

ANKE NIEHOF, ROY JORDAAN AND AFFANDY SANTOSO

## Technological and social change in a Madurese fishing village (1978-2004)

### *Introduction*

This article is about recent changes in Pasean, a fishing village on the north coast of the island of Madura, Indonesia (see maps).<sup>1</sup> The village has been described in detail in several publications based on research carried out in the area during 1977-1979, and a short visit in 1982.<sup>2</sup> In May-August 2004, we did fieldwork for a restudy. In this article we report our findings on the changes in Pasean during the past 26 years. The article starts with a description of general changes. The second part deals more specifically with changes in Pasean's fishing economy. Attention is paid to technological innovations, fishing methods, and trading patterns both within and outside fishery. A number of socio-economic changes, such as those in the division of labour and catches, are demonstrably related to the introduction of new technologies

<sup>1</sup> Research for this article was undertaken with a grant from Wageningen University, under the auspices of Lembaga Ilmu Pengetahuan Indonesia (LIPI, Indonesian Institute of Sciences). The Pusat Studi Kependudukan dan Kebijakan (PSKK, Center for Population and Policy Studies) of Gajah Mada University acted as academic host. The fieldwork was carried out within the framework of ongoing research by the first author on household food security, ageing, and gender.

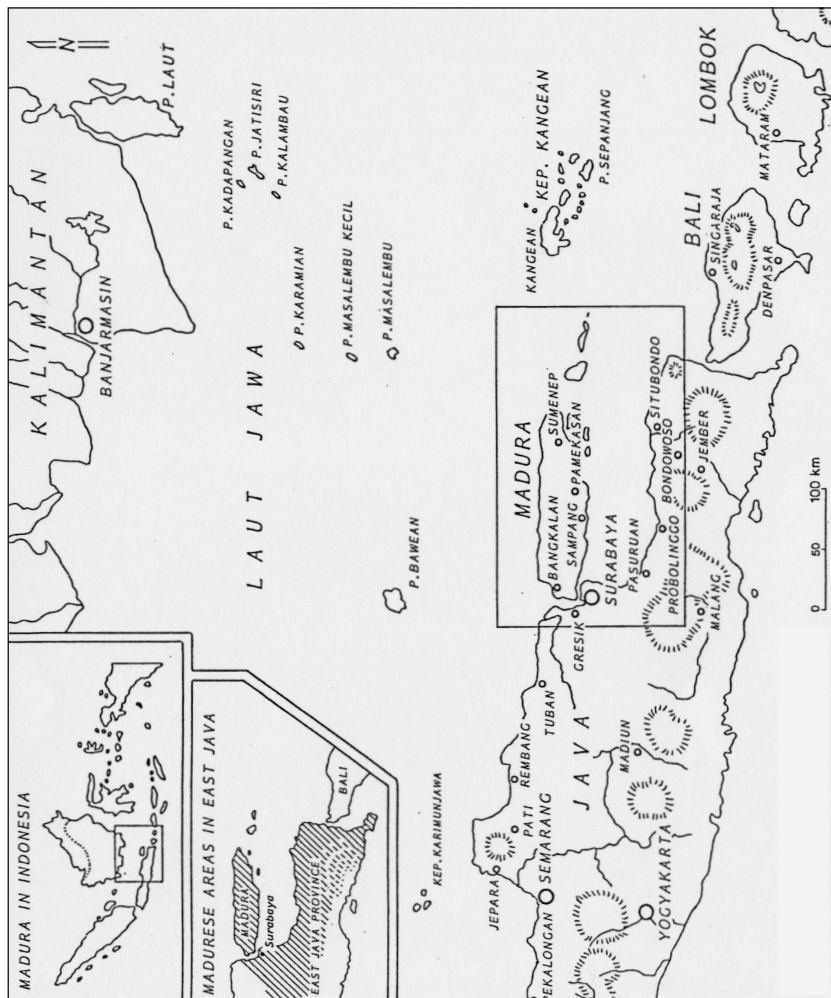
<sup>2</sup> Jordaan and Niehof 1980, 1982; Jordaan 1985; Niehof 1985. In these publications the fishing village was given the pseudonym of Patondu. Seeing that the true name of the village has recent-

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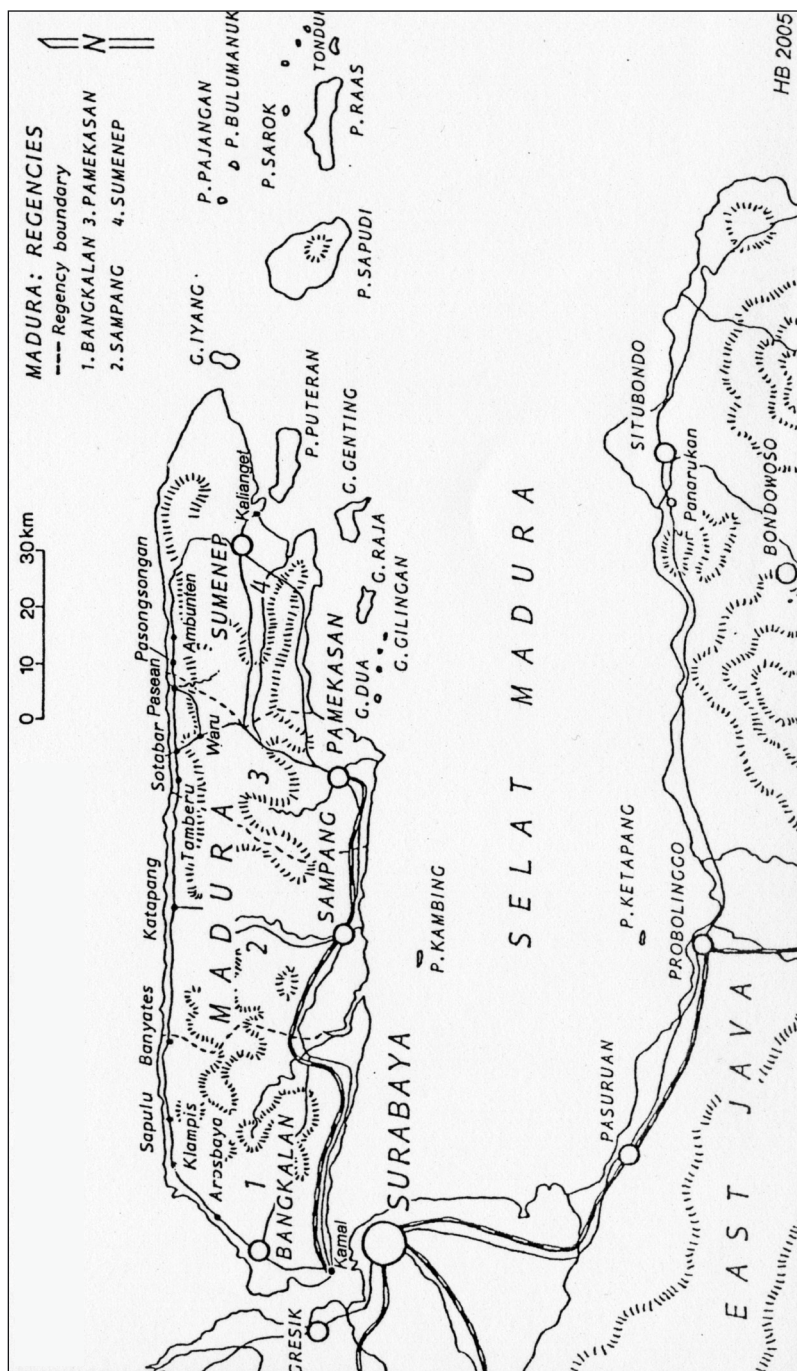
ANKE NIEHOF, a graduate of Leiden University, presently is professor in sociology and holds the chair of Household and Consumer Studies at Wageningen University. Relevant publications in the field are *The domestic domain; Chances, choices and strategies of family households* (co-author P. Pennartz), and 'Women and the social context of fertility under the New Order', in: *Two is enough; Family planning in Indonesia under the New Order 1968-1998*, a book she edited together with Firman Lubis. Professor Niehof may be reached at Household and Consumer Studies, Wageningen University, PO Box 8060, 6700 DA Wageningen, the Netherlands. E-mail: <anke.niehof@wur.nl>.

ROY JORDAAN, also a graduate of Leiden University, is a private scholar whose main interest has shifted from Madurese folk medicine to Indonesian 'classical' archaeology, particularly of central Java during the reign of the Sailendras. His most recent publication is *The maharajas of the isles; The Sailendras and the problem of Srivijaya* (co-author B.E. Colless).

AFFANDY SANTOSO lives and works in the fishing wards of Pasean, where he was born and raised. A tailor by profession, he is occasionally employed as a part-time local consultant for development projects supported by the World Bank.



Map 1. Madura, eastern Java and southern Kalimantan



in fishery, but other social changes are less clearly technology-driven. An example of the latter is the *klotok*, a new type of *perahu*, the introduction of which was facilitated by the altered social circumstances and individualistic life-style of Pasean fishermen.

By presenting this Madurese case, our aim is to contribute to current research on the dynamics of modernization in fishery and the socio-economic transformation of Indonesian fishing communities.<sup>3</sup> Special attention is given to the role of women in the fishing economy. Although, since Boserup's pioneering study (1970) on the role of women in economic development, it is generally assumed that women lose out in technological change because men take over when technologically more advanced modes of production are introduced, our case shows that technological innovations in fishery and fish processing have not fundamentally affected the position of women in Pasean's economy and society. Upton and Susilowati (1992:126), surveying the role of women in small-scale fishery development in Indonesia, quote Firth (1984) as saying: 'Both in Tikopia [...] and on the Kelantan coast, in different ways, the forces of modernization, which have brought women into more direct relationship with a world of male capital control, have resulted in a restriction of the economic opportunities open to them'. This phenomenon was not observed in Pasean. Amid significant social and technological change, the strong position of women in the local economy, based on a particular gendered division of labour, seems firmly anchored in Pasean society, and shows continuity rather than change.

### *The sub-district and the fishing wards of Pasean*

Pasean is located in the regency of Pamekasan, which is part of the province of East Java. Formerly, the name Pasean did not refer to an administrative unit, but rather loosely to the coastal area north of Pamekasan, on either side of the mouth of the river Pasian. In 1993, the territory of Waru sub-district was split into two new sub-districts: Waru, comprising 12 villages, and Pasean, now comprising nine villages. The main objective of the administrative reorganization was to facilitate the provision of governmental services,

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ly been revealed by an Indonesian fishery expert (Kusnadi 2002), it would make little sense to continue the pseudonym. For editorial reasons we have kept the use of Madurese words and expressions as limited as possible, occasionally opting for a better known Indonesian equivalent or simplified a orthographic rendition. For instance, *perahu*, *jurumudi*, *musim barat* instead of *prao*, *järmodhih*, *nambärä*. Readers interested in lexicography are referred to our earlier publications for a discussion of the relevant Madurese fishing terms as well as of local distinctions relating to socio-economic status.

<sup>3</sup> Masyhuri 1995; Arif Satria 2001, 2002; Pujo Semedi 2003; Butcher 2004; Kusnadi 2000, 2004.

but for local people the status elevation of Pasean was also an official recognition of the importance of fishery in the regional economy.

For local residents, the name Pasean has always referred to the fishing wards Lebak Timur and Lebak Barat in the village of Tlontoraja. With a population of about 1,700 people, these are the most densely populated places in the area, squeezed in between the beach, the coastal road, and the river Pasean. The people living in East and West Lebak are referred to as the 'coastal people' (*orèng Lebblhāk, orang pesisir*), whereas the people living on the other side of the road (where the terrain gets hilly) are known as the 'people from the hills' (*orèng ghunong, orang pegunungan*). The road is not only a geographic demarcation but also a socio-cultural boundary, and to a certain extent an economic one as well.<sup>4</sup> The coastal people of Pasean have always been more prosperous than the *pegunungan* people. The stereotype is that the latter are poor and backward; to earn a living they have to till the poor limestone soil and if they engage in fishing they do so only seasonally, as deckhands on boats owned by coastal people.

Pasean faces the Java Sea, lying on a small bay where the river Pasian runs into the sea. The bay and river are used as an anchoring place and natural harbour, because the bottom is sandy and the river offers protection against the stormy weather of the west monsoon (see Photo 5). Thirty years ago the beach was about 30 metres wide and 200 metres long, offering ample space for the landing and trading of fish, mending of gear and nets, and drying of fish.

These conditions have changed dramatically. The beach has eroded, partly due to natural forces and partly because of human activity such as illegal sand-digging for building purposes. At some places the beach has shrunk to a narrow strip only a few metres wide. Some of the houses nearest the sea became easy prey for the west monsoon storms with their mighty waves, and collapsed. Since 2000, the regional government has tried to turn the tide by building a dam to protect the houses against further damage, but sections of the dam itself have collapsed, partly as a result of poor construction caused by embezzlement and mismanagement of allocated funds. The condition of the river has deteriorated as well. Especially during the east monsoon period, the water level is low and the mouth of the river gets clogged with sand, which hampers the passage of boats between the sea and the river harbour.

<sup>4</sup> Regarding the distinct characteristics of Indonesian fishing villages in general, Arif Satria (2002) has recently proposed making them the object of a special branch of sociology, namely *sosiologi masyarakat pesisir* (sociology of coastal societies).



*Conspicuous changes and continuities*

While Pasean was already more prosperous than most other villages in Pamekasan, compared to the situation of the late 1970s the signs of recent development and 'progress' are striking. During our first stay, there was no electricity, and the village counted only two television sets, both of which worked on car batteries. Now, there is electricity, and a number of houses are connected to a piped water system. For some years a daily newspaper has been available, and since 1995 telephone service. With more than fifty subscribers among the well-to-do inhabitants, East and West Lebak account for 40% of the telephone connections in the sub-districts of Waru and Pasean. Modern household appliances such as a television set with a satellite dish, a refrigerator, a gas stove, and a washing machine can now be found in many houses. People have become more mobile as well. While formerly they would go to the nearby town of Waru for shopping, they now go to Pamekasan and Sumenep, and occasionally even as far as Surabaya. At the same time, people have become more materialistic. For services that were formerly carried out on a reciprocal basis, a form of payment is now expected or else somebody is hired to provide the service.

Women still hold a powerful position, even more so than 25 years ago, when the low level of fertility could be explained by the high degree of women's autonomy and their active role in the fishing economy (Niehof 1985). The distinction of men ruling at sea and women ruling on land, with women controlling household income and expenditure, has persisted. Not only daily household expenditure, but also paying for children's education, repairs on the house, medical services, and going on pilgrimage, is largely decided by women. The position of women seems to have become stronger and more acknowledged over the years in the semi-public domain as well. Presently, at wedding parties almost all attending guests are women; men feature predominantly only at funerals and death rituals.

*Education, religion and politics*

While formerly there was only one primary school in the area, there are now three. In addition, there is a first-level secondary school in the village, and in nearby Waru a second-level secondary school. A few Pasean youngsters have made it to university. Although the educational infrastructure has much improved and the overall rate of illiteracy in Madura has declined, the statistics on the level of education among Madurese (whether living on the island itself or in the eastern regencies of Java) are still a source of concern. The percentages of educational achievement above primary school level

are significantly lower in the Madurese regencies than the East Javanese averages (*Hasil sensus penduduk* 2001:117). It should be noted, however, that these figures relate to secular education, whereas the Madurese themselves have always put great value on their children's religious education provided by teachers of various Islamic educational institutions ranging from small prayer houses to large religious boarding schools.

Of old, Pasean is a stronghold of orthodox Islam. The dominant religious orientation of the village is towards an orthodox traditionalist version of Islam. About a hundred persons are followers of the Muhammadiyah movement, a modernist Islamic organization which aims at 'purification of the faith' by the removal of what are regarded as Hindu-Buddhist or other non-Islamic 'contaminations' (for details, see Jordaan 1985:46-55). To accomplish this is far from easy, because of the island's relative isolation and the conservative attitude and low level of education of most of its people. The traditional religious teachers (*kiyai*) have always played and still play an important role in Madurese religious and social life. Still, compared to the late 1970s, the significance of old syncretistic beliefs in the locally practised Islam has diminished. In fishing, magic precautions seem largely to have been replaced by science and technology. Magical beliefs linger on in time-reckoning and divination, as is apparent from the distinction between 'good' and 'bad' days for certain activities, and sprinkling boats with flower water for good luck. Islam locally seems to have become more orthodox in character. More women are now wearing a headscarf or a fashionable ladies' bonnet, and the number of dome-shaped Middle Eastern types of mosques fitted out with splendid minarets and glossy tiles has increased, as has the number of decibels coming from their loudspeakers.

Politically, Pasean is a PPP (Partai Persatuan Pembangunan) stronghold, as are many other areas of Madura. The PPP is an Islamic political party that was founded in 1977 in response to the merger which President Soeharto had enforced upon a multitude of national political parties. The remaining two parties, Partai Demokrasi Indonesia (PDI) and Golongan Karya (Golkar), the dominant government-affiliated party during the New Order (1967-1998), never gained much of a following in Pasean. Being the only political party available for Islamic voters at the time, the PPP comprised Muslims of many shades and varieties of opinion. In Pasean, the PPP had to serve the needs of both the minority of modernist Muslims from the Muhammadiyah movement and the majority of orthodox traditionalist Muslims. In former days, the latter were either followers of the Nahdlatul Ulama (NU) or the Sarekat Islam (SI).

The uneasy cohabitation of various sorts of Muslims in one political party came to an end after the downfall of President Soeharto, which initiated a period of social and political freedom known as the era of *reformasi*. In 1999, no fewer than 36 political parties participated in the national elections

(Van Dijk 2001:306-15). In the sub-district of Pasean, SI followers continued their hold over the PPP, which won the elections. NU sympathizers rallied around Abdurrahman Wahid and his newly founded political party Partai Kebangkitan Bangsa (PKB).

In 2004, a new party came to the fore in the parliamentary elections at the more secular end of the political spectrum, namely Partai Demokrat (PD) led by Susilo Bambang Yudhoyono alias SBY, a retired army general. At first only a minor competitor for PDI and Golkar, the PD soon gained so much popular support among Indonesians as to become a prominent player in the presidential elections of 2004. In Pasean sub-district, while obtaining most of the votes, the PPP scored worse than it had done in the parliamentary elections some months earlier. The same held for the PKB-Golkar alliance, indicating that part of their following had sided with one of the other contestants. Remarkable is the rise in popularity of SBY (from only 0.2% in the parliamentary elections to 11.6% in the first round of the presidential elections), a trend which continued in the second round of the presidential elections with the SBY-Kalla alliance obtaining 13,414 votes (45%).

While the political climate is now more democratic and people have become less submissive to government officials, they are also disappointed in politics. In their eyes, *reformasi* did not change things for the better, which is not surprising as it coincided with the onset of *krismon*, the financial crisis in Indonesia. With the weakening of secular power structures and increasing poverty, the danger of lawlessness and social unrest looms large. People feel freer to do as they like, which has a negative side as well. Petty crime and robberies are on the rise, and the situation as a whole seems less secure than it used to be, making some people even yearn for the tight public order imposed by Soeharto's military regime. Seen from this perspective, SBY's decisive victory in the second round of the national presidential elections becomes more comprehensible, expressing as it does both the widespread disappointment of the Indonesian people in the established parties (protest voting) and the desire for more social, political, and economic security (safety voting).

### *Demography*

The size of Pasean's population remained more or less the same over the past 25 years. Table 1 below gives the population figures according to the census we did in July 1978 and the national population census of April 2003.



Table 1. Population of East and West Lebak, July 1978 and April 2003

Age group	Male		Female		Total	
	1978 <sup>1</sup>	2003 <sup>2</sup>	1978 <sup>1</sup>	2003 <sup>2</sup>	1978 <sup>1</sup>	2003 <sup>2</sup>
0-14	260	190	238	213	498	403
15-64	504	558	601	643	1,105	1,201
65 +	35	18	61	56	96	74
Total	799	766	900	912	1,699	1,678

<sup>1</sup> Source: Niehof 1985:40.

<sup>2</sup> Source: 2003 census.

The demographic dependency ratio<sup>5</sup> declined from 53.8 in 1978 to 39.7 in 2003. There are several possible explanations for such a decline. The most plausible one is fertility decline, leading to lower numbers in the youngest age groups. Although Pasean in 1978 already had below-average fertility rates (Niehof 1985), fertility may have declined further. The fact that contraceptive pills of several brands are now freely bought and sold at the weekly market in Pasean and that according to official statistics contraceptive prevalence is high, support this explanation. At the same time, infant and child mortality, which were quite high in 1978, must have declined significantly as they did all over Indonesia (Niehof and Lubis 2003). Generally, declining infant mortality is conducive to fertility decline. Regarding migration, our impression is that out-migration, especially by young adults for purposes of study or work, has increased, but we do not have migration figures.

### *Changing modes of fishing in Pasean*

In Pasean there is not one single type of fishing, but a configuration of different modes that all have their specific requirements in terms of technology, manpower, skills, and capital inputs. Different fishing methods yield different catches and their application largely depends on ecological conditions and season. The most pervasive seasonal distinction is that between *musim barat*, the period dominated by the west monsoon (October-March), and *musim pokok*, the main fishing season, which falls in the east monsoon period (May-September) and usually begins during the month of August. At the height of the west monsoon, fishermen face a period of hardship. For weeks on end, storms and mighty waves can make it impossible for them to go to sea. People then have to live frugally on money that was saved in better

<sup>5</sup> The demographic dependency ratio is calculated by dividing the sum of the numbers of persons aged 0-14 and 65+ by the number of people aged 15-64, multiplied by 100.



Photo 5. Harbour view, 1978

times. It is not uncommon for families to go into debt, obliging them to sell or pawn their furniture, utensils and crockery. Because of the latter phenomenon, the west monsoon has been aptly designated *musim terbang piring*, 'the season of flying saucers' (Kusnadi 2002). Sometimes, in spells of good weather, fishermen (when forced by the pressing financial situation of their households) set out to sea to try to catch some fish with long lines. These short trips are often unprofitable and dangerous undertakings. However, the fish that is caught fetches a high price on the market. During January-February, the *perahu majǎng* fleet of Pasean (and other fishing villages on the north coast), moves to Bintaro on the south coast, east of Kalianget, because the harbour and fishing grounds there are better protected from the west monsoon. Up to two years ago Pasean fishermen also went to south Bali, but because of conflicts with the local population they are no longer welcome there. This seasonal movement is called *andhun*. It is common in other fishing villages in East Java as well (Susilo and Ismadi 1998; Kusnadi 2001).

If the west monsoon is a time of hardship, *musim poco*k can be a time of affluence. This season is determined by the appearance of *kabǎn* fish (scads, *Decapterus* spp., known as *ikan layang* in Indonesian). In essence, *kabǎn* is not a Java Sea fish, but a species which lives in clear ocean waters of relatively high salinity, in the deep waters of the eastern part of the Indo-Australian archipelago (Hardenberg 1937, 1938; Masyhuri 1996). During the east monsoon, which coincides with westward sea currents, water flows into the shallow Java Sea from the Flores Sea and partly from the Makassar Straits. When the eastern section of the Java Sea has reached a certain level of salinity, young *kabǎn* fish will appear and grow to maturity. Being a fish from the open sea with pelagic habits, the *kabǎn* fish generally is not caught nearer than about 20 miles from the coast. Fishermen use a device made of palm leaves, which is known as *onjem* (*rumpon* in Indonesian), to attract schools of young fish. The seasonal arrival of *kabǎn* fish and the natural conditions that limit its westward migration make fishing during the *musim poco*k fraught with uncertainty, especially after climatic disturbances that are commonly associated with El Niño (1997-1998). Fishermen in Pasean hold that in the past *kabǎn* used to be caught in greater abundance and also further west than is the case now. The experiences of Pasean fishermen would seem to accord with the scientific findings of the 1995 Java Sea Pelagic Fisheries workshop at Bandungan regarding the stagnation of catches by medium and large seiners from Java and the eastward move for fishing grounds which has led to the full exploitation (if not over-exploitation and depletion) of all fishing grounds in the Java Sea.<sup>6</sup>

Back in 1978, fishery in Pasean during *musim poco*k comprised two main activities: *majǎng* and *ngaddǎng*. *Majǎng* refers to the actual fishing, which

<sup>6</sup> Roch et al. 1998:337; Masyhuri 1995; Pujo Semedi 2003; Butcher 2004.



Photo 6. *Pangamba'* supervising and making records of the catch that is being unloaded from a fishing boat she has money invested in

was done with larger *perahu* of the *antokan* type.<sup>7</sup> These were not equipped with engines at the time and needed a crew of at least twelve men. *Kabǎn* was caught on the high seas with a large seine made of natural materials and the use of one or more *onjem*, which were anchored to the sea-bed at different locations. *Perahu majǎng* usually stayed at sea for three to four days, selling their daily catches to so-called *ngaddǎng* fishermen. The latter transported the fish to the shore in smaller *perahu* of the *lè-golè'an* type, which were equipped with outboard motors, to be handed over to regular (female) traders. These traders took care of the further distribution of the fish to regional markets through a network of small traders and customers. In 1978, about 27% of the fishermen in Pasean were engaged in *majǎng*, while the majority of fishermen (65%) were specialized in *ngaddǎng*, the others practising coastal or inshore fishing with smaller *perahu* and outrigger canoes or with nets pulled in from the beach.

The configuration of types of fishing activities has changed considerably over the past 26 years. Comparable to the impact of the outboard engine during the early 1970s was the introduction during the 1980s of the inboard engine, which actually is a do-it-yourself conversion of the old outboard engine supplemented with a built-in driving shaft and a water-cooling system. While the outboard engine had stimulated the division of labour between *majǎng* and *ngaddǎng*, the introduction of the inboard engine blurred it again, and caused the demise of *ngaddǎng*.<sup>8</sup> Adoption of the inboard engine allowed *majǎng* fishermen to bring their own catches ashore daily, thus putting an end to their dependence upon transporters and middlemen. Yet, rather than leading to a return and revival of *majǎng* fishery, the number of fishermen engaged in *majǎng* has remained about the same (roughly 30%). The explanation for this remarkable fact is the arrival in the mid-1980s of a new type of *perahu*, the *klotok*, which was widely adopted and soon came to dominate the fishing scene, thus helping to absorb the manpower of the now redundant *perahu ngaddǎng*.

The *klotok* is a slender vessel about 12 metres long and 2 metres wide, having a depth of 1.5 metres (see Photo 2). It resembles a yacht, except that it has no fin-stabilizer or permanent sails; it is powered by a 15 to 20

<sup>7</sup> We have refrained from Indonesianizing the word *majǎng* as *mayang*, since on the north-eastern coast of Madura the latter word is commonly used in connection with small *perahu* and outrigger canoes, with a crew of two, that are used to catch anchovy and shrimps with fine-meshed nets. Today, *mayang* is mainly practised by fishermen from Sotabar and Ambunten. The word *majǎng* is derived from *pajǎng*, a large bag-shaped net with a pair of wings used for catching pelagic fish, such as *kabǎn*.

<sup>8</sup> This change has led to the abandonment of the *perahu majǎng* of the *antokan* type, with its characteristic prominent bow, to be replaced by the enlarged *lè-golè'an* type of *perahu majǎng* (see Photo 1). More importantly, the total number of *perahu majǎng* decreased from 36 in 1978 to 14 in 2004. Apart from the demise of *ngaddǎng*, we must also report the disappearance from the scene of the 35 outrigger canoes.





Photo 7. Haji Halima's powerful presence as *pangambā'*



horsepower inboard engine. This being a relatively cheap fishing boat, a considerable number of fishermen in Pasean dared to take the financial risk and buy a *klotok*, and in this way become their own boss (*juragan*), with the expectation of having more control over their own destiny.<sup>9</sup> The crew of a *klotok* usually consists of only two men: the helmsman-cum-fisherman and his assistant. Most *klotok* are used for pole-line fishing (*arombhǎng*), with lines that are attached to two poles put out on either side of the boat. A few *klotok* were used not for pole-line fishing but for seine fishing, being equipped with a converted drive shaft (called *gardan*, derived from the Dutch-French word *cardan*) connected to a recycled differential axle of a truck. The fish net is pulled in mechanically from the back side of the boat, using ropes that are tied to the wooden wheels at both ends of the axle (see Photo 3). Because of this particular feature, these *klotok* are sometimes called 'mini-trawlers'.<sup>10</sup>

One of the factors that stimulated the rise of pole-line fishing with *klotok* boats was the introduction of cool boxes for preserving the fish, allowing Pasean fishermen to sail to more distant fishing grounds than was formerly the case (for example Bawean, Karimunjawa Islands). When such long-distance trips were undertaken in the past, fishermen had to sell their catches in other fishing villages along the way. The demise of *ngaddǎng* and the rise of *arombhǎng* also caused a partial shift in the species of fish caught: from scads (*kabǎn*) to tuna, comprising the smaller *tongkol* (*Euthynnus* spp.) and the bigger *cakalan* (*Katsuwonus pelamis*). However, it could well be that this partial shift is a temporary phenomenon connected with the introduction and rapid expansion of the *klotok* fleet. During our stay in 2004, we noted that many of the *klotok* which had once contributed to increased catches of various sorts of demersal fish were now left idle in the Pasian river. We were told that this was because the operational costs of the *klotok* more often than not exceed the value of the catch, the volume of which would seem to be declining as well.<sup>11</sup>

<sup>9</sup> *Klotok* were usually imported from Kalimantan for a new price of nearly Rp 30 million (€ 3,000), including inboard engine and fishing gear. More often than not, the purchase could only be realized with the financial help of others, such as moneylenders, resulting in indebtedness and dependence. Still, the appeal of the *klotok* to Pasean fishermen is clearly reflected in the spectacular rise of their numbers: while in 1986 there were only about 15 *klotok*, in 2004 the total number was estimated at 200 to 220 (including second-hand ones). Interestingly, no *klotok* has yet been adopted in the neighbouring village of Pasongsongan, which the people themselves explained by their stronger communal feeling and social cooperation in contrast to the more individualistic lifestyle of Pasean fishermen.

<sup>10</sup> It should be noted that trawlers have been officially banned from Indonesian waters since 1980 (Bailey 1997), and that the actual operation of *klotok* as mini-trawlers is prohibited. Still, illegal trawling does occur and is a source of social conflict among fishermen, particularly in heavily fished areas.

<sup>11</sup> In some respects, this is reminiscent of the situation in Estancia, in the Philippines, where there seems to be a complete turnover in the dominant fishing gear every eight to twelve years. Gear found to be profitable is quickly copied and used so intensively that it eventually depletes



Photo 8. Sorting and dividing fish over baskets according to kind and size of fish

### Occupational structure

In 1978, the majority (69.5%) of men above 15 years of age worked in fishery or fishing-related activities. A substantial part (29.6%) of all women above 15 years of age derived a regular income from fishing-related activities, such as preparing and trading in fish and fish paste. In June 2004 a household survey was done in Pasean, enumerating all households that had at least one child aged 12 years old or under.<sup>12</sup> In the 2004 survey, of all working men aged 18 years old and above (N = 307), 51.1 percent work as fishermen or as *perahu* owners (*juragan darat*). The 241 households counted 149 fishermen, of whom 95 (64%) practise *arombhāng* or *apolang* for which the *klotok* is used, and 49 (33%) are *majāng* fishermen. Table 2 shows the distribution of the occupation of the household head of the 241 households in the survey.

Of all 263 women aged 18 and above in the survey, 141 were working (53.6%), many of them in fish trading or fish processing. The survey counted 12 *pangambā'*, women who put up the finances needed for the *perahu* and gear, and, in return, have an exclusive right to the catch, the sale of which they are responsible for.<sup>13</sup> The 38 traders counted in the survey specialize in the trade of processed fish (*ikan pindang*) or fish paste (*petis*), or engage in regional fish trade (*ngebok*). *Ikan pindang* is prepared by putting the fish (*kabān* or small tuna) packed in baskets into salted boiling water for ten to fifteen minutes, after which it is taken out and sold as *ikan pindang* (see Photo 9). The water containing the fish extract is later boiled down and stirred, adding sugar. The result is a treacly brown paste, called *petis* (see Photo 10). The household enterprise engaged in this activity is referred to as *pemindangan*. A count with the help of key informants resulted in 41 such enterprises in East and West Lebak.

The preliminary analysis in Niehof's 2004 household survey in Pasean yielded data that consistently picture the households of fishermen as poorer

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the local stocks of the particular fish it is used to catch (see Szanton 1998:266, note 1). Concerning the *klotok*, it should be borne in mind that from 1998 onwards as a result of the monetary crisis (*krismon*) the operational costs also became more difficult to meet. The two factors, financing difficulties and declining local stocks of fish combined, could well account for the inactivity of part of the *klotok* fleet. Regrettably, we lack the exact figures to demonstrate the synergetic impact of these two factors.

<sup>12</sup> The issues of definition of household and household composition and headship will be dealt with in-depth in a forthcoming article on household food security in Pasean. Here it suffices to say that – in line with the census definition – household was defined as the unit sharing most of the food and resources on a daily basis. For headship a subjective definition was used: the person designated as such by the members of the households themselves. This would generally be the most important male, in terms of income generation and authority.

<sup>13</sup> The word *pangambā'* derives from the verb *ambā'*, which means waiting for the arrival of somebody or something; here it concerns the moneylender who is waiting for the *perahu* she has invested her money in.

Table 2. Primary occupation of household head

Occupation	N	%
Not working/unemployed or pensioned	16	6.6
Civil servant, teacher, village official	6	2.5
Religious teacher ( <i>kiyai</i> )	3	1.2
<i>Fisherman</i>	91 <sup>1</sup>	37.7
<i>Perahu</i> owner, not going to sea ( <i>juragan darat</i> )	9	3.7
Direct fishery-related activities	4 <sup>2</sup>	1.7
Financing boats and equipment ( <i>pangambă'</i> )	2	0.8
Fish trade, marketing and processing	10 <sup>3</sup>	4.1
Fishery-related crafts and skills	4 <sup>4</sup>	1.7
<i>Crew member on a wood freighter</i>	18 <sup>5</sup>	7.5
Artisans (welders, tailors, etc.)	9	3.7
Trader in wood or other non-food items (tobacco)	16	6.7
Taxi driver	11	4.6
Labourer	11	4.6
Owning a small business or (non-food) shop	12	5.0
Owning a shop for daily necessities	7	2.9
Itinerant seller of foods, snacks, herbal tonics	10	4.1
Other (farmer, travel agent)	2	0.8
<i>Total</i>	241	99.9

<sup>1</sup> Counting 30 *majăng* fishermen, 60 practising *arombhăng/apolang*, and 1 *ngopè'* fisherman.

<sup>2</sup> Including begging for fish (*ngojur*), and providing drinking water and ice blocks to boats.

<sup>3</sup> Counting 3 traders of *ikan pindang*, 1 fish processor, and 6 regional fish traders (*negebok*).

<sup>4</sup> Counting 2 boat builders (*tukang perahu*), 1 mechanic and 1 ice-box maker.

<sup>5</sup> Transporting and trading of wood from Kalimantan (sometimes derived from illegal logging) is a relatively new economic enterprise. A blooming business during the final decade of the Soeharto regime, it no longer is now.

Source: Niehof's 2004 household survey of Pasean.

than households of non-fishermen. With regard to household income per capita, ownership of assets, and savings, fishing households score significantly lower than non-fishing households. The same pattern is found with regard to household expenditure. Thus, the survey results indicate that most fishermen are poor. Based on personal observation and discussions with local informants, our impression is that the gap between the 'haves' (*orèng sè andi'*) and the 'have-nots' (*orèng sè ta' andi'*) has widened since 1978, with fishermen increasingly finding themselves in a position of indebtedness and working as poorly paid labourers. This supports the findings of other socio-economic studies done in fishing communities and strengthens the plea by Kusnadi (2004) for a concerted effort to alleviate poverty among fishermen.

*Changes in the division of labour and in the division of catches*

The people involved in the operation of a *perahu majāṅg* comprise persons of a variety of skills and functions, who are entitled to a larger or smaller portion of the catch. The first distinction is that between *perahu* owner and crew. The *perahu* owner is generally known as *juragan*, or boss. The crew, referred to as *pandhigā* or *mondhu*, can be further differentiated according to function: the *jurumudi* (skipper or helmsman), the *papajāṅgan* (supervisor of the nets, *pajāṅg*, that are now referred to as *porsèn* or *porsèl*, local pronunciations of purse seine, a type of fishing net made of synthetic materials), the *patoronan* (the man responsible for unloading and floating the *onjem*, as well as for the lamps), and, finally, the *bhāreng*, a collective noun for ordinary crew members or deckhands. Each of these deckhands used to be referred to by a particular descriptive term indicating his special task and responsibility (for details, see Jordaan and Niehof 1980:85-6). It should be noted that the terminological and functional distinctions are very similar but not identical to those recorded in other areas of Indonesia (Kusnadi 2000; Arif Satria 2001; Pujo Semedi 2003).

In the division of catches, different portions are allotted to the different functions according to a stratified sharing arrangement, in which persons with special skills are paid more than those who only contribute physical labour. Among smaller-sized boats such as the *klotok*, the catch is distributed according to a simpler and more equal arrangement. After subtracting 10% for the *pangambā'* and for operational costs,<sup>14</sup> the catch is divided into seven shares, allotted as follows: 2 for the owner of the boat, 2 for the owner of the engine, 0.5 for the owner of the cool box, 1.5 for the skipper (*jurumudi*), and 1 for the deckhand.

Regarding the division of the catch of *perahu majāṅg*, a prior distinction is made between the returns in fish and returns in money. The returns in fish consist of a small part of the total catch which is only meant for the crew's daily subsistence (*rè-karè*). It is divided by the skipper according to the following rule: *perahu* owner 14 parts, *jurumudi* 2 parts, *papajāṅgan* and *patoronan* 1.5 parts, deckhands 1 part each. The *gunjā'ān*, who does not belong to the crew, gets one share for providing the *perahu* with sufficient drinking water and fuel. The monetary results, on the other hand, are not paid out to the fishermen on the same day as the sale of the fish, but usually only after several trips. After subtracting 10% for the *pangambā'*, the total catch is divided into

<sup>14</sup> The operational costs of a single *klotok* trip of six to seven days amount to about Rp 800,000, covering 300 litres of diesel fuel, 10 kilograms of rice, 25 blocks of ice, 20 packets of cigarettes, and other items. As these costs are always charged, a poor catch inevitably leads to further indebtedness and a greater dependence upon the *pangambā'*, thus shattering the dream of independence that originally motivated the fisherman to purchase a *klotok*.



two equal parts: one for the *perahu* owner, the other for the crew. The details about the division of shares among the crew are given below.

In former days, the boat owner was entitled to 8 shares (*sara*), the skipper, the *papajāngan*, and *patoronan* to 1.5 shares each, and each of the other members of the crew to 1 share of the catch. Occasionally, some good fish were kept apart to be given as a present to specific people in return for their services, such as the *perahu* builder and repairer, and an esteemed *kiyai* (religious teacher). The word for share is *sara*, the shares system is known as *sara'an*. By 2004, the system had changed significantly, with the boat owner receiving 45% of the catch (half of the catch after subtracting 10% for the *pangambā'*) and the other 45% divided between crew and equipment owners, amounting to 20 shares. The detailed division is given in the case of Haji Halima (Case 2) below. As in the past, some good fish are kept apart to be presented as gifts to persons who were instrumental in the operation of the *perahu*, such as the *tukang mesin* (mechanic).

The changes reflect the ever-increasing influence of modern technologies as well as the capital that is needed to acquire these. For instance, the larger number of shares now allotted to the boat owner is because of his responsibility for the equipment of the fishing boat, presently consisting of three different engines (for locomotion, hauling in the nets, and lighting), the purse seine, and the radio transmitter (Acheson 1981:278; Meereboer 1998:260). If a boat owner himself is unable to bear the costs for this equipment, he will either borrow the money from a *pangambā'*, or try to involve others in the operation of the boat as a joint venture, for example by finding someone who will purchase the inboard engine and preferably join the crew as mechanic in return for three shares. The larger shares for the skipper, *papajāngan*, and *patoronan* over the rest of the crew are indicative of the greater value attached to their skills and their specific contributions in the operation and production process of a modernized *perahu majāng*. Also worth noticing are the terminological changes. Most of the terms that were used to differentiate the other members of the crew have become redundant as a result of the motorization of the *perahu majāng*. The intricate functional description of the past has been reduced to a much simpler classification of the crew, consisting of three specialists (*jurumudi*, *papajāngan*, *patoronan*), and twelve deckhands (*bhāreng*) who will undertake whatever physical job the skipper orders them to do. In other words, the fisherman of old has become a fish-labourer (*buruh nelayan*), a development that is in line with the changes in the 'social formation' in Pekalongan, and in Central Java, during the period 1980-1990, as described by Arif Satria (2001:60-5).

Another change is that trading networks have widened. Today, fish from Pasean is sold not only on the island of Madura itself, but also in Java. It is packed in ice and transported by trucks.



*Finance and gender in fishery, fish trade and fish processing*

While technological innovations readily taken on board by Pasean fishermen and have had a great impact, the government-induced modernization and fish auction scheme never got off the ground. Regarding the limited role of the formal sector in capital provision and the continuing prominent role of the traditional moneylender in conjunction with informal alliances between traders and fishermen, nothing seems to have changed. The office of the fishermen's cooperative, the Koperasi Unit Desa (KUD), is in a dilapidated state and nobody feels any urge to do anything about it. The official fish auction under KUD supervision functioned only briefly and on a very limited scale. We reflect now on the causes of this failure of institutional modernization.

At the time of our first fieldwork, in 1978, fishery in Pasean was structured along seasonal lines and oscillated between the high fishing season or *musim poco* (August-September), a time of affluence, and the west monsoon or *musim barat* (January-February), a period of hardship. *Ngaddāng* reached its peak during *musim poco*, when almost every able-bodied man, woman and child would be involved in fishery in one way or another. Every morning upon arrival of the *perahu* (see Photo 4), once a good price had been agreed on the beach, the wife of the *perahu* owner would assemble the wives of the crew to determine the profit made that day and to add the net profit to the *pèngghungan*, an accumulative fund. From this fund, at the end of the season, crew members and *perahu* owners would be paid according to the number of shares they were entitled to. One share at the end of a good season could amount to Rp 200,000.<sup>15</sup>

Following the demise of *ngaddāng*, the catch is now brought ashore by the *perahu majāng* fishermen themselves, but the fish is sold in the same manner as before: through a short and intensive process of haggling between fish mongers and fish traders on the one hand, and the moneylender or *pangambā'* on the other. Once the fish is brought ashore, it is entirely women's business. *Pangambā'* are women who have invested money earned in fish trade as loans to *perahu* owners. In return for their financial support they are entitled to 10% of the gross returns, which is why it is also in their interest to strike a good deal when negotiating with fish traders on behalf of the *perahu* owner. The debt to a *pangambā'* can never be paid off or wiped out. As long as the *perahu* concerned is in operation, the *pangambā'* is entitled to her 10%. Only if the *perahu* is shipwrecked, as occasionally happens during the west monsoon, will the loan be annulled. This is the risk taken by the *pangambā'*. In 1978, of a total of 197 women working in fishery, there were 25 *pangambā'* and 133 fish

<sup>15</sup> In 1978 the exchange rate of 1 US dollar fluctuated between Rp 600 and 700. During the second half of 2004, the exchange rate of 1 US dollar or 1 Euro was worth nearly Rp 10,000.

traders (Jordaan and Niehof 1980). In 2004, the *pangambă'* retained their position, and fish trade and processing were still firmly in women's hands.

Already during the early 1970s plans were made to use a World Bank loan for the modernization of fishery in Java and Madura, but Pasean only came to be included in the scheme in the late 1970s. In conjunction with soft loans extended to local fishermen for purchasing modern equipment for their *perahu* (consisting of outboard engines and purse seine), the government intended to put an end to what it perceived as the usurious practices of indigenous moneylenders. However, if asked, the fishermen themselves would not have been aware of their being victimized. In Pasean, and presumably elsewhere in Asia as well (Emmerson 1981), the moneylender is a necessary and familiar evil that can be kept under (social) control and also provides a certain protection from risks. Be that as it may, in 1980 a cooperative was formed to run the fish auction and mediate with the bank for loans to fishermen. *Perahu* owners who obtained a loan through the KUD were obliged to sell their fish at the auction and sever their ties with their *pangambă'*. Although the rates of interest were definitely lower than 10%, fishermen had heard rumours of houses being confiscated by the bank in cases of default and were thus generally reluctant to participate in the loan scheme. Unlike a *pangambă'*, a bank would insist on repayment of the loan, even in case of shipwreck. Another thing that made the fishermen doubtful was the composition of the KUD Board, which did not include a single fisherman. The scheme also totally ignored the strong position of women in the fishing economy, a position that they would not willingly surrender. As it turned out, only a fraction of the total amount of fish landed was handled through the auction and the scheme was a total failure.<sup>16</sup>

The modernization of fishery in the neighbouring village of Pasongsongan shows that the outcome could have been different if the government had been more sensitive to local customs and practices, and had involved informal leaders. In Pasongsongan, a certain Haji Abdurrachman, a widely respected informal leader, had been requested by local authorities to submit a plan that took into account the various interests of the different people involved in fishery, including the *pangambă'*. The extension of loans for motorization was made conditional upon acceptance by *perahu* owners of the new shares system, which Haji Abdurrachman had devised in dialogue with local people,

<sup>16</sup> For a more detailed analysis of how and why the fish auction scheme went awry, see Jordaan and Niehof 1982. The description of the functioning of a fish auction in a fishing village on the north coast of Central Java (Antunes 1998) shows that institutional modernization of fishery is possible. In the village concerned, access to the fish auction is regulated in a semi-formal manner. *Pangambă'*-type women (called *bangkel*) who have enough capital and are registered at the fish auction, mediate for smaller traders who are not. The scheme seems to function satisfactorily for all parties involved.

and which also met the government's aim to improve the plight of ordinary fishermen. The new system has been in practice for over 20 years now, to the satisfaction of everyone concerned, which is all the more remarkable in view of the rather complicated financial calculations it requires. These are described in Case 1 below.

*Case 1: Division of catches and money of the perahu majāng in Pasongsongan*

The *pangambā'* Ibu Atun (pseudonym), who works with eight *perahu majāng* in Pasongsongan, informs us that the division of catches and money can be divided into two parts: division at the *perahu* and the monthly<sup>17</sup> division of the cumulative fund or *pèngghungan*.

*Division of fish at the perahu*

This is referred to as *cèpèran*, which can be glossed as income for daily shopping, or income on the side. *Cèpèran* is given each time the *perahu* sails, and is not part of the *pèngghungan* or cumulative balance. On every *perahu* there are five to (maximally) eight boxes in which fish is put. Each box can contain about 150 buckets of fish. *Cèpèran* is taken from each box. Ordinary crew members each get one bucket per box. The share of the *juragan* is five buckets per box: one for the *perahu*, one for the purse seine, one for the *gardan*, one for the engine, one for the halogen lamps, if he actually owns all this equipment. If not, the shares (apart from the *perahu*) go to the respective owners. There is an additional *cèpèran* of one-fourth of a bucket for the *tukang perahu* (usually more than one person), for the *tukang mesin* (mechanic), and for the persons responsible for the lamps (*tukang lampu*) and the net (*tukang jaring*). The *cèpèran* provides a good daily income, which can amount to Rp 2 million per 20 trips, contributing substantially to the income of ordinary crew members, often more than they get from the *pèngghungan*, from which, among other things, the percentage for the *pangambā'* is subtracted. Fish obtained as *cèpèran* can be sold individually (by the fisherman's wife) without strings attached.

*Division of shares for the cumulative fund (pèngghungan)*

After the *cèpèran* has been distributed, the remainder of the fish is put into baskets. Assuming this amounts to 150 baskets at Rp 50,000 per basket, we get the following calculations:

<sup>17</sup> The monthly period is called *sapettengan*. The term is derived from the Madurese word *petteng*, which means dark or invisible, and refers to the new moon. During one *sapettengan* about 20 trips can be made. Generally, the boats do not set sail during full moon. In a Madurese fishing village in *kabupaten Situbondo*, East Java, the same concept of *sapettengan* is used (Kusnadi 2001:53).



Photo 9. Dipping baskets of fish into salted boiling water. The boiled fish is later sold at the market as *ikan pindang*.

	Rp 7,500,000	
10% cut for the <i>pangambă'</i> :	750,000	–
Remainder:	Rp 6,750,000	
Costs of diesel fuel etc. per trip:	250,000	–
Net yield:	Rp 6,500,000	
From this amount 30% is taken:	1,950,000	–
Remainder:	Rp 4,550,000	

Now two sorts of divisions are made. Thirty percent covers 10% for the *juragan* and 20% for the crew. This 20% is called *uang rokok* (cigarette money). The 20% (in this case Rp 1,300,000) is divided into 22 parts: 5 parts for the *juragan* and 17 parts for the crew (one part for each crew member). The remaining 70% is divided equally into two parts: one part for the *juragan* and one part for the crew and owners of equipment. The latter part (50% x Rp 4,550,000 = Rp 2,275,000) is divided into 22.5 shares (*sara*) as follows: *jurumudi* 2; *patoronan* 1.5; *papajăngan* 1.5; owner of the *gardan* 2; and owner of the lamps 1.5 (another 1.5 is taken from the *juragan's* part); ordinary crew members (as distinct from the *jurumudi*, *patoronan*, and *papajăngan*) 14 (one part each). Hence, the total number of shares is 22.5. In this case an ordinary crew member would get Rp 160,000 ((1/22 x Rp 1,300,000 = Rp 59,000) + (1/22.5 x Rp 2,275,000 = Rp 101,000)). He receives this at the end of the month, when the balance is made up.

The bookkeeping has to be in order. Ibu Atun keeps two notebooks: one for the beach, in which the names of the fish traders and the amounts they owe to the *pangambă'* are recorded, and one for the *pəngghungan*. For each month a new series of records is started, counting the trips. When asked whether it is difficult to get the money from the buyers (fish traders), the curt answer was 'no'. Ibu Atun knows that in Pasean paying discipline is a problem, but not so in Pasongsongan.

The interview with a well-known *pangambă'* in Pasean, named Haji Halima (pseudonym), shows that in Pasean crew members of a *perahu majăng* get a lesser deal.<sup>18</sup>

#### Case 2: Haji Halima and the division of spoils in Pasean

For a year Haji Halima has had a small radio that allows her to communicate with her boats. Other *perahu* at sea can also use it to send messages, provided

<sup>18</sup> Pasean fishermen are well aware of this situation, which they seem to accept as a fact of life. No collective actions or strikes to ameliorate their position are known to us. However, individual fishermen may decide to abandon a particular *perahu* if they think its owner and the *pangămba* are too greedy by claiming their usual shares even in the case of a bad catch, or when the *perahu* and the crew perform poorly during successive trips and the boat is branded as 'unlucky'. They are often unable to quit because of outstanding debts to the *perahu* owner, which the fishermen must repay before the relation can be severed.

they have the code. She is informed by radio of the estimated arrival time of the *perahu*. The interview with her yielded the following information.

### *Division of the pèngghungan*

The *pèngghungan* is paid after several days of work, for example seven days. When the *perahu* has not been in operation for a number of days, the outstanding balance is divided before the *perahu* sails again. The *pangambā'* is entitled to 10% of the *pèngghungan*. That is, if there is one. When catches are small the yields are divided right away: 50% for *juragan* and *pangambā'*, and 50% for the crew and owners of equipment. The division of the 50% for the crew and owners of equipment is as follows:

12 ordinary crew members,	1 sara each = 12 sara
<i>Jurumudi</i>	2 sara <sup>1</sup>
<i>Patoronan</i> (who goes down to check the <i>onjem</i> )	1.5 sara
<i>Papajāngan</i> (who handles the net)	1.5 sara
Owner of the lamps	1 sara <sup>2</sup>
Owner of the <i>gardan</i>	2 sara <sup>3</sup>
Total	20 sara

<sup>1</sup> Actually the *jurumudi* gets three shares because he takes care of the maintenance of the *perahu*, but the third share is taken from the *juragan's* share.

<sup>2</sup> In this case the *juragan* owns the halogen lamps, so this share goes to him as well. When the lamps are used to attract fish (*ngoncor*) an extra share is added, so that the total becomes 21. If fish are abundant there is no need to use the lamps.

<sup>3</sup> For this *perahu* the *juragan* also owns the *gardan*, so these shares go to him.

On the day of the interview the catch amounts to 68 baskets, one basket being equivalent to three buckets of fish. The catch is considered too small to add to the balance and is therefore divided up straight away, but first 10 baskets are set aside to pay for fuel. The remainder is divided into two: 29 for the *juragan* and his wife (who is the *pangambā'*) and 29 for the crew and owners of equipment (to be divided into 21 shares because the lamps had to be used). For the *juragan* the yield is  $29 \times 100,000 = \text{Rp } 2,900,000$ . In addition he gets two shares for the lamps and two for the *gardan*. In this case the *pangambā'* does not claim her 10%. When the catch exceeds one hundred baskets the proceeds are added to the *pèngghungan*. The division is as recorded above, after first subtracting the share of the *pangambā'* (10%).

The *pangambā'*, always a woman, is a pivotal figure in the fishing economy, not only in Pasean but elsewhere as well.<sup>19</sup> It is fascinating to watch them at work when their *perahu* arrives (see Photo 6). They have to keep an eye on the catches that are being landed and, at the same time, have to strike deals with

<sup>19</sup> See, for example, Antunes 1998; Ismadi, Surjatin and Abdul Qoid 1998; Kusnadi 2001.



several traders. Usually, they are accompanied by a younger female relative who records with whom and for how much deals are struck. During the time the catches are landed the atmosphere at the beach resembles that of a hectic stock exchange. The *pangambā'* has to have her eyes everywhere, memorizing the reputation of the traders to avoid making deals with notoriously unreliable ones, while estimating the current price of the fish. The latter fluctuates according to the total amount of fish caught that day and the time of arrival of the *perahu*. The gentle and soft-spoken Haji Halima at home (see above) changes into a powerful presence at the beach, yelling and fiercely gesturing (see Photo 7). Hence, Kusnadi's reference (2001) to the *pangambā'* as a 'phenomenal type of woman'. He also says that, by their combining commercial instinct with hard work, the *pangambā'* contribute to the prosperity of the fishing community. As a financier, the *pangambā'* has an enduring bond with her client as long as the *perahu* for which she put up the money sails, or the gear which she financed is used. According to our field notes Haji Surina (pseudonym), who now only finances *klotok* owners, maintained nine *pangambā'*-client relationships that in some cases were initiated 30 years back.

Haji Surina inherited the older clients from her mother when the latter retired. The transfer of titles from mother to daughter (or, in some cases, daughter-in-law) is a common occurrence. Kusnadi (2001:121) records cases of the transfer of titles to a husband or a son in his research area (a Madurese fishing village in Situbondo). However, they tend to do less well than their female colleagues. Local people say that in trading women are more '*luwes*' than men, *luwes* meaning smooth or flexible. When a *perahu* is sold, the debt to the *pangambā'* – the full amount borrowed – has to be paid back, but not so when it is shipwrecked.

East and West Lebak count 41 household enterprises for fish processing, called *pemindangan*, all run by women. Here we give one example.

### *Case 3: The pemindangan of Haji Patma*

Haji Patma (pseudonym) is a woman of about 40. She is married and has two daughters. For about 20 years the couple has owned a *klotok*, for which Haji Patma is the *pangambā'*. At about the same time, Haji Patma started the *pemindangan*. She did not inherit it from her mother. She buys all the fish herself or uses the catches from the *klotok*, and sells the *ikan pindang* and the *petis* herself as well. She is *pangambā'*, *petis* maker, and fish trader, all in one person. Four persons from the *pegunungan* help her during August-October, when the *pemindangan* is in full swing. Two women first assist with the sorting out and arranging of the fish over baskets, according to kind and size (see Photo 8), and also with cooking the fish and stirring the fish paste (see Photos 9 and 10). Two men are used as porters. Haji Patma's mother supervises their work when Haji Patma is away selling *ikan pindang* in Pakong.

*Set-up*

The backyard of the house borders on the sea. Part of it is used for the *pemindangan*. Under the tiled roof at the side of the backyard there are two hearths, for which firewood has to be used (see Photo 9), and four kerosene stoves. The kerosene is kept in a container that is linked to a hand pump (the type used for bicycle tyres), and the kerosene is pumped to the four stoves. According to Haji Patma, she is the only one using such an ingenious construction. Over the past five years she has used kerosene for fuel, because, she says, kerosene is now cheaper than firewood.

*Haji Patma's working day*

At five in the morning Haji Patma goes to Pakong to sell the *ikan pindang* prepared the previous day. The *ikan pindang* for Pamekasan and Pegantenan she sends with a pick-up truck to traders to whom she sells it for a previously arranged price. This is a standing arrangement with specific persons. When going to Pakong she also brings *petis* to sell to shops. In the afternoon, she may go to Sotabar and Waru to sell *petis* to shops there. Her mother sells it in Kapong. Sometimes people order *petis* directly from her. The jars are sold to the shop for Rp 3,000 each. The retail price will be Rp 5,000. She is back in Pasean by the time the boats arrive. She buys fish herself at the beach if there is not enough from her own *klotok*. When there is not enough *kabān* in Pasean she may go to Pasongsongan or Slopeng, depending on the price. If the fish is too expensive she will not run the *pemindangan*. When she has enough fish, the processing can start.

*Processing and petis quality*

The process does not differ much from that of other *pemindangan*. A pan holding 20 litres of water, and larger and smaller baskets are used. In the larger baskets 15 pieces of *manit* are put, in the smaller ones 15 pieces of *kabān*. Twenty-five large baskets and 50 small ones will yield five jars of *petis*. The small plastic jars in which the *petis* is sold must be purchased. They sell in Pasean at a price of Rp 2,500 per dozen. According to Haji Patma *kabān* yields first quality *petis*, *manit* second-best quality. Good quality *petis* has a light brown (beige) colour and can be kept for a year without turning dark brown. According to Haji Patma, to get this good quality it is important to start the *petis* making immediately after all the fish has been dipped in boiling water (see Photo 10). She says she is known for her good quality *petis*, for which she sometimes receives special orders.

*Selling ikan pindang*

Haji Patma buys the fresh fish herself. She buys 10 pieces of fresh *kabān* for Rp 5,000 and sells the *ikan pindang* for Rp 7,500 per basket. As one basket

contains 15 pieces, she generally does not make a profit on the *ikan pindang*. The profit comes from the *petis*.

The cases above show how *pangambā'* and female entrepreneurs in the fish trade and in fish processing are hard-working women with a sharp commercial instinct. The elderly women among them are mostly illiterate; they do all their accounting by memory and never make mistakes. They have a keen eye for technological innovation, as is shown by Haji Halima's radio transmitter and the kerosene pump used by Haji Patma.

#### *The Pasean money-go-round*

More than before, the people in Pasean are involved in borrowing and lending money. People borrow from moneylenders or neighbours, and participate in rotating savings and credit schemes called *arisan*. The *arisan* is a familiar and well-grounded institution in Indonesia (Hospes 1996). Although it was already there in 1978, in 2004 we documented many more *arisan*, on a daily, weekly or monthly basis, and the survey data indicate that people may be a member of more than one group. Often people use the jackpot they get from one *arisan* to pay their contributions for another, or to pay off other debts. The picture that emerges from the survey data and from observation and talks with local informants is that of Pasean as a 'money-go-round' that connects people through numerous interlinked chains of indebtedness. People borrow not only money but also rice. The local money- and rice-lending business as well as the management of *arisan* is all in the hands of women (Ardener and Burman 1995), as illustrated in the following cases.

#### *Case 4: The arisan beras*

The *arisan beras* works as follows. Haji Mariam (pseudonym), who runs it, provides 25 kilograms of rice, the value of which is Rp 60,000. In return for this the client has to pay Haji Mariam a sum of Rp 1,000 every day for a period of 80 days. Hence, the profit for Haji Mariam is Rp 20,000. The client's family will finish eating the rice in 25 days (given a daily consumption of 1 kilogram). However, they have to continue paying each day until the 80th day, while after 25 days they have to buy new rice as well. The only plus is that they have a secure supply of rice for about one month, which is important from a food security perspective. Additional fact-finding about the *arisan beras* yielded the following information. When people are in need of cash, they may sell the 25 kilograms back to the shop, for which they receive Rp 50,000. In East and West Lebak there are about ten women who run such a scheme and the number of their clients varies. Though called *arisan*, the *arisan beras* it is not a regular *arisan*, which uses a lottery for the jackpot. It is just a credit scheme.



Photo 10. Preparing fish paste (*petis*) by boiling down fish extract, water and sugar

### Case 5: Haji Satuni's business

Haji Satuni runs several *arisan* schemes, some of them involving substantial sums of money, in which only people who have a good business can participate. The schemes differ as to daily payment, Rp 10,000, Rp 50,000, or Rp 100,000, depending on the type of clientele. Each *arisan* has 20 participants. These *arisan* work as follows. The participants pay for seven months on a daily basis, which amounts to 210 daily payments. Each participant is entitled to receive the amount accumulated in 200 days, the remaining 10 days per person being Haji Satuni's profit. For example, for the Rp 50,000 *arisan*, her profit per cycle is  $20 \times 10 \times \text{Rp } 50,000$ , amounting to Rp 10 million. The order of receiving the jackpot is determined not by lottery, but by Haji Satuni herself, to enable her to wait till the end of the cycle to pay clients of whom she is less sure. The days to collect the money are the market days in Pasean, Tamberu, Waru, and Pasonsongan. Haji Satuni's young sister-in-law assists at making the rounds to collect the contributions in Pasean and other places (by motorbike). Haji Satuni does not mind if somebody cannot pay for a few days. She knows that once there is money from fish they will come and pay what they owe her. She agrees that trust is very basic in this business. She takes a risk but makes sure she knows her clients and their reputations. The money circulates quickly. If Haji Satuni has a large reserve at a certain moment, she will use it to buy gold. She does not have problems pre-financing large sums of cash.

Crew members of a *perahu majāng* can always borrow money from their *juragan*. The money will be taken out of their future payments as the *juragan's* wife (*pangambā'*) sees fit. They are not allowed to move to another *juragan* as long as they are in debt. In the survey respondents sometimes answered that they borrowed money from the KCK. Actually KCK stands for Kredit Canda Kulak, a former government program for credit to small traders. In Pasean, the term is also used for what is often referred to as *bank liar* ('wild banks'). There are 11 KCK men operating in Pasean, each having about 20 clients. They are employed by moneylenders who have their offices elsewhere. You can see the KCK men making their rounds in Pasean every morning. The loans have to be paid back in 30 days. The size of the instalments depends on the size of the loan: loans of Rp 25,000 have to be paid back in 30 instalments of Rp 1,000; loans of Rp 50,000 in thirty instalments of Rp 2,000; and loans of Rp 100,000 (maximum) in 30 instalments of Rp 4,000. Hence, the interest is 20% in 30 days. From the money borrowed, 5% is taken as 'savings'. So, somebody borrowing Rp 100,000 gets Rp 95,000 in hand. The borrower gets half of it back when (s)he has paid back the loan, the other half goes to the KCK employee. About 60% of the borrowers will have paid back the loan in two months' time, the rest take three months. It rarely happens that people have not paid it back after four months. But if



that happens, the outstanding debt will be cut from the salary of the KCK employee, who therefore will select his clients carefully. The offices do not have sanctions against defaulters. People also borrow from neighbours and friends. In these cases, payment of interest is not required, unless the borrower is willing to pay it. The survey data testify to the importance of these loans for many people.

From the examples above it can be inferred that a lot of people in Pasean are involved in borrowing and lending through a variety of informal and semi-formal schemes and relationships. In 1978, we did not witness such a proliferation of indebtedness as we documented in 2004. In 1978, *ngaddāng* fishermen saved during the *musim pocok*, at the end of which they were paid their share in a lump sum. Borrowing from the *juragan* and *pangambā'* was a common phenomenon at that time too. Kusnadi (2002:158) sees people in fishing communities as being far more creative than farmers in using all kinds of sources to borrow for all kinds of purposes. The result, he says, is that they (*masyarakat nelayan*) 'are involved in complex and endless networks of indebtedness'. This is pretty much the picture that emerged from the interviews and observation in 2004.

### *General conclusions*

During the past 26 years, fishery in Pasean witnessed significant technological change. New types of boats (*klotok*) and more sophisticated equipment (purse seine, inboard engines, halogen lamps, cool box, and radio) were adopted. This has led to a more differentiated division of catches in which a gradual shift can be observed from rewarding skills to rewarding capital inputs. Apart from the skipper (*jurumudi*) and the specialists who handle the fish-attracting device and the nets (*patoronan* and *papajāngan*), no specialist functions are acknowledged anymore. The other members of the crew are just deckhands (*bhāreng*) now, and treated as fish labourers rather than as skilled workers. In the division of catches they get only a small part. In the present situation, shares go not only to the *perahu* owner and the *pangambā'*, but also to equipment owners. In Pasean, the *perahu* owner gets more shares than formerly was the case. We have seen that in Pasongsongan a successful effort was made to redress this skewed situation. Probably because of this, in Pasongsongan most fishermen prefer joining the crew of a *perahu majāng* to acquiring a boat of their own. In Pasean, in contrast, many fishermen have opted for buying a *klotok*, often incurring a huge debt which they will be paying off for many years, if not forever. Yet, although *klotok* owners may be heavily in debt and find it hard to make ends meet, they feel it is better to be a *juragan* than a poorly paid crew member on a *perahu majāng*.

As Upton and Susilowati (1992:128) report on the basis of their survey of fishing communities in Java, Bali and Sulawesi, the roles of women in Indonesian small-scale fishery are diverse, and different technologies and social and economic structures have varying impacts on women's activities. Although somewhat dated, their article is still one of the few that addresses the role of women in the fishery sector. In our article the focus is on a Madurese fishing community. Regarding the role of women in Pasean, we found that women are firmly entrenched in the fishing economy. In spite of technological modernization, women are still the ones who deal with marketing and processing fish, and who put up the capital needed for technological innovations. In this respect the situation during the past 26 years has not changed. The profile of the key figure of the *pangambā'* is that of a hard-working woman with a keen commercial instinct and good social skills, who is able to build and maintain a long-lasting relationship of mutual dependence and benefit with fishermen and *perahu* owners. Kusnadi (2001) reports similar findings from his research in a Madurese fishing community in Situbondo in East Java. We may conclude that the women of Pasean have not lost out in the process of modernization but, instead, have consolidated their position. The main explanatory factor for this is the gendered division of labour that places the responsibility for financing fishing gear, fish trade and processing in the hands of women, who, building on experience and reputation, take technological change in their stride, if not applying new technologies themselves. Their 'role model' now seems to be extending to the *pegunungan* area, where formerly women did not play a significant economic role.

The *pangambā'* forges ties of dependence and indebtedness with fishermen and *perahu* owners based on capital that she has built up. As shown by us and documented in the literature (Antunes 1998; Kusnadi 2001), there are several ways of accumulating capital. The first one is by inheriting entitlements. Kusnadi (2001:126-7) mentions an internship-like mechanism, whereby a woman may assist a certain *pangambā'* first, becoming a *pangambā'* in her own right later. Clever trading and saving (in the form of gold jewellery) is another way for women to gradually achieve the status (and the means) of *pangambā'* (Antunes 1998:253). This will only happen if not all the income from trade is needed for the survival of the household. There seems to be a critical threshold below which women traders will forever remain poor and in debt, and above which they can accumulate assets and make others indebted to them. In Pasean, and in other Madurese fishing communities as well (Kusnadi 2002, 2003), the networks of indebtedness extend beyond fishing. In our estimation, more households seem to be trapped in a vicious circle of poverty and indebtedness now than was the case 26 years ago. It is beyond the scope of this article to describe in detail the coping mechanisms of poor households, but the survey data show that many households are dependent

upon the good will of neighbours, relatives, and moneylenders, or the protection of the *pangambā'*, to enable them to survive the lean season. Whatever assets they accumulate in better times are sold or pawned in order to eat. The money-go-round clearly has its winners and losers, the latter being far more numerous than the former.

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