

Can variety of traditional fish processing and fish food preparation facilitate domestic fish or other sea product consumption?

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ABSTRACT

This article, offer facts of variety of traditional fish processing and fish food preparation from different parts of Indonesia which might be an advantage to the effort of increasing and propagating fish (or other aquatic food resources) consumption to people in various parts of Indonesia. Tasting various fish preparations and processes from different regions will help people to familiarize themselves with different possibilities to present fish to the families. The transfer of fish food (or other sea and aqua products) preparations or recipes and processes from one part of Indonesia to other different parts is supposed stimulating people to consume more fishes and other sea or water products. The high domestic consumption of sea and water products will certainly enhance the economic significance of our waters. It should be noted that many people are curious about one locality delicacy and food particularity. This article present some examples below.

Key words : traditional fish processing, domestic fish, sea product, consumption

INTRODUCTION

This article neither to offer detail description of culinary techniques or fish gastronomy, nor the techniques of processing and preference. The author, offer facts from different parts of Indonesia which might be an advantage to the effort of increasing and propagating fish (or other aquatic food resources) consumption to people in various parts of Indonesia. Up to present, during the economic depression, one of our most crucial problem is that domestic fish consumption is still very low. Fish which can be considered as a relatively less costly protein source for the Indonesian, has not succeeded to replace meat or egg which the common can not afford to pay. Despite of the fish abundance of our waters, most of the Indonesian do not eat fish more than 20 kilograms per person per year in 1999 (see also Dirjen Perikanan, 2000). This number is certainly lower than the fish consumption of the Japanese per person per year. Between 1975-1977 the Japanese were already reported to consume more than 76 kilograms (148.6 pounds) of fish per individual annually (see Jackson, 1985:130). Bangladesh which is supposed to be among the poorest nations, between 1975 to 1977 it's population already consumed an average 11 kilograms (22.9 pounds) of fish per person per year.

Fishermen's life and practices to some extend had been studied by many (see for instance Nishimura, 1987). But articles on the problems of distribution, marketing, processing and fish preparation are still too scanty. Nevertheless the author considers that those factors above are quite related to the relatively low fish or other marine products consumption of the

Indonesian. Fresh fish will certainly less easy to be transported and distributed or marketed to far remote areas. Therefore either innovative fish processing or fish-food preparation can probably enhance the possibility for the Indonesian to consume more fish in the future. But different regional fish or marine product recipes will also likely important to be propagated to offer people with alternative fish or seafood representations. The increase of domestic fish consumption will certainly contribute a lot either to the people protein fulfillment as well as to the national economy.

DIFFERENT GEOGRAPHICAL FAMILIARITY TO FISH VARIETY

In different regions however different fishes are more popular and frequently harvested than others. In the northern coast of Java, people are more familiar to relatively a larger number of species than those of the southern coast of Java. Primarily because the southern coast fishermen are not well equipped to operate in an open ocean, unable to fish to the deep ocean floor (dimersal fishes), secondly because there are only limited lagoons and bays in which coral reefs life are to be found: practically only limited coral reef fishes are available. Therefore some fishes are quite rarely caught by the Java southern coast fishermen. Species members of the Serranidae or other coral fishes are rarely caught, except in some small bays where fringe reefs can be found. Fishermen of Parangtritis to the south of Yogyakarta, believe that a *kerapu* in the vicinity is an alarm of danger, almost similarly to the superstition that catching a turtle will bring a bad luck or a disaster to the fishermen. This is of cause quite contrary to the belief of the Balinese who are obliged to offer turtle soup to their deities.

In fact, the variety of fishes caught by the fishermen also influences the people's preference of fishes. In South Sulawesi people are quite fond of roasted or grilled *baronang* (*Siganus lineatus*) and *bolu* or *bandeng* (milk fish-*Chanos chanos*) eaten with particular prepared chilly sauces. But to the southern coast of Java, *baronang* fish is not familiar and probably not even recognized, while milk fish ponds are quite limited to the vicinity of Cilacap, so that the south Javanese have more preference on the member of the *ikan bawal* (*Stromateus cinereus* or *Stromateus niger*) and *ikan tongkol* (*Ethynnus* sp.). A day visit to the southern coast of Java (Pengkol, south of Jogja) the number of fish species caught by regular local fishermen were not more than 12 species. Only in the Bay of Pacitan area and in the lagoon of Cilacap the number of species caught by the fishermen are much more numerous.

Fishermen on the northern coast of Java have more choice because they can operate to the vicinity of Sulawesi or the island of Masalembu or even further, in the east, and to Bagan Siapi-api to the east of Sumatera, in the west. Therefore people from the northern coast of Java are more familiar with and consume different fishes such as the *kerapu* (different *Epinephelus* sp.), *kerapu tikus* (*Cromileptes altivales*) the *tongkol* (*Ethynnus* sp.), *tenggiri* (*Scomberomorus guttatus*), the *cakalang* (*Ethynnus pelamis* or *Katsuwonus pelamis*), various numbers of *selar* fish (*Caranx* sp.), a widely preferred member of the *kakap merah* (*Lutianus* sp.), *lemuru* (*Clupea S. longiceps*) members of the *Caesio* species such as *ekor kuning* fish (*Caesio erythrogaster*), *pisang-pisang* (*Caesio caeruleus*) etc. (see also Schuster and Djajadiredja, 1952)

But lower members of the inhabitants usually consume less expensive fishes such as the *teri* fish (*Stolephorus commersoni*), *manjung* fish (*Arius thalassinus*), *petek* or *peperék* fish (*Leiognathus* sp.), *layur* (*Trichiurus* sp.), *rebon* shrimp (tiny shrimp – *Acetes vulgaris*), members of the Molluscs, and Gastropodes. Marginal fishermen either from Java or outside islands usually depend their life more on *rebon* (*Acetes vulgaris*) and *rajungan* (floating crabs – *Portunus pelagicus*).

During the author visits to the fish auction markets (Ujungpandang and Sinjai for instance) in South Sulawesi, more than 27 species were recorded within a day. Included in the catch was the protected “*napoleon*” fish (*Cheilinus undulatus*).

Local inhabitants of east Sumatra are quite familiar with the eggs of *terubuk* fish (*Clupea A. sinensis* or *Hilsa toli*), but most of the south-eastern Sumatranese consume a large number of tasteful fresh water fishes such as the ikan Patin (*Pangasius* member) and *belidab* fish. In the southern coast of Sumatra, particularly along the small islands to the west of Sumatra, such as in Mentawai and Nias islands, living coral fishes are clandestinely collected and transported to Hongkong. Local inhabitants of Mentawai consume not only fishes and crustaceae, but they also collect mollusc living in deteriorating wood floating in brackish water.

The fishermen of the Maluku fish also deep-sea sharks for the squalene oil, which is quite, demanded by the Japanese, beside that they also culture pearl. *Tongkol* and *cakalang* are appreciated fishes by the Maluku people; they usually consume roasted *tongkol* or *cakalang* (*tuna* and *cakalang*) with sago, flour product of *Metroxylon sago*.

The people of Lamalera of the island of Lembata (Lomblen) to the east of Flores are particular people because they consume whale meat. The local people hunt and kill whales (*Odontoceti* and *Mysticeti*), using traditional harpoon, which is called “*tempuling*” (see Faculty of Letter UGM’s report, 1991).

Southern Sulawesi fishermen: the Bugisnese, the Bajau (or orang Laut) and the people from Buton and Muna are operating almost in all waters in Indonesia, they do not fish only but they cultivate green muzzles and collect sea cucumber. In west Papua (Irian Jaya) large lobsters and clamps are abundant.

TRADITIONAL FISH PROCESSING AND PREPARATION

Recording traditional fish and shrimp preparations from different parts of Indonesia will certainly contribute much for the effort of enhancing the fish and shrimp consumption of the Indonesian. It should be noted that sea food dishes were only becoming popular to the Indonesian after the 70’s or even the 80’s. In various regions in the past fish was considered as a second class menu.

Tasting various fish preparations and processes from different regions will help people to familiarize them selves with different possibilities to present fish to the families.

So far there are limited reports on traditional regional fish or shrimp processing and cooking.

There are quite few people who are really aware that fermented shrimp paste crushed with chilly recognized as “*sambel*” has helped the Javanese suffering from essential amino acids deficiency. Because of the adoption of Islam since the 11th century, the Javanese do not

consume pork anymore, chickens are only consumed during the *slametan* (religious ritual), and while fresh water fishes from interior streams in Java are relatively also quite limited to fulfill the demand. So that the Javanese obtain their protein need from the fermented soya bean: *tempe* and fermented shrimp paste: *terasi*, only. The amount of the protein obtained from both sources does not seem adequate, therefore it looks that enhancing fish domestic consumption will ameliorate the nutritional status of the Indonesian.

The transfer of fish food (or other sea and aqua products) preparations or recipes and processes from one part of Indonesia to other different parts is supposed stimulating people to consume more fishes and other sea or water products. The high domestic consumption of sea and water products will certainly enhance the economic significance of our waters. It should be noted that many people are curious about one locality delicacy and food particularity. The author offers you some examples below.

Culinary habits of the coastal west Kalimantan people are quite influenced by the Chinese, *rebon* shrimp or tiny shrimps (*Acetes vulgaris*) measure less than 1 cm in length are traditionally marketed in abundance to the people. A bowl of these *rebon* or tiny shrimps are mixed with small but extraordinary hot chilly, chop garlic and juice of lime is then left to undergo fermentation processes. These fermented hot and sour *rebons* are largely recognized as "*cincalo*" and are usually consumed with warm rice. These tiny shrimps (*udang rebon*) are in fact in different parts of Indonesia also consumed, but with different manners. At the southern part of Java this *rebon* shrimp are offered as crisp or chip which is prepared by frying the mixed tiny shrimps with rice flour, coconut milk, salt, and sometime with coriander. But in the northern part of Java *rebons* shrimp are becoming raw material for the "*terasi*" or shrimp paste.

Dried *rebons* are also offered in many places and supposed to be part of the ingredients for different sorts of vegetable preparations.

East Kalimantan offers different recipes, which are also quite interesting. In Samarinda you can visit the largest salted fish market in Indonesia (at least before being burnt in 1999) and choose the kind of salted fish you like. But if you have the opportunity to visit the Citra snack and food market in Samarinda you can even taste the best pepes ikan patin (*Pangasius* sp. best fresh water fish) heavily spiced, which ingredients are composed of turmeric, chilly, coriander, lemon grass, ginger, *kemiri* (*Aleurites mollucana*) etc., wrapped in banana leave and roasted. Of course instead of ikan patin there are also pepes of sea fishes such as pepes of *tongkol* (*Thynnus* sp.), *kembung* (*Scomber kanagurta*), *bawal* (*Stromateus* sp.) and even pieces of Ray fish (member of Batoidae) etc.

Of course there are many sea food delicacies offered by the restaurants around the Citra snack and food market. One of the east Kalimantan speciality is the sour soup of milk-fish (*Chanos-chanos*) with Kalimantan sour eggplant (*Solanum* sp.) and taro. This soup is in fact composed of peel and cut taro, cut eggplant (without peeling), cut milk fish in serving pieces, put fine cut garlic, shallots, or onion and regular chilies. Boil all those ingredients above in water and should be added with a piece of *Tamarindus indicus* fruit or some drops of tamarind syrup. Sometime people also put *kangkung* (*Ipomea aquatica*) or even sliced champignon or mushrooms.

Visiting north of Sulawesi, one should taste the rica-rica or the roasted fresh fish dressed with crushed red chilly mixed with onion or shallot and sometime garlic. But most popular

and widely familiar processed fish of north Sulawesi is in fact the so-called ikan Fou-fou: slowly roasted *tongkol* (*Euthynnus affinis*) or *cakalang* (*Euthynnus pelamis*). Now this *fou-fou* fish is already exported to Jakarta and can be found in some super markets. People consume this *fou-fou* fish dressed with chilly, onion or shallot, lime, chop ginger mixed with ketchup. Similarly to the people of Kalimantan, the north Sulawesi people practice also the cooking of fishes in a bamboo shaft. They put fishes or sliced fishes into a shaft of bamboo and put some ingredients inside and they roast the bamboo. In all Sulawesi people practically prefer to eat roasted fresh fish with particular *sambal* (crushed chilly with other ingredients) as dressing. Particular cooking of fish also practiced by central and western coast Sulawesi people; they simply cook fish mixed with *keluwek* (*Pangium edule*), so that the cooked fish looks totally black. Different ingredients are actually available in south Sulawesi but cultural diffusion has transformed and leaving the traditional cooking practices aside. Sometime they prepare fried fish and fish soup, similarly to those prepared by other Indonesian in different regions.

Most priced salted fish of south Sulawesi is the *sunu* fish, which is in fact member of the *Epinephelus* species, which are marketed in south Sulawesi in particular. But from the southeastern part of Sulawesi dried cuttlefish or small octopus is offered in the market for relatively in expensive price.

Similarly to the "*kayu*" fish (wooden fish) which are offered in different parts of south of Maluku, people are obliged to soak the dried fishes in boiled water before being cooked or prepared. "*Gofu*" from Tidore Island is probably one of Japanese heritage during the Second World War to the local people. Usually people prepare *gofu* similarly to the Japanese prepare sashimi, tuna eaten raw seasoned with lime, garlic and chilly.

The *kayu* fish is supposed to be dried by covering the fish with hot beach sand during the day. What the author recorded is that mostly they are composed of long rounded fishes, which could be *alu-alu* fish (*Sphyræna jello*). West Papua or Irian jaya is quite rich with tunas and lobsters. Most of the Serui and Muna or Buton fishermen living in Jayapura roast the sliced large tuna and offered to the market.

Sumatra offers different recipes, which should also be taken into account. The egg of the *terubuk* fish (*Clupea A. sinensis*) is quite valued by the eastern Sumatranese, they serve fried *terubuk* eggs, use the *terubuk*'s eggs as ingredient for their *sambal* (chilly sauce) or they cook banana wrapped *terubuk* eggs with different flavors. Of cause they also cook or fry and eat the *terubuk* fish. Many of the eastern coast Sumatranese are accustomed to prepare fish soup the "*pindang*" which is considered to be one of their specialties. In fact, fish is cooked with different ingredients or spices such as the lemon grass, *asam kandis* (*Garcinea cf. parviflora*), chilly, shallot, salt and coriander, *salam* leave (*Syzygium polyanthum*) and sometime tomatoes are also added.

The word *pindang*, however, in Java has a different meaning. Because the northern coast fishermen of Jawa address the word *pindang* for dried salt water boiled fishes. In Jakarta this kind of fishes is recognized as *cuek* fish.

Varieties of *pindang* soup are also prepared by members of different ethnic group with different names such as: *asam padeh* (west Sumatra), *asam pedas* (South Kalimantan) etc., literally it means hot and sour soup (see also Ganie, 1996).

In some areas of southeastern Sumatra, fish are mixed with *tempoyak* or fermented *durian* fruit (*Durio zibethanus*), salt, chilly, shallot, sometime also coriander and then wrapped in banana leave to be cooked.

A hot curry of fish is popular in west Sumatra, but the West Sumatranese are also fond of the "*pangek*". These *pangek* is an anomalous dish for the west Sumatranese, because it is prepared without chilly and also without coconut milk. Either cuttlefish, fish or large fish head are cooked with mixed ingredients such as ginger, turmeric, shallot, garlic, lemon grass, lime, *laos* (*Languas galanga*), leave of *salam* (*Syzygium polyanthum*), *kemiri* (*Aleurites mollucana*), and *asam kandis* (*Garcinea cf. parciflora*).

Barbecue of milk-fish is widely offered in Banten, west Java. Dried and sugarized, fried shrimps familiar as "*grinting shrimp*" are one among so many delicacies from east Java.

Different specialties from different other geographic places are certainly available, but the author only presents all those above examples to offer some ideas that fish and sea product traditional mode of processing and preparation can probably open the horizons of the Indonesian and probably can contribute to the effort of increasing the domestic fish consumption.

COMMENT AND CONCLUSION

Despite of the enormous resource potential of our waters, it looks that the state revenue from the sea is still quite low except from the offshore oil drilling which constitutes probably more than 34% of the Indonesian oil (data from 1981 from Donner, 1987:300). Indonesia is supposed to be a declared economic water territorial which is over than 5 million km², with a coast line of about 81 000 km, and the upwelling area of 750 000 km² provide estimated 4.2 million tones of fish (see Donner, 1987: 300). If it is compared to the coastline of India, which is only 5700 km in length with an enormous continental land, than Indonesia should be better well off in term of marine resources.

But aquatic sector actually does not only provide fish, it offers different other resources which' exploitation needs different technological skills and capitals. Beside fish and other biotic or organic resources such as pearl, Crustacea, sea weeds, and others, Indonesia waters offer tourist sites, offshore oil resources, and for the long future probably also the mineral and phosphates from the manganese nodules at the bottom of our abyssal inter islands sea floor.

Most recent findings by the BPPL (Badan Penelitian Perikanan Laut) estimation (Adam, 1999) the Indonesia waters which is 5.8 million km² offer 6 391 000 tones of yearly fish catch. There are 4 042 000 tones of pelagic yearly fish stock, 1 305 700 tones of yearly dimersal fishes. At least there are 2 75 400 tones of mackerel, 166 300 tones of tunas, 100700 tones of Crustacea (lobster, shrimps etc), and 148 800 tones of seaweeds. Out side that product there are 56 300 tones of coral fishes are caught each year.

But the critic of the Association of Indonesian fishing companies (the Gappindo-Jakarta post 26th June 2000:10) to the government for its lack concern about promoting the country's fishing industries, is likely quite relevant. Last year export of tuna to Japan (1999) was only 17 000 metric ton, it is certainly far below from our potential tuna catch. That amount is only 42 % of our previous year export, which was 29 300 metric tones. Japan accounted for 60% of

our total fish export market, worth more than 2 billion dollars in 1998. In fact export of different sea products, including the shrimp and seaweeds are likely still under the Indonesia's capacity to fulfill the world demand.

Without neglecting the remarks that some regional waters are already over fished or probably suffer destruction because of the using of either cyanide, insecticides and explosives.

Decline of our fish catch or harvest had been reported elsewhere, and it might be probably due to multiple factors, such as the recently monetary crisis, the lack of skill and adequate management, and most of all are the insufficient capital to back all forms of marine exploitative activities (see also Donner, 1987:300-304), as well as the under estimation of potential of our domestic fish consumption and significance to the people. Recent report from the Directorate of Fisheries (2000) marine fish catch has increased to 3 760 07 000 ton. The increase from 1998 is about 3.98%. Different exported marine products were also reported by the Dirjen Perikanan (2000), which include shrimps, tuna and mackerel, other fishes, jelly fish, crabs, aquarium fishes, pearl, seaweed, mollusc shell and coral (?). The total number of the export in 1999 was 900 917 000 ton!

Although export is important, but it looks that domestic consumption can contribute much for the welfare of the fishermen and the people as well. The author does not hope that with the present economic situation, the share of the family budget set aside for food (including the protein source) will decrease drastically. Based on the author's field observation, most of the low to low middle class members of the citizens are able to purchase *ikan teri* (*Stolephorous commersonni*), *ikan kembung* (*Rastrelloger neglectus* and *Scomber kanagurta*), *selar* (*Caranx* sp.) and *ikan kuweb* (*Alectis* sp.) and of course all kinds of salted fish. The price of each kilogram of the above fishes is much below the price of a kilogram of meat.

The increasing fish consumption will certainly support and stimulate for more fish catch, fish distribution and marketing which will help the exploitation processes and also the economic status of the Indonesian. For the consumers it means also an amelioration of the human resources because of adequate protein intake. To achieve that goal the government should put more effort in propagating the processing techniques, promoting various kinds of fish and informing people that there are different kinds of fish food preparation. Examples of gustatory subversion and diet alteration are many (see for instance Lewis, jr. 1988). At the same time researches on the possible new processing or preservation techniques which facilitate the distribution of fish from the coastal to the interior of the island and fish gastronomy which make fish more appreciated by the people should also be supported. In France, evolution of food purchases and also change of the content of the food basket were observed for instance by Grignon and Grignon (1999). The author thinks that the Indonesian could also be engineered to appreciate more fish than before. Without neglecting that researches on (fish) food as a cultural construction are seemingly not less important (see also for instance Meigs, 1988): to understand what are appreciated and what are not appreciated by different people from different ethnic groups. The author noted from his visits to different areas and his contacts with the tourists that regional specialties are one among the tourist cultural attractions. Encouraging people to more appreciate their local gastronomic recipes with particular emphasize to the seafood, will likely also help the people economic status.

It should be noted that consuming fresh fish should be familiarized and salted fish consumption should be discouraged to prevent from the now increasing sufferers of

cardiovascular diseases among the elders and also the increasing cases of neoplasm of the larynx and pharynx.

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