The Fiscal Aspect for Land Accretion Development by Using Landsat TM / ETM Image (Case Study Segara Anakan Area)

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Keywords: Local Government Land Taxation, Land Accretion Development Products, Landsat TM Multi-Temporal Images, Indonesia.

SUMMARY

Land accretion development process appear due to the sedimentation process at certain area near Segara Anakan Area, Central Java, Indonesia. The local land n tax office which responsible to indentify any land taxation, do not yet determine the value of this kind of land taxation, because the land accretation products as a national government properties are not yet ruled on the right of taxation purposes. Eventhough the local communities were starting to use those lands certain purposes such as for agriculture and fishery activites. Besides the land accreation development itself was still difficult for local government to do some continue identification. This kind of matters actually are an opportunity for Land Taxation Office to maximize the potential local area revenue of the land taxation.

In order to solve this matters, An alternative approach for data collection and indentification is using multi-temporal Landsat images, these data can be used to identify the land accretion development process and land use changes for property tax valuation purposes. The determination of property tax valuation for land accretion development products are based on the comparison method of market data with the land taxation value on the surrounding villages within the year of 1998 up to 2005. However, the property valuation of water area is conducted by slightly adapting the land fisheries or agriculture valuation procedures.

The results show that Landsat TM/ETM images can be used to determine land use/cover changes in Segara Anakan accretion lands, where as the water area reduced about 3.386 Ha, On the other hand the area of Segara Anakan accretion lands increased to be 3.770 Ha. There are also 314 Ha the unclassified area. Based on the area identification from landsat TM images, the potential aspects of fiscal revenues for Local government land taxation of the land accretion development product is a very significant values such as Rp 305.730.699 in 1996, and Rp 995.121.972 in 2001.

In conclusion, the policy related to the satellite data aquistion to monitor the accretion development of lands can be carried out minimal every 5 years, with maintenance of data can be done every year. The property valuation for land accretion also can be ditermined every 2 years. Finally, the assessment of fiscal aspect for local government land taxation of land accretion development products should consider as a community income.

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1. INTRODUCTION

Local government land and building taxation has been declaired as source of regional revenue and the strengthening of fiscal decentralization according to decree UU No. 28 Year 2009. The local government land taxation office in each region/district is obliged to explore the land taxation revenues by doing intensification and extensification of land and property valuation. Intensification is done to the land taxation objects and some reclassification of real property. Extensification is done by doing data collection and valuation.

Data collection and valuation to new object and subject tax is which during the time done by doing Forwarding and Monitoring Return of Tax Object Declaration Form (SPOP), Identifying Tax Object, Tax Object Verification and Measuring Tax Object Area. The some ways can reach effectively and efficient depended from condition of data area.

Area which not yet had administration data of Land and Building Tax can be done by the way of first and second. Two way of it if done step by step or separated will require big expense and time. There are alternative technology to overcome technical problems above, that is by utilizing image of remote sensing having extent of record area coverage and quickly in its acquisition. One of the image of remote sensing having extent of record area coverage is Landsat. Expected with image of Landsat TM / ETM can be identified tax object and at the same time the forwarding and monitoring return of SPOP to know the PBB potency.

In this research take case in area of Segara Anakan which not yet had map data and administration of Land and Building Tax. Area of Segara Anakan consist of 4 villages which don't have certain boundary. This matter because of existence of sedimentation in waters territorial from various river which have estuary to Segara Anakan, like river of Citanduy, Cibeureum and Cikonde. One of the sedimentation effect in Segara Anakan is the existence of land accretion phenomenon with various exploiting by society. Land accretion and waters territorial in natural Segara Anakan change along with time and is fast of sedimentation. This condition become idea to KP.PBB in tax assessing, considering the existence of exploiting of land accretion and waters in region. Level of tax depended from extent of land accretion and identified waters. Identifying land and land changes on continuous can be done by using Landsat multi-temporal image

2. PROBLEM DEFINITION

From background above, hence can be formulated problems that happened in territorial waters of Segara Anakan to requirement of KP.PBB which active in fiscal aspect or taxation
1. There is no assessed of PBB for land accretion and Segara Anakan waters
2. Change of continent and waters quickly as effect of sedimentation, in this time cannot identify on an ongoing basis.
3. Land accretion and waters represent goverment land which not yet been encumbered by rights,

Of problems above, hence can be formulated some ways to overcome, that is
1. How knowing the level of potency of PBB land accretion and waters object
2. How identifying land accretion object in Segara Anakan by using image of Landsat TM / ETM multitemporal
3. How imposition of appropriate PBB for the land accretion object and waters in Segara Anakan.

3 HYPOTHESIS

Hypothesis the raised [is]
1. Potency of PBB of land accretion object and waters can know from image data of Landsat TM / ETM.
2. Land accretion object can identify by using image of Landsat TM / etm
3. Imposition of appropriate PBB for land accretion and waters can be applied by considering data collection, assessment and imposition of PBB.

4. OBJECTIVES

Objectives of this research is :
1. Knowing the level of potency of PBB land accretion object and waters
2. Knowing the existence of change of land / land accretion object by using image of Landsat Multitemporal
3. Evaluating management of appropriate fiscal aspect for the land accretion object and waters in Segara Anakan.

5 BENEFIT RESEARCH

Research benefit to importance of PBB is :
1. Giving estimate level of PBB potency in region of Segara Anakan.
2. Studying usage of Landsat TM / ETM image as early stage in levying of data
3. Giving alternative management of fiscal aspect / PBB for land accretion and waters.

6 SCOPE OF RESEARCH

Scope of research is limited at management of fiscal aspect to land accretion in coastal region, specially Segara Anakan. By demarcation :
a. Research location in District of Kampung Laut, County of Cilacap, Central Java.
b. Influence of ebb, level of current irrigate erosion level and river do not be paid attention or disregarded.

c. Land value per m2 pursuant to Decision Kakanwil about Classification Assess Land for the land of continent, and Decree of Director General of Taxes KEP-16/PJ.6/1998 about Assessing Land and Building Tax.
d. Assumed happened increase of land value class and waters territorial every three year once.
e. Assumed that any land in area of Segara Anakan is goverment land which have been encumbered by rights.
f. Assumed that the each land represent 1 (one object).
g. Only land is assessed as tax object in this research

7 METHODOLOGIES

Methodologies in this research consist problems definition, determination of target, data collecting surroundings land value and fisheries invesment value, Bakosurtanal mapfor the area of research and its surroundings, image of Landsat TM / ETM in 1996 and 2001.

Then, it is done by valuation to land value and waters by based on surroundings land value by doing certain adjustment. From land value of adjustment result is formed trend model with three alternative model that is linear, quadratic, and cubic.

Image processing is meant to get spasial data of land, that is land extent. Land extent which have been obtained to be multiplied with land value and waters per m2 to obtain NJOP. NJOP which have been obtained is hereinafter related with assessment component of PBB like NJOPTKP, NJKP and tariff. So that can be obtained Land and building tax potency of lands in research area. As complete as can be seen in flow chart in Figure 1.

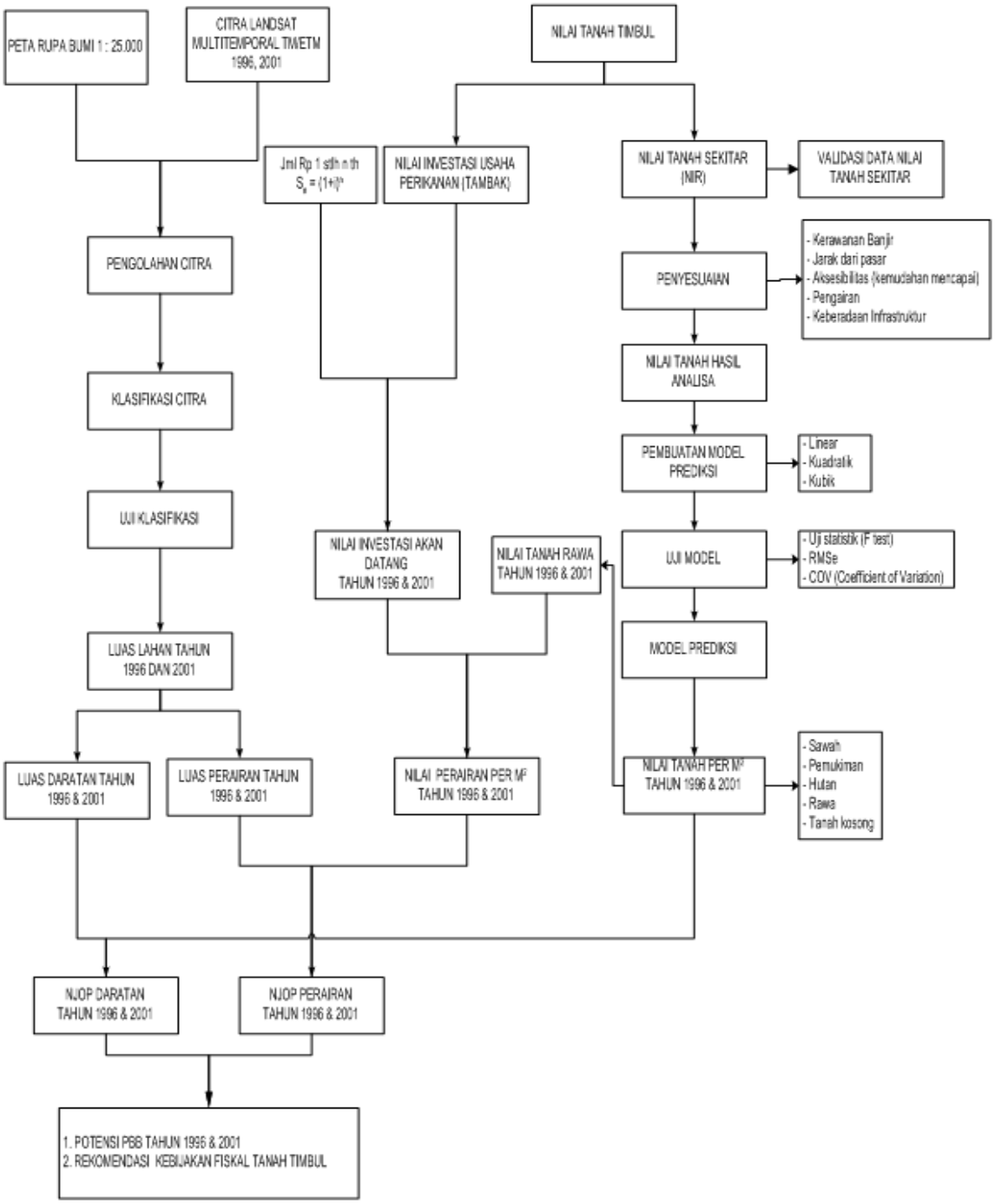

Figure 1 Research Flow Chart.

8. PREVIOUS RESEARCH

Some research which have been done by exploiting remote sensing to the following research region : Ruslan (2003) exploite satellite image of IKONOS in delimitating type and area usage of building object PBB. In research of image data of IKONOS can assist determination

of area boundary property and extent calculation of PBB object, with extent difference between extent result of field size measure result and digitations result in general have difference below 10 %. Thereby hence result of size measuring of digitations image data of IKONOS can be for the determination of boundary and extent of PBB object.

Isriyanto (2003) exploit image of Landsat ETM+ Multi-temporal for the Determination Of Regional Priority Data collection of tax object in Bogor and can know by 5 village have given high priority in data collection of tax object.

9. RESEARCH LOCATION AND USED DATA.

Research area is located in Segara Anakan which consist of 4 villages, that is Panikel, Klaces, Ujunggagak and Ujungalang. This area is included in region District of Kampung Laut, County of Cilacap, Province Central Java
Following equipments and data which [is] used in research : Research data consist of : Landsat TM/ETM satellite image of multitemporal for the County of Cilacap area or

Tables 1 Statistical Test Result of Prediction Model.

Lahan/Model	**Rawa**	**Pemukiman**	**Tn Kosong**	**Sawah**	**Hutan**
	Linier	***cubic***	***Linier***	***cubic***	***Linier***
R Square	0,893	0,947	0,883	0,959	0,863
Adj R Sq	0,875	0,907	0,864	0,929	0,84
SEE	0,080	0,285	0,126	0,233	0,287
F test	49,951	23,638	45,429	31,528	37,723
t test	7,068	0,587	6,74	0,197	6,142
a	0,563	1,22	0,727	1,116	0,92
b	0,088	0,373	0,131	0,102	0,272
c		-0,052		0,031	
d		0,006		0	
RMSe	0,069	0,202	0,109	0,165	0,028

Tables 2 Equation Models of Land Valuation

Lahan	**Model**	**Persamaan**
HUTAN	Linier	Y= 0,920 + 0,272x
RAWA	Linier	Y= 0,563 + 0,088x
PEMK	Kubik	Y= 1,22 + 0,373x - 0,052 x^2 + 0,006x^3
SAWAH	Kubik	Y= 01,116 + 0,102x + 0,031x2 + 0,000x3

Territorial water which there are [in] research area can be grouped to become 2 that is
1. Waters do not to the effort fishpond. In assessment of territorial water which do not be utilized for fishpond, pursuant to Director General of Taxes No : SE-30/PJ.6/1999 of is 17 May 1999, hence level of NJOP territorial water determined pursuant to straight line correlation aside with classification of NJOP surface of earth in the form of land;ground around him,
2. Waters to the effort fishpond. In assessment of territorial water utilized for fishpond, pursuant to Decision of Director-General of Taxex No : KEP-16/PJ.6/1998 about Imposition of Land Tax and Building. Related to research area, where 30 % territorial water areal utilized to the effort fishpond.
Pursuant to Decision Director-General of Taxes No : KEP-16/PJ.6/1998 about Assessment of Land and Building Tax, in section 12 article 1, that NJOP level of tax object is effort land fishery area determined as follows : for the areal of fish conducting land [is] equal to NJOP in the form of surrounding land value with required adjustment to be added by invesment cost standard with formula :

Waters Value = Surrounding land value + FV

Tables 3 Calculation of Invesment Value
in 1996 and 2001.

Tahun	Th ke	Suku Bunga	S^n	PV (Rp)	FV (Rp)
1996	-1	0,1	0,91		895
1997	0	0,1	1,00	984	984
2001	4	0,1	1,46		1.441

Image processing will result information identifying land accretion. Land accretion information which is obtained in this research is reduction of waters extent as indication the happening of superficiality process or forming of new continent or land accretion in Segara Anakan waters.

Visual interpretation result which is assisted with supported data of Bakosurtanal map scale 1 : 25.000 in Segara Anakan, and classification methode is which used that is unsupervised classification with exploiting difference of brightness level each pixel at image and subdividing of pixel become some group of object.

Classification test is done to know accuracy percentage of classified land class (> 85%). Calculation level correctness of classification result is done by comparing two map that is map of image classification result and other map which assumed correctness (Bakosurtanal Map). Objects are taken as examination base selected by considering several things that is clear object and can recognize at reference map and map of classification result.

11. RESULT AND SOLUTION

a. Classification Result Analysis

Classification is done by utilizing supported data in the form of Bakosurtanal Map, as for result of the following interpretation :

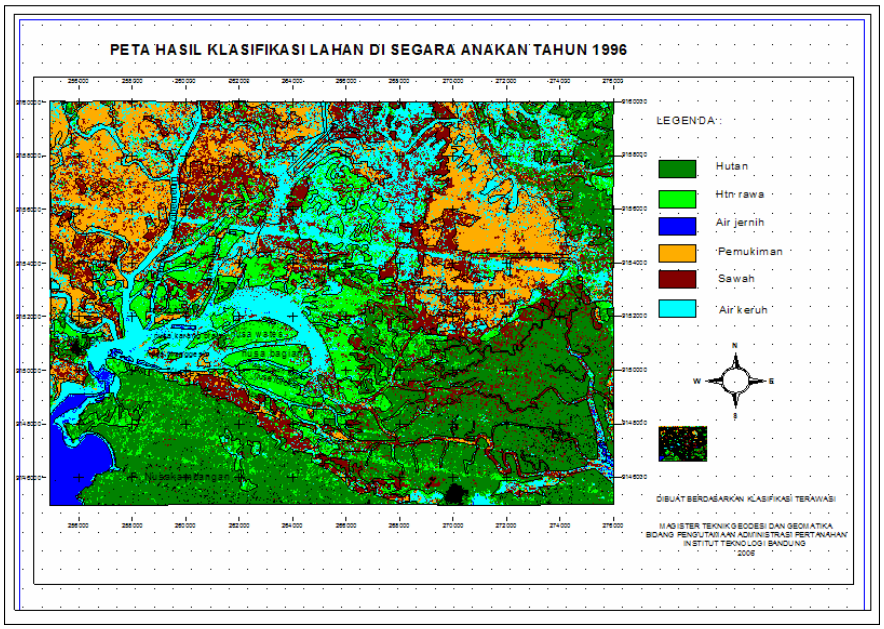

Figure 2 Result of Classification Image in 1996

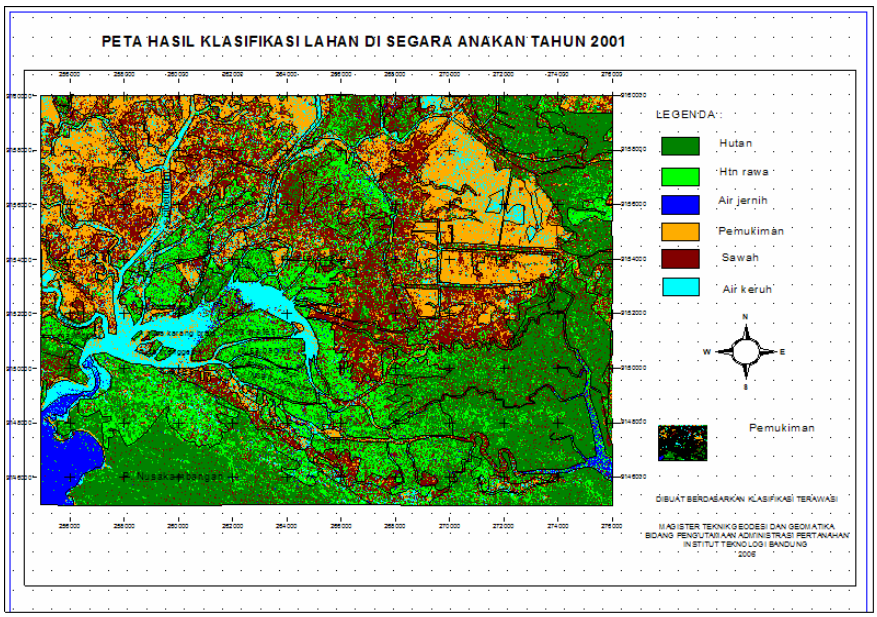

Figure 3 Result of Classification Image in 2001

Tables 4 Result of Classification Image
in 1996 and 2001.

No	Penggunaan Areal	Jumlah Piksel		Luas (ha)	
		1996	**2001**	**1996**	**2001**
1	Hutan	92.044	87.239	8.284	7.851
2	Htn Rawa	51.475	66.897	4.632	6.021
3	Air jernih	7.287	10.413	656	937
4	Air keruh	73.386	32.635	6.604	2.937
5	Pemukiman	48.559	59.851	4.370	5.387
6	Sawah	73.784	92.965	6.640	8.367
	jumlah	346.535	350.000	31.186	31.500
	tdk terklasifikasi	3.465	0	314	0
	Total	350.000	350.000	31.500	31.500

Continent extent consist of some class that is forest, bog, vacant land, settlement, farm and others class (cell null) which is interpreted still represent continent land for image classification result in 1996 and 2001. Calculation waters extent of area of Segara Anakan between Landsat Image in 1996 and 2001 is done without reckoning ebb correction, because ebb data to the each image data cannot be obtained. classification result have shown the existence of extent changes of waters which can become reference the happened of addition continent extent.

Tables 5 Result of Classification Test

Citra	Jumlah Diagonal Matriks	Jumlah Observasi	Persentase Akurasi
1996	99	125	79,2
2001	88	125	70,4

In examination which have been done, percentage of year accuration 1996 have fulfilled minimum conditions result of classification is according to that is > 78%. While percentage of year image classification accuration 2001 less is fulfilling, this matter is caused by image data 2001 many in a condition of cloud so that experience of constraint in data process. Besides Bakosurtanal map the used is map of compilation result of air photo in 1994 which is then done by survey in 1997, so that land classs in 1996 earning with interest is easy to recognized to be to be compared to 2001.

b. Change of Extent Analysis

Tables 6 Change of Extent Land
in Segara Anakan.

No	Penggunaan Areal	Luas (ha) RGB 321		Perubahan	
		1996	**2001**	ha	%
1	Hutan	8.284	7.851	-433	-1,4
2	Htn Rawa	4.632	6.021	1389	4,4
3	Air jernih	656	937	281	0,9
4	Air keruh *	6.604	2.937	-3667	-11,6
5	Pemukiman	4.370	5.387	1017	3,2
6	Sawah	6.640	8.367	1727	5,5
	jumlah	31.186	31.500	314	1,0
	tdk terklasifikasi	314	0	-314	-1,0
	Total	31.500	31.500	0	0,0

Forest in range of time 1996-2001 have shown of extent degradation equal to 433 ha, this matter is caused by the existence of wild hewing by society and irresponsible to forest in area of Segara Anakan, caused still jell society ascription him about ownership of forest.

Bog in range of time 1996-2001 have shown of extent of degradation equal to 1389 ha, this matter is caused by the existence of hewing of bog in this case of mangrove to be wooded up as firewood, considering

place situation live area society of Segara Anakan residing in waters that far in reaching requirement of kerosene fuel residing in continent. Besides extent degradation is also affected by opening of heedless fishpond of balance of ecosistem in ex-bog location.

Waters in range of time 1996-2001 have shown of extent degradation equal to 3.161 ha, this matter is caused by unresposibility human action to nature in drainage basin which have estuary to Segara Anakan, so that make sedimentation in waters of Segara Anakan.

Land Settlement in range of time 1996-2001 have shown extent increasing equal to 416 ha, this matter is caused to the number of all bacomer from Banyumas Central Java, and West Java which knowing to the number of new continent or land accretion in Segara Anakan, so that a lot [do/conduct] rent transaction dam out and mixed with local society.

Vacant land, in range of time 1996-2001 have shown extent degradation equal to 453 ha, this matter is caused by the existence of usage of vacant land in land accretion result of sedimentation which have old suspended to be exploited by society for the usage of agriculture of goodness in the form of rice field, non irigated dry field and also settlement.

Farm in range of time 1996-2001 have shown of extent incrasing equal 8.920 ha. In general this improvement is caused by the existence of land accretion which is low salty so that suited for cultivated by food crop, existence of the increase of the amount of resident, increase of

knowledge of society about agriculture and waters of Segara Anakan have cannot be expected as fisherman living.

Land changes as a whole can be differentiated between waters and continent, where have happened addition of continent extent and reduction of waters extent in range of time 1996-2001 equal to 3162 ha. Change of extent equal to 3162 ha is based on result of Landsat image classification of require data collection follow-up. Data collection alternative is able to be done with measurement of tax object parcel by considering PBB potency and expense of data collection. With seeing PBB potency for continent almost 1 milliard waters about 179 million, hence will be more profit if done by measurement of area of tax object so that tax object data in detail can be obtained.

c. Land Valuation Analysis
To know the model equation can be used or not in taking conclusion, hence done examination of statistic
(F test). From result of F test indicate that F calculation is bigger than F tables. This matter means Ho refused or H1 accepted, where "year" variable have an effect on to land value variable. Level of F tables of for the sampel of NIR farm and settlement with $F_{0.05(3,4)}$ is 6,59, while vacant land land, bog and forest with $F_{0,05(2,5)}$ is 5,79.

Tables 7 Result of F Test.

Lahan	***F Hitung***	***F Tabel***
Hutan	*37,723*	*5.79*
Rawa	*49,951*	*5.79*
Pemukiman	*23.638*	*6.59*
Tanah kosong	*45,429*	*5.79*
Sawah	*31.528*	*6.59*

According to F test can be expressed that prediction model can be used to take conclusion. As for result of applying of model in determination of area market value in this research in 1996 and 2001 presented in Tables 8

Tables 8 Land Value
in Segara Anakan in1996 and 2001 (Rp/m2)

Tahun	**Nilai Tanah (Rp/m^2)**			
	Hutan	**Hutan rawa**	**Pmk**	**Sawah**
1996	376	387	218	1036
2001	1700	910	2270	1986

Test of valuation quality of sample data by applying equation model chosen by comparing land market value with prediction value use COV. From result of calculation of COV

obtained by]value of COV < 20%. This number indicate that result of valuation of prediction model still fulfill standard of uniformity or there are not difference in applying of value

d. Waters Valuation Analysis

Determination of waters value with adopting Decision Of Director-General Iease Number : KEP-16/PJ.6/1998 about Assessment of Land and Building Tax. Pursuant to regulation of waters value represent quantifying between surrounding land value (farm and settlement) with invesment expense. Surrounding land value such is bog which there are in research area. This matter is relied on physical characteristic which much the same to with utilized waters land as effort fishpond by society.

Tables 10 Segara Anakan Waters Value in 1996

Lahan th 1996	**Luas (ha)**	**Nilai/m^2**			
		NTS	**FV**	**NJOP air**	**Jml**
Air jernih	656			4,8	4,8
Air keruh	4.623			4,8	4,8
Air keruh (tambak)	1.981	387	895		1282

Tables 11 Segara Anakan Waters Value in 2001

Lahan th 2001	**Luas (ha)**	**Nilai/m^2**			
		NTS	**FV**	**NJOP air**	**Jml**
Air jernih	937			12	12
Air keruh	2.056			12	12
Air keruh (tambak)	881	910	1441		2351

e. PBB Assessment Analysis

Result of classification in the form of extent of land is hereinafter done by calculation of Land and building tax potency/ fiscal aspect. By multiplying land value per m2 with land extent will be got by NJOP, hereinafter is done by calculation of Land and Building Tax to lands.
Tables 12 PBB Potency in Segara Anakan

Lahan	Potensi PBB (Rp)		
	1996	2001	%
Hutan	62.281.680	266.920.000	329
Htn rawa	35.837.680	109.568.200	206
Air jernih	24.488	105.440	331
Air keruh	214.894	239.708	11,5
Air keruh (tambak)	50.765.957	41.409.584	-18,4
Pemukiman	19.039.200	244.555.800	1184
Sawah	137.566.800	332.323.240	142
Jumlah	305.730.699	995.121.972	225

Fiscal aspect potency / PBB for forest is increase equal to 329% in range of time 1996-2001. This matter is caused the existence of increase of land value about 550%.

Fiscal aspect potency / PBB for bog is increase about 206% in range of time 1996-2001.
Fiscal aspect potency / PBB for waters increasing and decreasing about 19% in range of time 1996-2001.
Fiscal aspect potency /PBB for settlement is increasing about 1184% in range of time 1996-2001. This matter is caused the existence of increase of land value about 1107% and land extent of settlement about 115%.

Fiscal aspect potency / PBB for farm is increasing about 142% in range of time 1996-2001. This matter is caused the existence of increase of land value about 156% and increase of farm extent about 2074%.

Fiscal aspect potency / PBB in Segara Anakan in range of time 1996 and 2001 for continent is increasing about 449%, while waters about 19%. As a whole the increase of potency of PBB is equal to 252% like presented in Tables 9

Tables 9 Continent and Waters PBB Potency

Lahan	Potensi PBB (Rp)		Perubahan (%)
	1996	2001	
Daratan	254.725.360	953.367.240	274,27
Perairan	51.005.339	41.754.732	-18,14
Jumlah	305.730.699	995.121.972	225,49

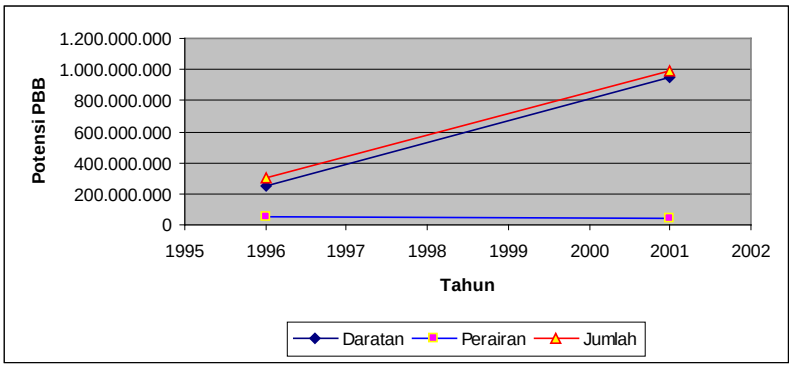

Figure 4 Graph Continent and Waters PBB Potency in 1996 and 2001

f. Recommendation Management of Fiscal Aspect Land Accretion

Management of fiscal aspect the meant is to get alternative of object and subject tax which during the time have never been assessed by Land and Building Tax, and also get the way of efficient assessment, effective and fulfill assessment principal like sufficiency, elasticity, justice, administrative ability and political agreement. In recommendation to be raised in the form of data collection procedures, valuation and assessment

¢ Data Collection Recommendation
Data represent activity which is Directorate General of Taxes to obtain data of object and subject tax as according to procedure forming of data bases. From breakdown of above seen that :

1. Data collection is done to get object data by using satellite image technology of Landsat TM / ETM having resolution of spasial 30 m. This alternative in order to getting data early to activity of data hereinafter, so that minimize can know by situation relative an object, type usage of object and its extent estimation.
2. Measurement of tax object land accretion can be done to be more get more accurate data with image data support, so that expected by justice in assessment of PBB. Where in data by utilizing image of Landsat cannot show definitive position of tax object, because limitation of image resolution. Beside that, activity of data with measurement of area of tax object have to consider expense and estimate of PBB revenue. Estimated by data collection with measurement of tax object will be effective applied every 5 year once, fixed consider sedimentation phenomenon,data expense and PBB potency for a few year forwards.
3. Research (survey) and record-keeping about detailed land to property right and settlement. This matter relate to maintenance of data result by entangling local government which more knowing of situation object and subject. So that earn in doing monitoring to growth giving of rights to land accretion betterly, considering land accretion to represent goverment land, so that do not become Iease object if not yet been encumbered by a rights.

¢ Valuation Recommendation

1. In range of time 1996-2001 happened change about 135% up to 1179% or mean 22.5% up to 196.5% per year. Harshly have happened increase of land value per annum equal to mean. Though seen land value data in 1998-2005 is not that way, caused by class some years land value do not be boosted up, more than anything else if growth of land value still enter in the same class interval, like farm value in 2000 equal to Rp 1596 and in 2001 equal to Rp 1986, both the value still enter in class interval of A42 equal to Rp 1400 up to Rp 2000. Thereby valuation to farm in the area can be done each two year once.
2. Level of value waters in 1996 is Rp 1282 per m^2 which be obtained from quantifying of bog value in 1996 (Rp 387 per m^2) and invesment value (Rp 895 per m^2). While waters value for year 2001 is Rp 2351 per m^2 which be obtained of quantifying of bog value in 2001 (Rp 910 per m^2) with invesment value in the same year (Rp 1441 per m^2). According growth of waters value, hence determination of reappraisal to conducive

to be waters minimize 3 (three) year once and maximal 5 (five) years.

¢ Assessment Recommendation

1. Policy of assessment of NJOPTKP as factor of pengurang in enumeration of PBB equal to 7 million to each;every taxpayer, for land accretion[in] Segara Anakan can be gone into effect equal to > 7 million and < 12 million. This matter remember the condition of very labile land;ground or nature, floods disaster gristle, and uncertainty of earnings of society can be used as by consideration in realizing it.
2. Participation of DPRD and Local Government of Cilacap in determination of NJOPTKP very having a meaning because directly relate with strategic policy, that is by minimizing NJOPTKP hence acceptance of PBB as source of area fund can be improved. On the other hand area can propose to boost up NJOPTKP as protection effort to impecunious people in Kampong Laut to lessen burden of PBB, or even freeing it.
3. In supporting taxation administration (PBB) which is good to be needed network collector of PBB, considering distance of tax object with KP.PBB and pay bank which far enough (about 4 hour). Other solution is to apply to perception bank to found representative office in Kampung Laut, this matter is enabled because Kampung Laut represent separate district, competent so that to get service like other district in the case of banking, including service of payment of PBB, so that state money of sector of PBB can be protected.

12. CONCLUSION AND SUGGESTION

Conclusion Pursuant to result of solution and research can be concluded that

1) Time series analysis of trend cubic and linear to land value result Land and building Tax potency equal to Rp 305.730.699 in 1996 and Rp 995.121.972 in 2001, where happened the increase of potency equal to 225,5 % in range of time 5 year.
2) Image of Landsat TM / etm having extent of record area coverage (185 km of x 185 km), cheap in its acquisition and also can differentiate land distribution in Segara Anakan represent one of the alternative technology in acquisition of data early. But this ability do

not make balance to by spatial resolution had, where with spatial resolution 30 metre, hence minimum extent is able to detect equal to 900 m2. Related to requirement of PBB, where assessment of tax in set of metre, hence for the tax object below/under 900 square meters cannot be assessed. Thereby Landsat TM / etm cannot be used maximally for the sake of is fiscal / PBB (calculation of acceptance of PBB).

3) Image of Landsat multitemporal can be utilized to monitor the level of land changes in area of Segara Anakan, where have happened waters extent reduction equal 3386 ha and at the same time happened addition of new continent equal to 3700 ha and unclassified area is equal 314 ha.
4) Management of fiscal aspect for land accretion to differ because physical characteristic, accesibility and ability of society in accounting tax burden. Needed by data collection procedures, valuation and assessment which can be applied so that fulfill sufficiency element, justice, political agreement and generalization
   a. Data collection procedures for land accretion in Segara Anakan by considering estimate of PBB potency and expense. To be estimated by every 5 year once can be applied by measurement of area of tax object.
   b. Valuation procedures for land accretion in Segara Anakan is different with other area because there are consideration of accessibility (tired amenity), existence of infrastructure, drainage, floods crisis and distance from market. Growth of land value is enough constant for a number of years in research area. This matter constitute to do revaluation every minimizing 2 year once.
   c. Assessment procedures for land accretion in Segara Anakan have equality with other area, because formula the used [is] same. Difference earn happened to be caused by utilized assumption, where at this research is assumed that each usage of land use is one tax object. This matter cause calculation of NJOP, where big land extent will cause height of NJOP. Level of NJOP cause at giving of NJOPTKP, where only just one object in every usage of land getting reduction of NJOPTKP, other effect is in determination of NJKP. With high NJOP (> 1 milliard) will result assessment of NJKP equal to 40%.

SUGGESTION

1. Needed the existence of study about technical and also Land and Building Tax administration procedures about land accretion, both for happened naturally and also result of reclamation.
2. KP.PBB can exploite Landsat TM / ETM image of alternatively in early data acquisition to know the level of Land and building tax potency (PBB)
3. Usage of method of remote sensing to check growth a distribution of spatial, better be utilized by image data having big spatial resolution, so that enable to get information more detail.
4. Usage of reference map in classification test or calibration is better used image year with the same time/year so that more accurate.
5. Needed by making of law and regulation arranging exploiting of goverment land which not yet been encumbered by rights, but have been exploited by individual or society.

REFERENCES

1 Campbell, James. B. (1987), *Introduction to Remote Sensing*, The Guilford Press, New York, London.
2 Danoedoro, Projo. (1996), *Pengolahan Citra Digital, Teori dan Aplikasinya Dalam Bidang Penginderaan Jauh*, Fakultas Geografi Universitas Gadjah Mada, Yogyakarta.
3 Dirjen Pajak (2000), *Petunjuk Pelaksanaan Pendaftaran, Pendataan dan Penilaian Obyek dan Subyek Pajak Bumi dan Bangunan dalam Rangka Pembentukan dan atau Pemeliharaan Basis Data SISMIOP*, Keputusan Direktur Jenderal Pajak Nomor KEP-533/PJ.6/2000 tanggal 20 Desember 2000, Jakarta.
4 Dirjen Pajak (1998), *Pengenaan Pajak Bumi dan Bangunan*, Keputusan Direktur Jenderal Pajak Nomor KEP-16/PJ.6/1998 tanggal 30 Desember 1998, Jakarta.
5 Eckert, Joseph. K. (1990), *Property Appraisal and Assessment Administration, The International Association of Assessing Officers*, Chicago, USA
6 Hardjanto, Budi. (2003), *Konsep Dasar Penilaian Properti*, Edisi Pertama, BPFE Yogyakarta.
7 Isriyanto (2003), *Pemanfaatan Citra Landsat ETM+ Multiwaktu untuk Penentuan Prioritas Wilayah Pendataan Obyek Pajak di Kota Bogo*r, Departemen Teknik Geodesi, UGM, 2003.
8 Kuncoro, Mudrajad, (2001), *Metode Kuantitatif, Teori dan Aplikasi untuk Bisnis dan Ekonomi*, UPP AMP YPKN, Yogyakarta.
9 Lillesand, Thomas. M. and Kiefer, Ralph. W. (1993*),Penginderaan Jauh dan Interprestasi Citra*, Diterjemahkan oleh Dulbahri, Prapto Suharsono, Hartono, Suharyadi; Penyunting, Sutanto, Cetakan kedua, Yogyakarta, Gadjah Mada University Press, Yogyakarta.
10 Menteri Keuangan, *Klasifikasi, Penggolongan dan Ketentuan Nilai Jual Bumi*, Keputusan Menteri Keuangan Nomor 174/KMK.04/1993 tanggal 23 Pebruari 1993.
11 Murai, Shunji. (1975), *Remote Sensing Note*, Japan Association on Remote Sensing, Jepang.
12 Peraturan Pemerintah, *Penatagunaan Tanah*, PP No 16 Tahun 2004.
13 Ruslan (2003), *Pemanfaatan Citra Satelit IKONOS dalam Penentuan Batas Bidang dan Jenis Penggunaan Bangunan Obyek PBB*, Departemen Teknik Geodesi, UGM, 2003.
14 Suharno (2003), *Pajak Properti di Indonesia (Kajian Teoritis dan Empiris)*, Direktorat PBB dan BPHTB, Jakarta.
15 Suharno (2003), *Pengelolaan Pajak Bumi dan Bangunan Dalam Era Otonomi Daerah*, Direktorat PBB dan BPHTB, Jakarta.
16 Undang-Undang, *Perubahan atas UU No 12 Tahun 1985 Tentang Pajak Bumi dan Bangunan*, UU No 12 Tahun 1994.

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