TECHNICAL SHEET

Fish smokers

Smoking of fish

Smoking is the process of subjecting meat or meat products to the direct or indirect action of gaseous products that are released during the combustion of certain plants. This process is characterized by the combination of one or more of the steps of salting, drying, heating and smoking in a smoking chamber (FAO, 2013).

Today, the purpose of smoking is no longer so much to ensure a long shelf life of the product (at least in industrialized countries) as to give a color and taste to the processed fish (KNOCKAERT, 1995). The complete treatment consists of three phases, each of which has its own importance for the future shelf life of the product: salting, drying and smoking (KNOCKAERT, 1995). There are two types of smoking: cold smoking and hot smoking. Cold smoking is a traditional preservation technique practiced in many Nordic countries and Europe (KNOCKAERT, 2002) cited by ABOTCHI (2010).

The "ambient" smoking temperature is between 20°C and 25°C and should not exceed 28°C (KNOCKAERT, 2002 cited by ABOTCHI, 2010). Smoking preserves foodstuffs of animal origin through cooking, dehydration and the protective action of the smoke. The "ambient" temperature varies between 60°C and 120°C (GRET, 1993) cited by ABOTCHI (2010). Fish subjected to this temperature is smoked within 1 to 4 hours or more, depending on its size, the type of oven used and the desired final moisture content (KNOCKAERT, 2002, cited by MONNEY MONNEY, 2014).

During smoking operations, temperatures are gradually raised to promote the formation of a film that will envelop the whole fish or the cut pieces. If this is not done, the fish will disintegrate (if placed on a rack) or fall into the firebox (if hung on hooks) (ENDA, 2001 quoted by MONNEY MONNEY, 2014). Hot smoking is an operation that is always accompanied by weight loss. The extent of this weight loss depends on the one hand on the smoking temperature and its duration and on the other hand on the specific characteristics of the fish, its prior preparation and the size of the pieces. Weight losses are much higher, 20-45% in the case of hot smoking (KNOCKAERT, 1990 quoted by MONNEY MONNEY, 2014).

Several traditional smoking processes have been developed by the communities, and in this specific case, it is hot smoking in a metal and stepped oven.

Process for smoking fish

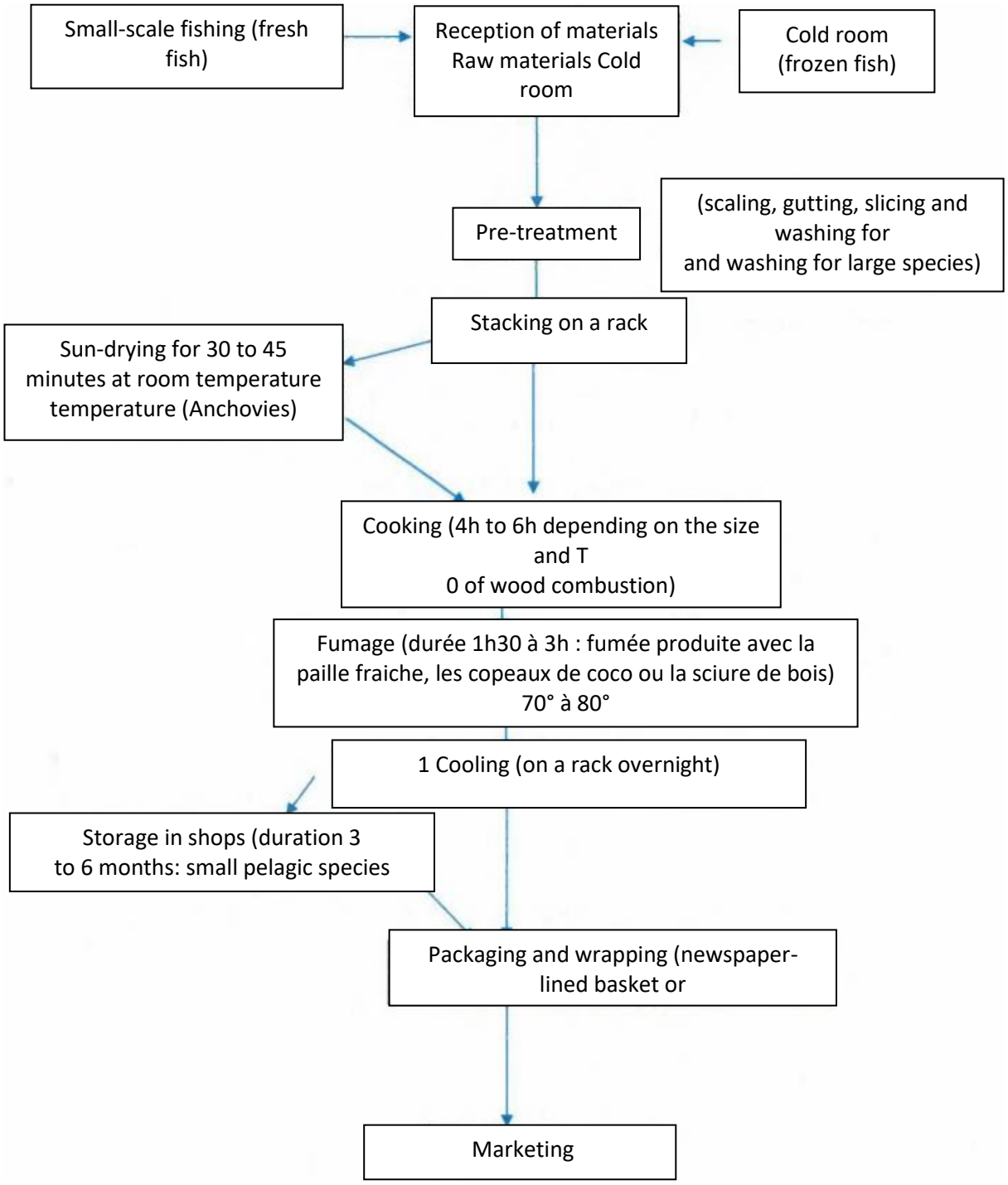

Figure 1: General process of smoking fish in processing units (source: KNOCKAERT, 1990 quoted by MONNEY MONNEY, 2015)

Technology features

- Improved detachable fish smoking equipment
- High quality and very competitive smoked fish and fish oil
- Reduced smoking/drying time and drudgery.
- Increased income for fish farmers by 70%.
- Able to reduce post-harvest losses to zero
- Return on Investment = 62.7

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