Background paper WG 2: Processing

Global situation

The key role of agriculture in producing food and generating income for the majority of rural and urban populations is unquestioned. But there is now a consensus that the potential for combating hunger and malnutrition would be far greater if we focused on the entire food system, from production, processing and preservation to post-harvest, transportation to markets and consumption towards better health.

Theoretically, sub-Saharan Africa would not need to import any grain if it succeeded in making processing more efficient and in reducing losses. Grain losses in sub-Saharan Africa are estimated to amount to 4 billion dollars per year; this alone could provide 48 million people with enough calories. Despite this, a third of all food worldwide is still lost on the way from the fields to the consumers. The FAO's most recent estimates put losses for perishable products resulting from storage, processing and distribution at around 50% in the case of fruit and vegetables and 30% for fish and seafood. There are many different reasons for these high losses. The main reason is a lack of suitable storage capacity. But biological factors such as pests and micro-organisms also result in high losses and, moreover, pose considerable health risks, e.g. from aflatoxins. Other factors include mechanical losses, mainly during harvesting, transport and processing. This means that many smallholders, once they have deducted the food they need for themselves and taken into account seasonal availability, have nothing left to sell.

WG 2 will focus on how simple processing methods can be supported at household, community and regional levels in order to retain nutritional value, shelf-life, and food safety, reduce food and nutrient losses and make healthy foods convenient to prepare. Discussions will also focus in particular on the challenges facing urban centres and arising from increasing urbanisation, including the role of international food companies.

Priority issues:

I. Processing into high-quality foods (*basic convenience products*):

The processing of agricultural produce is very important, from the standpoint of both nutrition and the storage of food. Processing fresh products using suitable methods (e.g. by drying) can increase the nutrient density and at the same time reduce perishability and reduce the negative impact on health. It must be ensured that specific attention is paid to food safety and that food safety is ensured throughout

processing. This can ensure a supply of nutritious products, including locally grown products, over longer periods of the year and reduce post-harvest food losses and waste. Many foods are then also easier to digest and more likely to be accepted. Drying fruit in dehydrating devices is one example of preserving perishable products such as fruit and vegetables. This results in "*basic convenience*" products i.e. food that has had little processing but that contributes to a healthy diet. Staple foods can also be given added value by, for example, mixing common, regional, low-nutrient products such as cassava flour with protein-rich soy flour.

Away-from-home consumption is also increasing in importance as mobility rises. Preparing meals and taking packed meals, in particular to provide children with food, and the use of products for away-from-home consumption, in particular in urban centres, requires both suitable processed products and also strategies if a nutritious and healthy diet is to be achieved. Street kitchens and industrially manufactured convenience products that are quick to prepare have gained a large market share, particularly in urban centres. However, the growing consumption of highly-processed products with high sugar, fat and salt levels, is contributing to an increase in overweight and nutrition-related illnesses in developing countries. Innovative approaches are still required to deal with the challenge of achieving balanced and safe away-from-home consumption with local and affordable products and in this context to link simple processing techniques with dietary diversity.

II. Preservation and the reduction of losses

The methods that are traditionally used to preserve food in all cultures comprise preservation using salt or sugar and preservation by drying or transforming food, e.g. flour (from grain), dried fish, dried meat, and juice or purée (in combination with heat treatment) from fruit and vegetables. Perishable fresh products, in particular, require processing methods that on the one hand retain the nutritional value and on the other hand ensure that the food is safe by using appropriate hygiene measures to keep the germ and bacteria count low.

Food and nutrient losses occur on the one hand due to insufficient storage conditions such as a lack of dry rooms, cooling systems or storage containers, but on the other hand also due to bad transport conditions that may lead to the high post-harvest food losses that are often recorded. Frequently, a lack of knowledge is also a significant factor; fruit or vegetables (e.g. mangos) may be left unharvested, and thus high-quality food not used, or such food may be allowed to spoil shortly after harvest. Existing knowledge and skills on locally adapted processing and marketing strategies must be retained and incorporated in this regard (cross-reference to WG 4, nutrition education in agriculture).

Adapted and affordable techniques and approaches for preserving food and avoiding food and nutrient losses and waste in the entire food system (harvest, transport, storage, preparation, processing and consumption) require appropriate technology and instruction and a local, regional and possibly also national and global marketing system for processing, marketing and consumption.

Guiding questions:

1. What simple, processing and preservation methods for producing food with a high nutritional value are well-known and widespread?
2. How can a nutritious and affordable supply of diversified food, and the demand for such food, be achieved both at household level and in away-from-home consumption?
3. What synergies and challenges exist in respect of diversification, women empowerment and nutrition education?
4. What policy framework and incentives are required in order to make processing nutrition-sensitive and to reduce food and nutrient losses?

Facilitator: **Florence Tartanac,** Group Leader Market Linkages and Value Chains, ESN, FAO (tbc)

Rapporteur: **Isa Álvarez,** URGENCI, International Network for Community supported Agriculture

Inputs:

- **Rosemonde Touré,** Entrepreneur for dried foods, Burkina Faso
- **Shakuntala Haraksingh Thilsted,** Research Program Leader, Value Chains and Nutrition, WorldFish, CGIAR
- **Bendantunguka Tiisekwa,** Department of Fish Science and Technology, Sokoine University of Agriculture

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