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COMMON PROPERTY IN SOUTHEAST ASIAN MARINE
FISHERIES RESOURCE ALLOCATION

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Abstract

This paper explores the multi-dimensional aspects of common property in Southeast Asian marine fisheries resource allocation. Over the past fifty years, dominant neoclassical economic approaches to common property have generally dismissed its significance as inferior to privatization. Recently this position has been challenged by institutional economists. The institutional position has been strengthened by contributions from maritime anthropology. A growing contingent implies that common property systems can contribute significantly to Southeast Asian marine fisheries management. Schemes for designing common property management of fisheries resources are especially applicable to small-scale communities who make up the vast majority of fishers in the region. The concluding section examines the scope and limitations that common property holds for Southeast Asian marine fisheries resource allocation and development.

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Introduction

This paper explores the multi-dimensional aspects of common property in Southeast Asian marine fisheries resource allocation. Marine fisheries resources have provided Southeast Asians with a means of subsistence for centuries. Fish play an important role in the diets of Asians as indicated by the high levels of consumption found in the region (FAO 1985; 1988; 1989; Floyd 1985). Prior to the 1960's, the marine fisheries sectors of Southeast Asia could best be characterized as "traditional", which employed a diverse set of social practices intimately linked to the natural environment. These fisheries can still be considered in this context, as small-scale ones, which presently exist in direct competition and often conflict with larger commercial ventures. With the advent of trawler technology, most notably in Thailand, Southeast Asian marine capture fisheries grew rapidly. In recent years, China has accelerated capture fisheries efforts and now ranks as the third largest fishery in the world (U.S. Department of Commerce 1987). Major fisheries in China, India, Indonesia, Thailand and the Philippines are generally considered to be fully exploited and in some cases overfished. The Law of the Sea has also effectively sealed regional expansion. Currently, Southeast Asian governments are grappling with attempts to better manage open access fisheries in the wake of widespread resource depletion, degradation, economic stagnation, and social conflict.

A central concern in these historical developments has been the changing status of property and property rights in Southeast Asian ocean fisheries regimes. As governments, fisheries managers, and local fisher communities struggle to attain satisfactory and sustainable practices, a contrasting set of international, national and local initiatives often reflect growing attempts to privatize fisheries and adjoining coastal lands on the grounds of market efficiency. These arguments often rely on firm-level, neoclassical rationale which have characterized "the common property debate" in the fisheries literature over the past twenty years.

Generally, the neoclassical approach has unequivocally dismissed the significance of common property systems for management of fisheries resources. The international implications here attempt to "obliterate the commons" rather than design them. This approach has been contested by the institutional school and has been strengthened by contributions from maritime anthropology. The diverse social, economic and political nature of Southeast Asian fisheries holds out the possibility that common property, among other property systems, can contribute significantly to sustainable Southeast Asian marine fisheries development practices. This is especially relevant considering the vast majority of small-scale fishers who have become increasingly marginalized by developments at sea and on adjoining coastal lands.

While not a panacea, designing common property systems which are supported by the state offers a viable scope for future fisheries management of Southeast Asian ocean resources. Common property cannot, however, be wished into existence. Appeals to political "will" do not fully appreciate the full scope of power differentials in determining resource allocation processes. It is at the level of political economy where the fate of these systems will be determined. Given the dominant neoclassical influence in global fisheries management, designing common property systems may conflict with vested class and international interests which support attempts to privatize fisheries resources. Thus, common property as a legitimate and sustainable set of social relations faces an uphill struggle in overcoming political economic realities which limit its meaning and consequent application.

Property and Property Rights in Marine Fisheries: The Common Property Debate

Historically, the fisheries literature has relegated the meaning of property in ocean fisheries to a factor of production in support of maximizing a utility function (Gordon 1954; Scott 1955; Christy and Scott 1965; Demsetz 1967; Hardin 1968; Christy 1972:1975). In the best interests of satisfying implicit Paretian efficiency criteria, problems associated with marine fisheries resource allocation are rectified by the creation of incentives which internalize externalities resulting when fishers take advantage of "the gift of nature" (1). Generally, in light of the externalities problem, management strategies for ocean fisheries revolve around the creation of ownership and rights in the form of private property. A second best solution involves state intervention but this solution is considered vastly inferior to privatization.

Recently the neoclassical view has been challenged. In particular, the theoretical and empirical work of institutional economists and maritime anthropologists have broke with the mainstream view (Bromley 1985a: 1985b; Ciriacy-Wantrup and Bishop 1975; McCay and Acheson 1987). Earlier writers failed to distinguish between different types of property especially a condition called "open access" and another labelled "common property". Often these terms were used interchangeably. The distinction between open access and common property holds crucial implications for recognition of legitimate property types.

Over the past 25 years, Southeast Asian fisheries have been characterized by open access conditions. During the 1960's international aid agencies actively became involved in Southeast Asian marine fisheries development (Bailey 1988). During this period there was little understanding or appreciation of limiting bio-economic factors on fish stocks. Hence, developmental efforts focused on capitalization of large-scale enterprises capable of tapping into widely held notions of unlimited marine wealth thought to be beyond the domain of traditional fisheries. Initially production levels grew rapidly only to level off in the

region. Despite limited data, most fisheries in the region are considered fully exploited and in some cases overfished (Bailey et al. 1987; FAO 1989).

Institutional Perspective on Property

The institutional meaning of property contains both "tangible" and "intangible" aspects (Commons 1961). Property is an important subset of society's institutional structure and is best viewed on a continuum starting with the tangible object claimed as property on one hand, and intangible associated rights, duties, privileges etc., on the other. At the core of property and associated rights are relatively secure expectations in regard to attainment of socially defined benefits over time. In an open access marine fisheries these conditions do not hold. Anybody is allowed entry and exit into the fishery. There is no excludability. In a common property system 1) well-defined groups of resource users exist and 2) specified sets of use-rights operate (Bailey 1988; Bromley 1985b:1988; Ciricay-Wantrup and Bishop 1975; National Academy of Science 1986; Runge 1986).

The institutional perspective has become somewhat influential in resource management circles. The dominant framework in the world currently however, is state based claims and some control over what is essentially open access fisheries resources. The global trend seems to further indicate that privatization of ocean fisheries may become widely adopted. Policy options are restricted in this framework. Since open access results in a competitive "tragedy of the commons", and state intervention leads to gross inefficiencies, the third policy option - privatization is generally viewed as the only viable and efficient long-term fisheries resource management strategy.

In contrast, institutionalists argue effectively for a wider conceptual approach to property and property rights. For institutionalists, property is a social relation "that defines expectations with respect to a thing or an act - expectations on the part of at least two parties. There must be at least three aspects to property - the thing 'owned', the 'owner', and all others. Because property is a set of social relations and expectations, the core of property is security" (Bromley 1985b:68). In contrast, by following the neoclassical "property rights" perspective, we would seek (as modern fisheries management does) market solutions to property definitions, allocation and conflicts.

Runge (1986) argued that common property systems provide institutional advantages of joint use rights which illustrate the adaptive capability of resource users to come to terms with three aspects of their environment where they go about daily sustenance activities;

(1) In contrast to private property, common property entails relatively lower transaction and enforcement costs; the adaptive

mechanism utilized to undertake transactions and enforcement measures are contained within the community level of decision making.

(2) Survival and social utility are enhanced by common property systems due to the random and uneven nature of stochastic events and occurrences which fall upon a local population; Common property systems provide a hedge against this "randomness" by insuring a degree of institutionalized fairness by allowing access to resource use (rather than exclusion in private and public property models). Those threatened can take advantage of organizational means which contribute to a general sense of social stability.

(3) Access to resource use in common lessens the risk of individual failure; In high risk occupations such as marine capture fisheries, the spreading out of these risks collectively rather than individually represents an adaptation to a high risk environment where the probability of individual failure is great.

Points 1-3, are seen as adaptive responses by sustenance organizations to a highly fluctuating, uncertain natural environment. Given the particular characteristics that each point entails, common property as an adaptive set of social relations serves to meet the communities notion of a thoroughgoing socially "efficient" resource allocation process. It is highly doubtful whether any other property models would serve in such an equally mutual reenforcing manner in a way which common property does in this particular environmental context.

The institutional contribution to the common property debate has challenged previous conceptualizations held in the fisheries literature since the time of Gordon (1954). Importantly, the institutional perspective is compatible and often complimentary with and strengthened by related social science disciplines such as human ecology. In particular, empirical work undertaken in a variety of diverse cultural and social settings by mainly maritime anthropologists extends the institutional approach into a more concrete social context (eg., McCay and Acheson 1987; National Academy of Science 1986; Polunin 1985; Ruddle 1987; Ruddle and Johannes 1985).

Above all, the combined work of institutional economists and maritime anthropologists points to property and property rights as a dynamic form of adaptive social organization. The centrality of common property as a focus of research and in some cases an applied fisheries management model, offers key links to framing an institutional/human ecology perspective. When seen as a collective body of research, the many descriptive studies undertaken point to further investigations into the "working rules for going concerns" with respect to resource allocation systems, including fisheries (eg., Bailey 1983; 1987a; Firth 1966; McCay and Acheson 1987; Ruddle, 1987).

Traditional Fisheries Categories

Two conceptual studies by Christy (1982) and Dahl (1988) develop important categories which enlarge the scope of property relations in traditional fisheries management systems. Christy (1982) and Dahl (1988) have identified social (Dahl) and "natural" and social (Christy) conditions of traditional fisheries management systems. The combined conditions they list relate to;

(1) Natural Resource Attributes - In marine fisheries, the nature of valued stocks are related to their mobility and perceived scarcity. Sedentary stocks (eg. oysters, mussels, cockles) are more easily regulated than highly mobile and relatively abundant species (eg. tuna). In addition, species which aggregate around reefs, or enter coastal areas to spawn (eg. groupers, snappers) may also be subject to effective property claims. Regulation occurs when valued stocks exhibit relative scarcity. As such, the stock in question becomes integrated into property relations which provide continuity to the social system exploiting the resource. Both stock exploitation and the social system mutually reinforce each other in traditional fisheries management practices.

Southeast Asian fisheries are characterized by their multi-species attributes (Bailey et al. 1987; Pauly 1979). A variety of species are harvested from mainly coastal waters of the region. In particular, pursuit of highly valued species such as coastal shrimp have shown repeated instances of conflict between small and large-scale fishers. The recent development of coastal shrimp aquaculture is another source of resource use conflicts between small-scale coastal fishers and coastal aquaculturists (Bailey and Skladany 1990). In coastal regions throughout Southeast Asia, widespread conversion of coastal habitat into privately owned shrimp ponds is significantly altering species habitat and occupational opportunities in new and unforeseen ways. Given the key ecological roles that coastal mangroves play as spawning and nursery areas for many marine organisms, the destruction of these areas is bound to have negative impacts on coastal fisheries. There is however, little empirical work to back these claims nonetheless the rapid conversion and privatization of coastal lands continues unabated in the region (ICLARM 1987).

(2) Resource Boundaries - Traditional fisheries management is highly dependent on defining and delineating boundaries. Groups of islands, reefs, lagoons and beaches are highly conducive to boundary "mapping". The familiarity with one's environment represents a form of ownership. In addition, certain species may fall under patterns of collective ownership.

Regional and locally defined boundaries are often points of conflict between Southeast Asian nations and fishers. In the open access fisheries of Southeast Asia, Thailand for example has claimed disputed areas as "traditional" fishing grounds off the

coasts of Cambodia, Vietnam, Burma and Malaysia. Within Thai waters trawling often takes place within coastal areas which have been set aside by Thai Fisheries Law for small-scale fisheries (Panayotou and Jetanavanich 1987; Rientrairut 1983). Conflicts erupt when these intrusions destroy stationary gears placed in coastal waters by small-scale fishers.

(3) Technology - the use and deployment of various technologies can have an important impact on the creation, maintenance and even the decline of territorial boundaries. Stationary gears such as traps, pots, set nets, weirs etc., claim territory and often discriminate for a desired species. In contrast, highly mobile gears such as trawlers, push nets or purse seines are much less discriminate with regard to area fished (a relatively large parcel of oceanic space is required) or species harvest.

The development and adoption of powerful modern fishing technologies has radically altered the traditional range of fishing activities into conditions of open access. The case of Southeast Asian marine fisheries development is notable in this regard (Bailey 1988; Panayotou 1980; Panayotou and Jetanavanich 1987). Prior to the 1960's, fishing was primarily the domain of artisanal fishers. With the introduction of trawling technology through foreign development assistance, the marine fisheries sectors of Asian countries were radically altered. This development has generated a variety of unforeseen social consequences which have exasperated the best efforts of state based fisheries management schemes (Bailey 1987a).

The application of new technologies is the basis of widespread use conflicts between small-scale and large-scale fishers. In most cases, with the exception of the Indonesian ban on trawling, conflicts remain unmitigated (Bailey 1987c). Development on land in terms of aquaculture, urbanization, pollution, mining, tourism spell widespread demise of traditional property relations. In their wake, private property has become a means by which to secure short-term growth without recognizing long-term social consequences.

(4) Cultural Factors - Intimately related to the largely "physical" manifestations of property structures are cultural factors. In the context of modern times, the advent of new technologies and the expansion of global markets for seafood, has led to altered social relations of production, increased competition (and conflict) over marine resources by large- and small-scale fishers, and a host of impacts on community organization, food supplies, distribution and class relations.

There are many studies which have documented cultural change (eg., Bailey 1987b; Firth 1966; McCay and Acheson 1987; National Academy of Sciences 1986; Ruddle 1987). In general, this aspect of property structure is probably the least appreciated or understood in mainstream fisheries management and policy circles. There has been however, a growing recognition of the role which culture plays in marine fisheries. These developments are recent

and their managerial and policy implications are difficult to assess at present. Nonetheless, the growing awareness of traditional knowledge systems, of which culture plays a significant role, may offer some countries a viable rationale for designing sustainable resource allocation strategies in light of the prohibitive costs of alternatives (eg. instituting scientific management).

(5) Economic Organization - Economic structure is partially a function of property relations. In particular, the introduction of international market arrangements in marine fisheries regimes has raised central issues about distribution, equity, sustainability and the overriding concerns of national welfare. Much of the ideological appeal of common property systems lies in potentially redistributive mechanisms these forms of resource allocation tend to foster. There are millions of small-scale fishers, countless part-time fishers, and related individuals whose occupational categories depend on the importance of small-scale fisheries in Southeast Asia. In this regard, redistribution based on community based management of coastal fisheries resources cannot be overemphasized. The increasingly marginalized character of many small-scale fisheries requires immediate distributive attention.

(6) The Role of Government - Categories 1 through 5 entail that government possess the adequate institutional, technical, authoritative and political capability to address the problematic nature of marine fisheries resource allocation regimes. This is indeed a formidable task. From an ideological perspective the property typologies put forth by Bromley (1988), in particular common property are appealing in certain situations. The expansionary vision of marine fisheries development policies often lead to overshoot and in some cases collapse within a relatively short period. Whether governmental "will" and reorientation exist to direct fisheries allocation in an equitable, sustainable and viable manner remains to be seen (Skladany 1989). Nonetheless, a rethinking of the policy implications emanating from the previously developed institutional-maritime anthropology schools would on the surface require a substantial departure from current thinking which attempts to "privatize" marine fisheries resources and adjacent coastal lands.

Contributions from Maritime Anthropology

Adaptation

While adaptation arguably may hold the key link to formulating a viable institutional human ecology framework on marine fisheries resource allocation regimes, it makes sense to temper and specify our explanations in terms of "adaptive strategies" (Bennett 1976). Specifically, adaptive strategies are taken as "a component of strategic action: specific acts with a predictable degree of success which are selected by the individual in a decision-making process" (Bennett 1976: 272).

When property relations and adaptive strategies are combined, we can begin to appreciate and anticipate rich social dynamics which underly marine fisheries resource allocation processes. These social dynamics are also the basis for instituting appropriate fisheries management schemes. The question of how fishers adjust, cope and organize along with environmental change represents a key contribution which human ecology is well suited to make to institutional fisheries management and policy. While adaptive strategies provide a key link, and even an overarching conceptual framework for assessing property relations in marine fisheries, the focus needs to be related to sustenance organization in order to develop a cogent frame of reference and substantiate theoretical and empirical aspects of marine fisheries resource allocation systems.

Sustenance Organization

For the human ecologist, the conditions inherent within sustenance organizations provide an applied model for conceptual specification. The focus is on structural characteristics indicated by the "conception of a population as an aggregate of individuals engaged in activities that provide them with a livelihood" (Poston et al. 1984). Property structures, as an important subset of marine sustenance organization needs further elaboration in light of the critical insights brought forth for example by McCay and Acheson (1987). The analysis of fishing communities and property relations offer investigators a potentially unique window with regard to describing structural characteristics of fishing and related occupational activities. Functions that characterize the organization, levels of sustenance differentiation, functional interdependence, differentiation by ascription, productivity, efficiency and the position of the sustenance organization in the larger hierarchy of populations indicate the scope of human ecologies contribution to marine fisheries resource issues (Poston et al. 1984).

The notion of a "fishing" community implies that the major sustenance activities of the population are primarily related to fishing. In order to isolate some of the characteristics of sustenance organization in fishing communities/regions, researchers have tended to focus on areas where the relations between sustenance organization and its dimensions are more prominent and easily identified. The rapid development of coastal and oceanic areas have seen however, the withering away of these traditional communities. However, opportunities are missed in other settings where more complex and oftentimes competing social systems of sustenance organizations operate. In particular, tropical fisheries display incredibly diverse biological and social characteristics which can extend greatly our knowledge of sustenance organization in marine fisheries. These communities have been caught up in wider societal changes and rapid economic development which may alter property categories in the foreseeable future. Mangrove destruction, coastal aquaculture, tourism, industrial growth, pollution, urbanization and mining all are found within the coastal regions

of Southeast Asia. Little is known about these complex set of institutions and ecosystems undergoing rapid developmental change.

Growth

Historically, the policy orientation of Southeast Asian marine fisheries development has stressed increased production and economic growth (Bailey 1988). Growth mechanisms shape/confront the adaptive strategies and sustenance organization of fishers. What is suprising about the growth paradigm is the one dimensional economic context it unfolds in. Growth holds direct implications for which types of property regimes will prevail in marine fisheries settings.

Despite apparent horizons to the continued growth of marine fisheries, the assumed substitutability of aquaculture, pollution, overfishing, the imposition of EEZ's, and rising energy costs in real terms, world fisheries production continues to increase (U.S.Department of Commerce 1987). The increases in world fisheries landings has given the proponents of growth a rationale for extending the economic factors of marine fisheries resource allocation to the forefront of policy, management, and development. By implication, two issues are raised, one being narrowly contained within the fisheries economics literature as to what type of property relations are most "efficient", and secondly the real issue of how sustainable are Southeast Asian marine fisheries resources?

Sustainability

Growth proponents tend to ignore when convenient, the important and limiting factors of MSY, MEY and OSY. These concepts provide a sound rationale for temperring the exuberance of growth advocates. There are however, both political and empirical obstacles to accepting the formulation of sustainable fisheries management and policy measures (Fricke, 1985; Pauly, 1979). Bailey et al. (1987) have described the continued emphasis on fisheries growth and development in Indonesia. Indonesian policymakers have claimed that maine fisheries production is less than 30% of sustainable yields. However a series of technical and economic factors limit efforts to exploit stocks more fully. Efforts to exploit these offshore resources are considered to be out of the range of Indonesia's marine fishers due to extreme depths encountered of over 300 meters and often greater than 1,000 meters (Bailey et al., 1987:170). Indonesia, like other Southeast Asian nations, faces a series of interrelated issues with regard to 1) how to obtain optimal yields from resources which are unevenly exploited, 2) how to match production areas with domestic demand and, 3) how to improve the socio-economic conditions of small-scale fishers who are concentrated in the more populated areas, especially Java (Bailey et al., 1987).

Scope and Limitations of Common Property in Southeast Asian Marine Fisheries

Renewed interest in common property systems has led to their consideration as viable management strategies for ocean fisheries. By combining local knowledge and participation in community based management schemes, important objectives such as efficiency, distribution, equity and sustainability may be realized which are not addressed in open access or private property regimes. Although ample scope exists for widespread application of common property management of Southeast Asian fisheries, limitations also exist. Among these limitations is the limited knowledge of the "working rules for going concerns" in the case of specific communities.

Both Christy (1982) and Dahl (1988) have identified conditions which may lead to designing of the commons in fisheries resource allocation and development. Subtract any one of the conditions they have laid out with respect to the resource base, territoriality, technology, economic organization or political will, and common property systems are likely to fail. Christy (1982) has pointed out, for instance, that under highly stratified social conditions, devolving total control to the local level could lead to establishment of a few "sea lords" in place of communal control of common property resources.

At this level, the role of the state seems necessary in providing the legal and political support in order to enforce common property designs. Ultimately the success or failure of common property regimes in Southeast Asian fisheries rests on the wider political economy dimensions of allocation and development. Political economic conditions have and will determine Southeast Asian fisheries allocation and development strategies. In this sense designing common property systems face an uphill struggle because such systems involve resource allocation and development goals between competing classes within society. As Scott (1985:308) has remarked "... property relations [are] always the focus of symbolic manipulation, struggle and conflict."

Those concerned with the inherent appeal of common property must take into account the political economy of such systems. Political economy is about power to allocate resources, including property. Adequate scope exists for the legitimate entry of common property systems into the realm of Southeast Asian fisheries resource allocation, management and development. Indeed designing common property systems offers an alternative fisheries development strategy which addresses a wide variety of problems which have been and continue to be difficult to solve if reliance was based solely on standard fisheries development models. International, national and local interests might however, be reluctant to accept common property management schemes in fisheries because they represent a significant decentralization of power and control over policy and management. Common property challenges centralized power structures and the vested interests of the status-quo. At this strategic

institutional intersection, the likely outcome of common property systems will be determined. These systems require political support from outside the local environs if they are to succeed. Common property cannot be wished into existence, but entails full incorporation and consideration of political economy as it is at this level property is determined.

Conclusion

In this paper the multi-dimensional aspects of common property in Southeast Asian marine fisheries resource allocation were examined. Positive attributes of common property systems were developed in contrast with dominant neoclassical thought. Traditional fisheries categories were also explored in terms of an enlarged scope pertaining to common property. In the context of Southeast Asian marine fisheries resource allocation and development, the political economy of common property systems was introduced as a means to explore the limitations of such systems.

Designing common property systems necessarily entails state support for the sustainment of these property relations. In this context the question remains as to whether common property marine fisheries resource allocation in Southeast Asia can compete with wider societal intent to privatize such resources. Whether or not common property can become a viable or competing fisheries management system in Southeast Asia requires full consideration of political-economic factors because it is at this level the fate of such systems will be determined.

NOTES

1. Since the time of Gordon (1954), the debate over property was largely articulated by neoclassical economists. Recently the institutional school has mounted a credible challenge. The figure below attempts to summarize the difference between them.

Institutionalist

1. Property is a social institution. Focus is on institutional arrangements (the working rules for going concerns) emanating from the property object.
2. There are at least four major property regimes. These regimes vary over time, resource type and season.
3. Property rights determine market conditions and what constitutes efficiency. Value is not derived in the marketplace.
4. Takes "agnostic" stance in resolving the dilemma of the commons.
5. Common property has performed well over historical time in terms of allocating resources. In some cases it offers a viable solution (among other regimes) to the dilemma of the commons.

Neoclassical/Property Rights

1. Property is an object, commodity, a physical thing. Focus is on property rights in regard to resource use.
2. Three types of property regimes: state, private and a condition referred to as "open access", common property, communal property.
3. Property rights are exchanged in the market. Market determines efficiency. Value is derived in the market.
4. Advocates creation of private property conditions as efficient. Provides user with adequate incentive for "wise use".
5. Open access and communal property creates problems. Property rights will follow an evolutionary pathway to private property.

Source: Skladany (1989).

2. This has been an issue since the time of Gordon (1954); For an interesting explanation of the setting during those times, see Scott (1977).

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