

A NOTE ON THE DEMOGRAPHIC, ECONOMIC AND SOCIAL STRUCTURES OF FISHERMEN HOUSEHOLDS

J. ROCH, N. LUONG and R. CLIGNET

ABSTRACT

The management of risks attached to fishing involves specific residential strategies. Some fishermen minimise these risks by living with relatives who are engaged in other activities, but others prefer to live with other fishermen, providing that they are at least as successful as themselves. The strategies chosen are conditioned by the status occupied by the individuals studied in the fisherman's hierarchy. The higher the status, the larger the household, but also the less significant the participation of its female members in the labour market and the importance of their contribution to familial resources. Indeed, the management of risks attached to fishing involves also long term strategies. The higher one is in the hierarchy of fishermen, the more one invests in the long term by both having more children and providing each of them with a post primary form of schooling.

KEYWORDS : pluriactivity, household composition, formal schooling, skill level.

ABSTRAK

Respon terhadap manajemen atas berbagai resiko yang dihadapi pada kegiatan penangkapan mengakibatkan terbentuknya strategi tempat tinggal yang spesifik. Beberapa nelayan mengurangi resiko yang ada dengan cara tinggal bersama kaum-kerabat yang mempunyai aktifitas selain penangkapan. Terdapat pula nelayan yang lebih menyukai hidup dengan sesama nelayan yang tingkat keberhasilan penangkapannya setara. Strategi yang dipilih tergantung pada status yang dimiliki oleh individu nelayan dalam hirarki masyarakat nelayan. Semakin tinggi status tersebut, semakin besar rumah tangganya, tetapi juga semakin tidak nyata partisipasi anggota wanitanya dalam pasar tenaga kerja dan dalam sumbangan mereka bagi kebutuhan keluarga. Tentu saja, manajemen resiko dalam penangkapan meliputi pula berbagai strategi jangka panjang. Semakin tinggi seseorang dalam hirarki nelayan, dia akan harus melakukan investasi jangka panjang sehubungan dengan jumlah anak yang lebih banyak dan harus membekali mereka dengan pendidikan lebih lanjut.

KATA KUNCI : aktivitas beragam, komposisi rumah tangga, pendidikan formal, tingkat keterampilan.

All around the world the pluriactivity of fishermen represents a particular strategy designed to cope with the risks that accompany their activities. Yet, these risks are not necessarily experienced uniformly. Individual responses to risks are likely to vary with skill levels as well as with incomes and familial needs.

Correspondingly, the purpose of this note is to sketch the variety of strategies that fishermen use to manage risks. This involves an examination of the demographic and economical profile of the households to which 155 fishermen living in three villages located around Tegal, Pekalongan and Juwana, the three major harbours of Central Java, are attached.

A THEORETICAL PERSPECTIVE : PLURIACTIVITY AS AN INDIVIDUAL STRATEGY

In individual terms, the concept of pluriactivity refers to the fact that, for reasons ranging from personal preferences to exogenous constraints (notably the free time associated with the repair or the maintenance of the boats used), fishing is not a full time activity. Fishermen use the free time resulting from the fewer trips undertaken during the low fishing season to participate in another occupation. To be accessible to fishermen, the tasks that form the "other" activity must have a time structure consistent with the schedules prevailing among fisheries. Further, the skills required must be sufficiently limited to enable actors to substitute one another.

As these two requirements are often stringent, only 15 per cent of the Javanese fishermen studied here have a subsidiary occupation. As the current increase in the size of purse seiners implies longer trips, fishermen meet more difficulties in moving across economic sectors. In addition, the number and the nature of alternative opportunities open to them depend on the environment. Fishermen may assist some relatives in cultivating rice or farming shrimps. Alternatively, chances to find a secondary source of income in an urban environment are more modest. It is more difficult to control the channels facilitating access to the jobs that are furthermore characterised by the demanding nature of their schedules.

In short, the contribution of pluriactivity in this regard is limited. It is more typical of those fishermen living in the rural area of Juwana than of their counterparts living in Tegal or in Pekalongan, because the management of the risks associated with fishing varies with the opportunities of the economic environment.

A THEORETICAL PERSPECTIVE : PLURIACTIVITY AS A COLLECTIVE STRATEGY

Strategies to cope with the risks of fishing are also collective as they reflect the domestic arrangements of individual fishermen. As observed in other cultural contexts, one particular way to cope with the uncertainties characterising the means of production on which individuals rely consists in being as mobile as possible and hence, in having as few dependants as possible (Winch and Blumberg, 1968). Briefly, whenever and wherever means of production involve high risks, prevail nuclear families with few minor children, because such groups move easily across territories as well as across jobs¹. To avoid breaking eggs, the best solution is to have as few of them in as small a basket as possible.

In other cultural contexts, conversely, the most appropriate way to cope with economic uncertainties consists in participating in large households, as the adults that belong to the group are likely to pool their resources. The underlying notion is that one minimises individual risks by transferring them at the collective level.

Yet the strategy does not necessarily yield comparable results whenever the productive members of such households are all involved in the same sector (which enhances their inter-personal relations

¹ In this sense, the consequences of an economy based on hunting and gathering (including fishing) are like those of a modern industrial economy. In both cases, chances of survival are maximised by lowering the needs of collective units.

since they all share the same perspective) and whenever such members participate in distinct enterprises. In this later case, households are likely to have more stable resources but that domestic and occupational cultures evolve in diverging directions may jeopardise the cohesiveness of the individuals concerned. In other words, the risks resulting from putting eggs in the same basket depend on the nature of the eggs. Their similarity or their contrasts create distinct risks. Any assessment of the relevant collective strategies requires, therefore, evaluating the numbers of the gainfully employed members of the households to which fishermen are attached, but also identifying the variety of sources of income tapped by such individuals and assessing the regularity and the amount of the resources secured.

Insofar as survival strategies depend also on the position of the individual in his own life cycle, it is also necessary to introduce an implicit or explicit time dimension in the analysis of the households studied. Younger individuals may lower the risks generated by their means of production by pledging allegiance to the head of an already existing house. In contrast, older and more experienced individuals seek to achieve the same result by creating their own network of subordinates. Briefly, the risks of breaking a basket full of eggs depends on the age of the specimens considered.

In the long term, collective chances of survival depend also on the extent to which household members take advantage of the opportunities generated by formal education. As the function of schooling is to widen the range of occupations to which individuals have access within the same sector and across sectors, it enlarges the amount as well as the regularity of the income that may be tapped by the group. In short, the risks of breaking eggs vary with the duration of the trip to which they are subjected.

THE ECONOMIC STRUCTURE OF JAVANESE FISHERMEN HOUSEHOLDS

Even though the subsequent analysis is inspired by the preceding framework, it is partially at odds with the logic used to collect the relevant data. As noted, the primary purpose of the study of the three villages was to retrace the social and occupational trajectories of individual fishermen and identify the components of their incomes. Analyses of contrasts in the profiles of their respective households or contrasts between these households and other domestic structures are but fringe benefits to the main analysis. As such, the results observed here should be considered as indicative rather than definitive. Due to a limited external validity, they are but stones marking the way toward more systematic surveys.

The 155 individuals interviewed belong to 134 households. Most of them are household heads, the remainders are mere rank and file members. Males represent an overwhelming majority of these household heads (the fishermen belonging to a household headed by a woman in only 5 per cent of the cases)². The dominance of men in this regard reflects two factors. First, the traditional Javanese society, including communities of fishermen, is characterised by patriarchal orientations³. Secondly, the visibility of the patriarchal model is probably accentuated by the age distribution of the fishermen sampled. Many respondents are still sufficiently young to occupy a subordinate position in a male headed households.

The majority of male household heads (83 per cent) are fishermen, the others being engaged in other jobs. Among the heads of the dominant occupational group, one third is composed of unskilled fishermen (*anak buah kapal*: *ABK*), 37 per cent are specialists (assistant skippers and motorists, *juru arus*, *juru lampu*, etc.), 12 per cent are chief motorists, and 18 per cent are skippers.

The distribution makes it possible to make two-way comparisons. We may initially contrast the profile of households headed by fishermen and by individuals engaged in other sectors, before focusing on the influence that occupational status exerts on domestic life styles, for the population of household heads who are fishermen.

² The limited number of female household heads (there are only 7) prevents from a systematic comparative analysis of the profile of their groups in relation to the remaining units examined here.

³ All the same, it is important to acknowledge the fact that the frequent and long term absence of fishermen gives a matrifocal structure to their households.

Our first concern is to evaluate the overall resources of the various types of groups examined here⁴. The average household income of the groups headed by the seven women included in the sample (Rp. 1,800 per day) is lower than that of their male counterparts. Among men, it is higher in the case of households headed by fishermen (regardless of skill) than in the case of other professional groups (Rp. 4,850 versus Rp. 3,929 if we use the first method). As we could expect, however, the distribution of income within the first occupational group has a quite large standard deviation. This results from the big differences in the incomes of the various categories of fishermen (Tab. 1). Indeed, households of skippers enjoy an income which is about six times larger than that enjoyed by unskilled deck hands, and three times larger than that claimed by motorists. In short, the hierarchical rank ordering of roles on a fishing boat entails a sharp parallel differentiation of the incomes accessible to the relevant familial groups. However, these average differences should not mask differences within the profiles of the households' income distributions typical of each occupational category. The figures obtained in the case of the unskilled fishermen are more homogeneous than those obtained in the case of skippers⁵. Put differently, the range of household incomes is much greater for the *ABK* than for the skippers.

Table 1 : Indicators of the demographic, economic and social structures of fishermen households
Beberapa indikator struktur-struktur demografi, ekonomi dan sosial dari sejumlah rumah-tangga nelayan

	<i>ABK</i>	Specialists (1)	Motorists	Skippers	All fishermen	Others (2)
Daily income (Rp)	2,694	3,929	4,554	14,743	4,850	3,929
Ratio fishermen/gainfully employed	0.61	0.61	0.67	0.85	0.64	0.45
% of daily income earned by fishermen	0.70	0.63	0.76	0.99	0.79	0.50
Ratio gainfully employed women	0.28	0.34	0.10	0.04	0.23	0.38
% of daily income earned by women	0.26	0.29	0.08	0.01	0.16	0.19
Household size	4.97	5.23	6.50	6.16	5.45	5.21
% dependents (under 14 and over 60)	0.31	0.33	0.45	0.43	0.35	0.14
Post primary enrolments (3)	0.23	0.37	0.50	0.88	0.49	0.22
Daily income per capita	1,053	1,502	1,518	2,898	1,622	1,743
Number	36	39	12	19	106	18

(1) Includes *juru arus*, *juru lampu*, *wakil* motorists, *wakil nahkoda*

(2) Includes all household heads in a sector other than fishing

(3) Measured by the ratio number of individuals between 12 and 20 years of age who attend school over total number of individuals in this age category

To identify the daily amount of money on which various familial groups can rely is one thing, to identify the source of these sums, another. On the whole, and due to the main focus of our study, way over one half of the daily income enjoyed by households originates from the earnings of the fishermen themselves. The corresponding ratio ranges between an expected maximal value of 79 per cent for those households headed by a fisherman to a minimal ratio of 50 per cent for the households headed by individuals engaged in other sectors, regardless of their gender. As shown in Table 1, 99% of the daily income of the households headed by skippers comes from fishermen's earnings, in contrast to 61 per cent in the case of skilled seamen (*wakil nahkoda* or motorists and the various types of *juru*).

⁴ Two methods may be used. The first one consists in dividing the sum of the daily incomes earned by all the individuals placed in the occupational group of their heads by their number. The second one consists in doing the same thing at the level of each household, to add the averages so obtained for each occupational group and divide the number obtained by the number of households. The two methods yield comparable results, but the figures produced by the second one are systematically, albeit marginally, higher.

⁵ The standard deviation of the distribution of daily incomes is Rp. 1,491 for *ABK* and Rp. 8,053 for skippers.

This contrast reflects disparities in the relative importance of the place occupied by fishermen in relation to that of other members of the same households who participate in other economic sectors. Two thirds of individuals gainfully employed are fishermen in households headed by fishermen against only 47 per cent in residential units headed by male or female persons attached to another sector. Within the first group, this ratio varies between a maximum of 0.85 for the households of skippers to a minimum of 0.61 for unskilled deck hands and for the group of specialists. In other words, *ABK* tend probably to reduce the risks faced by their domestic groups by having their relatives participating in sectors other than fisheries, which minimises the variability of collective resources.

Yet, familial incomes may also be generated by the participation of women in the labour force. There are differences in this regard not only between the domestic units headed by fishermen and by other gainfully employed individuals (23 per cent versus 38 per cent), but also within the first of these two populations. One third of the women attached to the households of skilled crewmen work against only 4 per cent of those who belong to the households of skippers. There are also variations in the size of female contributions to the overall domestic resources. While these contributions are alike for the two major occupational categories, they vary sharply within the population of fishermen themselves, from a minimum of 1 per cent in the case of skippers to a maximum of 29 per cent for the population headed by specialists.

Two conclusions may be derived from the preceding remarks. First, as expected, division of labour among sex lines varies with the occupational status of the household head. The very fact that the wives, daughters or sisters of skippers contribute less to the familial budget than their counterparts related to crewmen with a lower status suggests parallel contrasts in their respective domestic conditions. In the first case, women act primarily as agents of socialisation, as spenders, and as substitutes for their husbands when the latter are at sea. In the second one, they may perform the same functions, but their gainful employment tends also to minimise the risks resulting from the very activity of the heads to which they are attached.

Secondly, the management of risks is contingent on the position occupied by household heads in the social hierarchy. Risks differ depending on whether these heads are men or women, whether they live on the income derived from fisheries or from other branches of activity, and whether they are skippers, motorists or at the bottom of the hierarchy of the occupation. This is because of contrasts both in the average earnings enjoyed by domestic groups and in their variability.

THE SOCIAL STRUCTURE OF JAVANESE FISHERMEN HOUSEHOLDS

As suggested earlier, the management of the risks fostered by any economic activity does not depend exclusively on immediate economic factors. Contingent on the loyalties generated by household heads, variations in this management highlight the role played by the number of dependants. While the households headed by fishermen and those headed by other individuals have the same size, there are significant disparities in the size of the households headed by fishermen themselves. There is an average of 6,5 persons living with motorists against 5 in the case of *ABK*. Further, in this later case, the variability of household size is greater (2,14) than in the case of skippers (1,60), which suggests that the higher one climbs in the hierarchy, the more homogeneous the functions served by domestic groups.

In effect, other indicators suggest that domestic solidarity is more effective among the households of fishermen than of males engaged in other sectors or of all women regardless of their occupational status (30 per cent of the individuals attached to fishermen's households are either below 14 years of age or over 60). Similarly, the hierarchical ranking of occupations within fishermen's communities is associated with a differentiation of this particular form of solidarity. No less than 44 per cent of individuals sheltered in the households of skippers' dependants against only 33 per cent in the case households of those headed by *ABK*.

Among dependants, the younger ones represent long term investments. It is not surprising that post-primary enrolments rates are significantly higher for the children of fishermen than among those attached to the remaining segments of the household head population. These rates drop from 49 per cent

for the group of fishermen to 22 per cent for the heads engaged in other economic sectors and 17 per cent for female heads. The corresponding contrasts are even sharper among fishermen themselves. No less than 88 per cent of the children between 12 and 20 years of age who are attached to the household of a skipper attend a post-primary institution against half of those attached to the household of a motorist and only less than one fourth of those present in *ABK* households. In short, the young dependants of fishermen and especially of skippers have more opportunities to move ahead both in this sector and away from it. The underlying opportunities may alter the current economic profile of existing households, but they may also help them to maintain their identity.

Finally, as the management of risks in economic and social terms may involve dimensions that are mutually exclusive, it is necessary to compare the average daily income per capita of the households present in our sample. The income available to the individual members of fishermen's household is perhaps lower than that available to individuals attached to a head present in another economic sector, but the former are still better off than their counterparts attached to a female headed domestic unit who enjoys an income of only approximately Rp. 1,200 per day.

Within the fishermen's environment itself, there is a perfect relationship between the resources available to household members and the status of the head. The income per capita is over twice as large for individuals sheltered by skippers than for their counterparts living under the authority of an *ABK*. In other words, the greater size of the households headed by skippers and the larger number of their dependants does not prevent their residents from still enjoying higher more comfortable living conditions than the remaining parts of the population.

Enjoying higher resources, they spend effectively more. When we consider the population of fishermen regardless of the households to which they are attached, we can observe that skippers spend an average Rp. 5,530 per day as opposed to only Rp. 2,220 for *ABK* and Rp. 1,780 for skilled fishermen (*juru*). Not only this, if we evaluate these expenses in relation to the number of children of the various categories, skippers spend more for their children (Rp. 1,500 per day and per child) than any other category (for the *ABK*, the corresponding figure drops to Rp. 960).

In short, skippers are able to pursue two distinct strategies for the survival of their domestic groups⁶. On the one hand, they continue to play, even in a "modern" environment, the so called "traditional" game for which the group's chances to survive increase as a direct function of its size. Since in such a context, economic success is often viewed as comparable to a lottery, parents continue to have as many children as they can afford in the hope that one of them will hit the jackpot (Caldwell, 1982). On the other hand, the perpetuation of such a traditional model does not prevent the same individuals from mobilising the necessary resources for enabling their children to move upward in the social hierarchy by acquiring an appropriate amount of formal schooling.

CONCLUSION

The management of the risks fostered by fishing involves a variety of dilemmas. In demographic terms, the dilemma is to determine whether to remain alone, to remain attached to a fisherman's household, or to move to a unit headed by a person engaged in another branch of activity. In economic terms, the dilemma is to increase the sources of income either in the same or in different economic sectors and to heighten the participation of all members of the household in the labour force or to introduce gender based distinctions in this regard. Finally, in social terms, the underlying dilemma is to identify the ideal household size and to generate long term opportunities by raising the educational level of the next generation and facilitating inter generation mobility within and out of fisheries.

⁶ Many theorists of social change would like tastes for a large family and aspirations for the schooling of children to be mutually exclusive. Yet in Java as in Africa, the two strategies coexist for those individuals who can play two games simultaneously. This is because material means and symbolic aspirations do not evolve at the same pace in the same direction (Sween and Clignet, 1974).

Responses to such dilemmas are not uniform. It is in this sense that there are various ways to avoid breaking the eggs, that is, the resources needed in order to survive. With the emergence of larger boats and their coexistence with smaller and more traditional production units, patterns of stratification should become wider and more differentiated.

REFERENCES

- Caldwell J., 1982. A theory of fertility decline. New York : Academic Press.
- Sween J. and Clignet R., 1974. Types of marriage and residential choices in African city. *Journal of Marriage and the Family* : 780-793.
- Winch R. and Blumberg R., 1968. Societal complexity and familial organisation. *in* : Selected studies in marriage and the family, Winch R. and Goodman L. (eds.), New York : Holt, Rinehart and Winston : 70-92.