Analysis of Land Use Changes In The Coastal Pangkep

Muh.Yunus, Amo Tuwo, Didi Rukmana, Rijal Idrus and Sitti Nurani Sirajuddin

Department of Agricultural Sciences Graduate Universitas Hasanuddin, Makassar, 90245 Indonesia
Department of Fisheries, Faculty of fisheries and marine sciences, Universitas Hasanuddin, Makassar, 90245 Indonesia
Department of Agribusiness, Faculty of Agriculture, Universitas Hasanuddin, Makassar, 90245 Indonesia
Department of Marine Science, Faculty of fisheries and marine sciences, Universitas Hasanuddin Makassar, 90245 Indonesia
Department of Social Economic, Faculty of Animal Science, Universitas Hasanuddin, Makassar, 90245 Indonesia

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Address For Correspondence:
Sitti Nurani Sirajuddin, Department of Social Economic, Faculty of Animal Science, Universitas Hasanuddin, Makassar, Sulawesi Selatan, 90245, Indonesia.
Tel: +6281389654334; E-mail: sitti_nurani@yahoo.co.id

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ABSTRACT

The research aimed to determine changes in land use and land mangrove ecosystem ponds in Pangkep. The research was conducted in May-July 2014 Pangkep, south Sulawesi. The research was qualitative approach. Data analysis techniques were used descriptive qualitative. The collection of the data through observation, image interpretation, interviews and literature studies. The results showed during the period 2002-2014 there was a change in the land use changes Pangkep among increased land use extensive cleaning of agricultural land and settlements, while the type of land cover decreased wetland area was agriculture, farm land and mangrove land. Mangrove ecosystem conditions and farm land in Pangkep a significant impact on the availability of coastal fisheries resources. Given the changes in land use that occurred the local government and all relevant stakeholders need immediate action and the arrangement of mutually beneficial space utilization and still preserve the environment around it.

KEY WORDS
Changes in Land Use, Mangrove, ponds, coastal, beach

INTRODUCTION

Indonesia is an archipelago consisting of 17,504 islands with an area of approximately 5.8 million m² and a stretch of coastline of 81,000 km (Dahuri, 2001), has a very large coastal resources, both biological and non-biological. The coastal region of the border between land and sea, therefore the region is affected by processes that exist on land and in the sea.

As one of the coastal ecosystem, mangrove forest is a unique and fragile ecosystem. This ecosystem has the function of ecological and economical. Ecological functions of mangrove forests, among others: the protective shoreline, preventing sea water intrusion, habitat (dwelling), feeding (feeding ground), where the care and rearing (nursery grounds), spawning (spawning ground) for a variety of aquatic biota, retaining the tsunami, as well as a regulator of the microclimate. While the economic function, among others, as a producer of household (charcoal) and industrial use, and producing seeds.

South Sulawesi as a region rich in natural resources provide hope for prosperity waters society. Mangrove is a community on the coast or estuaries in the tropics, which is influenced by the tide, and is dominated by the kind of trees that have the ability to grow and thrive in the salty waters. Mangrove forest area in South Sulawesi is estimated 13841.95 ha. These areas are scattered in several areas, such as Takalar, Bulukumba, Selayar, Sinjai, Jeneponto, Maros, Pangkep, Barru, Wajo, Luwu. North Luwu Luwu Timur, Makassar and Palopo. (Source Satellite Imagery Landsat 7 ETM + sci-offs, acquisitions in 2012).
Coastal ecosystems in a region that is dominated by mangrove forest vegetation and the vegetation plays an important role for the conservation of various species of flora and fauna as well as a source of livelihood for the people of coastal areas so that its preservation should be a price that can not be negotiable. But the facts speak otherwise found in the field from year to year because of the extent of mangrove vegetation instead degraded by deforestation and land conversion, of course, more often for economic reasons.

The dynamics of population from year to year due to population growth and the need for land for development can cause changes in land use in coastal areas. In addition coastal management without regard to principles of conservation impact on coastal ecosystem damage. Beach erosion and sedimentation and pollution by industry is unavoidable due to the conversion of mangrove land in coastal areas.

Based on the data from the conservation area and the area Pangkep based Regent Decree No. 180 of 2009 and Decree 523/179 / Dislutkan dated 25 September 2012 Mangrove ecosystem contained in the mainland coastal areas Pangkep the which are remnants of mangrove forests that grow naturally, or planted by communities around the settlements and ponds. Extensive mangrove forests in the coastal areas of the mainland and the District Liu Kang Tupac yellowish red Pangkep is 1,764 Ha. Pangkep have extensive coastal area of 781.13 square kilometers or 70% of the land area. Additionally, Pangkep has a long coastline along 95 km. In the period 2003 to 2013, the area of mangrove forests along the coastal areas in Pangkep many experienced conversion into ponds. During that time span, spacious ponds that have developed an area of 13494.80 hectares of shrimp ponds with primary commodities and milkfish (Department of Maritime and Fisheries Pangkep, 2012), this causes the degradation of mangroves to be one of the most serious issues. According Bengen (2002), destruction of mangrove forests are more extensive to be converted into the pond will have an impact on the loss of biodiversity and resources in other ecological functions of ecosystems. Purwoko (2005) found that damage ecosystems in coastal areas impact on fishing communities’ mangrove income Decreased by 33.89%. In addition, the conversion of mangrove forests for fishpond development of fishing activities will have an impact on the economic conditions surrounding communities such as local employment and Increased levels of social welfare. Therefore, this study aimed to determine changes in land use and land mangrove ecosystem pond in Pangkep.

MATERIALS AND METHODS

This study was conducted in May-July 2014 Pangkep, South Sulawesi. The type of research conducted field observations, interpretation of images, interviews and literature. The research study is a survey research. The research variables collected include physical potential and the socio economic potential. Methods of data collection includes primary data, the field observations from both physical observations or interviews with Several sources related to the research location, including views / Aspirations of the people related to the management of the mangrove ecosystem in the District secondary Pangkep and Obtained from the study of The literature on basic physical condition, local community profiles, Map and image aerial / satellite imagery, Landsat 7 ETM + 2014, as well as research beforehand the data associated with this research, and by conducting a survey of institutional. Furthermore, in this study, Also using the format of the data / spatial information (in the form of maps) and data / information non-spatial or attribute (in the form of statistical Data and descriptive data. The data analysis is spatial analysis.

RESULTS AND DISCUSSION

Overall land use within the scope of the study in Pangkep is 13,156.99 Ha comprising: a secondary forest land, open land, mangroves, plantations, settlements, agricultural wetlands, dry land farming, ponds and water bodies. Based on the results of the spatial analysis of land use in Pangkep found that there are several types of soil changes due to the land area of land use to another. The term (twelve) years from 2002 to 2014 occurred some shift in land use, as shown by increases and loss of use of land. Land use extension additional experience that is open land, plantations, settlements, dry land farming, while experiencing a reduction in the land area is secondary forest, mangrove, ports, agriculture, wetlands and water bodies.

Changes in land use that experience large increase from 2002 to 2014, namely the use of agricultural land have additional dry land area of 926.27 hectares of the area of 676.06 ha to 1602.33 ha; land use settlement has the addition of an area of 124.54 hectares of the area of 43.98 ha to 168.54 ha; the use of open land has the addition of an area of 44.49 hectares of extensive 17:21 ha to 214.69 ha and land use ports that use the land area of 11.91 hectares. While the land use changes that experienced a reduction in the use of agricultural land area that is experiencing a reduction in wetland area of 955.36 hectares of the area of 2181.13 ha to 1225.78 ha; the use of farm land experienced a reduction in an area of 125.23 hectares of 9127.10 ha to 9001.87 ha; land use mangrove experienced a reduction in an area of 29.29 hectares of 382.75 ha to 353.48 ha; and secondary land use of forest land experiencing a reduction of 6.86 ha of 277.39 ha to 270.53 ha. From 2002 until 2014 Mangroves in coastal areas Pangkep undergo changes in land use are: mangrove converted into farm land area
of 62.40 hectares; be open due to the hoarding of land covering an area of 6.59 hectares and become the construction site of the port area of 1.16 hectares to the mangrove area of 382.75 hectares in 2002 tersisa an area of 312.60 hectares in 2014. But on the other hand, the mangrove suffered extensive additions to the mangrove planting on land that is unproductive lands of 35.44 hectares, the planting program in the coastal area of 1.46 ha, the mangrove planting in open land area of 0.78 hectares and the planting of mangroves in wet agricultural land area of 3.20 hectares, so in 2014 mangrove has a total area of 353.56 hectares.

While the process of farm land use changes from 2002 to 2014 ie land embankment changed into wet agricultural land area of 246.95 hectares; into a residential area of 79.96 Ha; into a mangrove area of 35.44 hectares of land; Become cleaning of agricultural land area of 28.35 hectares; into an open land area of 15.94 hectares; into the port area of 10.26 hectares, into a body of water covering an area of 0:12 hectares; 0:04 hectares to plantations and secondary forests into land area of 0.004 Ha. So farms covering an area of 9127.10 ha in 2002 remain an area of 8710.04 ha in 2014. But on the other hand Also has the addition of extensive mangrove with the change of land use into ponds items, namely: a change in the function of wet agricultural land into ponds covering 96.78 hectares; dryland farming area of 65.34 Ha; the conversion of mangrove area of 62.40 Ha; residential land area of 37.41 hectares; open 18.46 hectares of land area; plantations covering an area of 7.54 hectares and secondary forest land into embankment land area of 3.33 hectares. So that the pond has a total area of 9001.87 ha. For land use in Pangkep as a whole can be seen in Table 1, Figure 1 and Figure 2.

While the results of image interpretation on changes in land use in coastal areas in Pangkep is based on the results of spatial analysis of land use change coastal areas Pangkep by using the image of Landsat TM 7 2002 - 2014, shows the change in land use from 2002 to 2014 occurred shifts in land use between the one with the other is to have a reduction of secondary forest land area of 6.86 hectares, a reduction of mangrove experienced area of 29.29 hectares and wetland agriculture experienced a reduction in an area of 955.36 hectares and farm experienced a reduction in area of 125 230 ha, while for land use roommates Suffered extensive additions are open to experience mining land area of 44.9 hectares, the estate has the addition of an area of 11.91 hectares and settlement suffered extensive additions amounted to 124.56 ha and dryland agriculture has the addition of an area of 955 360 ha. For land use in Pangkep as a whole can be seen in Table 1, Figure 1 and Figure 2.

Causes shift change of land use of coastal region Pangkep influenced by the need to meet the needs of the population which is increasing in number and increasing demands for a better quality of life. Within 5 (five years from 2007 until 2012 the tendency of an increasing number of the population that in 2007 a population of 302 874 inhabitants and in 2012 a population of 325 239 people (BPS Pangkep, 2013). The population growth led to the need for increased welfare, consumption, demand accessibility and the need for land to settle so as to encourage people to do the conversion of land or land-use change, this is in accordance with the opinion of Barlowe (1986) states that in Determining the use of land there are four important factors to be Considered are: factors of physical fields, the factor of economic and institutional factors. In addition, factors of social conditions and local culture will Also Affect the pattern of land use, land conversion of mangroves into fishponds in Pangkep is the effort of society to improve the livelihoods and the need for consumption, conversion of mangrove ecosystems into farms within 12 (twelve) years of 62.40 Ha, Ha 1:16 port development and the hoarding of land at 6:59 ha. While changes in the function of land use land into settlement ponds Also Showed an increase is in the amount of 79.96 hectares of total land requirement of settlements of 168.54 Ha. Appropriately that it is said Barlowe (1986) Affect land use factors that are physical factors and biological factors and economic considerations of institutional factors (institutional). Physical and biological factors include physical properties such as suitability of the geological conditions, soil, water, climate, vegetation, animal and population. Economic factors are characterized by profit considerations, market conditions and transportation. The institutional factors are characterized by land law, political situation, social circumstances and the administration can be Carried out. Experts argue that the land use change is the caused by human needs and desires. According to McNeill et al., (1998) the factors that drive land use change is the political, economic, demographic and cultural. Political aspect is the policy Carried out by decision makers who influence the pattern of land use changes. Further economic growth, changes in income and consumption is Also a factor contributing to land use changes. For example, the growing need for space where living, transportation and recreation areas will encourage changes in land use.

Shifting land use changes that occur in Pangkep can cause environmental damage, especially on changes in land use of mangrove ecosystems into farms land. This can cause damage to the mangrove forest in Pangkep, if it is not treated Immediately it will cause serious harm to the ecology of the mangrove forest and the impact on the coastal erosion is increasingly critical, sea water intrusion further into the mainland, fishery potential decreases, wildlife and various other types of habitat disturbed and reduced income sources surrounding communities. Therefore, mangrove ecosystems need to be conserved in order to Obtain the maximum benefit in the present and the future. Efforts are trying to do to reduce the rate of utilization of mangrove ecosystems are already showing results, it is shown by the increasing number of extents of mangrove ecosystem of mangrove planting program amounted to 1:46 Ha and of the replanting of unproductive land on the embankment of 35.44 Ha.
Conclusions:
Changes in land use has increased among instant confirmation cleaning of agricultural land and settlements, while the type of land cover decreased. Wetland area is agriculture, farm land and mangrove land. Mangrove ecosystem conditions and farm land in Pangkep have a significant impact on the availability of shore fishery resources. Roommates become the foundation of people's lives around the coastal area of this. Given the various changes in land use that occurred, the local government and all relevant stakeholders should take action immediately structuring and mutually beneficial space utilization and still preserve the environment around it.

REFERENCES