agriculture policies must be developed by experts and technocrats drawn from the various relevant value chain segments in order to achieve a robust policy document that will stand the test of time.

3.0 Contributions of FST Professionals to Food and Agriculture Policies

The best role of professional food scientists and technologists in the formulation of Nigerian food and agriculture policies will be mostly in the form of ensuring that the downstream sectors of food and agriculture businesses constitute the pull and push factors that move our agriculture into food security in a sustainable manner and ensure profits for all segments of the value chains.

The food professionals should ensure the maintenance of the delicate structural balance of the contributions of academia/research; industry/trade and governance. However, it is the governance component that typically coordinates policy formulation and must not neglect the other components in order to achieve the desired balance.

Some good examples of urgent areas of Nigerian food and agriculture system that urgently needs properly packaged policies that require direct inputs by professional food scientists and technologists for their development include:

1. Cassava inclusion policy
2. Export of beans
3. Official release of seeds of improved varieties
4. Regulation of street food commercial practices

Some past Nigerian agriculture polies

1. Forest Policy (1937)
2. Forest Policy (1945)
3. Agricultural Policy (1946)
4. Policy for the Marketing of Oil Seeds and Cotton (1948)
5. Forest Policy for Westerrn Region (1952)
6. Agricultural Policy for the Western Region (1952)
7. Policy for Natural Resources of Eastern Region (1953)
8. Western Nigeria Policy of Agriculture and Natural Resources (1959)
9. Nigeria Agricultural Policy (undated)

10. Agricultural Policy for Nigeria (1988)
11. Agriculture Policy (2000)
12. National Policy on Food and Nutrition in Nigeria (2001)
13. Draft Agricultural Policy for Agricultural Transformation Agenda (2014)
14. Green Alternative – Agricultural Promotion Policy (2016)
15. National Agricultural Technology and Innovation Policy (NATIP) (2022 - 2027)
16. Nigeria Postharvest Systems Transformation Programme (NiPHaST), (2025)

These policies generally failed to place the value addition on the front burner of our agriculture development thrust. Not even the National Policy on Food and Nutrition in Nigeria (National Planning Commission, 2001) was able to drive home the importance of investing massively in the downstream post-harvest areas of the value chains. Instead, this policy document highlighted hygienic food preparation and quality monitoring. The major exception among the policies listed is only the No. 12 i.e. the Agriculture Transformation Agenda that had a well-structured plan for attracting investments into the downstream and post-harvest side of the food and agriculture value chains. It was packaged to promote investments into value addition to agriculture commodities as a way of sustaining agriculture production as a business. The boost of investments from both public and private sectors were led to the massive off-take of commodities from farmers. This assured off-take became a natural incentive for the farmers to keep producing more. But it also imposes a great requirement for the farmers to receive a predictable and timely supply of sufficient quantities of affordable inputs. It also creates the need for farmers to have an easy access to credit facilities.

The National Agricultural Technology and Innovation Policy (NATIP) – 2022 – 2027 clearly indicated the strengthening of key value chains as part of its key objectives (Federal Ministry of Agriculture and Food Security, 2023) but the

implementation matrix did not specify the major activities that will lead to stronger value addition businesses.

The professional food scientists and technologists are expected to provide the food scientific skills required for the for the operation of the downstream sectors of the food and agriculture supply system. Indeed, the food professionals have roles to play in every segment of the food value chains from the farm to the dinning table. But their core function is evidently the value addition to agriculture produce through processing, preservation, storage and marketing/distribution.

The development of food and agriculture policies without clearly spelt out roles for food professionals enshrined in the documentation will amount to planning to boost agriculture production without planning for what to do with the harvests. This has been the general pattern in most past agriculture policies. This happens probably because the profession of food science and technology is relatively new in Nigeria. It could also be as a result of the low awareness of the functions of food scientists and technologists among the public.

The major roles of professional food science and Technologists are as follows:

- During the policy formulation, it is important to have FST professionals involved in the formulation and implementation of food, agriculture and related policies. Their participation will bring the multi-disciplinary food scientific knowledge and skills required to realistically resolve the issues being addressed by the policy. FST professionals are involved in many of the nodes of the food value chains to be ignored. Making food and agriculture policies without the inputs of FST professionals might be a contributory factor for the failure of many policies in the sector.
    - FST professionals involved in the development of policies must be careful to use their unique position they occupy along the value chains to identify the gaps in the various segments of the food and agriculture value chains

and ensure that these gaps are adequately addressed in the policy documentation.

- The FST professionals should provide food scientific details and quantify the inputs and outputs of the gains of the policy. For example, agriculture policies in Nigeria usually target to increase the farm yields and total output but the policies seldom show a pathway for the support of proper utilization of the harvests by value addition enterprises.
- It is the responsibility of the FST professional to ensure that the post-harvest components constitute critical pull or push prime movers that will drive the process of achievement of the set objectives of the agriculture policies. The value addition plans outlined in the policy must provide adequate incentives that will drive the rest of the nodes on the value chain. When policy supports value addition activities, it provides a reliable platform for the off-take of farmers harvests. The regular off-take is a natural incentive for the farmers to produce more. If off-take is not assured, it could make farmers to cautiously produce small quantities. Therefore, food and agriculture policies must support a thriving agro-industry which in turn will support farmers to produce more. It will also help to control glut and post-harvest losses.
- Policy support for the value addition segments of the food value chain covers areas such as access roads, aggregation/bulking centres and other infrastructure, storage facilities, appropriate processing technology and maintenance support, research and development and new products development.
- In cases of policies that seek to address food safety matters, FST professionals must be aligned to the use of empirical facts related to the matter including exposure to risk, toxicity, use of GRAS (generally recognised as safe) materials, abuse of food products and issues related to balance of life style and consumption patterns.

4.0 Conclusion

Formulating the food and agricultural policies without FST professionals would slow the march towards food self-sufficiency and limits the economic benefits derivable from agribusiness. Since FST professionals are relevant in every node of the food and agriculture value chains. Their absence in the formulation and implementation of the food, agriculture and related policies could render such policies ineffective. They will lead to waste of resources during implementation and prevent the realization of the desired objectives.

FST professionals are found in key nodes of the food and agriculture value chains such as breeding and varietal selection and release; agronomy/harvesting, on farm post-harvesting; off-farm post-harvesting, preservation; storage; processing; food safety management, distribution, consumer perception evaluation etc. Therefore, they are best suited to contribute to the formulation of robust policies by ensuring that issues of the entire value chains are addressed.

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