PLASTIC PACKAGING AND FOOD SAFETY

Plastics have emerged as the ideal packaging material that responds to modern lifestyles, making it possible for food as well as many other consumer goods to transition long distances through the value chain to the end consumers with an enhanced product safety and appeal, longer shelf life and contribution to reduced food wastage.

A large proportion of food and other consumer goods are packaged in plastics. This has partly contributed to the continued expansion of formal retail operations such as the shopping malls, supermarkets and fuel station shops. Thanks to plastics, traditional and informal open air markets, corner shops and kiosks, table tops and street vending have experienced significant growth accounting for about two thirds of total sale of consumer goods in Ghana. Plastic packaging has also contributed to the growth of many small scale food industries in Ghana.

Our food is always touching plastic in every phase of food production and preparation. Food is packed in plastic packaging, shipped in plastic containers and at home we store food in plastic containers.

Plastics assure Food Safety in the following ways:

- Physical Security: protection of food products from mechanical damage during transit, materials handling, stacking and storage (crates, drums, polystyrene foam containers, intermediate bulk containers, stretch films).

- Chemical Security: prevention of deterioration which could be caused by the ingress of light moisture and gases (oxygen and carbon dioxide).
- Biochemical Security: securing the nutritional value of food products which includes the retention of vitamins as well as desirable flavours, odours and colours.
- Biological Security: protecting food products against pathogens, insects, rodents

Plastic as such is not a problem because the polymer molecules from which it is made are far too big to move from the packaging material into the food during shelf life. However plastics can slowly break down, releasing monomer into the environment. Secondly certain types of chemicals added during manufacture

of plastic packaging to give it the right properties can leach into food. Printing inks may also be released into food or the environment.

Despite the growth, benefits and conveniences addressed, plastics, especially single-use packaging have posed immense challenges to the environment due to poor management of post-consumer waste. This is characterised by littering of streets and neighbourhoods, choked drains, and beaches saturated with plastic waste. It is reported that Ghana produces 1.7 million tonnes of plastic waste annually (UNDP, 2017).

This situation has raised serious concerns about the increasing levels of plastic packaging consumption and its impact on the environment. There is ongoing debate in many African countries including Ghana whether plastic packaging is the appropriate choice, considering the future due to these environmental challenges. About 25 African countries have imposed bans on plastic goods, targeting thin single-use plastic carrier bags and imports of non-biodegradable bags with varying levels of success.

Plastic packaging provides the following benefits-

- responds to modern lifestyle requirements
- makes food processing effective and efficient.
- makes consumer goods readily available everywhere, creates choice, keeps costs down, boosts economies and creates employment.
- reduces food waste and loss
- is generally a safe food-contact material.

So can we do without plastic packaging? The challenges of plastics are largely due to -

- absence of an effective system to monitor the quality of plastic packaging as food contact material
- poor or lack of management of post-consumer, single use plastic packaging waste
- The human factor – indiscriminate disposal of plastic waste

What can we do? Current plastic waste management methods consisting of product manufacture, purchase, use and throw away, is unsustainable. New models such circular plastics economy which involve using less packaging as well as redesigning plastic packaging so it can be reused, recycled or composted are options businesses have to adopt as a matter of principle. This approach will require the implementation of engineering controls, effective waste management system and a behavioral change.

Effective response to the challenges of plastic packaging requires a multi stakeholder approach involving consumers, governments and businesses to work together to adopt and implement new model of sustainable plastic packaging waste management. The benefits of successfully implementing new initiatives include safe food, a clean and fresh environment, creation of value from plastic waste, generation of employment and income, energy conservation and saving the earth.