

Urban Socio-Economy Sub-Group

Project 2-4 Human Impacts on Urban Subsurface Environments

Research Institute for Humanity and Nature

Survey Report

Bangkok Field Survey

May 27-31, 2007

Members:

Dr. Shinji Kaneko, Hiroshima University

Prof. Ryo Fujikura, Hosei University

Prof. Tsuyoshi Imai, Yamaguchi University

Dr. Toru Matsumoto, University of Kitakyushu

Dr. Junyi Zhang, Hiroshima University

Karen Ann Jago-on, Research Institute for Humanity and Nature

The survey to Bangkok was conducted from May 27-30. The objective of the survey was to gather relevant information on the urbanization of Bangkok and the influences of increasing population and human activities on surface water quality and quantity and on the subsurface environment.

During the survey, the group has visited 13 offices and institutions and collected data not only from reports but also from several presentations and discussions with experts and government personnel in Bangkok and Thailand. Although we cannot get a historical data of 50-100 years in all aspects, a substantive collection of statistical reports and documentation are available in Bangkok and can be acquired upon formal request.

Bangkok Metropolitan Administration was created in 1985 so the information before 1985 can be found from different national agencies (Ministry of Interior, Ministry of Natural Resources and Environment, etc.). However, at present most of the information on Bangkok and its vicinities can be obtained from the Bangkok Metropolitan Administration.

Below is a summary of the information available in Bangkok:

I. Land Use Change and Land Use Plans

1958 – Bangkok Plan (1960-1990) 30 years plan for the city of Bangkok

1992 – Bangkok Metropolis Urban Plan (1992-1997)

1999 – Bangkok Metropolis Urban Plan (1999-2004) – First revised plan

2004 – Bangkok Metropolis Urban Plan – Second revised plan

Bangkok Land utilization – 1986-2005

II. Population and Human activities

(Population data generated by the National Statistics office are taken from the registration of residents in Bangkok. Daytime population count is only estimated by different agencies. Registered population in Bangkok in 2005 is 5.6 million and BMA estimates an additional 4 million non-registered population)

Population of Bangkok – 1919- 2006

Other demographic statistics- 1963-2006

Economic and social statistics (GRP, GRDP, HH income, etc) 1970s - Present

Food supply and demand – recent 10 years

Water supply and demand – 1970s- 2006

Transportation – 1989-2006

Waste generation – 1985-2006

III. Impact on water quality and quantity

Groundwater level information – 1970s – Present (Bangkok and 7 provinces)¹

Well water quantity (consumption) – 1997-Present

Groundwater quality

Chemical analysis of groundwater – 1978-1998²

2nd monitoring report will be released at the end of 2007

Land subsidence record – 1990s – Present (spatial information)

Canal water quality (Bangkok Metropolitan area) – 279 stations in 84 canals-
1990s – Present³

Chao Phraya river quality – mid 1990s- Present

Monitoring is done 4 times/ year (2x per season)⁴

Notes

¹Some of the monitoring data on groundwater level are already in GIS format

²Parameters for monitoring: pH, conductivity, Ca, Mg, Na, K, Fe, Mn, Cl, SO₄, CO₃, HCO₃, NO₃, F, TDS

³Parameters for monitoring: temperature, pH, DO, H₂S, BOD, SS, N, P, total coliform

⁴Parameters for monitoring: temperature, pH, conductivity, nitrate, nitrite, ammonium, phosphate, some metals.

Things to be done:

- 1) Request for specific data through a formal letter:
 - Surface water quality and pollution status

- Groundwater quality and well water quantity
 - Land subsidence record
 - Others
- 2) Translation of documents written in Thai
 - 3) Collation of land use maps

Others

Kazuya Suzuki (JICA-Thailand) will leave Bangkok on June 22, 2007 and will be back to JICA main office in Tokyo.

Documents acquired:

Hard copies:

- 1) Portraits of Bangkok 222 years (Bangkok Metropolitan Administration)
- 2) Basic Information on City Planning and Zoning in Bangkok (2004)
- 3) Summary of Bangkok Master Plan (2006)
- 4) Bangkok City Strategic Plan (2004-2006)
- 5) Bangkok State of the Environment 2005
- 6) Thailand State of Pollution Report (2004)
- 7) Metropolitan Waterworks Authority Annual Report (2006)
- 8) Solid Waste Management in Bangkok 2005
- 9) Land Readjustment Act
- 10) Land Excavation and Land Filling Act
- 11) Town Planning Act

Digital files:

- 1) Bangkok Sectoral Plans and maps (2006)
- 2) Demographic and economic statistics
- 3) Water quality management in Bangkok (ppt)
- 4) Groundwater Operations (ppt)
- 5) Land transportation in Bangkok (ppt)
- 6) Solid waste management in Bangkok (ppt)

Offices visited in Bangkok and Contact persons:

Topics/ Themes	Contact Person	Institute Address/ Tel/Fax
Urban and land use planning	Sompong Chirabundarnsook c.sompong@gmail.com	Department of City Planning, BMA 44 Vibhavadi, Rungsit Road, Dindaeng, Bangkok 10400 Tel: (66) 2 354 1277; Fax: (66) 2 354 1276
	Sakda Arunee sakdaarunee@hotmail.com	Department of Public Works and Town and Country Planning 224 Rama IX Rd., Huaykwang, Bangkok 10320 Tel: (66) 2 201 8342; Fax: (66) 2 643 1722
	Soradej Sundararjun Somdej_sun@yahoo.com	Office of Foreign Relations, Department of Public Works and Town and Country Planning, MOI 218/1 Rama VI Bangkok Tel: (66) 2 299 4480; Fax: (66) 2 299 4477
Urban water management issues	Phonphot Kannasoot PHONPHOT@bma.go.th	Department of Drainage and Sewerage, BMA Bangkok City Hall 2, Mitmaitri Rd., Dindaeng, Bangkok 10400 Tel: (66) 2 2246 0316
	Suthimol Kessomboon	Department of Drainage and Sewerage, BMA Bangkok City Hall 2, Mitmaitri Rd., Dindaeng, Bangkok 10400 Tel: (66) 2 2246 0316
	Dr. Pathan Bangjongproo Pathan9938@yahoo.com	Department of Drainage and Sewerage, BMA Bangkok City Hall 2, Mitmaitri Rd., Dindaeng, Bangkok 10400 Tel: (66) 2 2246 0316
	Dr. Wijarn Simachaya Wijarn.s@pcd.go.th	Pollution Control Department, MONRE 92 Phahonyothin 7 Phahonyothin Rd, Bangkok 10400 Tel: (66) 2 298 2550; Fax: (66) 2 298 2552
	Pinida Leelapanang Pinida.l@pcd.go.th	Pollution Control Department, MONRE 92 Phahonyothin 7 Phahonyothin Rd, Bangkok 10400 Tel: (66) 2 298 2556; Fax: (66) 2 298 2255
Water supply and demand	Laohasiripanya Chucharit Chuchart_l@hotmail.com	Metropolitan Waterworks Authority 400 Prachachuen Road, Laksi, Bangkok 10210 Tel: (66) 2 504 0195; Fax: (66) 2 504 0196
Groundwater Management	Somkid Buapeng Somkid@dgr.go.th	Department of Groundwater Resources, MONRE 49 Soi 30 Rama 6 Rd., Payathai, Bangkok 10400 Tel: (66) 2 299 3911; Fax: (66) 2 299 3920
	Terdsak Subtavewung Terdsaks1@yahoo.co.uk	26 Soi Thanphuying Phahol, Ngamwongwan Rd., Lat Yao, Chatuchak, Bangkok 10900 Tel: (66) 2 941 1562; Fax: (66) 2 579 4832

	Alin Chintraruck Alin_nuk@yahoo.com	Department of Groundwater Resources, MONRE 49 Soi 30 Rama 6 Rd., Payathai, Bangkok 10400 Tel: (66) 2 299 3959; Fax: (66) 2 299 3920
Solid waste management	Suwanna Jungrungrueng suwannajung@hotmail.com	Department of Environment, BMA Mitmitree Rd., Dindang District, Bangkok 10400 Tel: (66) 2 246 0348; Fax: (66) 2 245 8432
Agricultural Economics	Dr. Rangsit Poosiripinyo rangsit@oae.go.th	Office of Agricultural Economics 50 Paholyothin Rd., Bangkok 10900 Tel: (66) 2 579 5881; Fax: (66) 2 579 5830
	Chan Chiumkanokchai chan@oae.go.th	Office of Agricultural Economics 50 Paholyothin Rd., Bangkok 10900 Tel: (66) 2 940 7033; Fax: (66) 2 579 5830