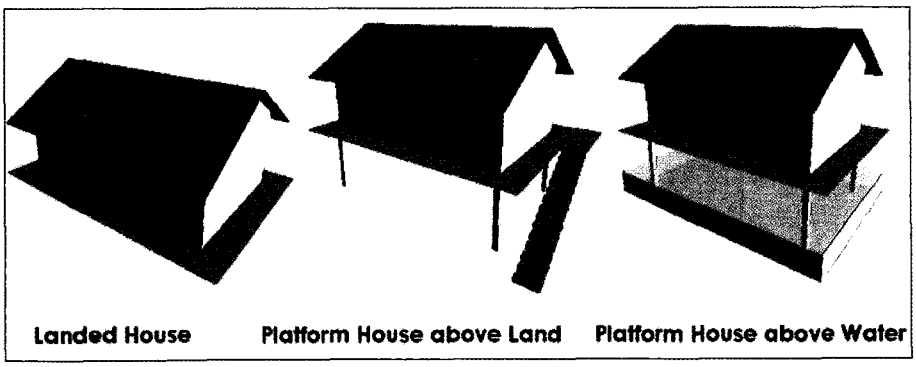
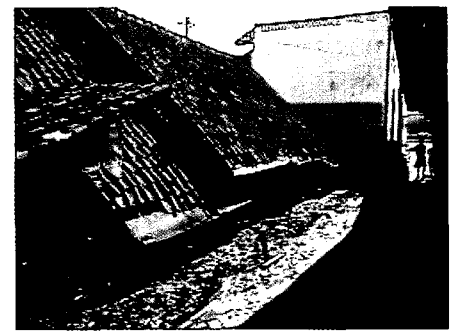
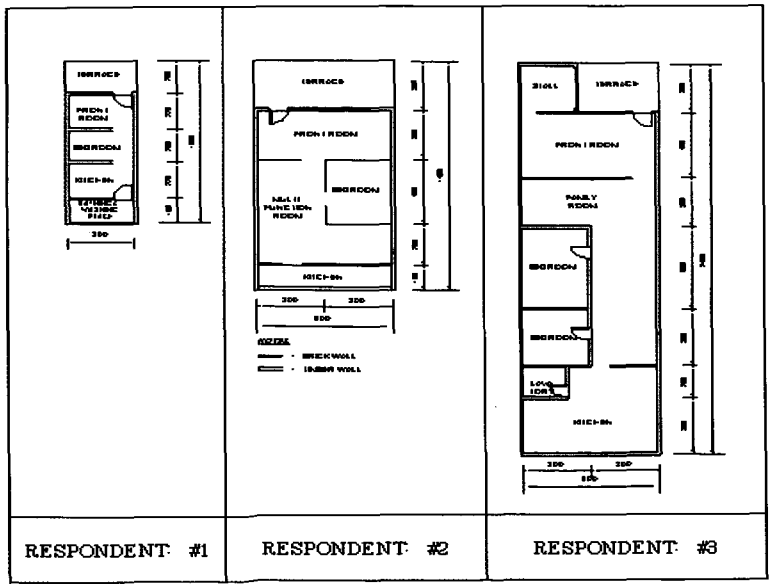
1. Fact Finding

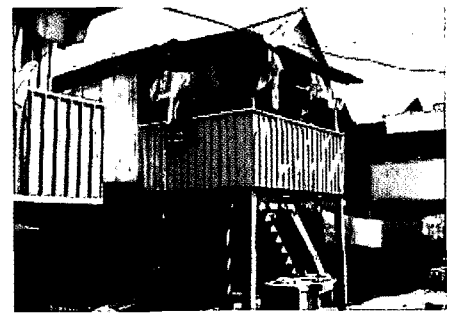
Forerunning phenomena in Semarang, where SLR is accelerated by land subsidence

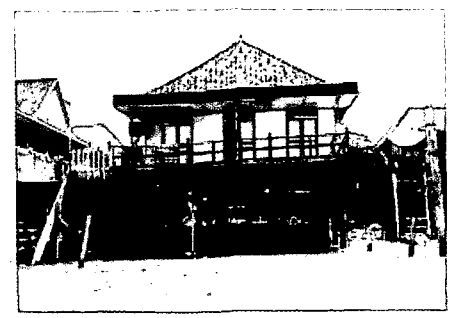
2. Micro approach: Field survey for identifying basic units











3. Macro approach: Satellite image analysis for identifying total amount

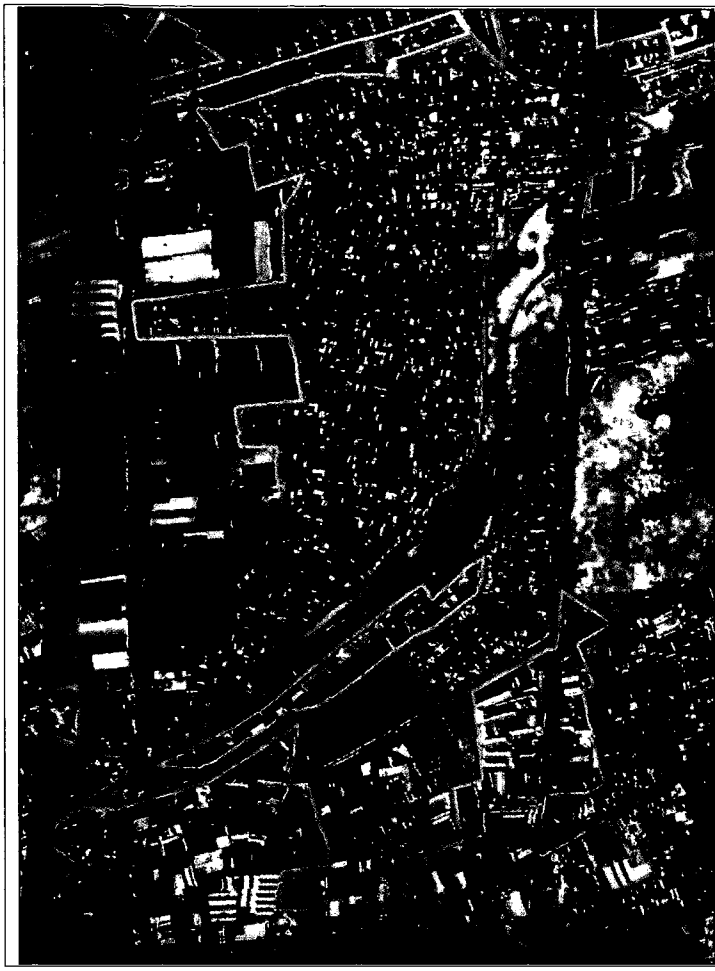


Table 3 Cross distribution for land use – altitude in the area, Semarang

Altitude / Urban classification	0-1m	1-2m	2-3m	3-4m	4-5m	5-10m	10-12.5m	12.5m-
un-planned housing area	171.37	128.06	69.94	11.07	8.93	22.07	26.04	11.88
planned housing area	314.40	316.79	436.64	68.59	39.76	140.43	118.91	128.46
public buildings	69.80	216.76	133.52	21.14	14.95	70.79	47.52	25.92
Factory/warehouse	150.62	56.42	17.53	1.04	2.01	16.94	9.01	20.04
Commercial area	0.00	3.41	13.83	0.00	0.00	0.00	0.00	0.00
Pond	607.89	114.64	64.70	66.54	69.55	217.87	5.37	0.00
Open space	584.80	199.39	315.36	73.39	53.00	115.65	72.22	95.42

Land use zone identified from IKONOS image, and cross tabulation with contour zone areas

4. Seminars and workshops for identifying appropriate adaptation scheme

Workshop in Bandung, on adaptation (2003.3)

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IMPACT OF SEA LEVEL RISING ON COASTAL CITIES - CASE STUDIES IN INDONESIA–

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海面上昇の沿岸都市への影響 －インドネシアにおける事例研究－

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IMPACT OF SEA LEVEL RISING ON COASTAL CITIES －CASE STUDIES IN INDONESIA－

Hideyuki Kobayashi *　　Zubaidah Kurdi **

概要

環境省地球環境研究総合推進費により、2000~2002 年度に行った、インドネシア７都市を対象とした事例研究により得た、沿岸都市における海面上昇の被害予測を定量的に行うためのデータ集である。インドネシア人間居住研究所の協力を得て、既に高潮被害等が発生している都市の沿岸地域から８４棟の実測調査を行い、被害の実態を把握すると共に、被害を量的に算定するための原単位を把握した。同時に、衛星画像をＧＩＳ上で解析し、建築類型別・標高別の地区区分を行い、現地調査で得られた原単位と組み合わせることにより、海面上昇により水没する区域の被害の総量を算出した。

キーワード：海面上昇　影響評価　都市　インドネシア　ＧＩＳ　建物調査

Synopsis

This is a collection of data obtained through a research between 2000-2002, sponsored by the Ministry of Environment, for the purpose of quantitatively forecasting possible impact of future Sea-level Rise onto coastal cities. Through co-operation with Indonesian Research Institute of Human Settlements, 84 sample buildings selected from frequently inundated urban coastal area and measured, in order to identify the features of damage and to obtain the basic unit for calculating the amount of future damage. In parallel, NILIM analyzed relevant satellite images on GIS, to identify the specific area related to building type and contour zone, which are combined with the basic unit from the field to calculate the total amount of possible damage in the areas which will be lost after Sea-level Rise.

Keywords : sea-level rise, impact assessment, city, Indonesia, GIS, Building Survey

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