

UNIVERSITATEA DE ȘTIINȚE AGRICOLE ȘI MEDICINA VETERINARĂ  
ION IONESCU DE LA BRAD  
IASI-ROMANIA

ȚUCRĂRI  
ȘTIINȚIFICE  
SERIA MEDICINĂ VETERINARĂ  
VOL. 55 (NR. 3-4)



Editura „ION IONESCU DE LA BRAD“  
ISSN 1454-7406

**UNIVERSITATEA DE ȘTIINȚE AGRICOLE ȘI MEDICINĂ  
VETERINARĂ ION IONESCU DE LA BRAD  
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**LUCRĂRI ȘTIINȚIFICE  
SERIA MEDICINĂ VETERINARĂ  
VOL. 55 (3 – 4)**

**ISSN 1454-7406  
Editura „ION IONESCU DE LA BRAD“  
2012**

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Volumul a fost editat cu sprijinul financiar al  
Ministerului Educației, Cercetării, Tineretului și Sportului

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## ADAPTATION OF FISHING COMMUNITIES IN COASTAL RECLAMATION AREAS IN MANADO CITY

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### **Abstract**

*The phenomenon of coastal development through reclamation needs to be studied related to the existence of coastal communities, particularly fishing communities. Fishing communities have a high dependence on coastal ecological resources for social and economic activities. Study of post-reclamation fishermen adaptation is the knowledge needed to determine the positive and negative impacts on coastal communities in relation to coastal development. This study uses a case study approach, which is studying the adaptation aspects post-reclamation fishing communities in the city of Manado. Adaptation of fishing communities after reclamation is done through the struggle to get right a boat moorings. Jetty into the critical issues related to the sustainability of fishing opportunities. Similarly, fishermen who moor boats licensed by the developer, get the double benefit of the fishing and easy access to jobs outside the fisheries.*

**Keywords:** adaptation, fishermen, reclamation, boat moorings

### **Introduction**

Adaptability (*adaptive capacity*) is the ability to react to challenges through learning, risk management and its impact, in the knowledge that the new development with a more effective approach (Marshall *et al.*, 2009).

On social systems, adaptability is a characteristic of conscious, able to develop institutions, cooperation in harnessing knowledge and experience, and create flexibility in problem solving, have the ability to cope and adapt to change (Armitage 2005; Holling and Meffe 1996; Nelson *et al.*, 2007; Scheffer *et al.*, 2001). Adaptability is largely influenced by the sensitivity of the community will change and environmental damage and climate (Adger, 2006; Adger *et al.*, 2005; Rapport *et al.*, 1998).

Changes in coastal environments due to increased human activity in coastal areas need different adaptation strategies of coastal communities, including fishermen community. Geographically fishing communities are communities that live, grow, and thrive in the coastal area, which is a transition area between land and sea areas (Kusnadi, 2009). As a system, a fishing community consists of social categories that make up social unity.

Concentration of human activities in coastal areas led to the phenomenon of coastal settlement. Arrangement referred to, namely to maximize the function of the beach to the pressure of population and activities. One form of the arrangement of the beach is through reclamation. Reclamation conducted by stockpiled coastal and marine areas to serve new land, both for housing and infrastructure supporting the socio-economic activities.

Technically able to change the configuration of the beach reclamation and closing some areas to the sea. Although as a solution to the fulfillment of the coastal space, environmental and ecological problems often occur in the process of reclamation, in the form of beach erosion and sedimentation, changes in coastal wetlands, coastal habitat loss, and

changes in the marine environment (Barnes, 1991; Noske, 1995; Ni *et al.* 2002; Terawaki *et al.* 2003).

The phenomenon of coastal development through coastal reclamation needs to be studied related to the existence of coastal communities, particularly fishing communities. That which needs to be underlined that fishing communities have a high dependence on coastal ecological resources for social and economic activities. This dependence is a consequence of vulnerability in the event of significant changes in the region. If the nature of the vulnerability of the region are not addressed, it will display the conflict between the interests of coastal resource use for subsistence and economic development in the short term generation needs to come to the coastal resources.

Study the adaptation of post reclamation fishing communities in the Manado of North Sulawesi Province, Indonesia, is the knowledge needed to determine the positive and negative impacts on coastal communities in relation to coastal development.

### **Materials and methods**

This study uses a case study approach, which is studying the adaptation aspects post-reclamation fishing communities in Manado. The case study is a research strategy that is used in various situations that contribute to the understanding of phenomena associated with individuals, groups, organizations, social and political (Yin, 2003).

The objective of this study, namely the family and fishermen family members who are directly affected of coastal reclamation activities in Manado. Object of study is taken from the family and family members living at the site reclamation, which is in the Titiwungen, South Wenang and Sindulang Village.

Data analysis was performed with qualitative techniques, ie since the beginning of the researchers took the data, for data retrieval, to the end of the accumulation of all data according to issues and do more intensive research after returning from the field. All data are available are reviewed and reduced and abstracted to form an information. Unit information is interpreted and processed in the form of research results to a conclusion at this stage.

### **Results and discussion**

#### **Coastal Communities and Coastal Reclamation in Manado**

Manado is the capital of the North Sulawesi province located between: latitude  $1^{\circ}25'88''$ - $1^{\circ}39'5''$  S dan longitude  $124^{\circ}47'00''$ - $124^{\circ}56'00''$  E. Manado as a city located in the coastal region has five districts coast.

The main tribes located in Manado, ie Minahasa, Sangir, Bajo, Bolaang Mongondouw, Gorontalo, Bantik, and ethnic mix (Padang, Arabs, Bugis, and Javanese). More mixed tribes inhabiting the center of Manado, general merchant by profession. Tribal mix also includes six major tribes have been mixed in the bond of marriage.

Although Manado said to be a beach town, but the development until the year 2008, Manado city tend to be classified as trade and services. This is because the contribution of industrial sector and the services of employment and to the formation of the Gross Regional Domestic Product (GDP) is still relatively dominant compared to that in which the agricultural sector including fisheries sub-sector.

**Table 1.** The number of coastal districts in Manado

No	Sub-district	Number of Village	Total Population (people)	Length of coastline (m)
1.	Bunaken (Siladen, Bunaken and Manado Tua)	8	36,555	40,050
2.	Tuminting	6	21,171	5,225
3.	Wenang	2	4,519	2,325
4.	Sario	4	15,588	2,610
5.	Malalayang	5	27,868	8,502
Total		25	105,701	58,712

Source: CRMP (2002)

**Table 2.** Composition of the Working Population by Group Business Sector, 1998, 2003 and 2008

Field Work	1998	2003	2008
	----- % -----		
Agriculture	5.96	5.10	4.98
Industry	15.24	18.23	16.83
Services	78.79	76.67	78.19

Sources: National Social Economic Survey 1998, 2003, Sakernas 2008

The services sector is still dominated the past 10 years, while the proportion of people working in the agricultural sector continued to decline from 5.96 percent to 4.98 percent during the period 1998 to 2008. Spatial structure in Manado in 2000, showing most of Manado included in the services and trade, office and marine tourism.

Increasing the proportion of people who work in Manado related services with the launching of a government policy of Manado in 1990, the reclamation. The project was rejected by many local residents who received support from a number of environmental activists and non-governmental organizations, given the social impact would threaten the lives and future of fishing in the area or location of the reclamation project.

Along with the loss of some parts of the coastal city of Manado coastal communities also experience a variety of livelihood-related loss of coastal fisheries and the relocation of people going into the new settlements.

### **Livelihood Adaptation to First: Fishermen to the City**

Although Manado has developed rapidly into a city of trade and services, but the family fishing can still be found, either as fishermen, fishing workers, and multiple livelihood of fishermen. Reclamation is very pronounced influence on the family group *in-shore fishermen*, ie fishermen who do fishing effort around the beach and the sea city of Manado. This group of fishermen who normally anchor the boat as a means of catching fish in the seashore city of Manado. Fishing operations carried out at any time depending on the weather, so the need for a safe boat mooring space when the weather is absolutely necessary unfriendly.

The presence of *in-shore* fishing communities post-reclamation can still be found, but have been scattered. This condition occurs as a result of reclamation carried out by developers and for developers. The struggle to get the boat mooring location, must be done with great effort.

The group is promoting the rights of fishing jetty from the developer. This struggle to fruition in the form of granting approval jetty location. Locations in the reclamation area is often used to sell the catch of fishermen, which is on the edge of the road mall locations.

Consumers want it because it catches fish freshness is guaranteed. The observations of researchers in one of the fishermen in the boat mooring location Titiwungen Village, fishermen sell the fish is still alive. Consumers usually come from people who exercise in the morning around the site reclamation and also mothers who live around the Titiwungen Village.



Source: photographs of the study, 2011.

**Fig. 1.** Location of boat moorings facility (reclamation areas) in the Titiwungen Village, Manado, and transaction fresh fish catch fisherman

A big advantage for fishermen, because the conditions are still fresh fish to sell high-value, in addition to marketing is not difficult because consumers are familiar with the locations of traditional fishing boat moorings.

The catch of fishermen in the city not only enjoyed by urban households. Employers restaurant, which provides a culinary specialty of grilled fish in desperate need of high quality

fish. Grilled fish restaurants in the area of reclamation has always accepted the catch of local fishermen around the coastal city of Manado for guaranteed freshness.

### **Livelihood Adaptation to Double: Cities for Fishermen**

Season causes the dependence of fishermen on fishing operations can not be done throughout the year. There was a time “peceklik” where fishermen can not go to sea because the sea wave conditions. In such conditions the fishermen hope to earn money for family needs can be disrupted, so that fishing effort needs to be done outside the family fishing business.

Manado with a variety of social and economic activities provide employment opportunities to all walks of life including fishing. A bad season will be the day the guerrillas said one informant, in order to find a job through acquaintances who have contacts an acquaintance. Sometimes the work is not only located in Manado, but acquaintances who have contacts outside Manado is often also offered a job.

Fishermen who have the skills to choose to drive a motor vehicle towing a motorcycle taxi or choose a job working in shops, factories, restaurants, or the choice of a construction worker. Sell energy services is the only option that can be done when a bad season fishermen.

The life cycle of fishing there is always a bad season and the ease of getting a replacement job is a strong motivation to stay afloat fishermen on the coast of Manado. Various efforts, including forming groups of fishermen and in cooperation with nongovernmental organizations in Manado is a form of self defense to defend the right to marine resources, in addition to the awareness of fishermen weak position if the work is far from a substitute source of employment other than fishing.

### **Adaptation of Production Facilities: Boat Modifications**

Modifications made boat fishing communities as a form of livelihood adaptation of fishermen into the water transportation service providers with the boat. Most types of boats available in the Village Sindulang I site of reclamation for the construction of the coast road is a type of boat "Londe". Boat "Londe" is a kind of small boat fishermen who often used the traditional "hand line" for fishing operations around the coast of Manado.

This type of boat can accommodate two people, paddle fixtures or machinery furnished “katinting” as a driver of the boat. Difficulties that arise as a result of environmental changes that have implications for the reluctance of coastal fishermen go to sea pushed the boat fishermen utilizing the services of craftsmen to modify the boat "Londe" a boat that can be used as a means of water transportation. Modifications carried out with the aim of improving the function of the boat "Londe" from one function, that means fishing a dual function, which can be used as fishing boats and means of transport.

Than as a means of water transportation, boat modification is often used as a boat for fishing through rent to the owner of the boat. Modification is a bit much to give double benefit to the families of fishermen, even though the capacity of the estuary of the river becomes a limiting factor on the number of modifications to be able to operate a boat.





Source: photographs of the study, 2011.

**Fig. 2.** Boat modification and transportation activities which cross the Tondano river, Manado

### Conclusion

1. Social groups were formed to increase the "*bargaining position*" of traditional fishermen in order to gain concessions of natural resources for the continuation of his life. Indication is shown by the success of a boat mooring space in site coastal reclamation.
2. Substantiality of traditional fishermen occupy the coastal city of Manado is attributed demanding equal rights to resources including coastal areas of fisheries resources, substantiality is also based on the awareness of fishermen weak position if the work is far from a substitute source of employment other than fishing. In other words, fishermen protest against reclamation is not absolute because of disruption of fishing activity but rather due to the fear loss of access to employment outside the fishing activity.
3. Employment opportunities offered by social economic activities in Manado is a guaranteed source of income and livelihood sustainability, while the fishing job is a job that will be retained since it is the business for generations. Kinship as draftsman (fishermen) or the local lived close to the access to sources of income outside of fishing effort, foster social interaction in solving the problem of scarcity of fish catches in order to find other solutions to the social networks for a variety of possible bid livelihood.

## References

1. Adger, W.N., 2006. Vulnerability. *Global Environmental Change* 16, 268-281.
2. Adger, W.N., N.W. Arnell, E.L. Tompkins, 2005. Successful adaptation to climate change across scales. *Global Environmental Change*.
3. Armitage, D., 2005. Adaptive Capacity, Social Capital and Co-Management. In 'Adaptive Co-Management Symposium'. Waterloo, Ontario p. online at: <http://www.omrn.ca/documents/Armitage.pdf>.
4. Barnes, R.S.K., 1991. Dilemmas in the theory and practice of biological conservation as exemplified by British coastal lagoons, *Biological Conservation* 55(3).
5. CRMP, 2002. Atlas Sumberdaya Wilayah Pesisir Minahasa-Manado-Bitung. Kerjasama Pemerintah Provinsi Sulawesi Utara, Kabupaten Minahasa, Kota Manado dan Kota Bitung. Proyek Pesisir (USAID Indonesia, Coastal Resources Management Project), Manado, Indonesia.
6. Holling, C.S, and G.K. Meffe, 1996. Command and Control and the Pathology of Natural Resource Management. *Conservation Biology* 10.
7. Kusnadi, 2009. *Keberdayaan Nelayan dan Dinamika Ekonomi Pesisir*. Diterbitkan atas Kerjasama Pusat Penelitian Wilayah Pesisir dan Pulau-Pulau Kecil Lembaga Penelitian, Universitas Jember dengann Penerbit Ar-RuzzMedia. Yogyakarta.
8. Marshall, N.A., P.A. Mashall, J. Tamender, D. Obura, D. Malleret-King, dan J.E. Cinner, 2009. *A Framework for Social Adaptation to Climate Change*. Sustaining Tropical Coastal Communities & Industri. IUCN (International Union for Conservation of Nature) Publications Services. Switzerland.
9. Nelson, D.R., W.N. Adger, and K. Brown, 200. Adaptation to Environmental Change: Contributions of a Resilience Framework. *Annual Review of Environment and Resources* 32.
10. Ni, J.R., A.G.L. Borthwick and H.P. Qin, 2002. Integrated approach to determining postreclamation coastlines, *Journal of Environmental Engineering-Asce*, 128 (6).
11. Noske, R.A., 1995. The ecology of mangrove forest birds in peninsular malaysia, *IBIS* 137 (2).
12. Rapport, D.J and C. Gaudet, 1998. Evaluating Landscape Health: Integrating Societal Goals and Biophysical Process. *Journal of Environmental Managemen*.
13. Scheffer, M., S. Carpenter, J.A. Foley, C. Folke and B. Walker, 2001. Catastrophic Shifts in Ecosystems. *Nature* 413.
14. Terawaki, T., K. Yoshikawa, G. Yoshida, M. Uchimura and K. Iseki, 2003. Ecology and restoration techniques for Sargassum beds in the Seto Inland Sea, Japan, *Marine Pollution Bulletin* 47 (1-6)
15. Yin, R.K., 2003. Case Study Research. Design and Methods. Third Edition. Sage Publication.