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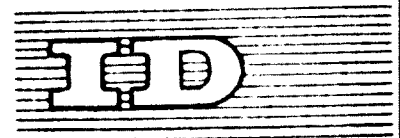
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REVIEW AND ASSESSMENT OF THE SITUATION
IN THE IVORY COAST WITH REGARD TO THE USE OF FPC 1/

by

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1/ The views and opinions expressed in this paper are those of the author and do not necessarily reflect the views of the secretariat of UNIDO.

We regret that some of the pages in the microfiche copy of this report may not be up to the proper legibility standards, even though the best possible copy was used for preparing the master fiche.



COMMUNICATION FROM THE IVORY COAST

The Ivory Coast is successfully establishing, on an experimental basis, a local Nucc Mam industry in order to meet part of the animal protein requirements of its people, particularly in rural areas.

This experiment has been motivated by the following considerations:

1. Studies showed that an excellent Nucc Mam could be industrially manufactured in the Ivory Coast.
2. The establishment of such an industry in the country costs relatively little and does not require complex industrial equipment although it is highly profitable.
3. The manufacturing of Nucc Mam is so simple that it requires neither highly trained specialists nor a large labour force.
4. The product is unusually acceptable to the people of the Ivory Coast, a fact which is easily explained.

Eating habits are, of course, difficult to overcome whenever a food is really new - in other words, when it is distinct from existing foods and its use requires knowledge of new recipes.

However, Nucc Mam is new only in a geographical sense, for it is already known around the world and appreciated by some 30 million Vietnamese and at least 10 million Thais, Indonesians, Chinese, Europeans, Americans and, recently, Africans.

Furthermore, as a condiment, it fits very readily into traditional African recipes as they stand, while producing an improvement in flavour and nutritional value.

Housewives welcome its simplicity of use, for food being prepared need only be salted with Nucc Mam, instead of with salt.

Its flexibility makes it immediately acceptable. During the period of adaptation, the housewife can combine Nucc Mam and salt in proportions suiting her taste, then gradually increase the proportion of Nucc Mam to salt.

5. Nuoc Mam is of considerable therapeutic value owing to its content of vitamins, including B₁₂ which helps to prevent anaemia, and trace elements, including calcium and, in particular, iodine which is effective against goitre.

CONCLUSION

The Ivory Coast hopes that its experience will be of use to other countries confronting the same nutritional problems.

ESTABLISHMENT OF THE FIRST AFRICAN PLANT FOR THE
PRODUCTION OF NUOC NAM

FABRIQUE IVOIRIENNE DE NUOC NAM (FINELA)

Limited company (société anonyme) with assets
of 55 million CFA francs

Head office at Abidjan - P.O. box 20,874

Despite the long-standing efforts of international organizations to solve the problem of hunger, it is generally estimated that 50 per cent of the world's population lives in a state of latent famine or malnutrition.

It is true that the African continent is at least partially spared, but although Africa cannot be said to suffer from famine too many Africans are still affected by malnutrition caused by unbalanced, nitrogen-deficient diets.

In the Ivory Coast, vegetable proteins from manioc, yams, plantain, millet and, more recently, rice, etc., are plentiful. However, there is a shortage of animal protein.

In view of the inadequate supply of meat for stocks owing to the small number of livestock in the Ivory Coast, the most plentiful source of the animal protein so necessary to the development of both children and adults is at hand in the oceans and seas. According to Doctor Tahiri Zagret, an Ivory Coast specialist in nutritional chemistry, fish is a high-grade protein-containing food, comparing favourably with meat. In addition, it has two advantages over meat - its low price and its superior food and nutritional value.

The Government of the Ivory Coast has already endeavoured to ensure maximum distribution among urban and rural populations of the products of Ivory Coast sea fishery and to promote the breeding of freshwater fish in ponds and marshes.

Unfortunately, fish is among the most perishable foodstuffs, and prolonged transport raises complex problems. Inland areas are therefore very poorly supplied - and, very often, not at all.

The Vietnamese population (30 million inhabitants), which had been confronted by the same nutritional problems for centuries, has perfected one of the many possible methods of preserving and transporting the essential nutritive elements of fish.

This method of preservation and transport of fish is known as the manufacture of Nuoc Mam.

Although Nuoc Mam is commonly supposed to be a sauce made from rotten fish, it can in fact be obtained only with the use of extremely fresh fish.

Nuoc Mam is the product of the self-digestion of the fish's flesh by the enzymes of its digestive system. During this digestion, protection from bacterial rotting is provided by near-saturation with marine salt. It must be stressed that Nuoc Mam is a natural and not a chemical product.

Nuoc Mam is an extremely healthy food and its high nutritive and nutritional value is attributable to the fact that it does not provide proteins as such, but the components of these proteins in the form of all types of amino acids, mineral salts and vitamins - particularly the anti-anaemic vitamin B₁₂ - all of which can be completely assimilated by the human body, while the highest rate of digestibility for a non-ruminant or non-meat ruminant is only 76 per cent. This difference of 4 per cent is of great importance for nutrition experts in favour of Nuoc Mam.

Hence, Nuoc Mam is not only a condiment, but a genuine foodstuff.

Thanks to the phenomenon of supplementation, by which even a small intake of animal protein considerably enhances the value of the inferior vegetable proteins, Nuoc Mam constitutes an effective element for supplementing the African diet. Recent studies carried out by the Institut d'Hygiène et de Médecine Vétérinaire des Pays Tropicaux in Paris have proved that the amino acids which are scarce in the carbohydrate intake in Africa are present in surplus in Nuoc Mam, and vice versa. Small doses of Nuoc Mam make possible more balanced nutrition for the child after weaning and also for the worker who cannot afford fish or meat every day. This is of especially vital importance for the child, for his physical and intellectual future depends irrevocably on the quality of his diet during his first five years. With a high-quality diet, he will grow and develop normally, but if poorly nourished and hence suffering from malnutrition during that period he will bear the consequences throughout his life - in other words, he will be stunted, retarded or handicapped.

Nuoc Mam contains the following nutritive elements in doses which are in all cases useful but may be larger or smaller depending on its quality:

Amino acids:

Aspartic acid, serine, glutamic acid, proline, glycine, leucine, tyrosine, histidine, arginine and, above all, the nine amino acids essential to the growth and maintenance of the human body: threonine, valine, cystine, methionine, isoleucine, leucine, phenylalanine, lysine and tryptophan.

Mineral salts:

Phosphorus, bromine, iodine, calcium, magnesium, iron, sodium chloride, fluorine, etc.

Vitamins:

Vitamins of the groups PP, B₁ and, in particular, the anti-anaemic vitamin B₁₂.

Its food value and its facility of use have led the Government to study the possibility of manufacturing Nuoc Mam from the fish obtained off the shores of the Ivory Coast.

The studies were entrusted to an expert of the Compagnie d'Etudes Economiques et de Gestion Industrielles. According to their findings, several types of fish plentiful in the coastal region near Abidjan can definitely be used to manufacture Nuoc Mam of excellent quality which keeps well. These studies have been confirmed by specialized laboratories in the Ivory Coast.

It has also been found that the product thereby manufactured combines very well with Ivory Coast cookery and can be widely used both at Accra and in the interior of the country, where it provides particularly valuable nutritive elements. It will also fit well into all the traditional recipes of all African countries, for it is easily used, being merely substituted for salt (as it is already highly salted), and in using it the housewife will improve her cooking from the points of view of flavour, food value and nutrition.

Nuoc Mam has not been well-known among the people of the Ivory Coast until recently owing to the excessively high price of the product imported from Viet-Nam, which costs 1,100 to 1,200 CFA francs per litre.

However, the Nuoc Nam produced industrially at Abidjan, containing at least 15 g/rammer of total nitrogen per litre (superior quality under current Vietnamese regulations), can be retailed throughout the Ivory Coast at approximately 400 CFA francs per litre.

Being conscious of this possibility for its people to improve the quality of their diet, the Government of the Ivory Coast has authorized and participated in the establishment of the first fully industrialized tanning industry of this type in Africa and probably in the world, far even in Viet-Nam the Nuoc Nam industry takes the form rather of a collection of many small-scale, family briners. It should be mentioned that this multitude of processors in some years produces as much as 100 million litres of Nuoc Nam.

Our young industry, for its part, is contenting itself with a very modest initial objective of 1.2 million litres/year, reached by progressive increases of 400,000 litres/year. Its financing is in the order of 60 million CFA francs, from the first year, of which 35 million is registered capital approximately representing the first investment instalment. The majority of the subscribed capital is held by citizens of the Ivory Coast.

France's undertaking is therefore in the interests of the masses, of the nation and even of the international community and mankind, for through the Ivory Coast Africa as a whole will benefit from this experiment, and the people of the Ivory Coast, in participating in its development, can be proud of having made an invaluable contribution to their country's development and to the improvement of man's condition on the African continent.

COLLECTION OF RECIPES

for 450 persons

Minimum quantities of lube ham are shown here. These may be increased without danger provided the salt used is reduced correspondingly.

I. Tomato sauce with browned onions (to accompany attiéké and fried fish)

3 tins (250 grammes each) tomato paste

4 kg fresh tomatoes

3 kg red onions

2 kg peppers

4 kg onions

3 litres oil

Fish heads or tails removed from the fish to be fried

Beef bones, if available

5 generous handfuls flour, or approximately 1.5 kg

1-2 scant handfuls salt

3 litres lube ham

140 litres water

Pare the vegetables and cut up small, quarter or slice; brown in the oil, add the flour.

When well browned, add 30 to 40 litres of water, a handful of salt and the tomato paste and bring to a boil.

Boil for approximately 30 minutes; add the fish heads or tails and, if available, the beef bones and the remaining water up to about 140 litres.

When the sauce begins to boil again, add the three litres of lube ham and simmer over a low heat until the volume is reduced to approximately 130-140 litres of sauce.

Before serving, supplement the seasoning with a second handful of salt, if necessary.

II. Tomato and ground-nut sauce (to be served with rice creole and attiéké)

This is a variant of the nut sauce with fresh vegetables, but in this case 1.5 kg of ground-nut paste is added at the same time as the tomato paste.

III. Beef stew (to be served with rice creole, rice with meat, noodles and attiéké)

- 60-70 kg beef
- 2 tins (250 g each) tomato paste
- 1 kg fresh tomatoes
- 1.5 kg auberges
- 3 litres oil
- 4 generous handfuls flour (approximately 1 kg)
- 2 lit. red wine
- 1-2 handfuls salt
- 100 litres water

Put up the beef in water in the oil. When the pieces are golden-brown, add the auberges and fresh tomatoes cut in pieces, stir well while sprinkling with flour.

When well mixed, add a handful of salt, the tomato paste and enough water to cover the meat, bring to a boil.

Boil for approximately 30 minutes, then add the remaining water.

When the sauce has again boiled for 15 minutes to half an hour, remove 30 to 40 litres of it, already having mixed flour, and keep in a cool place for use as a thickener the next day.

Next, season with 2 litres of wine and, if necessary, a second handful of salt.

Allow to simmer until 90 to 100 litres of meat stew remain.

IV. Beef provincial (to be served with rice creole, attiéké or noodles)

This is a variant of the beef stew recipe, with the addition of 2 kg of aubergines and 1 kg of fresh tomatoes instead of 1 kg.

V. Stewed yams or potatoes (served with meat, omelette or fried egg)

- 150 kg yams or potatoes
- 0.5 kg onions
- 2 tins (250 g each) tomato paste
- 1.5 litres oil
- 1 litre Basic Man
- 80 litres water (approximately)

Brown the chopped onion in the oil, then pour on the 80 litres of water. Add the tomato paste and the Basic Man and stir well. Cook the yam, peeled and cut up, in this liquid.

VI. Soup for poussins

- 58 chickens (73 kg)
- 5 kg carrots
- 5 kg leeks
- 5 kg turnips
- 5 large cabbages
- 1 kg fresh tomatoes
- 1 tin (250 g) tomato paste
- 4 kg onions
- 1 generous handful flour (250 g)
- 2 litres Basic Man
- 1 scant handful salt
- 5 litres oil
- 140 litres water

Brown the coarsely cut-up vegetables and sliced onions in 2 litres of oil while sprinkling them with flour.

Add the water, salt and tomato paste and allow to boil.

In the meantime, sauté the cut-up chicken or, if there is enough oil, fry it and put aside.

As soon as the vegetables are just done, add the pieces of sautéed or fried chicken and allow to boil for 5 minutes, add the Salt Men and stir well before covering and reducing the heat. In this way, the soup will continue to simmer gently and can be served without the pieces of chicken falling apart.

Preparation (to serve with rice, chicken or beef)

Combine exactly the rice or flour, and fresh vegetable sauce, with all the ingredients in two thirds of quantity by weight.

In addition, Salt Men can be used in practically all sauces as a partial or total substitute for salt.

It is therefore very easy to use without altering traditional recipes.





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