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Traditional community-based coastal marine fisheries management in Viet Nam

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Abstract

Despite more than a century of colonial occupation, radical political and administrative change, and more recent motorization of fleets and gear introductions, there remains in Viet Nam a still functioning tradition of local stakeholder organizations (*van chai*) by which marine fishing communities historically regulated the fishery and ensured mutual assistance for their membership. Such systems remain strong in many coastal communities, especially in the Central and Southern regions, largely because their moral authority and leadership is deeply rooted in and legitimated by traditional religion, expressed in the community “whale” shrine. In 1963, one such community organization, in Binh Thuan Province of the Central Region, comprehensively documented its traditional regulations to inform future generations. That document is analyzed here, and supplemented and complemented by information from seven other marine fisheries *van chai* in the Central and Southern regions. A brief historical introduction and a description of the official fisheries management systems are followed by an analysis of the structure of the traditional community-based system, in terms of authority, rights, rules, monitoring, accountability, conflict resolution, and sanctions. Since in many localities substantial and fundamental aspects of the traditional *van chai* system continue to function, it is concluded that these traditional systems, suitably adapted to modern conditions, could enhance fisheries management at the lowest administrative levels in Viet Nam. © 1998 Elsevier Science Ltd. All rights reserved.

1. Introduction

There is a long tradition of stakeholders’ organization (*van chai*)¹ for local community-based marine fisheries management and mutual assistance in many parts of

¹ It should be noted that the all-important diacritical marks in Vietnamese terms have been omitted, owing to the exigencies of publication.

Viet Nam [1, 2].² In the Central and Southern regions, in particular, paralleling the situation with agricultural settlements, marine fishing villages erected shrines that served as a focal point for local fisheries management. Rules have been transmitted orally through the generations, and based on them fisheries management tasks performed by the *van* administrative section. This long tradition of local management is based on the adage “*Phep Vua Thua Le Lang*” (“The King’s law comes after the village’s customs”) [3].

But management has traditionally been far more comprehensive than just the governance of natural resources. Thus, for example, the Administrative Section of Duc Thang Hamlet, Binh Thuan Province, observed that Van Thuy Tu has provided local government with valuable help in the fields of administration, justice, social affairs, and the maintenance of order and public security [3].

But nowhere are such systems immutable. They change, often rapidly, in response to both a wide range of external stresses and internal pressures [4]. In the case of Viet Nam a complex and turbulent political history has had a major impact on traditional community-based management systems. A second major cause of change has been the impact of motorization of fishing vessels and gear introductions that have witnessed the decline of fixed gear concomitant with the introduction of mobile techniques, especially purse-seining and trawling. As a consequence, in many locations, many of the traditional rules that governed fisheries have become irrelevant.

The impact of the vastly changing political situation can be summarized in terms of four historical periods: pre-colonial times (prior to 1859), French colonial rule (1895–1954), the post-colonial era 1954–1975, and post-1975 re-unification during which two phases, a collectivization period and the *Doi Moi* era, starting in the 1980s, can be distinguished.

In pre-colonial times local governments were empowered by the kings to lease via auction and tax local fisheries. Since under these arrangements families with a history of fishing were given priority in obtaining leases, many fishing grounds became a quasi-private property of a fishing family, with inter-generational transfer of rights resembling inheritance. Meritorious individual villagers were also granted property rights to the fishery. But these rights were taxed and did not include the right of sale. Under indigenous Vietnamese rule central governance was weak, so local communities essentially managed the fishery.

The period of French colonial rule (1859–1954) had little impact on the governance of fisheries. Although by decrees issued in 1904 and 1925 the Vietnamese kings were stripped of their supreme ownership of national properties, including coastal waters, which were declared “national common property” owned by the French government, traditional community-based fisheries management continued virtually unaltered [5].

² The term “*van*” means “one village” or “one group of villages”, the population of which earns its livelihood from a common activity, e.g. fishing. “*Chai*” means “sea”. In the Tam Giang Lagoon, Hue Province, the *van* are more finely sub-divided than in the communities I surveyed. For example, at Vinh Ha 12 *van* exist, one for each major gear type [1, 2]. In addition, *van* members are usually related also by kinship, marriage or friendship [2].

During the post-colonial era, from 1954 to 1975, conditions differed in the former Democratic Republic of Viet Nam, in the north, and the Republic of Viet Nam, in the south. In the former, coastal waters belonged to the state and governance of local waters was by the commune, the lowest level in the government structure. Fisheries production was collectivized. In the south, ownership rights remained unchanged; fishers leased rights from and were taxed by village governments.

With re-unification, in 1975, the government initially extended nationwide the system prevailing in the north. Previous administrative organization and rights were abandoned, and the management of local fisheries according to national laws was handed to the provinces and the communes.

Fisheries collectives in Viet Nam took two forms: “Cooperatives” (*Hop Tac Xa*) or “Production Collectives” (*Tap Doan San Xuat*). In the former assets and equipment were owned by the community and typically involved several fishing units, whereas in the latter they were owned by individuals and generally involved a single fishing unit. Cooperatives were predominant in the northern provinces, whereas Production Collectives occurred mostly in the South.

In the Democratic Republic of Viet Nam, following the end of French rule, one large cooperative was established per fishing village. Since everything belonged to these multi-purpose cooperatives, and there was little economic incentive, fisheries developed slowly. After 1975 the same approach was tried in the south of the country. In some cases, as at Long Hai, Ba Ria Vung Tau Province, “input” cooperatives existed in name only. Low interest loans, cheap gear and subsidized engines and hulls were provided. However, fishers retained their production and sold it on the open market. As a consequence the fishery developed very fast in Long Hai, because inputs were cheap whereas the open market returned high prices for catches; but eventually the cooperatives failed. This basic pattern of failure recurs throughout the Central and Southern regions.

During the period of cooperative development, the government paid no attention to the traditional community-based management systems, so they declined. But now, after the near universal collapse of fishing cooperatives, the government is beginning to appreciate their potential as a vehicle for local fisheries management.

Despite these years of turmoil, in many areas the systems have survived. It is noteworthy that because the salient characteristic of traditional management systems in Viet Nam is regulation of inter-relationships among fisheries stakeholders, within the framework of the strong moral authority of the community shrine, rather than governance of fishing and the fishery per se, the core of the systems has proven remarkably resilient.

Because of the far-reaching changes that were occurring in both general society and the fishery, by the early-1960s officials of Duc Thang Hamlet, Binh Thuan Province, were of the opinion that for local fishery regulations and customs to be handed-down systematically to future generations, they should be expressed comprehensively in a written document [3]. Accordingly, a document consisting of 22 chapters and 114 articles dealing exclusively with the local marine fishery was prepared and unanimously approved at a seminar participated in by 29 officials of Duc Thang Hamlet [6].

Compared with agricultural villages, and especially those in the north of the country [7], there has been little examination of fishing communities in Viet Nam. Further, and quite unlike the situation in farming villages [8], there has been no significant study of traditional community-based fisheries management systems in Viet Nam [9]. In view of this, and because of their potential usefulness in modern fisheries management, particularly under the existing constraints, field research and archival study was conducted by the author for three months in 1995 and 1996 at eight *van chai* in five provinces along the coast of the Central and Southern regions. These were Long Hai and Van Lach Thang Tam (Ba Ria Vung Tau Province), Van Thuy Tu and Van Binh An (Binh Thuan Province), Lach Vinh Luong, and Lach Vinh Truong (Khanh Hoa Province), Dong Hoi (Quang Binh Province), and Van Son Hai (Quang Nam Danang Province).³

2. Official fisheries administration in Viet Nam

2.1. The legislative background

The Government of Viet Nam is in the process of making the basic legal and institutional changes required to ensure a more market-oriented economy. As a consequence, the legal framework governing fisheries still lacks coherence. Areas of international concern have been addressed, including the delineation of the territorial sea, the exclusive economic zone and the continental shelf, taxation, and foreign fishing. But the problems of small-scale and industrial fisheries management have hardly been touched-on, despite recognition of an overfishing problem and of the need to protect fishery resources under very diverse regional differences in fishing effort, coastal-marine ecosystems, target species, and levels of fisheries development.

A State Council Ordinance was promulgated on 25 April 1989 (*On the Conservation and Management of Marine Resources*).⁴ This was apparently intended to serve as the main instrument for national living aquatic resources management. It was followed on 30 August 1990 by a highly detailed *Circular* issued by the Vice-Minister of Fisheries that provided instructions on many aspects of the management and conservation of living aquatic resources [10].⁵

³ In Central Vietnam, northward from Nha Trang, the word “*Lach*” is used instead of “*Van*”. The term *Lach* is certainly used as far north as Danang.

⁴ This Ordinance covers many provisions necessary for the management and protection of resources, advises of the rights of various stakeholders to exploit resources in waters under State control, and specifies duties and responsibilities of various organs of national, provincial and local government for planning, monitoring and conflict resolution regarding aquatic resources. Further, all regulations preceding this Ordinance were thereby abrogated. The resource conservation and management provisions of the 1989 Ordinance, and as authorized by it, were refined by a Decree issued on 2 June 1990 by the Vice-Chairman of the Council of Ministers.

⁵ These instructions include allowable concentrations of toxic substances in waters inhabited by aquatic organisms, minimum permitted mesh sizes by gear type, total allowable catch, allowable catches by bottom trawling, total allowable catch of shrimp, prohibited species, closed seasons by species, areal closures during spawning seasons, and minimum allowable catch sizes by species. For the purposes of this legislation, the marine waters were divided into five areas, defined by latitudinal and longitudinal coordinates. Sub-areas were defined in the same way.

2.2. *The national fisheries administrative framework*

At the national level principal responsibility for all aspects of fisheries is vested in the Ministry of Fisheries (MOF). The MOF receives directives from the Council of Ministers and coordinates its actions with the Fisheries Department of the State Planning Committee. Established in 1976 as the successor to the General Department of Fisheries (founded in 1960), the MOF is organized into eight departments that function as advisory bodies to the Minister of Fisheries. Formerly its mandate was the direct control of fishing activities, but despite setting production targets it lacked both the authority and means to ensure that they were met. However, since the *Doi Moi* reforms the MOF has had the role of projecting Central Government influence in policy and planning, together with the People's Committee of each province, to ensure the transition of the fisheries sector to a market orientation.

2.3. *Fisheries management at the provincial level*

At the provincial, district and commune levels the People's Council, together with the People's Committee and the Communist Party, formulates provincial and lower level policy. The People's Committee performs the administrative functions of the People's Council at the provincial, district and commune levels. Each People's Committee has a number of specialized services, such as Fisheries Authorities for fisheries, that implement all laws and policies. The Director of each specialized service reports to the People's Committee. Linkage from the commune level to the national level is via the People's Committee (i.e., the Commune People's Committee reports to the District People's Committee, which in turn reports to the Provincial People's Committee, which then reports to the National Government).

Fisheries Authorities exist in 27 of the 42 provinces of Viet Nam and in 127 of the 400 Districts. An unknown number exist in communes, the lowest administrative level. At their various levels these Fishing Authorities are responsible for capture and culture fisheries activities, planning, collection of statistics, and regulating local fisheries enterprises. Although nominally under the MOF, the various Fisheries Authorities are under the administrative and political direction of the People's Committee in each province, district and commune. Despite an overall agreement on national fisheries policy and technical cooperation, this dual allegiance of the Fisheries Authorities can be a source of conflict, as each level of government apparently has its own agenda and set of priorities for the local fisheries sector.

At the national level fisheries operate under an open access system. At the provincial level, fisheries are open of access to all provincial fishers. Inter-provincial entry contracts, plus an entry license for each boat, are made to permit outsiders to operate in provincial waters. Provincial fishers fishing locally require an annually renewable license, based on crew size, engine capacity and gear type. Only large boats are permitted to operate outside their own provincial waters.

The MOF limits the total effort permitted on each fishing ground. These limits are revised every 5 years. Each province then allocates effort on grounds over which it has jurisdiction. Entry rights are allocated first to boats from its own province, and then,

with the concurrence of the MOF, the balance is allocated annually to those from other provinces. Besides paying tax to their province of registration, outsider boats must pay tax to the province in which they fish.

In addition to implementing resource conservation regulations established by the national government, each province can make its own regulations. They also “adapt” national fisheries policy and regulations to local social and economic conditions. The professional capacity, information basis and the logistical situation also constrain implementation at the provincial level. For example, in Khanh Hoa Province, although the Chairman of the People’s Committee of the Province has issued marine conservation measures (essentially an implementation of national regulations) they cannot yet be implemented because of general rural poverty. So deleterious resource use practises, the consequences of which are recognized by the authorities, are still tolerated. For example, coral exploitation and mangrove cutting are allowed, although officially banned. And fishers are still allowed to operate in the 500 ha Nha Phu Lagoon, although fishing there is prohibited by provincial regulations. Similarly, the Fisheries Department in Quang Nam Danang Province believes that were the central government regulations prohibiting small fishing vessels in inshore waters and those controlling mesh sizes to be strictly enforced, chaos would ensue, since fishers can neither afford to build larger boats nor invest in new gear.

2.4. Fisheries management at the commune and village level

The commune is the basic rural administrative unit, but the local administrative system has undergone still continuing major changes since the introduction of *Doi Moi*. It consists of the following main elements:

- *The People’s Council*, chaired by the Communist Party Secretary and elected for a five-year term by all enfranchised commune members, is the highest authority at the commune level.
- *The People’s Committee*, headed by a Chairman and composed of two Vice-Chairmen and selected members of the People’s Council, performs the routine management of commune affairs (having inherited that role from the Cooperative) and is empowered to implement the administrative, political and economic decisions of the People’s Council, with the directors of its departments mirroring the functions of ministers at the national level. Its main functions are the management and development planning of land and natural resources, tax collection, social welfare, and preparation of development plans and projects for the approval of the People’s Council.
- *Representatives of the Mass Organizations*, of which the *Fatherland Front* has a major role in elections and is widely involved in social matters, the *Womens’ Union* is involved mainly in the improvement of household economies, and, in fishing communities, the *Viet Nam Fisheries Association*, which aims to promote (but so far with little success) the voluntary unity of fishers for mutual economic, technical support and legal protection.

Villages within a commune have their own administrative structure. Villagers elect a Chairman for a five-year term. The remainder of the administrative team consists of

the Party Secretary, leaders of the village branches of the Mass Organizations, and local members of the People's Council. Village Chairmen are now also members of the Commune Government.

2.5. *Constraints on the formal management system*

Although a hierarchical structure has been established for national fisheries management in Viet Nam, it is constrained by several major deficiencies. The main ones are a lack of information, inappropriate management training, poor educational levels, and a local ignorance of legislation and regulations.

(1) *Lack of information.* National fisheries policy is being implemented in the absence of comprehensive and systematic information. Although the EEZ of Viet Nam is thought to contain very large fishery resources that could be exploited sustainably to attain the national policy objectives of increased rent (foreign exchange), expanded domestic consumption and increased employment, neither the resource base nor the effort to which it is currently subjected are known well enough to permit development planning or management, particularly at the provincial and lower levels.

(2) *Management training.* There already exists a considerable level of fisheries management and planning expertise in both the MOF and its specialized research institutes as well as at the provincial level, since many fisheries managers received high-level training overseas. However, it is increasingly apparent that, although sophisticated, such training has not always proven particularly relevant to the tropical, multi-species and multi-gear, small-scale fisheries environments of Viet Nam. This is particularly evident at the provincial and lower levels of management.

(3) *Low educational background.* Communal government employees have generally low educational levels and little general experience. Since the concepts and skills required to manage marine capture fisheries are relatively complex, the low educational level of commune officials is probably a major constraint on both the design and implementation of a national fisheries policy.

(4) *Monitoring and enforcement.* Fishers often do not comply with national and provincial fisheries rules and regulations, and, worse, they are often not aware of them. Also, provincial and local authorities frequently do not enforce national rules, largely because legislation aimed at reducing effort cannot be enforced at present on small-scale, impoverished fishers without livelihood alternatives, and because provincial authorities lack enforcement capabilities. In part, too, the problem also results from many rules having been made as *ad hoc* decrees, some of which are contradictory.

3. Shrine-based fisheries management

A fundamental aspect of the moral basis of Vietnamese society is the tradition of “remembering the source from which one drinks water”, an expression of the deep sense of gratitude to the ancestors in a community for their labors and struggle to survive and build a prospering community [11]. Further, in earlier times the

appeasement of a mysterious and often hostile natural environment was important. This led to a strong belief in the power and salvation of numerous deities. So when the economic fundamentals of any new settlement were basically established, villagers constructed a shrine for the village's tutelary genie, ancestral sages and wise elders. In the social context of former times the shrine became the principal cultural and organizational center of a village [8, 12–16].

From the late-18th century marine fishing villages enlarged their shrines to make provision for the worship of the Deity of the South Sea (*Tham Nam Hai Cu Toc Ngoc Lan*). This deity is a "whale" (a local concept that embraces all cetaceans). More importantly, the "Whale Shrine" is the centerpoint of the *van chai*, and so the locus of moral authority of a fishing community's life and the foundation on which local, community-based fisheries management was and remains based. According to Claeys, the cult of "whale" veneration had its origin during the reign of Emperor of Gia Long (1802–1819). In gratitude for reputedly having been saved from disaster by a whale while at sea in the vicinity of Phu Quoc Island in 1783, Emperor of Gia Long elevated whales to a high grade mandarin. Supernatural powers were attributed to cetaceans, and they were entitled to veneration [12].

The shrine at Van Thuy Tu, Binh Thuan Province, illustrates the historical processes at work. In the late-17th century the southern borders of what is now Viet Nam were in Binh Thuan Province, around present-day Phan Thiet. To stabilize the frontier in newly conquered territory, the Nguyen Lords brought many settlers from the northern provinces of the Ngu Quang Region. The first such settlers gathered in the Phan Thiet area at Duc Thang Hamlet, where general rural occupations gradually gave way as the marine fishery developed. The *van* started in 1697, and so has 300 years of history as an association [17].

The Van Thuy Tu shrine was established in the winter of 1762. (This is known from Chinese characters written on the beam in the main hall of the shrine and verifiable from historical documents and other objects kept in the shrine [11, 17].) Its initial function was as a shrine to village deities and ancestors. But as the sea fishery developed this function became auxiliary to the worship of the Deity of the South Sea. It is also known that various kings approved the fishing rights of Van Thuy Tu in 1843 and 1887 (as attested by original documents stored in the shrine.) Duc Thang Hamlet, the first fishing village in the region, is regarded as the center from which the whale cult disseminated in Binh Thuan Province. (There are now five *van chai* in Phan Thiet area, of which Van Thuy Tu is the largest. That mostly recently founded is the Roman Catholic *van*, composed of immigrants from the north who settled in Phan Thiet in the 1950s.) In the main hall of the shrine the originator (sage) of the fishery at Duc Thang village is worshipped as the originator of all fishing villages in Binh Thuan Province.

But in the provinces that comprised the former Democratic Republic of Viet Nam, as well as at various locations in the Central and Southern regions, the traditional religious characteristics have lapsed, and only the secular administrative functions remain. However, during the French colonial era religious functions were still performed in the northern provinces. For example, Claeys noted that at the fishing community of Li Hoa, just north of Dong Hoi, a major festival was observed at the whale shrine during the 4th lunar month [12]. But nowadays each fishing community

in Quang Binh Province has only a “Problem-Solving Committee” (*Hoi Hoa Giai*), which, in addition to solving fisheries-related problems, also addresses social issues within the village. Nothing else remains of former systems.

In contrast, at Van Lach Thang Tam, near Vung Tau City, Ba Ria Vung Tau Province, the *van chai* now retains just its religious functions, and is being developed into a tourist attraction. The Ong Nam Hai shrine in this *van* was officially established in 1802 and greatly elaborated in 1824, when the population increased sharply following an influx of settlers from the central provinces. Original royal documents permitting the establishment of the shrine and confirming the fisheries rights of the *van chai* were issued in the Minh (1820–1840) and Thieu-tri (1841–1847) eras. Fisheries regulations were similar to those for Van Thuy Tu, described below. However, the system collapsed in the late-1940s, when the provincial government established an open access system for provincial vessels. Since it was never written down, when the system fell into disuse knowledge of it was gradually forgotten.

4. The structure of traditional of community-based fisheries management in Viet Nam

In Viet Nam the traditional *van chai* system was structured to address principally:

- shrine management and the conduct of ceremonies;
- mutual assistance among fishers;
- the behavior, rights and obligations of fishing boat owners, captains and crew members;
- disposal of the catch;
- governance of fishing operations;
- rules for the main gear types (pertaining mainly to eligibility, seasonality and profit-sharing);
- conciliation of fisheries conflicts, the resolution of which is not stipulated in current local rules or higher laws; and
- sanctions (punishment).

Although the details vary considerably by locality, in large part a result of the political pressures described above, the underlying principles of the veneration of deities and ancestors, combined with the sacred obligations of mutual assistance, remain all pervasive. This reflects the history of the establishment of coastal *van* during the centuries of progressive southward migration and settlement by the Vietnamese of lands conquered from the Cham and Khmer peoples.

The sections that follow are based on the comprehensive data from Van Thuy Tu, supplemented by examples from other sites. They are structured under the following headings: authority, rules, rights, monitoring, accountability, enforcement, and sanctions [9].

4.1. Authority

In Viet Nam traditional authority over the *van chai* is a compound type in which traditional secular, traditional religious and fisheries specialist functions are

conjoined either in the same individual(s) or a committee. In particular, traditional religion, as manifested in shrine festivals and ceremonies and in the veneration of “whale” bones and treatment of carcasses, continues to play a major role in conferring moral authority in fishing communities. Fishers and their family members pray at the shrine first for safety at sea and secondly for a good catch. It is still firmly believed that the Sea Gods and ancestral spirits exert a power over both the welfare of the fishers and their families and the fishery.

4.1.1. *Van administration*

The size of administrative committees and their terms of office vary. In most cases all fishers in a *van* have voting rights, and in some instances additional qualifications are required of the administrators. Invariably, candidates for office are respected village elders and master fishers. At Van Thuy Tu the administrative committee is composed of 7–15 members, elected to a three-year term of office. All boat-owners and fishers 18 years-of-age or older elect them, and all over 21 years old can run for election.

In most cases *van* administrators have four main duties. These are:

- to worship the Sea Gods;
- to assist the local government in implementing the orders of higher levels of government;
- in concert with the Hamlet Council, to settle fisheries disputes among fishers; and
- to investigate the needs of the fishing community and assist the government in fulfilling them.

The elected administrators themselves elect the three heads of the sub-sections of administration that manage routine affairs. These are the:

- Head of worship,
- Head of the *van*, and
- Secretary of the *van*.

The number and functions of administrative officers at other *van* vary somewhat regarding terms of office, qualifications and age of eligibility. For example, at Lach Vinh Truong, Nhatrang, Khanh Hoa Province, the general administrative officers comprise a Chairman, assisted by a Vice-Chairman, a Treasurer, and a Secretary. Five persons administer the prayers; a Shrine Leader, an Assistant Leader, an Assistant to the Assistant Leader, a Priest for the Right, and a Priest for the Left. All are elected directly by the fishers to a 5-year term. To qualify for candidacy as a *van* official a person must be at least 40 years old, and so know by experience everything about the local fishing and community traditions. For the first year of office only, the Chairman has the right to select the best fishing ground for his set net. No other official has the right.

4.1.2. *Festivals*

A major function of *van* administrators is the maintenance of the shrine and conduct of festivals and routine ritual performance, including the rites for new “whale” carcasses encountered by *van* members. Members of the committee are responsible for ensuring the appropriate treatment of “whale” carcasses. “Whales”

washed ashore are buried close to the shrine for two or three years. (In former times, the *van* committee was in mourning until the bones were disinterred.) They are then disinterred, cleaned and placed in containers in the shrine. The skeletons are kept in separate containers, one set containing the bones of just one animal.

The number and scheduling of shrine festivals varies by *van*, but most are held in the Spring and Fall, according to lunar reckoning. Information is most complete for the Van Thuy Tu shrine festivals. There festivals for the worship of the Sea Gods are performed five times each year during five two-day festivals, on the 20th and 21st days of the lunar month. These are the:

- “Spring Festival” (2nd month);
- “Summer Festival” (4th month) to mark the beginning of the Southwest Monsoon or main fishing season;
- “Autumn Festival” (6th month);
- “Praying for Fish Festival” (7th month); and
- “Close of the Southwest Monsoon Fishing or Transition Season” (8th month).

Additional festivals are organized as required to pray for fish, when a dead “whale” is encountered, or when the annual fish catch is very poor.

The rituals performed at these festivals are of deep significance, since they emphasize the importance of harmonious relationships among the various stakeholders in the fishery and the vital importance of mutual assistance, to ensure the continued prosperity of the community and thereby venerate the ancestors. For example, the rituals of the “Praying for Fish Festival” include display of the royal diplomas sanctioning the *van*, a procession of fishing boats decorated with flags, gongs, processional parasols, musical instruments to invite the “whale” to witness the festival, rituals of veneration for the God of the South Sea, the Originator of the Fishery, the Sea Goddess, Antecedent Sages, and the Souls of the Ancestors, and, as the centerpiece of the festival, performance the *Ba trao* traditional operetta. This morality play interweaves three themes stressing the community’s traditional values that:

- by combining the intercession of supernatural forces with their own diligence and sacrifice, the community’s ancestors could create a vibrant economic and social life under harsh frontier zone conditions;
- the life of a fisher is hard and dangerous, so if the fishing community’s aspiration for a comfortable and prosperous life is to be realized a spirit of unity, attachment, benevolence, righteousness, and affection among all persons in the fishery is essential; and
- the benevolence of the “whale” saves human life at sea.

Together, these three themes then sanction the moral authority of the *van*, especially the moral obligation for mutual assistance and community solidarity [3].

4.1.3. *Mutual assistance*

The linkage between festivals and mutual assistance in the codification document implies that mutual assistance is a sacred duty of *van* members [3]. It demonstrates the traditional moral authority of the *van*. It is reiterated within the document that the Sea Gods must be solemnly and sincerely worshipped by fishing boat-owners and fishers.

Mutual assistance obligations are specified in detail. They are divided into three groups of rules:

- *Those applied at sea*: If an accident occurs at sea, boat-owners and fishing boat crews must try to first save the crew and then the boat and gear. Those who do not would be punished by the court. When requested by a boat-owner, the *van* organizes emergency searches for accident victims.
- *Those pertaining to a bereaved fishing family*: If a fisher dies at sea during the fishing season, the *van* must try to supplement government assistance to the bereaved family. The family is allocated food, boat-owners are enjoined from claiming the dead fishers' loans or advances, and the victims' parents, wife or children are entitled to his share of catch proceeds. The boat-owner pays the funeral expenses.
- *Those pertaining to substitute crewmembers*: To maintain a proper crew size, boat-owners are obliged to seek substitute members for those lost at sea. The boat-owner is required to pay their hiring expenses (i.e., wages, advances or loans).

4.1.4. *Finances and temple maintenance*

All expenses for worship, temple maintenance and administration are covered by financial contributions, mainly from boat-owners and fishers, and by gear licensing. Formerly the costs of the administrative work performed by the *van* Secretary (mainly submitting and registering boat documents at the Fisheries Office) were covered by local license fee levied on gear. At Van Binh An, Mui Ne Village, Binh Thuan Province, the entire catch of the day before a festival is donated to the whale shrine for its financial support. After each shrine festival the *van* Secretary is required to submit a formal financial account to the Hamlet Council for approval. The account is then disseminated throughout the fishing community for public information.

4.2. *Rights*

Under traditional community-based systems, such as the *van*, resource use is governed by use rights protected by customary law and practice. Such a grant of authority defines legitimate uses, as well as the penalties for violating those rights. The characteristics of such property rights may vary situationally. In Viet Nam the main ones are residential proximity rights, primary rights, the right to sell, lease, or bequeath the right, and that to share rights.

4.2.1. *Right conveyed by proximity to residence*

A fundamental but not nationwide right governing coastal fisheries management in Viet Nam is that to operate small-scale fixed gear in waters proximate to one's residence (*O Gan Nha Dube Quyen Vu Tien*). In the Dong Hoi area of Quang Binh Province, for example, fishing spots for fixed gear (such as those suitable for employing the lift net [*luoi vo*] to catch small pelagics) near a one's residence can be claimed exclusively by the householder. But in other areas this right can be over-ridden by the "first-comer rule" (*Nguoi Den Truoc Duoc Vu Tien*) (see below). For example, at Van Son Hai, in Quang Nam Danang Province, the first person that erects fixed gear in

a fishing spot, even if adjacent to another person's residence, enjoys firstcomer's use rights until he dismantles the gear.

4.2.2. *Primary rights*

Most commonly these are a birthright. In the Dong Hoi area of Quang Binh Province, a man who inherits his father's residence also inherits the associated proximate fishing right. In the absence of a son, a daughter can inherit the right. In that case, sons of an in-marrying male could inherit bilaterally, if their father also inherits rights elsewhere, from his father. Again this varies throughout the country. At Van Son Hai, in Quang Nam Danang Province, for example, only males born in the village and who continue to reside there inherit the right to fish in the village's exclusive sea territory. Outsiders must wait for a minimum of 10 years before being granted fishing rights, in order that they fully understand the village's 140-year old traditional fishing rules and behavior. Further, a man born into a fishing family but who had moved away for a protracted period could not automatically expect to enjoy his fishing rights should he return to the village later in life. Unwritten rules state that acquisition of rights depends on a person having built-up adequate local experience before receiving a personal right.

4.2.3. *The right of transfer and loan*

In the Dong Hoi area of Quang Binh Province rights of residential proximity can be loaned, sold, leased, given, or otherwise transferred, either permanently or for a fixed term. Where a person transfers his right permanently or in the long-term to another, who then sells the residence to a third person, the person buying the house can also claim the right of residential proximity. But the original owner could negotiate the return of the right from the third purchaser of the house. At Van Son Hai, Quang Nam Danang Province, fishers are permitted to loan their annually re-allocated rights to another fisher from the same village.

4.2.4. *Shared rights*

There is little information on the sharing of fishing rights in Viet Nam, but the practise was apparently traditional and widespread. In the Dong Hoi area of Quang Binh Province residentially proximity rights are shared when they intersect or overlap. Families there also make agreements to share residential rights with those lacking them. At Van Son Hai, Quang Nam Danang Province, fishers are permitted to share their annually re-allocated rights with others from the same village.

4.3. *Rules*

Rules structure rights by specifying required, permitted and forbidden acts in exercising the right. Thus whereas a right authorizes a fisher to work a particular fishing ground, the available options in exercising it are governed by rules which may, for example, specify gear type or seasonal restrictions, among many other limitations.

In Viet Nam a fundamentally important set of rules, and usually those regarded as most important in any *van chai*, has traditionally defined the relationships among

boat-owners, captains, and crewmembers. These have been strenuously enforced to ensure harmony in the fishing community. Other basic rules give priority to firstcomers, define the geographical areas to which rights are applied, and govern access of outsiders. Operational rules govern fishing behavior, gear externalities, assignment issues, fishing behavior and temporal allocation of space, seasonality of fishing, conservation practises, and distribution of the catch within the community.

(1) *Rules pertaining to relationships among boat-owners, captains and crew:* Several rules cover boat-owners' behavior when seeking to hire a captain and crew. First they are required to know for whom the captain and crewmembers worked during the previous season. They are forbidden to offer enticements to lure men away from other boat-owners, and must not "scramble among themselves" to hire a captain and crew.

Formerly, all *van* contractual rules regarding the rights and obligations of crewmembers concerned cash advances and loans from the boat-owner. Such financial arrangements are still made, but maximum amounts allowable are no longer set by *van* rules. Contracts specify the following three types of financial arrangement:

- Before starting work for the year, crewmembers are entitled to an interest-free cash advance to cover their family's expenses. This is repaid by deduction from each crewmember's share of the profit from the entire fishing season. In a poor season, where the individual crew member's share of the profit is less than the amount advanced, repayment must be made by either signing-on with the same boat-owner for the following year, or by obtaining a loan from another boat-owner to repay the advance in full.
- Crewmembers can obtain an interest-free cash loan from a boat-owner that lacks the means to make an advance. Such loans must be repaid in cash but are not subject to deduction from shares of the fishing season's profit.
- Crewmembers who receive advances or loans but who fail to fulfill their contracted duties are required to make repayment in full. They are not entitled to any wages.

A captain's rights and obligations to loans and advances are the same as for crewmembers, except that the maximum amounts allowed are double.

Captains and crewmembers are admonished to cooperate closely in the conduct of fishing operations. Those who become drunk, argue and fight, or who quit fishing during the contract period, and thus interrupt smooth fishing operations, are taken to the authorities for punishment. The same rule is applied to crewmembers who importune several boat owners for loans as well as to "stubborn and bad-mannered captains and crewmembers" [6].

Captains and crewmembers are also required to maintain gear. If intentional damage to gear can be proven, the expense of repairs is covered temporarily by the *van*, and later deducted from the profit share of the guilty person(s). Such persons may also be subject to criminal proceedings.

Although having signed an annual contract (captains and crewmembers are required to work for the entire fishing season) earlier resignation for legitimate reasons can be accepted. However, they are required to seek an acceptable substitute person and to repay all advances and loans. If not they may be tried and forced to compensate the boat-owner, captain and fellow crewmembers.

Provision is made for illness. Captains and crewmembers are entitled to 5 days sick leave per season, with an additional 5 days if the illness is both serious and clearly work-related. Under normal sea conditions other crewmembers will cover for a sick colleague for up to 10 days. However, when seas are heavy, the *van* is required to hire a substitute. If a person is on sick leave for more than 10 days, he must himself hire a substitute, to remain entitled to his full share of the season's profit.

(2) *First-comer's rule*: Common throughout Viet Nam is that on the open sea the right of a first-comer to the exclusive use of a fishing spot is always upheld, regardless of the gear type being employed.

(3) *The definition of fishing territories*: Exclusive village sea territories (*Bien Noi Dia*, lit. "interior sea") were widespread prior to and during French colonial times. A village's sea territory was usually, but not always, defined by proximity or adjacency to its settlement, and by lateral and seawards boundaries. As is commonplace throughout the Asia-Pacific Region [9], lateral boundaries were marked with reference to such prominent landmarks as capes, peaks or river mouths. The depth or other limits at which gear could be operated defined seaward boundaries. The village elders fixed these boundaries.

(4) *Inter-community access rules*: Access controls are applied to outsiders. Commonly, rules specify that some form of fee, compensation or royalty be paid once permission has been granted. At Van Soi Hai, Quang Nam Danang Province, for example, fishers from other communities have traditionally been permitted to fish within the village's exclusive sea territory in return for payment equivalent to 30% of the value of the catch caught by them in the village's waters.

(5) *Gear rules*: Gear rules are widespread. Many were established to overcome gear externality problems. In Tam Giang Lagoon, Hue Province, the emphasis on overcoming gear externalities and ensuring equity of catching opportunity is well illustrated [2]. There minimum distances were specified between fish corrals (1 km), and between fish corrals and bottom gill nets (1.2–1.5 km). Further, to ensure equity, bottom gill nets could not be set at the lagoon entrance and fixed gear must be set at least 10 m from the edge of the lagoon.

However, as at Van Thuy Tu, where detailed rules were applied to the 11 main gear types used, rules pertained mostly to eligibility, seasonality and profit-sharing among boat-owners, captains and crew. The overriding principle of eligibility rules is that boat-owners are eligible to participate in a given fishery if they can supply the requisite number of boats and gear, as well as meet all expenses for the entire season. The details of profit sharing among boat-owners, captains and crewmembers vary by gear type. They are summarized in Table 1. Further detailed rules are applied to some gears, and particularly to the fixed Sardine net (see below).

At Van Thuy Tu special rules were applied to the Sardine net, because, being a major fishery and employing a fixed fish sheltering device, there was a greater inherent potential for conflict than for other gear types. The Sardine net comprised a fixed floating fish shelter made of bamboo, branches and palm fronds, and anchored with ropes and rocks. Since this gear targeted an important fishery (sardine, the basis of the local fermented fish sauce [*nuoc mam*] industry), it was governed by an elaborate and specific set of rules. These pertained to eligibility, fishing season,

Table 1
Profit-sharing Rules by Gear Type at Van Thuy Tu, Binh Thuan Province

| Gear Type | Profit Sharing |
|------------------|--|
| Gizzard Shad net | 50–50 owner and captain-crew; captain of forward boat 2 shares, captain of rear boat 1.5 shares, crew 1 share each |
| Drag net | Two types: 50–50 owner and captain-crew, and 40–60, respectively. Captain of forward boat 2 parts and of rear boat 1.5 parts |
| Small drag net | 30–70 owner-captain and crew. Captain takes 1.5 shares, crew 1 each |
| Trawl | 50–50 owner-captain and crew. Captain gets 1.5 shares, crew divide balance equally |
| Purse seine | 40–60, owner-captain-crew |
| Sea crab net | Each member keeps income from own net; boat-owner gives 10% of his receipts to helper (who has no gear); crew give 10% of receipts to boat-owner and 10% to helper |
| Nylon net | Each person keeps income from own net and pays 15% of receipts to boat-owner |
| Shell-fishing | Equal division among boat owner and two cooperating crew members |
| Hand-lining | Boat-owner takes 15% of receipts from each day's catch |
| Fixed gear | Each participant entitled to receipts from own gear |

Source: Field survey data.

territory, conservation, outsider's rights, removal of fish shelters, monitoring, expenses and accounting, and catch-sharing, as follows:

- *Eligibility*: Only boats that constructed a fish shelter and set the net could practice this fishery, unless the owner's permission had been obtained to use the site (see below). To be eligible to participate, a boat must construct at least one shelter.
- *Fishing season*: The season opened from the first lunar month, except for late-entrants who begin in the fifth month, and ended on the fifth day of the ninth month, when the season's income was shared. If after that day abundant fish remained and sea and weather conditions were still favorable, fishing could continue. The same sharing rules as for the main season governed the income from this extended season.
- *Territory*: To avoid gear conflict, individual Sardine nets had to maintain a separation of at least 300 m. Sardine net owners were required to mark their sites with a distinct sign of ownership. Further, fishers using other gear, particularly nylon nets, seine nets and baited-lines, were forbidden from fishing around the sardine nets belonging to other persons.
- *Conservation*: The use of attractor lights on the fish shelter was forbidden because, although a large catch would be taken on the first night, thereafter few fish could be caught. Blast fishing was prohibited.
- *Outsider's rights*: Boats that had set their own Sardine net had the right to fish from another's site. However, as soon as the boat that "owned" the site approached and signaled, an outsider boat had to cease fishing immediately. Should the outsider boat fail to comply immediately, and delay the owner's fishing, the latter could claim the entire catch from its site from the outsider boat. However, the owning boat was forbidden from taking any direct punitive action at sea (such as cutting the

offending boat's anchor line, or dropping its anchor in the offending boat's fishing net).

- *Removal of fish shelters*: In order that the entire community could benefit from this fishery, rules governed the removal of shelters at the end of the fishing season. Fishers could remove only their own fish shelter; shelters could not be removed before the 21st day of the ninth lunar month, in case others wished to continue fishing after the season closure, on the fifth day; and fishers who stopped fishing before the end of the season had to leave their shelters intact until the 21st day of the ninth month, for the use of others.

(6) *Temporal allocation rules*: In general, rules are enforced to promote both orderly and equitable fishing. These can be both short- and long-term. At Van Son Hai, Quang Nam Danang Province, for example, before the opening of each fishing season all village fishers gather for an annual meeting (*Van Lang Ong*) to allocate exclusive fishing spots within the village sea territory. At that time the Head of the *van* allocates to groups of fishing units their exclusive rights areas for the next year. These groups must pay 20–30% of the profit from their catch to the *van*. The grounds are allocated to all fishers, regardless of gear type operated, and verified by a vote by all fishers at the meeting. During the second lunar month, just prior to the annual meeting, the approximately 50 named village fishing grounds are classified into three quality categories, based on water depth:

- Best (*Rang Be*): inshore waters to a depth of 15–18 m;
- Intermediate: (*Rang Thu*): 18–25 m depth; and
- Worst (*Bai Dai*): along the shoreline in “pockets” of deeper water.

To ensure equitable treatment, fishing units are annually re-allocated grounds of different quality on a rotational basis. The allocation is exclusive for the year. The approximately 50 grounds are allocated among the almost 400 units in the village so that an average of 8 units is allowed to operate per ground. But the precise number varies according to the quality of the ground.

The Head of the *van* has no authority of closure. Instead, the fishers holding annual exclusive rights to a particular ground do this. The Head's authority extends only to areal allocation of sea space.

(7) *Conservation rules*: Compared with other aspects of fisheries management, resource conservation appears to have been of little concern in the traditional *van* system, since relatively few traditional rules appear to have been directed at conservation per se. According to informants, resource depletion is a recent concern, resulting, they perceive, from motorization and the use of more efficient gear by a greatly increased number of coastal fishing units.

This same situation has also been observed in Tam Giang Lagoon, Hue Province. Although in former times the fishing communities had no strict rules for resource protection, a minimum mesh size of 1 cm for cotton gills nets and a minimum spacing of 1.5 cm between the bamboo poles of fish corrals permitted small fish to escape. But these rules no longer apply now that nylon gill nets are used and corrals are made of netting. Dynamite fishing and using stupeficients derived from plants were also prohibited [1, 2].

(8) *Distribution of catch rules*: Rules defining access to harvested fish are widespread in the Asia-Pacific Region [9]. These are an extremely important set of rules in many societies, since in terms of equity within a community access to fish once harvested can be as or more important than access to fishing grounds.

In Viet Nam remuneration of harvesting labor is extremely complex and varies greatly by fishing port and gear type. But everywhere it is based on a share of the annual catch value, after all costs have been deducted, among boat-owners, captains and crewmembers. Although the information provided here is derived entirely from Van Thuy Tu (Table 1), similar information is available from Khanh Hoa Province for fixed gear [18], flying fish catching [19] and seine-netting [20]. Boat-owners, captains and crewmembers are entitled to sell the catch at the landing site for prices that are published daily.

4.4. *Monitoring and accountability*

If rights are to be meaningful, provision must be made within the system for monitoring compliance with rules, and backing-up this by imposing sanctions on violators. Under most community-based marine resource management systems in the Asia-Pacific Region, monitoring and enforcement are generally undertaken within the local community; resource users policing themselves, and being observed by all others as they do so [9].

That was the case at Van Thuy Tu, where the Sardine net fishery was monitored by the fishers, who were required to report to the *van* officers any violations concerning the location of fish shelters or lack of maintenance.

Further, *van* rules governed the use of the Sardine net, so crucial to the traditional economy of Phan Thiet. A detailed contract had to be drawn-up at the beginning of the fishing season at a special meeting of captain and crewmembers. Details of the season's work assignment, rewards, punishments, rations, and the like had to be specified, and the agreement recorded in a minutes of the meeting. A detailed record of expenses and other accounts was required. To avoid conflict, each fishing unit had to employ a bookkeeper, who could be neither a family member nor relative of the boat-owner, captain or any crewmember, to maintain "clear and impartial" accounts for the season. The bookkeeper was paid with 3% of the season's profits, as was the person in charge of selling fish and collecting sales money. As a further safeguard, the boat-owner and crewmembers had also keep an account book for comparison.

But the Sardine net is no longer used, so the rules governing its use have also disappeared. Van Thuy Tu fishers no longer police themselves; surveillance of the closed season and compliance with other rules is now supposedly done entirely by the provincial fisheries officers.

In the community of Cau Hai, at Tam Giang Lagoon, Hue Province, the head of the *van* was assisted by a designated group of "guards". Nightly they patrolled the waters for fishers using either dynamite or stupeficients. Any such violator was apprehended and judged by the head of the *van* [2].

4.5. Conflict resolution and sanctions

4.5.1. Conflict resolution

Gear or other kind of conflict among fishing units is not uncommon, particularly where trawling and fixed gears are the major techniques. In Viet Nam there are three stages to conflict resolution:

- settlement among the fishers themselves (most conflicts are settled in the way);
- resolution by the *van* Committee; and
- resolution by the People's Committee.

Gear conflict or infringement of first-comer's rights and rights of residential proximity is still generally resolved in the fishing community by the village elders. But nowadays if they cannot resolve them problems are taken before the People's Committee. (In former times problems would have been taken to the Village Magistrate.)

Violations of Van Thuy Tu fisheries regulations are first considered by the Administrative Section. It gives its opinion to the Hamlet Council, which then settles matters and imposes punishment according to statutes regarding local government. The objective is to mete-out impartial and *constructive* punishment that provides an example to the community.

The principal officially sanctioned authority vested in the Administrative Section of a *van* is its power to conciliate fisheries conflicts, the resolution of which is not stipulated in current local rules or higher laws. However, its power is limited in that it can be exercised only at the request of either boat-owners or fishers. The Administrative Section forwards impartial opinions to the Hamlet Council to assist the latter in its decision-making. The powers of the *van* administrative section are tightly circumscribed; it cannot make a decision, being limited to an advisory role only, and its conciliation efforts must be requested by plaintiffs. It alone cannot initiate, implement or uphold new rules or local laws.

In conformity with the concept of constructive sanctions, punishment is graduated in severity. Sanctions are applied at four levels:

- explanation and seeking of a wrongdoer's understanding;
- warning;
- imposition of a monetary fine by the Hamlet Administrative Section; and
- revocation of the fishing license by the provincial authorities acting on the advice of the Hamlet Council.

Interpersonal disputes within an individual fishing unit are handled differently. As is clearly set forth in the codification document of Van Thuy Tu, mutual respect for the rights and dignity of all persons involved in a fishing unit must be respected. Boat-owners are forbidden to beat or humiliate captains and crewmembers, and vice versa. Violators are punished according to the national penal code.

4.5.2. Sanctions

As throughout the Asia-Pacific Region, sanctions are widely invoked in Viet Nam for the infringement of fisheries rights and the breaking or ignoring of locally formulated rules governing fishing and marine resource use [9]. These days either social or economic sanctions are applied. Implicit for those fishers whose belief in the

moral authority underlying traditional shrine-based management remains strong is that failure to abide by locally made rules, particularly those pertaining to mutual assistance, would invite supernatural sanction in the form of hazards at sea.

No types of social sanction were recorded during field research. However Tran mentions that at Vinh Ha, Tam Giang Lagoon, Hue Province, those who fished in others' rights areas were punished either by public criticism or by being ostracized by their community [1].

In contrast, these days economic sanctions are more commonly meted-out. Crew-members in cases involving deliberate gear damage or destruction are punished by being made to pay the claimant compensation equivalent to the amount of the loss. Tran notes that at Vinh Ha, Tam Giang Lagoon, Hue Province, fishers using mobile gear who were either late in paying or failed to pay their taxes had either their gear or catch confiscated [1].

5. Conclusions

Fisheries management in Viet Nam is essentially in a state of limbo. On the one hand, the centrally planned cooperative system has manifestly failed, and major constraints limit the effectiveness of the national administrative system. And on the other, traditional, shrine-based community management systems, where they have not lapsed entirely, are now of varying local importance.

After the nationwide collapse of fisheries cooperatives it is widely considered in national and provincial government circles that fishing communities in Viet Nam are not organized. But, as demonstrated here, this assumption is often incorrect, especially in the Central and Southern regions, where important aspects of pre-existing local fishers' associations continue to function and, more importantly, where their moral authority remains strong.

Owing to its strong moral authority, the shrine-based *van chai* is a potentially potent instrument on which to base modern village management structures. Integrating the *van chai* into fisheries management structures would be a practical way to address some of the major coastal-marine capture fisheries management problems in Viet Nam. National and provincial marine resources planners and managers need to re-orient their existing skills specifically to conditions in Viet Nam, and especially to enhance provincial and local management and mesh that with national policymaking and implementation planning. But this will avail little if they are still confronted with professional weaknesses at the local level. This, in turn, highlights the need to strengthen commune officials with the skills and experience of "master fishers" for more effective fisheries management.

Although it is not officially recognized, many senior provincial fisheries officers understand the potential of the *van chai* as a vehicle for local fisheries management. For example, the Fisheries Department of Binh Thuan Province has acknowledged the role of the *van chai* to manage the fishery, having been strongly influenced by the history of Van Thuy Tu. The concept has also gained the acceptance of international organizations that, under the contemporary conditions of Viet Nam, see no

alternative to delegating the functions of resource management, monitoring, surveillance, and enforcement to local institutions, particularly along the coasts of the Central Region and the northern parts of the Southern Region [21, 22]. Given the problems of managing the diverse and often remote fishing communities along the very long and ecologically varied coastline of Viet Nam, it would now seem opportune to make *selective* use of the marine ecological knowledge and management systems of local fishers, by involving them in the design, implementation, monitoring, and enforcement of local rules and regulations aimed at implementing national and provincial fisheries policy [23].

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References

- [1] Tran Van Tuan, Informal rules in the fishing community of Vinh Ha. In: Brzeski B, Truong Van Tuyen, editors. Annual Technical Report (First Year) Hue, Viet Nam: Centre for the Management of Biological Resources in Tam Giang Lagoon, 1996:60–62.
- [2] Nguyen Xuan Hong, Informal rules on management and protection of aquatic resources and environment in Tam Giang Lagoon. In: Brzeski B, Truong Van Tuyen, editors. Annual Technical Report (First Year) Hue, Viet Nam: Centre for the Management of Biological Resources in Tam Giang Lagoon, 1996:73–75.
- [3] Republic of Vietnam, Bien-Ban: Cuoc Hoi-Thao Tu-Chinh Quy-Le Chuyen-Nghiep Hai-Ngu-Nghiep Van Thuy-Tu (Minutes: Seminar on Amendment to Professional Rules concerning the Sea Fishery of Van Thuy Tu). Duc Thang, Viet Nam, 1963 (in Vietnamese).
- [4] Ruddle K. External forces and change in traditional community-based fishery management systems in the Pacific Island Region. *Maritime Anthropological Studies* 1993;6(1–2):1–37.
- [5] Nguyen Quang Trung Tien. Vietnamese Fisheries in the First Half of the 20th century. Hue, Viet Nam: Thuan Hoa Publishers, 1995.
- [6] Council of Chau Thanh Village, Phan Thiet, On the Compilation of Village Regulations, Official Note No. 982/ACL (May 17, 1963), 1963, Phan Thiet, Viet Nam (in Vietnamese).
- [7] Anon, (editor). The Traditional Village in Viet Nam. Hanoi, Viet Nam, The GIOI Publishers, 1993.
- [8] See, for example, Nguyen Van Chi, The traditional Viet Village in Bac Bo: its organizational structure and problems. In: Anon., editor. The Traditional Village in Viet Nam, Hanoi, Viet Nam: The GIOI Publishers, 1993:44–142.
- [9] Ruddle K. A Guide to the Literature on Traditional Community-based Fishery Management in the Asia-Pacific Island Tropics. Fisheries Circular No. 869, FIPP/C869. FAO, Rome, Italy, 1994.
- [10] Nguyen Long, An Overview of Marine Fishing in Viet Nam. Haiphong, Viet Nam: Research Institute of Marine Resources, 1993 (in Vietnamese).
- [11] Truong Cong Ly. Van Thuy Tu, Dinh Dac Thang, Duc Thang. Unpublished manuscript, Phan Thiet, Viet Nam, n.d. (in Vietnamese).
- [12] Claey's JY. L'Annamite devant la mer, Indochine (3-1943) 1–10.
- [13] Huard P, Durand M. Connaissance du Viêt-Nam. Hanoi: École Française d'Extrême-Orient, 1954.
- [14] Huynh Hung Ly, Van Thuy Tu in Phan Thiet. *Big Cooperation* (1996);63:4 (in Vietnamese).
- [15] Lam Thu Thao, Van Thuy Tu. Artistic architecture and popular religion by the seashore of Phan Thiet. *Culture and Art: Phan Thiet* 1996; 18–19 (in Vietnamese).

- [16] Nguyen Xuan Ly, Van Thuy Tu. Popular religion near the seashore. *Phan Thiet Spring Magazine* 1996;21:22–23 (in Vietnamese).
- [17] People's Committee, Binh Thuan Province. *Ho So Khoa Hoc: Di Tich Kien Truc Nghe Thuat Dinh-Van Thuy Tu Phuong Duc Thang, Thi Xa Phan Thiet (Scientific Dossier: Heritage of Artistic Architecture Van Thuy Tu Temple, Duc Thang Quarter, Phan Thiet County Town)* (in Vietnamese), Service of Culture and Information, Phan Thiet, Viet Nam, 1995.
- [18] Tran Van Tri, R. Serène. Étude descriptive d'un carrelet du Viêtnam. *Bulletin de la Société des Études Indochinoises, New Series* 1952;17(1):52–58
- [19] Anon. (Le Bureau d'Études des Pêches de l'Institut Océanographique, Nha Trang). La pêche aux poissons volants. *Bulletin de la Société des Études Indochinoises, New Series* 1952; 17(1):41–49.
- [20] Le Quang Nghiem, Tuc Tho Cung Cua Ngu-Phu Khanh Hoa Trung Tam, Hanoi, 1969.
- [21] DANFICO, Viet Nam: Preparatory Master Plan Project, Final Report, DANFICO, Stovring, Denmark, 1993.
- [22] Anon. Report of the Asian Development Bank/FAO Review Mission on Fisheries in Viet Nam. Manila: Asian Development Bank, 1993.
- [23] Ruddle K. Local knowledge in the future management of inshore tropical marine resources and environments. *Nature and Resources* 1994;30(1):28–37.