

# **An Analysis of the Utilization of Regional Fishing Ports in the Philippines**

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## **ABSTRACT**

This paper investigated the issue of underutilization of regional fishing ports in the Philippines using secondary data from institutional sources and interviews with key informants. It found that most of the existing regional ports were underutilized, having low actual usage to projected usage ratios. The paper argued that low commercial and aquaculture fish production contributed to the underutilization of the ports. It suggested some measures to address the problem.

## **INTRODUCTION**

The adequate provision of regional fishing ports and post-harvest facilities is critical to the development of the Philippine fisheries sector. The widely dispersed fishing areas of the archipelago require strategic landing points where catch can be immediately sold, stored, processed or shipped to markets. Furthermore, the highly perishable nature of fish necessitates the provision of enough facilities so that post-harvest losses, estimated at about 20 percent to 40 percent of total output, can be significantly reduced (Mendoza 1996).

Although regional fishing ports are highly needed, there are concerns about the construction of more of them in the country. Among the most important of these is the perceived underutilization of existing ports. Specifically, it has been argued

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that at least some of these regional ports have significant excess capacity and the building of new ones may only exacerbate the problem (Davila 1996).

While the above concern about underutilization may be valid, the demand for additional regional fishing ports and post-harvest facilities is increasing. For fishing regions, provision is seen as indispensable to full economic development. Furthermore, the acquisition of new regional ports is viewed as a reflection of the political clout of regional and local leaders. It is no wonder then that interest in regional fishing ports has been intense not only in fishing communities but also among politicians and policymakers.

### **OBJECTIVES, DATA, AND ORGANIZATION**

Few studies have looked into the development of fishing ports and post-harvest facilities in the Philippines. Furthermore, the available works have been cursory in nature (Davila 1996; Mendoza 1996). A study on the rate of utilization of existing regional fishing ports, in particular, has yet to be conducted.

The objective of this paper is to analyze the utilization of regional fishing ports, particularly in light of the perceived problem of port underutilization. It hopes to contribute to existing knowledge by finding out, based on secondary data from institutional sources, if underutilization of regional fishing ports has indeed occurred. Furthermore, the paper intends to provide, based on key informant sources, some recommendations useful for the future planning and development of regional fishing ports in the country.

The paper uses secondary data from the Philippine Fisheries Development Authority (PFDA), Bureau of Agricultural Statistics (BAS), Project Management Office (PMO) of the Department of Public Works and Highways (DPWH), and other institutional sources. To augment the secondary information, it gathered primary data from key informants from said institutions and the private sector.

This study is limited to the issue of underutilization of regional fishing ports and does not analyze the entire fishing port development in the country and all its myriad aspects. The limited available secondary data as well as time and resource constraints prevent a broader and more in-depth investigation of fishing port development.

The paper is organized as follows: The next section reviews the legislative and institutional aspects of regional fishing ports. The succeeding section profiles regional fishing ports. The penultimate section analyzes the utilization of regional fishing ports while the last provides the conclusions and recommendations.

## **LAWS AND INSTITUTIONS GOVERNING REGIONAL FISHING PORTS**

The coordinated thrust to develop fishing ports and post-harvest facilities in the country commenced in 1976 with the passing of Presidential Decree No. 977. This law created the Philippine Fish Marketing Authority (PFMA), which was tasked to address fish marketing problems due to inadequate fish marketing infrastructure, poor fish handling practices, chaotic system of distribution and limited post-harvest processing technology. The PFMA was originally placed under the Ministry of Natural Resources (MNR).

In 1981, the PFMA was transferred to the National Food Authority (NFA). Then, a year later, Executive Order No. 772 amended PD No. 977 and moved the PFMA back to the MNR to implement the Integrated Fisheries Development Plan (IFDP). In 1984, the PFMA was renamed the Philippine Fisheries Development Authority (PFDA) through E.O. No. 965 and placed under the jurisdiction of the Department of Agriculture (DA). Among others, the PFDA is mandated to strengthen the government's thrust in balancing production ventures with adequate post-harvest support facilities through the establishment and administration of fish ports, fish markets, and other port infrastructure (PFDA 1998).

Today, the PFDA manages only the regional fishing ports in the country. In the past, it also operated some municipal fishing ports but with the implementation of the Local Government Code (LGC), the control over all of the municipal ports was devolved to the local government units (LGUs).

## **PROFILE OF REGIONAL FISHING PORTS AND POST-HARVEST FACILITIES**

In 1997, there were seven existing regional ports in the Philippines: the Navotas Fishing Port Complex in Navotas (Metro Manila); Iloilo Fishing Port Complex in Barangay Tanza, Iloilo City, Iloilo (Region VI); Zamboanga Fishing Port Complex in Barangay Sangali, Zamboanga City (Region IX); Camaligan Fishing Port Complex in Barangay Dugcal, Camaligan, Camarines Sur (Region V); Lucena Fishing Port Complex in Barangay Dalahican, Lucena City (Region IV); Sual Fishing Port Complex in Barangay Poblacion, Sual, Pangasinan (Region I); and the Davao Fishing Port Complex in Barangay Daliao, Toril District, Davao City (Region XI). In 1998, another regional fishing port, the General Santos Fishing Port Complex in Barangay Tambler, General Santos City (Region XI) started operating bringing to eight the total number of regional fishing ports.

The Navotas Fishing Port Complex was the first regional fishing port built (Table 1). Its construction started in 1973 under a loan financing from the Asian Development Bank (ADB). The port was completed in 1976 and started operating a year after. After the Navotas port, other regional fishing ports were constructed using funds from the government and loans from the Overseas Economic Cooperation Fund (OECF). The construction of the Iloilo, Zamboanga, Camaligan, Lucena, and Sual fishing ports under the Fishing Port Package I (FPP I) started in 1982. In the same year, construction was suspended due to cost-cutting measures and revisions. The suspension was lifted in 1982 for the Iloilo and Zamboanga ports and in 1985 for the Lucena, Camaligan, and Sual ports. The Iloilo port was completed and started operating in 1985. The other ports were completed in the succeeding years and were operational by 1992.

Table 1. Year of construction, suspension, lifting of suspension, completion and operation of regional fishing ports in the Philippines

Fishing port complex	Construction	Suspension	Lifting of suspension	Completion	Operation
Navotas	1973	n.a.	n.a.	1976	1977
Iloilo	1982	1982	1982	1985	1985
Zamboanga	1982	1982	1982	1985	1986
Camaligan	1982	1982	1985	1990	1991
Lucena	1982	1982	1985	1991	1992
Sual	1982	1982	1985	1990	1992
Davao	1993	n.a.	n.a.	1994	1995
General Santos	1994	n.a.	n.a.	ongoing	1998

Sources: DPWH PMO -- Fishing Ports files; PFDA files

Table 2. Actual construction costs and cost per hectare of the regional fishing ports

Fishing port complex	Construction costs (Pesos)	Hectarage	Construction costs/Hectare (Pesos)
Navotas	n.d.	47.5	
Iloilo	597,945,898	21.0	28,473,614
Zamboanga	477,245,668	12.5	38,179,653
Camaligan	137,325,726	1.6	85,828,579
Lucena	283,976,020	8.7	32,640,922
Sual	219,340,989	3.2	68,544,059
Davao	354,450,703	4.5	78,766,823
General Santos	n.d.	11.0	-

Note: n.d. means no data available.

Source: DPWH PMO-Fishing Ports Completion Reports (various years)

The regional fishing ports in Davao and General Santos were built under the Fishing Port Package II (FPP II). The construction of the Davao port started in 1993 and was completed in 1994. The port commenced operation the year after. The construction of the General Santos port started in 1994 and is still underway even as the port has already started operating.

Available data on the construction costs of the regional fishing ports are limited. In general, they show that of those constructed under the FPP I, the most expensive were the Iloilo and Zamboanga ports while the least expensive were the Camaligan and Sual ports (Table 2). By area, the Navotas port is the largest, followed by the Iloilo, Zamboanga and General Santos ports. The smallest ports are the Camaligan, Sual, and Davao ports. On a per hectare basis and irrespective of the years they were built, the costliest ports are the Camaligan, Davao, and Sual ports while the least expensive are the Iloilo, Lucena, and Zamboanga ports. It is interesting to note that the Camaligan and Sual ports have a much higher construction cost per hectare of all the regional ports built under FPP I.

Available data for 1999 show that the Navotas port directly contributed the most to employment, followed by the Iloilo and Zamboanga ports (Table 3). The Sual, Camaligan and Davao ports added the least to employment. This information indicates that directly, regional ports contribute modestly to employment. Nevertheless, although there are no data available to show this, their overall significance in terms of employment should be great because of the extensive backward and forward linkages which regional ports have with the rest of the local, regional, and national economy.

## **ANALYSIS OF THE UTILIZATION OF REGIONAL FISHING PORTS**

A way of evaluating the rate of utilization of regional fishing ports using secondary data is by comparing port usage projections and the actual usage. If the ratio of the actual usage to the projected

**Table 3. Direct employment in the regional fishing ports in the Philippines, 1999**

Fishing port complex	Total number of employees	Percent to Total
Navotas	254	39.32
Iloilo	88	13.62
Zamboanga	84	13.00
Camaligan	38	5.88
Lucena	61	9.44
Sual	21	3.25
Davao	39	6.04
General Santos	61	9.44
<b>Total</b>	<b>646</b>	<b>100.00</b>

Source: PFDA Files

usage is less than one, then underutilization occurs. A ratio of one indicates full utilization while more than one implies overutilization. Data on the projected usage of most of the regional fishing ports were available although no projections can be had for the Navotas and General Santos ports (Table 4). Furthermore, the available projections were only for specific years, particularly 1983, 1990, and 2000. To firm up the figures, extrapolation for most regional ports except the Davao port for the year 1995 was done. Of the ports with data, the Iloilo, Lucena, and Davao ports were projected to service the largest volumes of fish while the Zamboanga, Zual and Camaligan ports were projected to handle the least load.

For actual port usage, data on the volume of unloading for all the regional fishing ports were available beginning 1989 and for the specific years they have been operating (Table 5). Expectedly,

the Navotas port had the largest reported annual unloading on average followed by the Iloilo and Zamboanga ports. The Sual, Camaligan and Davao ports had the smallest annual unloading.

Given the above data, the ratios of actual port unloading to the projected port usage are then computed (Table 6). The years 1990, 1995, and 2000 were selected as time reference because the projected usage and unloading figures for these years were either directly available or could be extrapolated. In the computations, the 2000 data for actual port unloading for all the ports were taken as the average of the yearly unloading since 1989 or since the ports started operating (Table 5).

The results show that overutilization occurred only in one port, the Zamboanga port, while underutilization happened in five regional ports. The underutilization was worst in the Sual, Davao, and Camaligan ports. These results support the contention that there is excess capacity in most regional fishing ports. Furthermore, the findings appear to suggest that the ports which were the least utilized were the most expensive to build on a per hectare basis.

It can be argued that the ports were underutilized because some of the programmed equipment were still unavailable. The data indicate

Table 4. Projected port usage of some regional fishing ports in the Philippines, 1983, 1990, 1995, 2000

Fishing port complex	Projected port usage (MT)			
	1983	1990	1995	2000
Iloilo	60,500	86,300	87,800*	89,300
Zamboanga	5,747	5,759	5,767*	5,775
Camaligan	8,946	11,150	12,010*	12,870
Lucena	29,417	33,158	33,535*	33,911
Sual	4,960	7,892	8,620*	9,347
Davao	n.o.	n.o.	15,250	19,550

Note: n.o. means not operating. \* Figures are extrapolated as average of 1990 and 2000.

Source: DPWH PMO-Fishing Ports Files



Table 5. Volume of unloading in regional fishing ports in the Philippines (in MT), 1989-1998

Year	P O R T							
	Navotas	Iloilo	Zamboanga	Camaligan	Lucena	Sual	Davao	Gen. Santos
1989	225,319	14,851	6,548	-	-	-	-	-
1990	237,456	18,690	6,596	-	-	-	-	-
1991	266,108	21,966	11,356	542	-	-	-	-
1992	261,952	25,906	12,967	3,336	9,276	199	-	-
1993	260,327	27,172	14,186	2,681	13,511	558	-	-
1994	262,966	24,473	17,203	2,208	11,865	586	-	-
1995	309,439	24,944	19,972	2,528	11,163	431	1,716	-
1996	264,457	24,624	23,911	2,220	11,830	788	2,692	-
1997	235,881	26,415	16,660	13	14,933	984	1,982	-
1998	239,243	26,409	16,085	0	13,919	740	5,312	12,541
Average	256,315	23,545	14,548	1,691	12,357	612	2,926	12,541

Source: PFDA Files

Table 6. Actual usage, projected usage and ratio of actual port usage in regional fishing ports in the Philippines, 1990 and 1995

Fishing port complex	1990			1995			2000		
	Actual	Projected	Ratio	Actual	Projected	Ratio	Actual	Projected	Ratio
	(MT)	(MT)		(MT)	(MT)		(MT)	(MT)	
Iloilo	18,690	86,300	0.22	24,944	87,800	0.28	23,545	89,300	0.26
Zamboanga	6,596	5,759	1.15	19,972	5,767	3.46	14,548	5,775	2.52
Camaligan	n.o.	11,150	-	2,528	12,010	0.21	1,691	12,870	0.13
Lucena	n.o.	33,158	-	11,163	33,535	0.33	12,357	33,911	0.36
Sual	n.o.	7,892	-	431	8,620	0.05	612	9,347	0.07
Davao	n.o.	n.o.	-	1,716	15,250	0.11	2,926	19,550	0.15

Notes: n.o. means not yet operating.

Sources: Tables 4 and 5

that, in general, the ports were not equipped with the same facilities (Table 7). For instance, the newer ports in General Santos and Davao did not have important facilities like boat landings, ice storage, and freezers. The older ports were also lacking in some important facilities like freezers. Overall, however, key informants at the PFDA asserted that the ports are generally well equipped according to plan. Hence, underutilization could not have been due to inadequate post-harvest facilities in the ports.

Another potential reason for the underutilization of the regional ports is low fish catch in their service areas. If true, this problem is serious because there will be few fish to land and process in the ports, resulting in underutilization. Furthermore, when the volume of fish catch is low at the regional level or in the service areas, there will be less economic rationale to build additional regional ports.

There are no available data on the fisheries production in the specific service areas of the regional fishing ports. This is because secondary fisheries data in the country are generally based on administrative divisions only. Thus, it is not possible to investigate the relationship of catch and utilization based on actual service areas. Given this constraint, it is imperative to look simply into the catch landed in regional ports by administrative divisions to investigate the potential relationship between fish catch and regional port underutilization.

In general, it can be assumed that the fish catch that usually land in regional ports comes from the commercial fisheries subsector. In addition to this, some harvests coming from aquaculture subsector may find their way into regional ports. The catch from the municipal fisheries is likely to land in the municipal ports and only a small portion of it end up in the regional ports. Hence, the commercial and fisheries production are the relevant sources of fish landed in regional fishing ports.

For purposes of comparison against the utilization figures shown in Table 6, the volumes of production of commercial fisheries and aquaculture in the regions with regional fishing ports for the years 1990 and 1995 are presented in Table 8. (The corresponding data for 2000 are not yet available.) Region IX had one of the largest annual commercial catches for 1990 and 1995. Furthermore, it had the largest total production (including aquaculture) during the said years. This

Table 7. Major facilities of regional fishing ports in the Philippines, 1998

Facilities	Navotas	Iloilo	Zamboanga	Camaligan	Lucena	Sual	Davao	Gen. Santos
<b>Port Facilities</b>								
Breakwater	0	0	x	x	0	x	0	x
Reclamation	0	0	0	0	0	0	0	0
Com. boat landing	0	0	0	x	0	x	0	x
Mun. boat landing	x	0	0	x	0	0	x	x
Fier	0	x	0	0	0	0	x	x
Navigation aid	0	0	0	0	0	0	0	0
Slipway	x	0	0	x	0	0	x	x
<b>Building</b>								
Shed	x	0	x	x	x	x	x	x
Wholesale market	0	0	0	0	0	0	0	0
Admin. office	0	0	0	0	0	x	0	x
Fabrication shop	x	0	0	x	0	0	x	x
<b>Refrigeration</b>								
Ice plant	0	0	0	0	0	0	0	0
Daily ice storage	x	0	0	x	0	0	x	x
Ice storage	0	0	0	0	0	0	0	0
Contact freezer	x	0	0	0	0	0	0	0
Air blast freezer	0	0	0	x	x	x	x	x
Brine freezer	x	x	0	x	x	x	x	x
Cold storage (-5C)	0	0	0	0	0	0	x	0
Cold storage (-35C)	0	0	0	0	0	0	0	0
<b>Utilities</b>								
Fresh water supply	0	0	0	0	0	0	0	0
Sea water supply	0	0	0	0	0	0	0	0
Drainage	0	0	0	0	0	0	0	0
Sewerage	0	0	0	0	0	0	0	0
Power supply	0	0	0	0	0	0	0	0
Fuel oil supply	0	0	x	x	0	x	0	0
Wastewater treatment plant	0	0	x	x	0	x	0	0

Note: 0 means facility available  
x means not available

Source: PFDA files

production performance may help explain the overutilization of the Zamboanga port in 1990 and 1995. Region I, on the other hand, had a very low annual catch for 1990 and 1995. It also had the lowest annual output for 1990 and 1995, including aquaculture production. Similarly then, this performance may explain the underutilization of the Sual port. Region XI had a low total output from both commercial fisheries and aquaculture in 1990 and 1995. This, and the presence of the General Santos port in the same region, could have resulted in the underutilization of the Davao port.

Overall, the data appear to show that catch had a positive relationship with the utilization of the regional ports. This evidence supports the argument that poor production of commercial fisheries and aquaculture have resulted in low landings and consequently the underutilization of the regional fishing ports.

In the literature, the problem of declining fish catch from marine fisheries is already well investigated and has been attributed to a significant extent to overfishing, particularly in traditional fishing areas closer to the coasts (Israel and Banzon 1998). Other works also show that the overexploitation of marine fisheries resources has already resulted to the significant and rapid decline in fisheries stocks and, as a consequence, the productivity of the entire fisheries sector (e.g., Silvestre and Pauly 1987; Schatz 1991).

## **CONCLUSIONS AND RECOMMENDATIONS**

The above results should be taken as preliminary, as the issue of regional fishing port underutilization needs to be investigated further using primary data. However, based on the findings, there is evidence that regional fishing ports in the Philippines are indeed underutilized. In the future, therefore, planners of regional fishing ports should be cognizant of this issue. Ways should be devised to improve the rate of utilization of the existing regional fishing ports. Moreover, if new ports are to be constructed, they should be meticulously planned to prevent, if not reduce, potential underutilization.

From the discussions with key informants, the following general ideas on how to proceed with the management and overall development of regional fishing ports are put forward:

Table 8. Commercial fisheries and aquaculture production of regions with regional fishing ports in the Philippines, 1990 and 1995

Region	Fishing port	1990	1995
NCR	Navotas	215,637	284,749
Commercial	Fishing port	208,494	276,888
Aquaculture	Complex	7,143	7,861
Region I	Sual	42,771	29,549
Commercial	Fishing port	4,028	1,366
Aquaculture	Complex	38,743	28,183
Region IV	Lucena	112,118	245,367
Commercial	Fishing port	46,510	99,979
Aquaculture	Complex	65,608	145,388
Region V	Camaligan	33,177	46,813
Commercial	Fishing port	20,088	19,668
Aquaculture	Complex	13,089	27,145
Region VI	Iloilo	224,385	211,061
Commercial	Fishing port	131,228	121,590
Aquaculture	Complex	93,157	89,471
Region IX	Zamboanga	382,279	270,530
Commercial	Fishing port	99,373	170,154
Aquaculture	Complex	282,906	100,376
Region XI	Davao and	62,398	65,624
Commercial	Gen. Santos Fishing port	52,141	47,343
Aquaculture	Complexes	10,257	18,281

Source: BAS (1998, 1995)

- a. The underutilized regional fishing ports must be considered by the PFDA for use in the processing of other agricultural products such as vegetables, livestock and poultry. Turning the ports into integrated fisheries-agriculture processing centers will improve their economic viability. At present, the PFDA is contemplating on the possible lease of some of the underutilized facilities to the private sector. These leases should be done on a short-term basis initially to accommodate possible increases in fish landings over the medium or long-term.
- b. The capability of the Zamboanga port to handle overutilization could be enhanced by investing in additional post-harvest facilities. This option, however, must be done only after a thorough feasibility analysis. Another option that can be considered is the transfer of movable post-harvest facilities from the underutilized ports to the Zamboanga port, assuming this is technically and economically possible. Furthermore, this equipment transfer should be done only if it will not undermine the operation of the underutilized ports.
- c. On the issue of whether or not new regional fishing ports should be built and where they will be located, a well accepted general rule must be followed: New ports may be established in any region as long as the decision to do so is based on sound technical, financial, economic, environmental, and other important considerations and not purely on political reasons. Ports have to be income-generating enough to be able to meet amortization requirements, particularly if funding comes not from grants but from foreign or domestic loans.
- d. A major basis for the construction of new regional ports should be the levels of commercial and aquaculture production expected in the region and service area. Secondary data on the production performance of the regions without regional fishing ports should be considered together with survey data to be collected by the port proponents. These data and related information must be put to good use in making projections and other site-related decisions for new ports.

- e. Another important basis for choosing sites for new regional ports should be their potential for inter-regional usage. Other things being equal, a regional port that is accessible to adjacent regions will have a higher usage than one which has a single-region coverage.
- g. If feasible, constructing smaller regional ports at the start may be a better approach rather than building bigger ports at the outset. This will help reduce the probability of underutilization due to errors in the estimated port usage and allow more flexibility in construction.

To sum up, regional fishing ports have forward and backward linkages to the coastal municipalities, regions, and the national economy. However, building more of them should be approached with caution since an arbitrary and indiscriminate form of development can be irretrievably costly to the entire nation. By way of proper planning and implementation, regional port development should significantly lower the magnitude of post-harvest losses in fisheries and result in a better utilization of marine resources.

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