

Study of Sanur Port Development Strategy To A Marina Oriented

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Abstract:- The background of this research is increasing activities in Sanur-Bali beach not only as the most popular tourist destination after Kuta but also increasing culture process, and increasing harbor activities. This exploratory study is meant to evaluate development strategy of Sanur port oriented marina. The perceived level of importance and satisfaction of expected services of port in Sanur were also assessed. Data used in this research were obtained from primary data collected in 2015 because this existing research can especially fit the study purpose. Secondary data obtained from relevant agencies and through semi structured interview and on-the-spot field observation. The findings give some insights regarding the demand and need from tourists and society, including boat operator that could be used by tourist planner and harbor planner in developing harbor and improving tourism development in Sanur-Bali.

Keywords: - Strategy, tourism, port, marina

I. INTRODUCTION

Bali Island have many interesting beaches, scattered in almost all corners of the island and every beach have its own uniqueness and beauty, one of them is Sanur beach. Preferency from 47 main tourists destination in Bali shows that tourist destination Sanur beach is the main priority after Kuta for international tourists coming to Bali, followed by Ubud, Nusa Dua, and so on [3].

Tourist destination Sanur is one kind of beach tour which combines unique resources to its upland and sea interface. Attractiveness such as coast, the beauty of the scenery, and its biodiversity, diversification of culture heritage and history.

The diversity of activity that take place in both coastal areas and coastal waters, involves a wide range of interests: (1) Local society's interest (Bali), such as, in Balinese's Hindu funerals that focused on cremation known as Ngaben or Pelebon, will then scatter the ashes to the sea and one of the popular place is Sanur beach, (2) Increasing tourism capacity such as hotel, resort, restaurant, etc. (3) increasing harbor activity that serves crossings to small islands in Bali (Nusa Penida, Nusa Lembongan) and Gili island in Lombok. Even though Sanur harbor is still not feasible to be mentioned as a harbor because it still don't have facilities such as dock, limitation fo traditional tourism development regarding social-economy features from environment like local society, comfort and security condition.

Based on the background the need for a research on tourism destination development strategy of Sanur beach, Bali which is marina oriented, can identify the correlation between harbor and tourism industry as well as degree of harbor dependence to tourism industry as a whole which in the end Sanur harbor development can be one of the drivers for improving tourism sector in Bali and will affect regional economy growth.

II. PORT ORIENTED MARINA

Port includes the notion of infrastructure and system, port is a working environment which is composed of upland and sea interface are equipped with docking and tie up facility for shops, for the implementation of unloading goods and passengers flows to happen, from a sea transportation mode (ship) to other transportation mode or vice versa [2].

According to [6] port is a place composed of upland and/or sea interface with certain borders for governmental activity and business activity that is used for ships to dock, haul down passengers, and/or unload goods, in the form of terminal and docking space for ships with shipping security facilities and port supporting activities as well as the place of inter and intra mode transportation movement.

Yacht is a medium sized sail boat for tour/cruise and sports/race. While yachting is a sport or hobby of rowing or sailing. Coastal marina/resort across the world provide small to medium sized boat facility, from simple resorts to real estate resorts and often integrated with port complex.

So tourism harbor marina, is a place that made of upland and/or sea interface that is used as the place for sailing boats or medium sized boats for tourism/yacht dock equipped with accomodation facility for boaters and port supporting activities.

Factors Affecting the Planning and Designing of Harbor Marina

Regarding the requirements need to be met in building tourism harbor which is marina oriented from several different aspects. First of all it need to gain a thorough understanding on factors that will affect facility development, including, not limited on the kind of the tourists or area which nowadays are interesting to be visited or can me an attraction through development of, facility and service, political situation and regulations as well as permits, availability of public services, geophysics and environment. Type of vessels to be served by the harbor in accomodating how the ships operate, understanding on small ship's (yacht) voyage character such as: long itinerary (10 – 25 days), focusing on culture and nature, daily visits and outing that does not require a major port. Boat needs when it is docked, their accomodation facility associated with the necessities of life floats. Combination of maintenance operation and repairs in marina, needs a particular faicility development for dry-docking in the form of courtyard.

Site and Location

Design and composition specifically for marina, depends heavily on site condition factor and location condition factor. First thing to do is field observation to obtain thorough understanding on factors that affect port facility development, including, not limited to what kind of tourists or area currently are often visited or which can be an attraction through development, facility and service; political condition and regulation along with licensing requirements; availability of public service, building material, upland infrastructure and operational resource; distance to the other marina facility; and climate condition, geophysic and environment.

Existing and/or infrastructure potency is crucial. For international tourists attraction, airport facility, also attractiveness of flight, generally play a vital rola in succeeding a certain location. Foreign tourist appeal as well as domestic tourist, easiness of access to facility is the most important. Distances from the centers of the crowd, even though it is important, it is not significant as the time needed to reach tourist destination of marina/resort both from airport or "local" community centers.

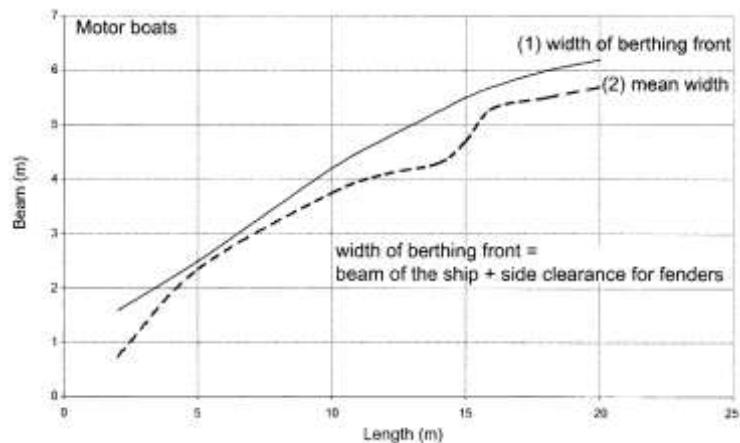
Total of functioning facility should not only as "land" and base for subsequent exploration, as well as a place for *non-boater* to enjoy *waterfront* as well. To decide and integrate the right design to accomodate different destinations will depend heavility on certain location and certain tourists. A tourism oriented facility in Bali such as Sanur, tend to be designed, developed with a very different functions from a facility in Benoa, also very different from operation in Lovina.

Sustainable development of maritime transportation in the area of small islands in Bali from the beginning is the aspect of social culture [4], therefore when assessing the potential marina/resort location in Bali island must start from the culture. Understanding the potential marina/resort location in developing countries and potency is the key to succeed in building a marina. The next step in deciding the feasibility of an area as a whole and the nature of available water resource. First of all to be determined are the kind of tourist activity and *boating* activity which will likely to succeed either for an area and certain location. It is basically close to population centers or location will require travel from a considerable distance. The purpose is to improve international tourism or to improve recreational opportunity and domestic tourism in order to increase the wellness of the native.

The main requirements if a harbor to be developed into tourism oriented or marina as facility in the waters. Therefore, facilites were developed entirely can be included into plot pattern in yacht oriented harbor development.

Lay-out

The lay-out where ship docked is determined by ship's dimension which is an important factor in initial survey. Diagram in Figure 1, shows that in making a plan must taking into account many variations. Genereally small boats don't have additional engine to enter the harbour flow to be safe it need wind direction angle less than 45^0 . Access condition to harbour must be considered carefully. Lay-out, of course, must ensure adequate security from entrance channel to against wave action and against shallowing. After that, layout should be such that a small boat without engine can enter or leave the harbour, implying that the channel must be wide enough to maneuver, every time it need. Other than that, ship's movement need to be flexible, even in rush hours. Especially given the density of traffic in most harbours.



Source: (H.Ligteringen and H. Velsink 2012)

Figure 1 Sizes of motorboats

Generally lay-out will input what the fishermen expect from the marina, a wide range of service that was given in a pleasant environment. In the master plan, the most important factor usually concerns on tide condition. Along the open coastline, marina generally need to be protected by wave breaker. In a more protected area, other systems can be considered, for example floating wave breaker.

III. DATA ANALYSIS AND CASE APPLICATION

Sanur Port Oriented Marina Potency

Understanding the location of potential marina/resort and understand market potency relative to existing marina location and potential is the key to succeed marina development. According to the observation, Sanur, as a whole is an area that is suitable with water resource characteristic available. Type of tourism activity and boating activity that are likely to succeed for the existing area and location. Basically it is close to the settlements or from the location will need a considerable distance of travel. The purpose is to improve international tourism or to increase the opportunity of recreation and domestic tourism for the improvement of native's wellness.

To test the potency from marina resort area in Bali by understanding the market that are relatively developing and will continue to be. Facilities that can support certain events, such as sailing regattas, power boat racing, or other festivals which will become a significant income source for economic sector of surrounding community.

Sanur, administratively is a part of Denpasar City, Bali province, Indonesia was a fishermen village, one of the first cities in Bali with considerably large tourism development, and until now is still a beach resort that become one of main tourist destination in Indonesia (see Figure 2). This place is known internationally as a long beach, variative accommodation, many restaurants and bars, and located on the east side of Bali island, is the opposite of Kuta, including its characteristic and nuance. Sanur beach was a fishermen village that until now most is still retained including its richness in arts and culture so it becomes an ideal tourist destination to enjoy best from both those two eras, classic and contemporary and keep attracting visitors, most of them came from Europe. Sanur Beach was introduced by a Belgian artist named Adrian Jean Le Mayeur de Merpes (1880-1958), had a Balinese wife named Ni Polok. Lived in Sanur from 1932 until death in 1958. Through L. Mayeur's painting about Sanur beach beauty made Sanur beach famous and many tourists visited. Today his home become Museum La Mayeur where approximately 80 of his upmost paintings were shown. After that Sanur changed into traditional tourism port, place for tourists to boat, fish while looking at a spectacular sunrise panorama.

There is a strong potency for tourism development and further recreation in Sanur, especially in Sanur Harbour with a unique history as traditional fishermen port and attractions close by, especially, golf field. To exploit this potential, development of tourism node will help consolidate Sanur beach position as a popular tourist destination, and build a relationship between existing attraction such as Semawang, Sakenan and Benoa, so it will form a tourism cluster. This will increase the attractiveness of local and international visitors, from the whole southern Bali island.

Currently, with existing limitation, it cannot be denied that, Sanur is one of a port in Bali, especially to connect Bali mainland with Nusa Penida and Nusa Lembongan island and also as a port for departure to Gili/Lombok island. While tourism facility with boat is a new thing, Sanur port is now developed to have two use, so that the provision of both port facility, for tourism port and commercial port were made to be compatible and mutually beneficial.

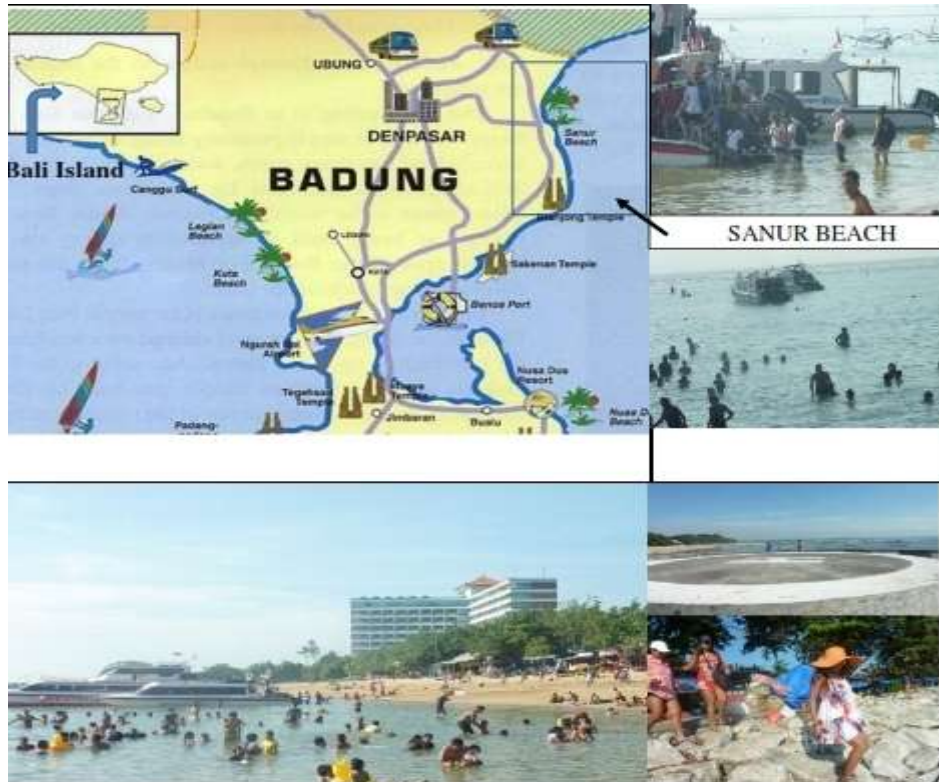


Figure 2 Sanur-Bali Port Potency

Transportation Issues

Before the opening of Benoa port, Sanur is the most crowded area with a better economical development and was chosen by many foreign investors and sailors as their landing point. Sanur Port had been established since the kingdom era and was the first port in Bali just like Benoa port, Celukan Bawang port, or Gilimanuk and Padangbai crossing port. In 1906 northern of Sanur beach was used as landing point for Dutch invasion army during the intervention in Bali. During World War II, Sanur was the entry point for Japanese army landing to colonize Bali island. Then Sanur port developed into traditional tourism port, as a place where canoe and ships tie up and becomes the gateway to small islands in Bali. Today, Sanur becomes ideal location for tourism development as well as real estate, commercial building while most of the beautiful and primitive nature of the environment is still preserved.

The amount of boats and goods loaded through Sanur port is keep increasing, in 2016 there were 7.242 units of boat recorded which all of them are local unloads at Sanur port. Sanur Port have been long since the colonization era until after independence is the gateway for cows and agriculture (bananas and seaweed) from Nusa Penida and Nusa Lembongan island as shown on Table 1. To unload cows, it only need to put it into the sea, because there were no docking facility and other supporting facility to unload those cows.

Table 1 Loading/unloading of goods in boat port

MOUNTH	NUMBER OF SHIP (UNIT)	GOODS			
		UNLOADING		LOADING	
		TYPES OF GOODS	AMOUNTS (CATTLE)	TYPES OF GOODS	AMOUNTS (TON)
JANUARY	465	Cow	155	Goods	80
FEBRUARY	630	Cow	185	Goods	76
MARCH	635	Cow	178	Goods	50
APRIL	523	Cow	327	Goods	32
MEY	576	Cow	525	Goods	40
JUNE	588	Cow	790	Goods	69
JULY	632	Cow	127	Goods	230
AUGUST	588	Cow	190	Goods	80
SEPTEMBER	760	Cow	565	Goods	83
OCTOBER	633	Cow	185	Goods	65
NOVEMBER	588	Cow	50	Goods	105
DECEMBER	624	Cow	115	Goods	150
TOTAL	7,242	Cow	3,392	Goods	1,060

Source: (Syahbandar Sanur 2017)

In 2015 the number of passengers as much as 510.590 people rose sharply to 711.504 passengers in 2016 it increased 28,24%. The biggest increase comes from international passenger as much as 39,99% where in 2015 international passengers were as much as 263.468 rose to 439.061 in 2016 and domestic passenger rose from 247.122 to 272.443 or 9,29% (see Table 2). While for unloading goods in 2016, especially cows from Nusa Penida and Lembongan island with 3.392 head of cattle and loading goods to Nusa Penida and Nusa Lembongan island with 1.060 tons. The number of vessels layover recorded in 2016 amounted as much 7.232 ships, all of them are national ships/boats [7].

Table 2 Number of passengers through the port sanur

MOUNTH	2015		2016		TOTAL		GROWTH (%)
	LOCAL (person)	FOREIGN (person)	LOCAL (person)	FOREIGN (person)	2015 (person)	2016 (person)	
JANUARY	13,000	18,000	23,009	27,868	31,000	50,877	64
FEBRUARY	13,200	18,186	20,646	39,729	31,386	60,375	92
MARCH	16,354	15,292	21,147	28,050	31,646	49,197	55
APRIL	26,560	18,990	19,359	31,374	45,550	50,733	11
MAY	21,628	21,969	25,069	33,896	43,597	58,965	35
JUNE	20,686	23,107	23,639	33,878	43,793	57,517	31
JULY	26,158	31,623	23,599	50,752	57,781	74,351	29
AUGUST	23,128	39,175	23,208	54,797	62,303	78,005	25
SEPTEMBER	20,688	28,098	23,897	40,571	48,786	64,468	32
OCTOBER	22,734	28,210	23,344	39,823	50,944	63,167	24
NOVEMBER	30,907	18,274	21,686	29,503	49,181	51,189	4
DECEMBER	25,079	20,544	23,840	28,820	45,623	52,660	15
TOTAL	260,122	281,468	272,443	439,061	541,590	711,504	31

Source: (Organization of Sanur Custom Village 2016)

As well as passengers that goes into/out of the boat, everyone need to jump into the water (see Figure 2). Even though the number of passengers going trough Sanur port is increasing significantly, but, there is still no research that have discussed Sanur port development, which formulates as the blue print for developing tourism port in Bali. Recently, there were government initiative that already done the effort of countermeasures for damages along the coast. This initiative covers the building of groins along Sanur’s coastline.

On the other hand, there are many worries from society regarding port’s capacity which may not be able to handle future tourism development. Future development at Sanur Harbour will have negative impact to already crowded ship traffic. Therefore, it is important to study the existing harbour’s condition and satisfaction level of sea transportation system at Sanur Harbour from the perspective of tourist and provide knowledge regarding the opportunities and challenges on developing tourism at Sanur beach in the future.

Facilities in the Water

Started from facilities in the water, the first requirement for tourism oriented or marina facility is water depth that is feasible. Information obtained during location assessment will help in deciding suitable minimum water depth. Factors that will affect this decision will become expected ship’s draft, tide, silting rate, variability of tidal rate (especially considering low water depth), and allowable wave height in harbour pool. The tendency in recent years has been toward average depth of draft ship standard, thus requiring a deeper marina waters. Need to be noted that potential variability that attached into tourism oriented facility mostly requiries deeper water, at least in a certain location which only lasted just short from the marina. All other things are considered as equal, that is efficient cost to design marina layout by minimizing or eliminating the need of dredging. Too deep waters can increase construction costs and create significant engineering problem in connection with mooring facilites or facilities for waves protection. From the observation, it is found that in Sanur harbour, problem comes fromthe water are common and there are more possible serious matters. There problems can be solved. The challenge is to develop an infrastructure that can handle it cost-wise also environmental friendly and approvable.

IV. DEVELOPMENT STRATEGY

Convenience for Tourists with Cruise Ship/Yacht

In an effort to increase the country's state revenue through international tourists' visit by encouraging tour travel through sea transportation sector, government through Ministry of Transportation issued Ministerial Regulation No. 121 year 2015 about "Provision of facilities for travelers using foreign-flagged cruise ships" into Indonesian harbor by still referring to Act No. 17 Year 2008 about cruise, Act No. 10 Year 2009 about tourism, Government Regulation No. 20 Year 2010 about water transportation and Presidential Decree No. 105 Year 2015 about international Yacht visits to Indonesia. Law basis is shown on Picture 2.

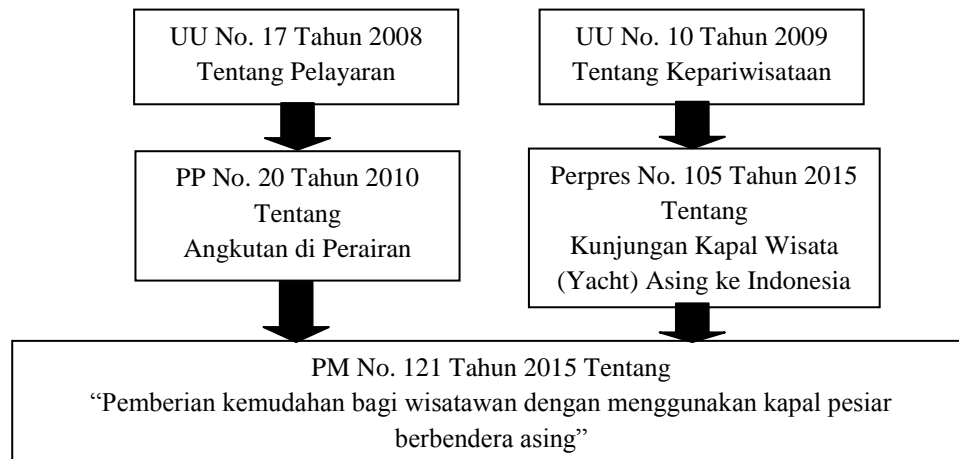


Figure.2 Law basis that provides convenience for international cruise ships

Tourism prospects are getting brighter and strategic in national development to give encouragement and requires strategic steps in improving competitiveness and income from tourists. To implement those regulations, there is a need for acceleration strategies realization of harbor infrastructure development in tourist destination including simplify the visiting permit of cruise ship and yacht. The availability of harbor is expected to be the tourism driver infrastructure in Bali, it must be supported by facilities to attract tourists considering the appeals are more on water area so marina resort are expected to be one of the project that fit and suitable to be developed as well as a solution for Bali tourism's problem.

Port Oriented Marina

The success of developing a recreational sea resort facility oriented in tourism challenge society and marina designer to make a master plan that combines a meaningful integration. To accommodate new tourism, state need to provide infrastructure and the appropriate coast construction, while at the same time ensuring environmental integrity. The ideal marina resort tour must be equipped to serve both interest on upland or sea interface, as i) "port of call" and ii) a base for surrounding sea exploration.

Planing and designing have to cover facilities both for attractiveness or accommodate temporary boat docking for carter boats and also boats from the locals, which combines in an integrated manner variety of services in-land and in-water by considering environment, geophysics, social and economic condition of a particular region.

In many cases, such as the use of marina/resort also can be accompanied with, or put into harbour facility development, also city construction or city development, thus further increase strong economic base and give additional justification that can potentially have high infrastructure cost.

The development of such facility requires that the aspect of marine projects will be fully integrated with the whole plan design not only for development, but also for for others in waters and harbour that utilize upland. Marina designer/consultant need to process it as soon as possible, it is better before the acquisition of a certain location so as to provide knowledge for the community, developer, related government authority with the knowledge from unique desirable aspects and a particular attribute of a location from the sea and environmental perspective along with the problems and challenges on developing the location can be presented.

V. CONCLUSION

Increasing demand of transport both international or local, with the increasing tourism facility such as hotel, restaurant, golf course and others, have resulted in a tremendous demands for the development of Sanur-Bali harbour to be oriented marina.

To gain benefits for local and regional economy also to preserve local natural resources, the main key located on the appropriate site selection that can accomodate access to the beach for recreation and cultural processes.

REFERENCES

- [1]. H.Ligteringen and H.Velsink, *Port and Terminals*, (Delf, Netherlands, VSSD, 2012)
- [2]. Nyoman Budiarta RM, *PELABUHAN: Perencanaan dan Perancangan Konstruksi Bangunan Laut dan Pantai*, (Denpasar, Arti Foundation, 2015)
- [3]. Nyoman Budiarta RM, T. Achmadi, et al. "Port Location Selection Model: Case Study of Tourism Sector in Bali." *Applied Mechanics and Materials*, **776**, 2015, 87-94.
- [4]. Nyoman Budiarta R.M and I. B. Adnyana "The Development of Marine Transportation System in Supporting Sustainable Tourism Case Study: Nusa Penida Island, Bali Indonesia." *Journal of Sustainable Development* 9, 2016,(4): 89-95.
- [5]. Organization of Sanur Custom Village,. *Report of Foreign And Local Passenger Data Years 2015-2016*, 2016
- [6]. *Perpres RI No.105. Tentang Kunjungan Kapal Wisata (Yacht) Asing ke Indonesia*, 2015
- [7]. *Syahbandar Sanur*. Ship Visits summary report and activities of loading / unloading kesyahbandaran station And Bena port authority of Sanur area, 2016.