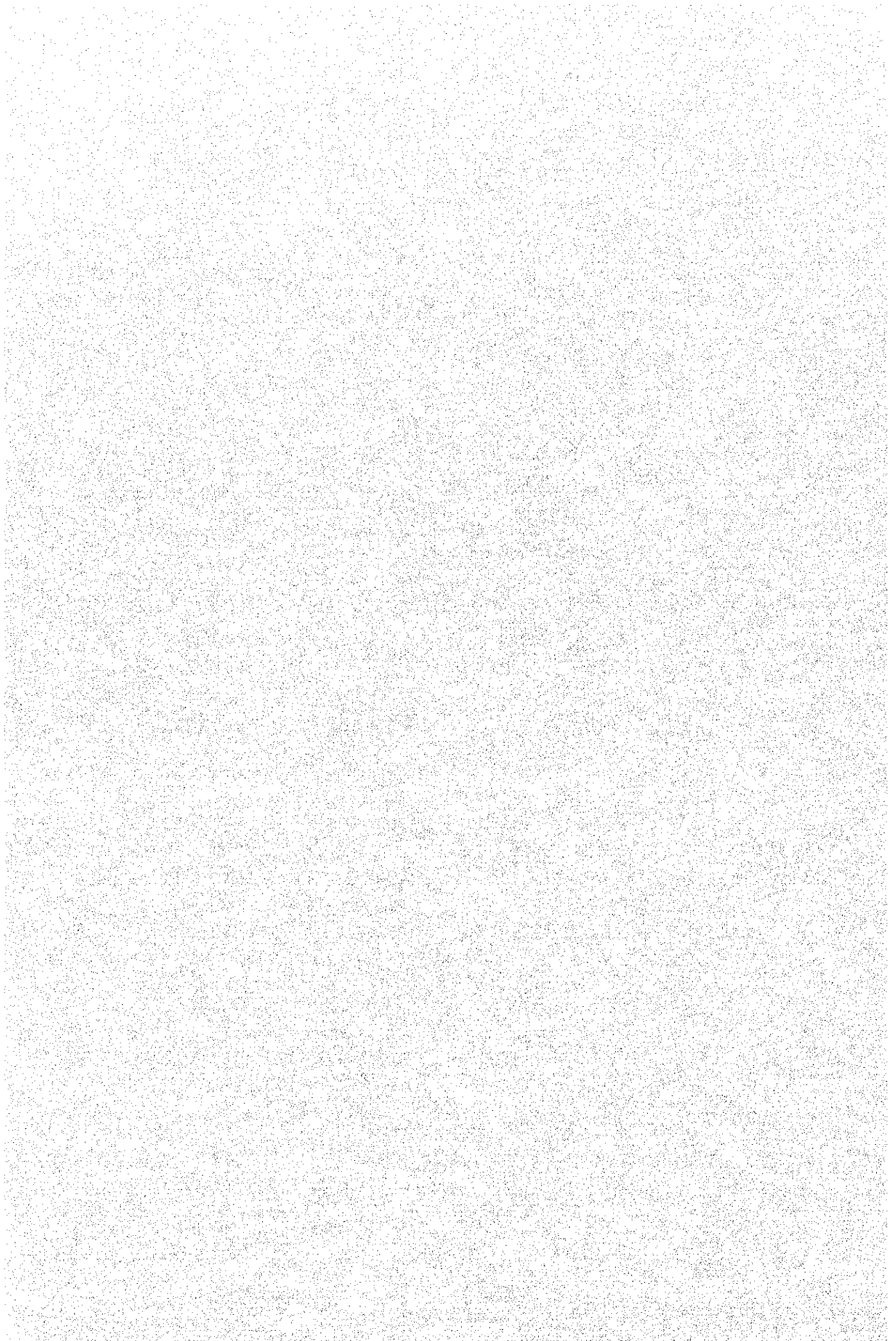


付 属 資 料

1. ヴィエトナム国政府要請書
2. S/W
3. M/M
4. 質問表及び回答
5. 主要面会者リスト



DRAFT
TERMS OF REFERENCE
FOR
MASTER PLAN AND FEASIBILITY STUDY
FOR
ENVIRONMENTAL IMPROVEMENT FOR HANOI AREA

1. INTRODUCTION

Hanoi covers an area of 927.5km² consisting of 7 urban districts (Ba Dinh, Hoan Kiem, Dong Da, Hai Ba Trung, Tay Ho, Thang Long and Thanh Xuan) and 5 suburban districts with population of some 2.3 million in total. The Hanoi urban area covers about 50km², inhabited by 1.1 million people. The urban area is rapidly expanding and expected to have a population of 1.5 million by the year 2000 with the annual population growth rate of 2.0%. The city population density is so high as 38,955 persons/km² in the old streets area.

The West Lake (Ho Tay) and surrounding area, located in the northern part of Hanoi city between Red River and the central urban area, is also rapidly urbanizing. The lake environment has worsened in recent years. The lake and its surrounding area are an important ecological spot for Hanoi City. The lake is expected to be a center of recreation, culture and tourism.

In addition, many infrastructure development studies in various sectors have already been carried out for Hanoi city and its surrounding area. For some development projects, their detailed designs and constructions have been completed or are currently being implemented in accordance with the recommendations of the studies. Those various projects follow their own development plans and schedules, and they are not necessary cohering with one another. The Vietnamese Government and the Hanoi People's Committee are deeply concerned about the scale and the degree of the ecological damage caused by industrial pollution and population growth in the city and its surrounding area. Hence, an effective program for preservation and/or improvement of the environmental situation for Hanoi area is urgently required, and a series of quick actions should follow to enforce the environmental standard set through the program.

Considering the complexity and multitude of problems involved, the Government of Vietnam (GOV) desires to prepare a master plan for comprehensive environmental improvement and management for long term for Hanoi city and its surrounding area. This master plan shall include the shortlisting of priority projects which are necessary for early implementation. The study shall also enhance the

technical knowledge, as well as institutional and operational capabilities of the Government counterparts for environmental conservation and management.

The GOV wishes to request to the Government of Japan (GOJ) for providing technical assistance first to carry out the comprehensive master plan study for environmental improvement, and secondly further to identify and initiate the feasibility study of the high-priority/urgent environmental projects for Hanoi City and its surrounding area.

2. BACKGROUND INFORMATION

Existing environmental conditions

The peculiarities of Hanoi have created many difficulties and complications to environmental management and conservation. Hanoi has a population of more than 2.2 million inhabitants. Household rubbish, solid waste and sewage, industrial wastes, vehicular emissions are all major sources of pollution in Hanoi. At present the concentration of suspended particles and BOD₂ are reported to be 5 - 20 times the maximum permissible levels. Certain heavy metal concentrations in the river water exceed many times the maximum permissible levels. In recent years, many lakes and ponds in the city and suburban areas have filled up with silt.

Hanoi city has 235km of roads, 49% of road pavements have developed cracks and potholes. During rush hour, the number of vehicles on several main roads is three times the designed capacity. The environmental standard for dust attached on the pavement is 10g/m². Roads of Hanoi on average have 20 - 40g/m² of dust settled on the road surface, and on the main roads these values are as high as 100 - 240g/m². The vehicle fleet of Hanoi in 1994 consisted of 50,000 motor vehicles, 2,960 diesel trucks, more than 490,000 motor bikes, 8,400 pedicabs and more than 1 million bicycles. Most vehicles are old imported used cars and motorbikes, and there is no effective control over their exhaust gases.

Air pollution monitoring in Hanoi city reveals the contents of SO₂ to be 14 times and CO₂ to be 2.2 times the authorized levels in several places. The quantity of dust in downtown Hanoi is 5 - 10 times higher than in the outskirts.

The water supply system of Hanoi is old and even after its expansion in 1993, only 40% of the population is served with 85l/capita/day. The losses are estimated at 50%. Water shortage and contaminated water are major causes for prevalence of water borne diseases. The sewerage system built in 1939 is a combined system for storm water and sewage and its coverage is only 60%. A number of streets totaling 14km in length in the central densely populated areas, are flooded for hours or even days after heavy rainfall (more than 50mm/h). Local floods are the ground for epidemic of water-borne diseases.

Surface water in four rivers in Hanoi (Red River, To Lich River, Set River, and Kim Nguu River) and 200ha of lakes (especially the West Lake) are heavily polluted. The turbidity in the main river - Red River with a flow of 2,710m³/s is as high as 847g/m³. The smaller rivers To Lich, Set and Kim Nguu are practically drainage canals and anaerobic conditions are prevalent in many places. The lakes are storm water regulators and treatment ponds for waste water. They are becoming shallow due to the accumulation of solid waste discharges. The Red River is coming from the north through industrial areas and large agricultural fields. The increasing use of chemical fertilizers and pesticides in farming poses a serious threat to the whole Hanoi water system.

According to the recent survey, the total volume of solid waste generated in the City is 2,995m³/day. Due to the lack of fund and equipment, URENCO is capable of collecting 1,750m³/day, that is 60% of the City's total generated. Besides, URENCO also collects 120 tons of nightsoil out of the total 220 tons daily generated.

URENCO's vehicles of over 5 - 10 years of age can be easily broken down, mainly due to hard operation without a sufficient supply of spareparts. About 75% of the vehicle fleets are working at the moment.

It is also worthy of mentioning that exotic, hazardous and hospital wastes are not properly treated and carried together with the domestic waste to dump sites resulting very high risk of ground water pollution. There are 36 central and local hospitals in Hanoi but none of them owns a complete treatment system for hazardous wastes. Some big hospitals have an incinerator but they stopped working a long time ago.

There is no classification of hazardous waste. All of the solid waste from hospitals, factories, and research institutions are collected together with domestic solid waste and transported to the dumping site.

Industrial and the surrounding households of the labors are serious source of pollution, as well. In the four urban districts of Hanoi, there are, at present, 274 enterprises, 540 service establishments, 450 small handicraft cooperatives, 350 production groups, 20 hospitals, and many dilapidated houses. Most of their equipment and technology are obsolete. The waste-water from all of these enterprises and households are discharged directly into the rivers without treatment. Heavily polluting factories are scattered in densely populated areas (Leather factory Thuy Khe, Hanoi Brewery, Hanoi Alcohol etc.). The environment at the production site and its surrounding area are polluted by fume, dust, hazardous wastes and noise.

The five suburban districts of Hanoi have 40,000ha of agricultural land, of which 25,000ha are used for paddy cultivation. They use more than 45,000 tons of chemical fertilizers annually, which may cause the serious contamination of the water supply. On the other hand, the farmers, who practice the traditional farming methods, use fresh night soil (estimated 200,000 tons annually), causing their agricultural products to spread the fecal pathogen bacteria.

Hanoi City Master Plan

The Hanoi City Master Plan was elaborated from 1990 to 1992 by the Hanoi People's Committee and other governmental organizations concerned. It was officially approved by the GOV in 1992. The target zone of the master plan includes the four urban districts and three suburban districts with a total area of 13,000 ha. The master plan provides the basic policy of development of the respective areas in Hanoi city and its surrounding area. The master plan was modified and approved by the GOV in 1996.

Infrastructure development projects

The Finnish International Development Agency (FINIDA) has been conducting the Hanoi Water Supply Master Plan. The study deals with water supply program until 2010 mainly from ground water resources, and preventive measures against land subsidence which may be caused by excessive groundwater extraction.

FINIDA has also been carrying out the environmental monitoring survey initiated in 1993. The survey is mainly elaborated for monitoring waste-water discharged from factory, hospitals, public facilities and households.

In March 1995, JICA prepared the master plan of drainage and waste-water disposal system in Hanoi City including feasibility study on priority projects.

Another report prepared in 1994 presents the planning orientation and investment projects for development of infrastructure systems (concerning transportation, drainage and sewerage, water supply, electricity supply) and environmental enhancement of Hanoi city.

In addition, tourism resources development and planning for location of industrial estates near Hanoi and relocation of some of the existing industries have also been carried out.

3. NECESSITY OF THE STUDY

As briefly described before, many types of businesses and industries are growing rapidly in Hanoi city; however, there is no structured environmental policy implemented to improve the current environment condition of the city as a whole. Despite the above situation, a number of new business and infrastructure development plans in Hanoi area are getting ready to be implemented in the near future. Hence, in order to set the environmental standard for the various development projects and to avoid an environmental chaos in the Hanoi area, a comprehensive environmental management strategy for a long-term city development (targeting the year 2015) must be formulated as soon as possible. Once the long-term strategy for environmental improvement in Hanoi city and its surrounding area is planned, there should be a study to determine the priority of individual projects and to construct phase-wise implementation programs for those prioritized projects.

In the course of the study, a comprehensive environmental management database should be developed, using the facilities like Remote Sensing (RS) and Geographic Information Systems (GIS) to ensure the accuracy of the study and the sound environmental planning and management in the future. In addition to the above, there will be the transfer of technology and know-how for environmental management to the counterparts of the Hanoi Environmental Committee and those of the Hanoi People's committee. Through training sessions, seminars, workshops and joint studies, the counterparts of the Vietnamese government for this study shall broaden their knowledge for strategic environmental planning and management, so that they shall be able to carry out an effective environmental planning on their own in the future.

4. OBJECTIVES OF THE STUDY

- (1) Formulation of a comprehensive integrated environmental management master plan for Hanoi city and its surrounding area with the target year 2015.
- (2) Shortlisting/Prioritization of urgent projects and programs for implementation.
- (3) Preparation of a stage-wise development program of identified projects.
- (4) Preparation of a comprehensive environmental resources database using RS and GIS planning tools and datasets.
- (5) Feasibility Study of the selected high-priority/urgent environmental projects.
- (6) Transfer of technical know-how to Vietnamese counterpart agency staff through joint studies, conduct of seminars, workshops and training sessions.

5. STUDY AREA

The study area would be the seven urban districts (Hai Ba Trung, Dong Da, Ba Dinh, Hoan Kiem, Tay Ho, Thang Long and Thanh Xuan) and the five suburban districts (Tu Liem, Soc Son, Dong Anh, Thanh Tri and Gia Lam). This is the same target zone of the Hanoi City Master Plan. Figure 1 shows the location and extent of the study area.

6. WORK TASKS

The following work tasks will be carried in parallel or in sequence:

1) Review of existing data and information

The collection of available data and updating of information will include the following:

- 1) Meteo-hydrology
- 2) Topography and Geology
- 3) Socio-economic conditions
- 4) Land use
- 5) Water use/potable water supply
- 6) Urban development
- 7) Lake, wetlands and river ecosystems
- 8) Drainage and domestic waste-water disposal
- 9) Industrial development and waste-water treatment
- 10) Tourism and historic spots
- 11) Law, regulations and institutions
- 12) Financing and investment of development projects/plans
- 13) Natural resources and energy balance

All data and information, including ongoing and proposed projects concerning each of the above will be reviewed and evaluated for their environmental implications and identification of problems and possible solutions. Areas necessitating field survey and investigations will be identified.

(2) Field survey/investigation and execution of experimental/pilot project

Items listed below would be surveyed and investigated from ecological and engineering aspects to supplement available information:

- 1) Water sampling and water quality testing
- 2) Air pollution monitoring
- 3) Lake and river sediment sampling and testing
- 4) Socio-economic survey

- 5) Land use survey
- 6) Ecosystem

Some selected experimental/pilot projects for the environmental improvement shall be executed and operated in order to obtain practical information to be input into the formulation of a master plan. The pilot projects may include, for example, an experiment of alternative methods of waste treatment, an experimental method of lake purification.

(3) Design of environmental database using RS and GIS

Financial Support by JICA is necessary to purchase hardware and software and necessary RS data like aerial photographs. Financial resources for creation of a digital database largely through digitization and scanning need also be made available by JICA. All of the above listed facilities and information will become the important components of technology transfer to GOV. An environmental database framework would be designed in the early stages of the projects, so that a comprehensive database would be created using RS and GIS as the project proceeds. Wide variety of data would be tailored to its use for environmental management of Hanoi city and its surrounding area.

(4) Scoping of important environmental item and identification of urgent projects

Based on the sectoral review and initial analysis of the envisaged problems, the most important environmental items and scopes shall be defined. Urgent projects for the improvement of the selected environmental items shall be identified and screened out for the subsequent feasibility studies.

(5) Feasibility study of the selected high-priority/urgent environmental projects.

Feasibility studies of the identified urgent projects shall be carried out in parallel with the formulation of a master plan. Candidate projects subject to F/S may include the following:

- 1) Hanoi City Solid Waste Disposal System Project (Review F/S)
- 2) Pilot Project for Industrial Pollution Control (Plan formulation for a selected typical factory)

The estimation of the project cost and the types of financial resources for the project implementation, as well as the program for the institutional capacity improvement of the concerning government agencies in Vietnam should be duly considered during the F/S stage.

(6) Formulation of comprehensive integrated environmental management plan

Based on the results of tasks (1) to (3) of "6. WORK TASKS", a comprehensive integrated environmental management plan with target year 2015 will be formulated for Hanoi city and its surrounding area. Priority projects and programs will be shortlisted for urgent implementation. A development program towards the target year, identifying the implementation plan and schedule, cost disbursement, method of procurement and implementing organization and institutional set-up would be recommended.

(7) Technology transfer

The study will achieve this by:

- 1) Carrying out workshops and seminars during the course of the study in Vietnam.
- 2) On the job training in working and interacting closely with GOV counterpart staff.
- 3) Training in Japan for a selected number of Government staff and experts in local authorities to gain first hand knowledge on practices and techniques adopted in Japan in similar projects.

7. STUDY SCHEDULE

The study shall be carried out in 12 months.

8. REPORTS

The following reports shall be prepared in English and submitted during the study.

- (1) Inception Report
Thirty (30) copies at the commencement of the study in Vietnam.
- (2) Interim Report
Thirty (30) copies within three (3) months after commencement of the study.
- (3) F/S Report for Solid Waste Disposal System
Thirty (30) copies within six (6) months after the commencement of the study.
- (4) Planning Report of Pilot Scheme for Anti-factory-Pollution
Thirty (30) copies within seven (7) months after the commencement of the study.
- (5) Draft Final Report of Master Plan
Thirty (30) copies within twelve (12) months after the commencement of the study.

(6) Final Report of Master Plan

Fifty (50) copies within two (2) months after the receipt of the written comments on the reports submitted from the GOV, while these comments are expected to be delivered within one (1) month after submission of the Draft Final Report.

9. EXPERTISE REQUIRED

9.1 The Master Plan study shall require the input of the following expatriate personnel:

Designation	Man months
Team leader	5
Environmental management and planning expert	10
Social environment expert	5
Water quality expert	5
Air quality expert	5
Solid and hazardous waste specialist	5
Water supply engineer	4
Drainage/Sewerage engineer	4
RS and GIS specialist	6
Hydrology and water balance expert	5
Environmental economist	4
Land use/urban development planner	6
Transportation planner	4
Institution and Investment Specialist	4
Natural resources and energy planner	5
Landscape Architect	3
Total	80

The total expertise input for the Master Plan study is estimated to be 80 man-months

9.2 The Feasibility Study shall require the input of approximately forty (40) man-months input for each selected project.

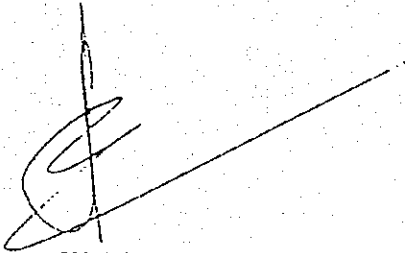
The total expertise input for the Feasibility Studies is estimated roughly 80 man-months, assuming three F/S.

2. S/W

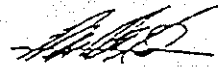
SCOPE OF WORK
FOR
THE STUDY
ON
ENVIRONMENTAL IMPROVEMENT FOR HANOI CITY
IN
THE SOCIALIST REPUBLIC OF VIETNAM

AGREED UPON BETWEEN
HANOI PEOPLE'S COMMITTEE
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

HANOI, NOVEMBER 13 1997

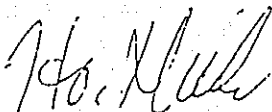


Mr. Do Hoang An
Vice Chairman
Hanoi People's Committee



Mr. Masahiro OHTA
Leader of Preparatory Study Team
Japan International Cooperation Agency (JICA)

Witnessed by,



Mr. Ho Quang Minh
Deputy Director
of Foreign Economic Relation Dept.
Ministry of Planning and Investment

I. INTRODUCTION

In response to the request of the Government of the Socialist Republic of Viet Nam (hereinafter referred to as "the Government of Vietnam"), the Government of Japan has decided to conduct the Study on Environmental Improvement for Hanoi Area (hereinafter referred to as "the Study") in accordance with the relevant laws and regulations in force in Japan.

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, will undertake the Study in close cooperation with the authorities concerned of the Government of Viet Nam.

The present document sets forth the scope of work with regard to the Study.

II. OBJECTIVES OF THE STUDY

The objectives of the Study are :

1. to formulate an Environmental Improvement Master Plan for the Hanoi Area,
2. to assist and strengthen the institutional system for subsequent implementation of the formulated Master Plan,
3. to transfer technologies, through joint study action, for environmental development and for implementation of the Master Plan.

III. STUDY AREA

The Study area shall cover the basins of following districts:

Urban and sub-urban districts in Hanoi City according to the New City M/P to be approve to the Government of Viet Nam

IV. SCOPE OF THE STUDY

In order to achieve the above objectives, the Study will cover the following items:

1. Review processes

- 1) Review of the present environmental problems in Hanoi
- 2) Review of the Hanoi City Master Plan and sector plans and projects related to environmental infrastructure
- 3) Review of the institutional system and the on-going programs for environmental management
- 4) Collection of existing data and information pertaining to elements 1-3 above.

2 Mapping the Study Area and Development of strategies for Environmental Problems

- 1) Field reconnaissance and study pertaining to elements 2-3 below
- 2) Mapping of the entire study area into smaller areas(zones), according to the present land use, and develop strategies to improve the degraded environmental quality in each zone
- 3) Development of strategies to solve specific environmental problems identified during the review process

3 Development of the Environmental Improvement Master Plan

- 1) Development of environmental quality targets for each of the zones classified from the view point of environmental quality parameters, natural, environment, amenity for citizens, historical and cultural resources
- 2) Development of programs required to attain the environmental quality targets
- 3) Development of a coordination mechanism between the National Environment Agency and the Hanoi DOSTE and among departments within the Hanoi People's Committee to support implementation of the environmental programs that are developed
- 4) Development of implementation strategies for strengthening environmental institutions and undertake preparations for possible feasibility studies on priority projects
- 5) Development of specific programs to promote environmental awareness among key organizations and citizens

4 Selection of Priority Projects

- 1) Identification of priority projects which should be implemented as soon as possible
- 2) Recommend an approach for implementation for each of the projects selected

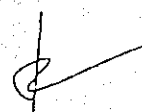
V. SCHEDULE OF THE STUDY

The tentative schedule of the Study is shown in the attached Annex.

VI. REPORTS

JICA shall prepare and submit the following reports in English to the Government of Viet Nam.

1. Inception Report:
Thirty (30) copies at the beginning of the work in Viet Nam.
2. Progress Report (1):
Thirty (30) copies at the end of the first work period in Viet Nam.
3. Interim Report:
Thirty (30) copies at the beginning of the second work period in Viet Nam.
4. Progress Report (2):
Thirty (30) copies at the end of second work period in Viet Nam
5. Draft Final Report:
Thirty (30) copies at the end of the third field survey
The Government of Viet Nam agrees to submit its comments within one(1) month after the receipt of the Draft Final Report.
6. Final Report:
Sixty (60) copies within one (1) month after receipt of the said comments on the Draft Final Report.



VII. UNDERTAKINGS OF THE GOVERNMENT OF VIETNAM

1. To facilitate smooth implementation of the Study, the Government of Viet Nam shall take necessary measures:
 - (1) to secure the safety of the Japanese Study Team,
 - (2) to permit the members of the Study Team to enter, leave and sojourn in Viet Nam for the duration of their assignment , and to exempt them from foreign registration requirements and consular fees,
 - (3) to exempt the members of the Study Team from taxes, duties and any other charges on equipment, machinery and other materials brought into and out of Viet Nam for the implementation of the Study,
 - (4) to exempt the members of the Study Team from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Study Team for their services in connection with the implementation of the Study,
 - (5) to provide necessary facilities to the Study Team for remittance as well as utilization of funds transferred into Viet Nam from Japan in connection with the implementation of the Study,
 - (6) to secure permission for entry into private properties or restricted areas as required for the implementation of the Study,
 - (7) to secure permission for the Study Team to take all data and documents (including photographs and maps) related to the Study out of Viet Nam , and
 - (8) to provide medical services as needed. Related expenses will be chargeable to the Study Team.
2. The Government of Viet Nam shall bear claims, if any arise, against the members of the Study Team resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the members of the Study Team.
3. The People's Committee of Hanoi Province shall also act as a coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.
4. HPC shall, at its own expense, provide the Study Team with the following, in cooperation with other organizations concerned:
 - (1) available data (including photographs and maps) and information related to the Study,
 - (2) counterpart personnel,
 - (3) suitable office space equipped with necessary equipment and furniture in Hanoi.

- (4) credentials or identification cards, and
- (5) an appropriate number of vehicles with drivers

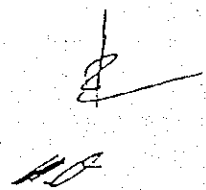
VIII. UNDERTAKINGS OF JICA

For the implementation of the Study, JICA shall take the following measures:

1. dispatch, at its own expense, the Study Team to Viet Nam and
2. pursue technology transfer to the Vietnam counterpart personnel during the course of the Study.

IX. CONSULTATION

JICA and HPC shall consult with each other in respect of any matter which may arise from or in connection with the Study.



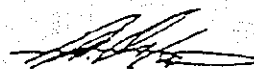
MINUTES OF MEETING
ON
THE SCOPE OF WORK
FOR
THE STUDY
ON
ENVIRONMENTAL IMPROVEMENT FOR HANOI CITY
IN
THE SOCIALIST REPUBLIC OF VIETNAM

AGREED UPON BETWEEN
HANOI PEOPLE'S COMMITTEE
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JAPAN INTERNATIONAL COOPERATION AGENCY

HANOI, NOVEMBER 13 1997

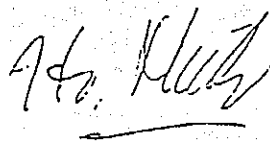


Mr. Do Hoang An
Vice Chairman
Hanoi People's Committee



Mr. Masahiro OHTA
Leader of Preparatory Study Team.
Japan International Cooperation Agency (JICA)

Witnessed by,



Mr. Ho Quang Minh
Deputy Director
of Foreign Economic Relation Dept.
Ministry of Planning and Investment

In response to the request of the Government of the Socialist Republic of Viet Nam (hereinafter referred to as "the Government of Viet Nam"), the Japanese Preparatory Study Team (hereinafter referred to as "the Team") was sent by Japan International Cooperation Agency (hereinafter referred to as "JICA") to discuss, with the Hanoi People's Committee (hereinafter referred to as "HPC") and the Ministry of Science, Technology and Environment, the Scope of Work (S/W) for the Study on Environmental Improvement for Hanoi City in the Socialist Republic of Viet Nam (hereinafter referred to as "the Study")

The Team carried out the field reconnaissance on the study area and had a series of discussions with the officials of the HPC and the other organizations concerned. The meetings were held from November 5 to 12 at the offices of the HPC. The participants and attendees to the meetings are listed in the attached Appendix.

As a result of the discussions, the Team and HPC agree to the S/W and the following:

(1) The Study will be conducted in accordance with JICA's basic policy for Development Study and will be undertaken as follows:

i) HPC will serve as the main counterpart for the coordination of the Study and it will assign the main counterpart for implementation of the study;

ii) JICA, working with the cooperation of other concerned counterpart organizations, will provide technical assistance for the formulation of the Master Plan (hereinafter referred to as "M/P");

iii) The members of the JICA consulting team will, during the course of formulating the M/P, transfer technology to the Vietnamese counterpart personnel in order to provide the said counterparts with the capacity to implement the M/P that is formulated.

(2) To undertake the Study, JICA will provide a team of consultants that is comprised of qualified professionals in disciplines which might include: environmental management planning; environmental administration; industrial pollution control; industrial waste; hazardous and solid waste management; treatment facilities; environmental laboratory planning; environmental monitoring; etc.

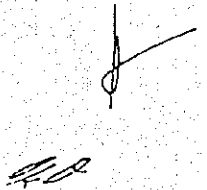
(3) HPC agrees to arrange for the assignment of the necessary counterpart personnel to work alongside the JICA Study Team including representation from organizations such as DOSTE, TUPWS, URENCO, HAPI, etc.

(4) In order to promote a smooth implementation of the Study, a Steering Committee will be established and the Vice Chairman of the HPC will serve as the Chairman of the Steering Committee.

(5) In providing technology transfer, the JICA Study Team will, as required, provide on-the-job training, seminars and workshops for the benefit of counterpart personnel and, in addition, the Team agrees to submit the HPC request for in-Japan training to JICA Headquarters for further consideration.

- (6) JICA will provide the necessary equipment that is required to undertake the Study.
- (7) HPC agrees to make its best efforts to accommodate the JICA request for appropriate and sufficient office space that is proximate to affected counterpart personnel, including the provision of space for a coordination office.
- (8) Given that both Japan and Canada are providing parallel environmental technical assistance to the Hanoi DOSTE. HPC acknowledges that the JICA Study Team will, through-out the course of the Study, coordinate its efforts with the on-going CIDA-VCEP.

With reference to the previous HPC request for a feasibility study on solid waste management in Hanoi City, the Team agrees to submit it to JICA Headquarters for further consideration.



4. 質問表及び回答

LIST OF ATTENDANTS

Vietnamese

Mr. Ho Quang Minh Deputy Director of Foreign Economic Relation Dept.
Ministry of Planning and Investment

Mr. Bui Liem Expert of Foreign Economic Relation Dept.

(Ministry of Planning and Investment - MPI)
Mr. Tran Tuan Anh Expert of Foreign Economic Relation Dept.

(Ministry of Science, Technology and Environment - MOSTE)
Mr. Dau Dinh Loi Director of International Relation Dept.

(Ministry of Construction - MOC)
Mr. Nguyen Van Thai Senior Expert of of Architecture and Urban -
Rural Planning and Public Works Management
Dept.

(Hanoi Department of Science, Technology and Environment - DOSTE)
Mr. Nguyen Duc Khien Director
Mr. Le Tran Lam Chief of Environmental Management Div.
Mrs. Phan Quynh Nhu Senior Environmental Officer

(Hanoi Authority for Planning and Investment - HAPI)
Mr. Nguyen Do Khue Deputy Director
Mr. Vu Kim Nam Manager
Mrs. Nguyen Minh Thuan Deputy Manager
Mr. Tran Anh Chu Expert

(Hanoi Transportation and Urban Public Works Service - TUPWS)
Mr. Pham Quoc Truong Director General
Mr. Nguyen Huu Sung Manager
Mr. Do Duc Huan Senior Engineer

(Hanoi Urban Environment Co. - URENCO)
Mr. Chu Van Chung Director
Mr. Dinh Dang Minh Deputy Director
Mrs. Nguyen Thi Hoang Lan Head of International Dept.

Japanese (Preparatory Study Team)

Mr. Masahiro OHTA Leader
Mr. Akihiro MIYAZAKI Study Planning
Mr. Robert DEROUIN Management
Mr. Takeaki KISHI Environmental Management Planning
Mr. Masanori URA Solid Waste Management
Mr. Teiji HORI Environmental Pollution Planning
Mrs. Ran NAGAI Interpreter
Mr. Taizo YAMADA Project Formulation Adviser

1. 一般的事項 (1)

項目	データの項目/情報		行用性		備考 (参考資料の名称、概要、その他)
	解説	行用性	データの出所		
1. 過去5年間の社会-経済情報 (国及び北部地方)					
(1) 国民総生産			○		1996年統計年鑑
(2) 地方国民総生産					
(3) 生産構造					
(4) 消費と投資の増大					
(5) 商業貿易の進展					
(6) 貯蓄と支出の収支			○		1995年統計年鑑
(7) 総対外負債					
2. 過去5年間の財政業績					
(1) 国家予算内訳					
(2) 国際貿易収支					
(3) 海外経済援助					

1. 一般的事項(2)

データの項目/情報		解説	行用性		備考 (参考資料の名称、概要、その他)
項目			行用性	データの担起源	
3. 過去5年間の公共投資 (1) 資本支出 (2) 財源					
4. 開発計画(国及び北帯地方)					
(1) 国家開発計画		① 長期計画 ② 短期計画	○		1995年統計年鑑
(2) 5年間経済開発計画					
(3) 農業開発計画					
(4) 工業開発計画					
(5) 鉱業と石油産業開発計画					
(6) 輸出開発計画					
(7) 社会-経済予想指標					

1. 一般的事項 (3)

項目	データの項目/情報		行用性		備考 (参考資料の名称、概要、その他)
	解説	有用性	データの 出所源		
(8) 土地管理	<p>① 土地利用 (交通, 住宅)</p>	○			ヴェトナム都市計画及び開発プロジェクト
5. 調査の概要	<p>① 対象地域の範囲</p> <p>② 目標期間</p> <p>③ 調査に対する人衆の意見と認識</p> <p>④ 環境管理計画の効果</p> <p>⑤ 将来にわたる基金源</p> <p>⑥ 他組織との連携状況</p>				
6. その他、関連データ・情報					

II. 自然的条件 (1)

データの項目 / 情報		行用性	行用性 データの出所源	備考 (参考資料の名称、概要、その他)
項目	解説			
1. 地理と地勢				
(1) 地図と航空写真	<ul style="list-style-type: none"> ① 地図 (縮尺: 1/1000 ~ 1/50000) ② 地勢図 (縮尺: 1/1000 ~ 1/50000) ③ 航空写真 (縮尺: 1/1000 ~ 1/50000) 			
(2) 保護地域、その他	<ul style="list-style-type: none"> ① 国立公園と自然保護地域 ② 環境に影響を受け易い地域 ③ 保護地域 ④ 景勝地 			
2. 気象と水象				
(1) 気象データ	<ul style="list-style-type: none"> ① 雨量データ (過去 5年/月別) ② 気温データ (過去 5年/月別) 	○ ○ ○		1995年統計年鑑 同上 同上

II. 自然的条件 (2)

項目	データの項目/情報	解説	有用性		備考 (参考資料の名称、概要、その他)
			有用性	データの出所源	
(2) 水象データ		③ 風力・風向データ (過去 5年/月別)	○		1995年統計年鑑
		① 河川流出率データ (過去 5年/月別)			
		② 底質推積データ			
		③ 浸食データ			
3. 水質・大気環境		① 河川	○		同上
		② 湖沼と池水	○		同上

II. 自然的条件 (3)

項目	データの項目/情報	有用性		備考 (参考資料の名称、概要、その他)
		有用性	データの起源	
4. 動物・植物相				
(1) 野生動物と植物の分布図	① 野生動物分布地図 ② 草植物分布地図			
(2) 関連情報	① 森林 ② 湿地 ③ 水性生物 (プランクトン, ベントス) ④ 希少種, 或いは地方動植物 (水性生物)			

Ⅲ. 社会・経済的条件(1)

データの項目/情報		有用性		備考 (参考資料の名称、概要、その他)
項目	解説	有用性	データの出所源	
1. 人口統計(国及び北部地方)	① 人口 ② 人口増加率 ③ 人口密度 ④ 標準収入	○ ○ ○ ○		1995～1996年統計年鑑 同上 同上 同上
2. 経済条件				
(1) 経済成長	① 農業 ② 工業 ③ 手工業 ④ サービス業、その他	○ ○ ○		1995年統計年鑑 同上 同上
(2) 生産構造	① 農林水産業 ② 工業 ③ 観光業(歴史、文化的建築物、遺跡)	○ ○ ○		1995年統計年鑑 同上 同上

III. 社会・経済的條件(2)

データの項目/情報		行用性		備考 (参考資料の名称、概要、その他)
項目	解説	行用性	データの出所	
3. 社会-経済基盤の現状	① エネルギーと鉱業	○		1995年統計年鑑
(1) 調査関連の社会-経済基盤	① 港湾			
	② 港湾設備			
	③ 排水、下水システム			
	④ 固・液廃棄物の処理システム			
(2) 既存水利用	① 上水道、下水道施設			
	② 地下水利用			
	③ 固・液廃棄物処理施設			
	④ 灌漑システム			
(3) 土地利用	① 土地利用計画			
	② 区域整理計画			

Ⅲ. 社会・経済的條件 (3)

項目	データの項目／情報	解説	有用性		備考 (参考資料の名称、概要、その他)
			有用性	データの活用	
(4) ハノイ市関連の進行中プロジェクト	③ 土地利用地図				
	① 水利用				
	② 洪水コントロール				
	③ 下水処理				
	④ 農業				
	⑤ 養殖				
4. 環境問題	⑥ 工業				
	① 水質汚濁	④ 騒音・振動			
	② 土壌汚染	⑤ 地盤沈下			
	③ 大気汚染	⑥ 悪臭			

Ⅲ. 社会・経済的条件(4)

項目	データの項目/情報	解説	有用性		備考 (参考資料の名称、概要、その他)
			有用性	データの出所源	
5. 水質汚濁の発生源	(1) 産業排水	⑦ 土壌浸食			
		⑧ 固・液廃棄物			
		⑨ 天災			
		① 範囲(鉱工業、農業、その他)			
		② 所在地			
		③ 規模			
		④ 生産品目			
		⑤ 排水-質・量			
		① 所在地			
		② 規模			
(2) 家庭排水		③ 水使用量			

III. 社会・経済的条件 (5)

データの項目/情報		解説	行用性		備考 (参考資料の名称、概要、その他)
項目			行用性	データの出所源	
(3) 観光業排水 (ホテル, 船舶)	<ul style="list-style-type: none"> ④ 排水 ⑤ 固・液廃棄物 				
6. 大気汚染の発生源	<ul style="list-style-type: none"> ① 所在地 ② 規模 ③ 排水 ④ 固・液廃棄物 				
(1) 工場排煙	<ul style="list-style-type: none"> ① 所在地 ② 規模 ③ 生産品目 ④ 排出ガス・質・量 				
(2) 交通	<ul style="list-style-type: none"> ① 粉塵 ② 騒音 				

IV. 環境関連の法、規制、及び慣例業務（1）

項目	データの項目／情報	解説	有用性		備考 (参考資料の名称、概要、その他)
			有用性	データの箇所	
1. 法／ガイドライン (国及び地方レベル)		<ul style="list-style-type: none"> ① 自然保護法 ② 汚濁防止法 ③ 水利権 ④ 漁業権 ⑤ 土地利川 			
2. 環境アセスメント関連の 法／ガイドライン (国及び地方レベル)		① 手続き - 適川の見直し、タイプ			
3. 環境質基準		① 環境基準 (水)	<input type="radio"/>		ベトナム国の1995年における環境基準
		(土壌)	<input type="radio"/>		同上
		(大気)	<input type="radio"/>		同上

IV. 環境関連の法、規制、及び慣例業務（2）

項目	データの項目/情報	解説	行用性		備考 (参考資料の名称、概要、その他)
			行用性	データの出所源	
4. 環境保全に関する国際条約		② 排水基準	○		ヴェトナム国の1995年における環境基準 同上 同上 同上 同上
		③ 排ガス基準	○		
		③ 飲料水基準	○		
		④ 騒音	○		
		⑤ 振動	○		
		⑥ 悪臭	○		
		① 世界文化遺産条約			
		② ラムサール条約			
		③ ワシントン条約			
		④ 国際海洋法関連条約			
⑤ ロンドンダンプینگ条約					
⑥ 危険廃棄物に関するバーゼル条約					

IV. 環境関連の法、規制、及び慣例業務 (3)

データの項目 / 情報		解説	有用性		備考 (参考資料の名称、概要、その他)
項目			有用性	データの目所源	
5. 現行の環境行政関連省庁とその役割		<ul style="list-style-type: none"> ① 省庁の機構図 ② 調査に対し、直接責任を負う省庁 ③ 調査に関係する他の機関 ④ 調査に関与する環境関連の分析機関 			
6. 予算					
(1) 国家予算					
(2) 地方予算		① プロビンス県, ハノイ市			
(3) 環境配分予算		<ul style="list-style-type: none"> ① 総合計画 ② 環境管理計画 			

V. 海外、及びNGO協力による他の環境プロジェクト(1)

項目	データの項目/情報	解説	有用性		備考 (参考資料の名称、概要、その他)
			行用性	データの出所	
1. 世界銀行(WB)			○		外国投資案件のリスト
2. 国連開発計画(UNDP)			○		同上

V. 海外、及びNGO協力による他の環境プロジェクト(2)

項目	データの項目/情報	解説	有用性		備考 (参考資料の名称、概要、その他)
			有用性	データの出所	
3. アジア開発銀行 (ADB)			○		外国投資案件のリスト
4. カナダ国際開発事業団 (CIDA)			○		同上

V. 海外、及びNGO協力による他の環境プロジェクト(3)

データの項目/情報		行用性		備考 (参考資料の名称、概要、その他)
項目	解説	行用性	データの出所源	
5. デンマーク国際開発事業団 (DANIDA)		○		外国投資案件のリスト
6. スウェーデン国際開発事業団 (SIDA)		○		同上
7. NGO		○		同上

VI. 設備 (1)

データの項目/情報		行用性	行用性 データの出所源	備考 (参考資料の名称、概要、その他)
項目	解説			
1. 水質測定用機具	<ul style="list-style-type: none"> ① 採水器 ② 簡易水質分析器 ③ 自動車 (フィールド調査用) ④ 分析室 ⑤ 分析用ガラス器具類 			
2. 大気測定用簡易キット				
3. 携帯用騒音測定器				
4. モニタリングシステム	<ul style="list-style-type: none"> ① モニタリングステーションの敷 ② モニタリングステーションの設置場所 ③ モニタリング項目と頻度 ④ ネットワークシステム ⑤ データベースシステム, メインコンピュータ 			

Ⅶ. ヴェトナムのローカルコンサルタント(1)

項目	データの項目/情報		備考 (参考資料の名称、概要、その他)
	解説	行用性 データの出所源	
1. コンサルタントのリスト			
(1) 環境調査	<ul style="list-style-type: none"> ① 河川、湖沼、池等の水質 ② 底質 ③ プランクトン、ベントス、藻類 ④ 道路騒音 ⑤ 大気質 		
(2) コンサルタントの調査費	① 環境調査		
(3) コンサルタントの人的費	<ul style="list-style-type: none"> ① マネジャー ② 上級研究者 ③ 研究者 		

[World Bank]

Mr. Nguyen Cong Thanh

Country Program Manager

[在ベトナム日本大使館]

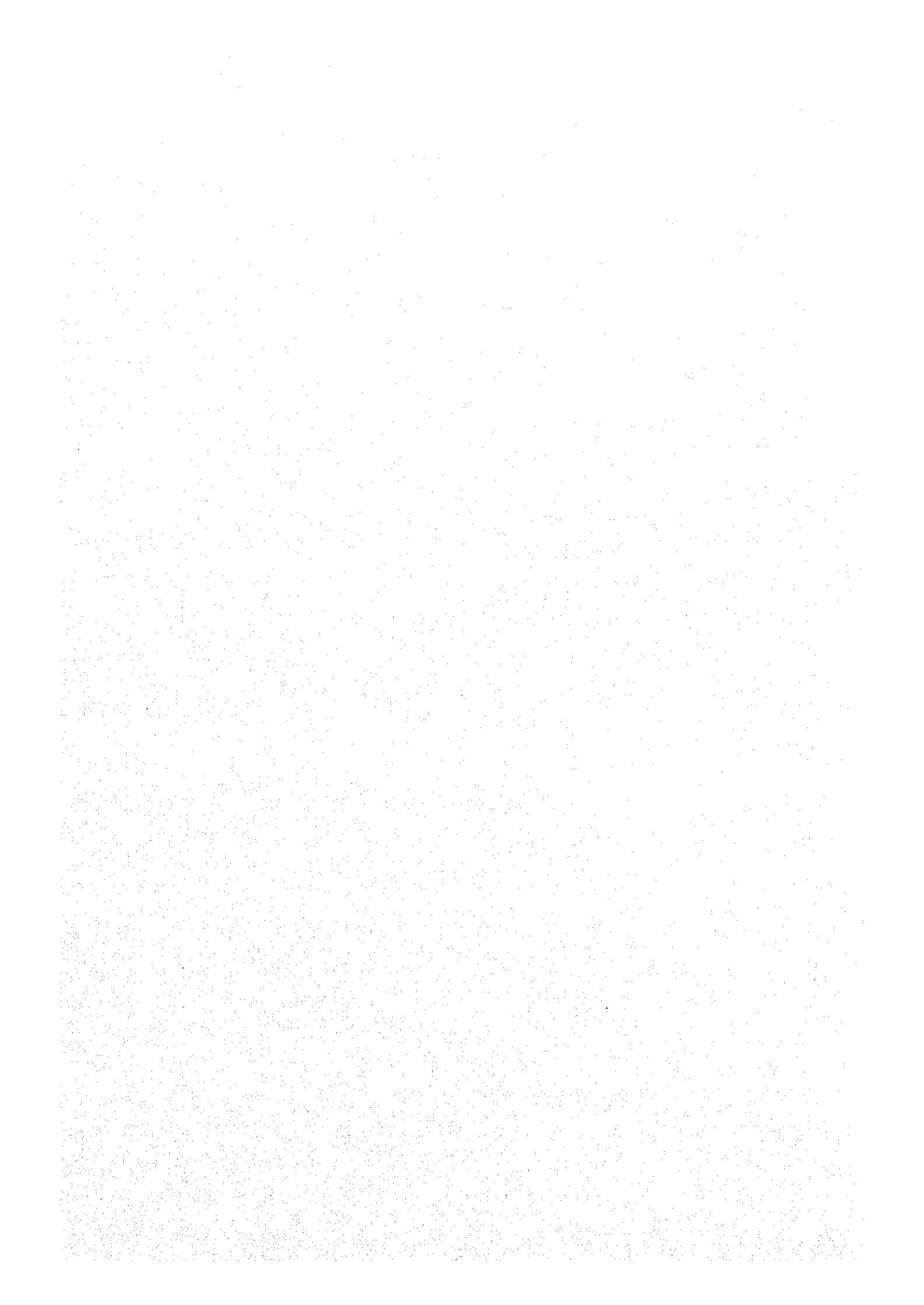
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村田 徹美
伊藤 康行

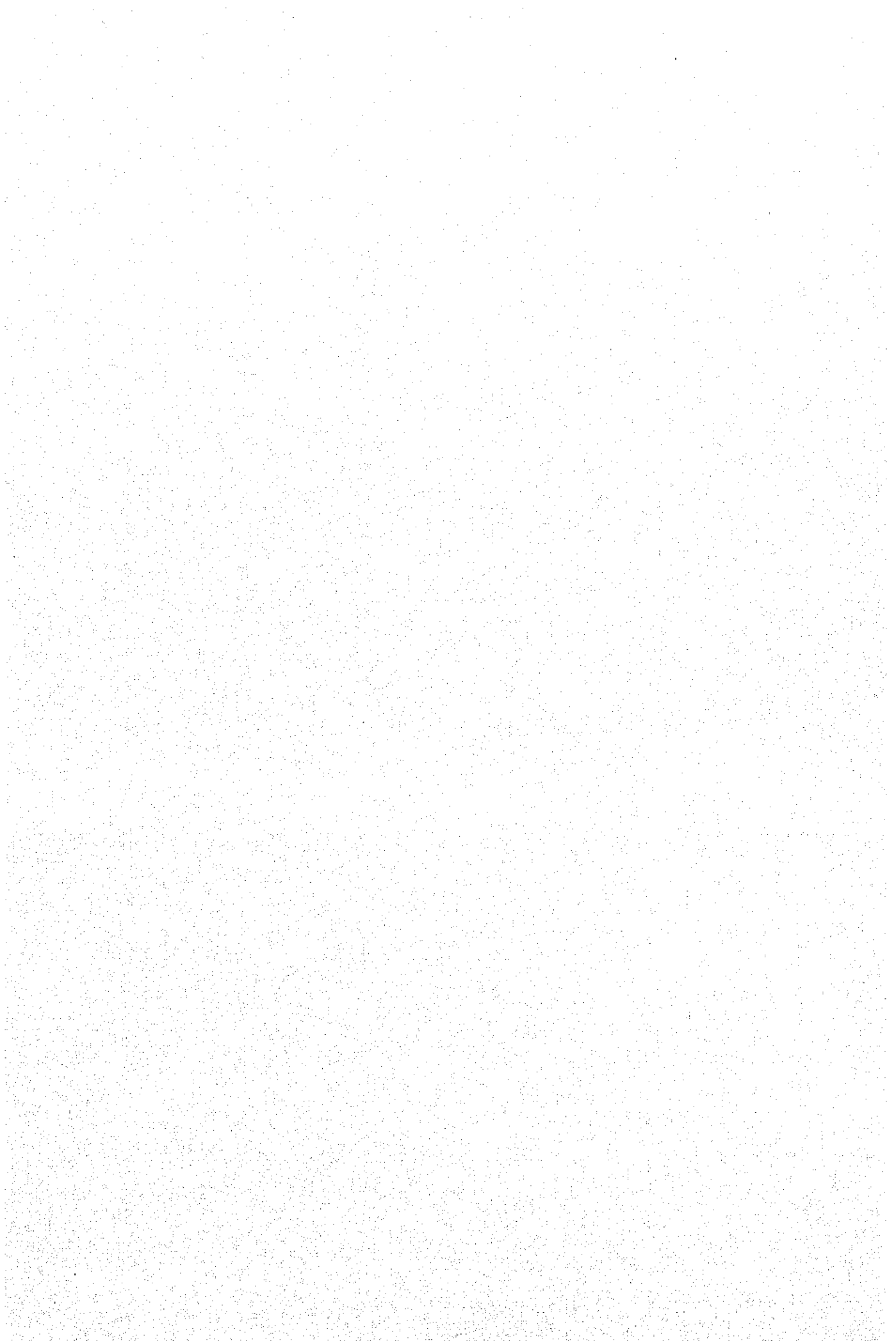
参事官
一等書記官
二等書記官

[JICAベトナム事務所]

等々力 勝
畠山 敬
大久保 久俊

所長
次長
所員





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