

APPENDIX-3 訪問先および面接者

1. 「ナ」国政府およびユニセフ関係者

氏名	所属機関	地位
Mr. M. Shitu	Federal Ministry of Finance & Economic Development	Secretary
Mr. J. C. Chalowu	" "	Principal Secretary
Mr. D. A. Adesina	" "	Senior Assistant Secretary
Mr. M. A. Alao	" "	Principal Assistant Secretary
Mr. H. Eteama	Federal Office of Statistice	Information Services Unit
Mr. C. De Rooy	UNICEF, Lagos, Nigeria	Chief, Water and Sanitation Section
Mr. L. A. Donaldson	" " "	Water Supply Officer
Mr. Harry A. Abe	WATSAN, Kwara State	Project Manager
Mr. M. KARIM	"	Chief, Workshop
Mrs. May Anyabolu	UNICEF, Enugu	Liaison Officer
Colonel R. N. Akonobi	Anambra State of Nigeria	Military Governor
Prof. A. B. C. Nwosu	Ministry of Health, Anambra State	Commissioner for Health
Dr. I. E. Ituma	" "	Permanent Secretary
Mr. C. Ezeoke	" "	Senior Assis. Secretary
Dr. C. N. Obionu	" "	Chief Health Officer
Dr. P. I. Okolo	" "	State Chief Medical Officer
Mr. J. O. Nwojiji	" "	Chief, Guinea-worm Coordinator.
Mr. David U. Chukwujekwu	Ministry of Works, Lands & Transport	Permanent Secretary

氏名	所属機関	地位
Eng. E. N. Agbala	"	Chief Civil Engineer
Eng. A. D. Ezenwata	"	Chief Engineer, Mech & Electric
Eng. Nath. C. Onwuagha	Anambra State Water Corporation	Chairman
Mr. E. N. Okongwu	" "	General Manager
Eng. M. M. I. Chukwuka	" "	Chief Engineer
Mr. P. Chudi Nwabuaun	" "	Asst. Chief Hydrogeologist
Mr. A. N. Mojekwu	" "	Chief Engineer
Dr. O. C. Nwaorgu	Dept. of Para Entomostrology Anambra State University of Technology	Chairman, Task Force on Guinea Worm Central
Mr. Adighije Chris	Cinab Eng. & Geological Service Ltd.	Consultant
Mr. A. O. Obianwu	Ministry of Works, Lands & Transport, Survey Dep.	Secretary of Survey Department
E. E. Okpa	Njikonu Social Club, Awgu	Chairman
B. U. Ikpenwa	Awgu Local Government	Chairman
Eng. A. A. Agbom	Ezza Local Government	Chairman
Mr. R. Barberopoulos	Nigerian Foundries Ltd.	Chairman

## 2. 在「ナ」国日本大使館

堂之脇 光 朗 特命全權大使  
山 本 徹 一等書記官  
加 藤 高 史 一等書記官  
岩 月 丈 明 一等書記官  
瀧 本 十 良 三 一等書記官

APPENDIX-4 協議議事録（和訳）

ナイジェリア連邦共和国  
ギニア・ウォーム対策飲料水確保計画  
議 事 録

ナイジェリア連邦共和国政府の要求に応じて、日本国政府はギニア・ウォーム対策飲料水確保計画の基本設計調査の実施を決め、JICAにそれを委託した。

JICAは、無償資金協力計画調査部、基本設計調査第1課、課長代理、辻岡政男氏を団長とする調査団を、その調査のため1988年3月1日より4月9日までナイジェリアに派遣した。

調査団は一連の協議と現地調査を行い、ナイジェリア連邦政府の関係部局と意見を交換した。

調査の結果、両者は当計画の実現に向け、ここに添付された協議結果を検討するように、それぞれ自国政府に勧告することを同意した。

1988年3月11日、ラゴスにて

JICA基本設計調査団  
団 長

辻岡政男

連邦政府財政経済開発省  
開発援助次官

M. シツ

## 添付資料

1. 当計画の目的は、ギニア・ウォーム症の根絶と村落住民の生活水準の改善のため、安全な飲料水を供給するため、緊急に井戸を建設することである。
2. 計画地区はアナンブラ州、アバカリギ地域である。計画地区は後に添付した別添 I に示す場所である。
3. ナイジェリア連邦共和国側の当計画実施の責任機関は、調整と監理をアナンブラ州保健省が行い、施工と維持をアナンブラ州指導公社が行う。(別添 II 参照)
4. ナイジェリア側は、(当計画の遂行のため)JICAが推薦する日本のコンサルタント会社と、公開入札によって選択される日本の請負業者を使用する原則を含む日本の無償援助の仕組み(調査団が説明した)を理解した。
5. 調査団は、別添 III に示されたナイジェリア連邦共和国政府の要求を日本国政府に伝達する。そして前者は、後者により要求された当計画の実施に協力するため、無償方式における日本の経済協力計画の範囲内で、必要な処置を講じる。
6. ナイジェリア連邦共和国政府は、日本国政府による無償援助が当計画のために行われるとの条件のもとで、別添 IV に記されている必要な処置を講じる。

## 別 添 III

ナイジェリア連邦共和国の要求する日本国政府による無償援助は次の通りである。

1. 建設資材の供給と手動ポンプセットの設置を含む150本の井戸とその付属設備の建設。
2. 当事業の実施に必要な機材の用意。
  - 1) 井戸掘削機材
  - 2) 支援機材
  - 3) 支援車両
  - 4) 井戸製作機材
  - 5) 塩化ビニール製の井戸ケーシング及びスクリーン
  - 6) 泥水剤と化学製品
  - 7) 手動ポンプセット
  - 8) 予備品

## 別添 IV

下記の準備はナイジェリア連邦共和国によってなされる。

1. 基本設計、詳細設計及び工事施工に必要な資料と情報を準備すること。
2. 工事開始前に、井戸やその他給水施設建設用地を確保すること。
3. 植樹、フェンス等付随工事を必要な場合に行うこと。
4. 仮設事務所、ワークショップ、機材置場その他の場所を用意すること。
5. 当無償援助で提供される給水設備や関連機材等を適正かつ効果的に維持する目的のために、必要な予算や人材を確保し、適正な維持管理計画を設立すること。
6. 当無償援助で建設される設備や購入される機材を正しく使用すること。
7. 銀行業務協定をもとに行われる銀行業務のため、日本外国為替銀行へその手数料を支払うこと。
8. 当無償援助のもとで購入される製品や、関連機材のナイジェリア国荷揚げ港における迅速な荷卸し、免税、通関手続き及び迅速な内陸輸送を確実に行うこと。
9. 当計画に従事する日本人及び当計画と確認された契約のもとで関連資機材と業務を関税、国内税、その他賦課から除外すること。
10. 当計画で承認された契約に基づいて行われる関連資機材の供給と業務に関し、その仕事に必要な日本人に対して、ナイジェリア国への入国と業務の遂行期間中の滞在を遅滞なく許容すること。
11. 当計画のため、日本国政府の無償援助によって負担される費用以外のすべての費用を負担すること。

APPENDIX-5 協議議事録 (英文)

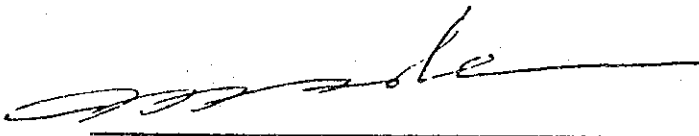
MINUTES OF MEETINGS  
OF THE PROJECT FOR  
THE GUINEA-WORM ERADICATION AND RURAL POTABLE WATER SCHEME  
IN  
THE FEDERAL REPUBLIC OF NIGERIA

In response to the request made by the Government of the Federal Republic of Nigeria, the Government of Japan has decided to conduct a basic design study on the Project for the Guinea-worm eradication and rural potable water scheme (hereinafter referred to as "the Study"), and entrusted the study to the Japan International Cooperation Agency (JICA). JICA has sent the Study Team lead by Mr. Masao Tsujioka, Deputy Head, First Basic Design Study Division, Grant Aid Planning and Survey Department, JICA, to Nigeria to conduct the Study from 1st March to 9th April, 1988.

The Study Team held a series of discussions and conducted field inspection and exchanged views with the authorities concerned of the Government of the Federal Republic of Nigeria.

As a result of the Study, both parties have agreed to recommend to their respective Governments to examine the results of the discussions attached herewith towards the realization of the Project.

At Lagos, 11th March, 1988.



MR. MASAO TSUJIOKA  
LEADER  
THE BASIC DESIGN STUDY TEAM  
JAPAN INTERNATIONAL COOPERATION AGENCY



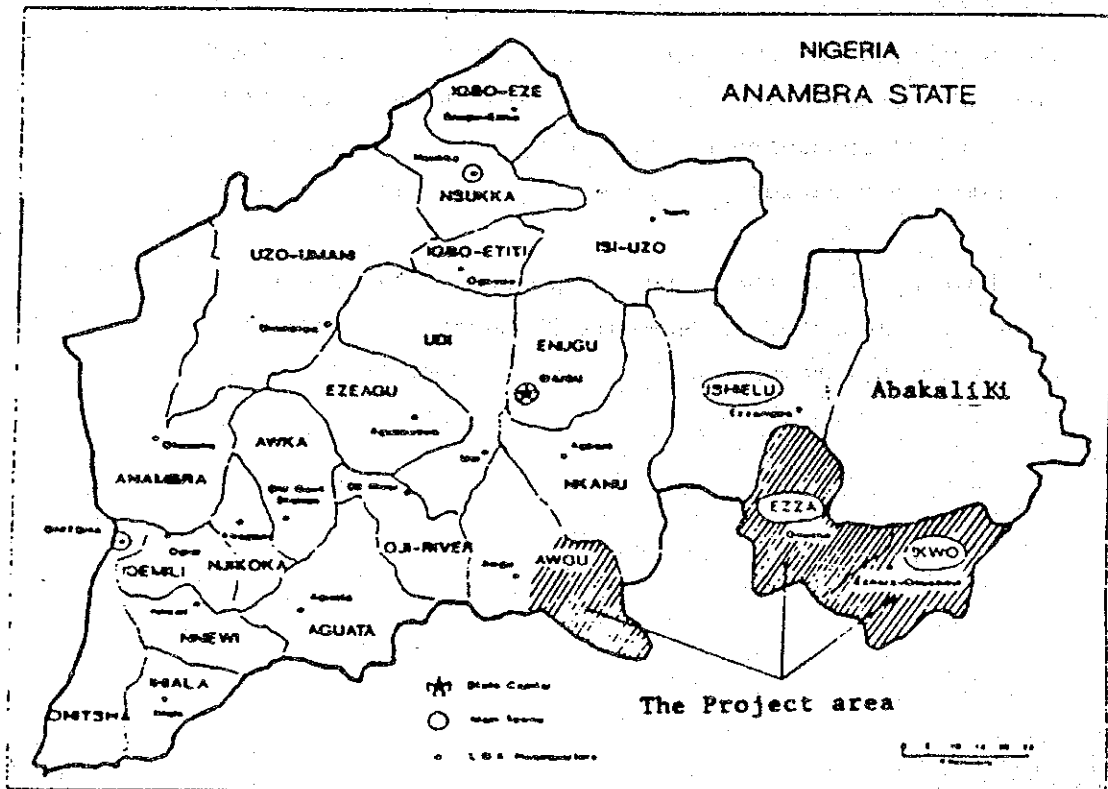
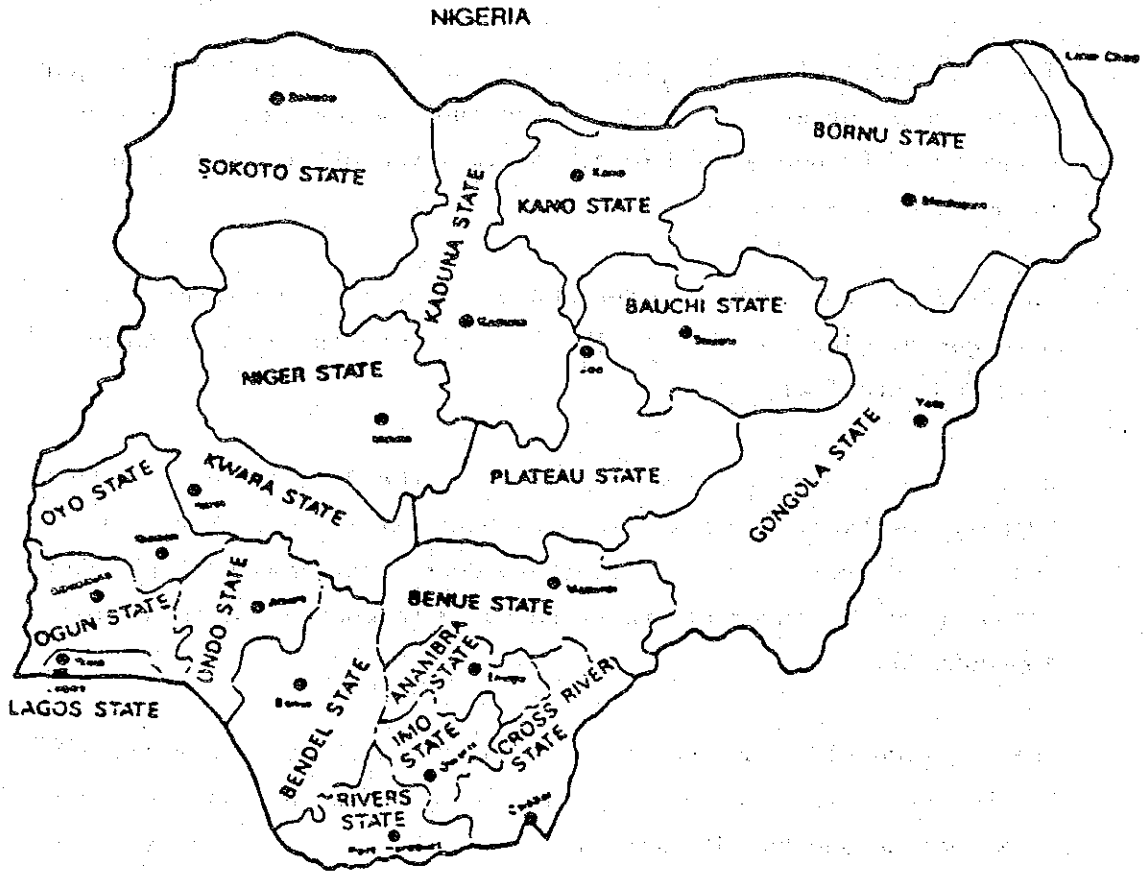
MR. M. SHITU  
SECRETARY FOR DEVELOPMENT AID  
FEDERAL MINISTRY OF FINANCE &  
ECONOMIC DEVELOPMENT

ATTACHMENT

1. The objectives of the Project are to construct boreholes of urgent programme in order to provide safe potable water supply for eradication of Guinea-worm disease and improvement of the living standard of the rural population.
2. The Project area is mainly the Abakalili zone in the Anambra State of Nigeria. The location of the Project area is shown in Appendix I attached hereafter.
3. Responsible bodies for implementation of the Project in the Federal Republic of Nigeria are the Anambra State Ministry of Health in-Charge of Coordination and Superintendert, and Anambra State later Corporation In-Charge of Execution and Maintenance, as is shown in Appendix II.
4. The Nigerian side has understood Japan's Grant Aid system explained by the Team which includes a principle of use of a Japanese Consultant firm recommended by JICA and Japanese Contractor(s) selected by open tendering.
5. The Study Team will convey to the Government of Japan the request of the Government of the Federal Republic of Nigeria (Appendix III) that the former takes necessary measures to cooperate in implementing the Project requested by the latter within the scope of Japan's economic cooperation programme in grant form.
6. The Government of the Federal Republic of Nigeria will take necessary measures stipulated in Appendix IV under the condition that the grant-aid by the Government of Japan is extended to the Project.



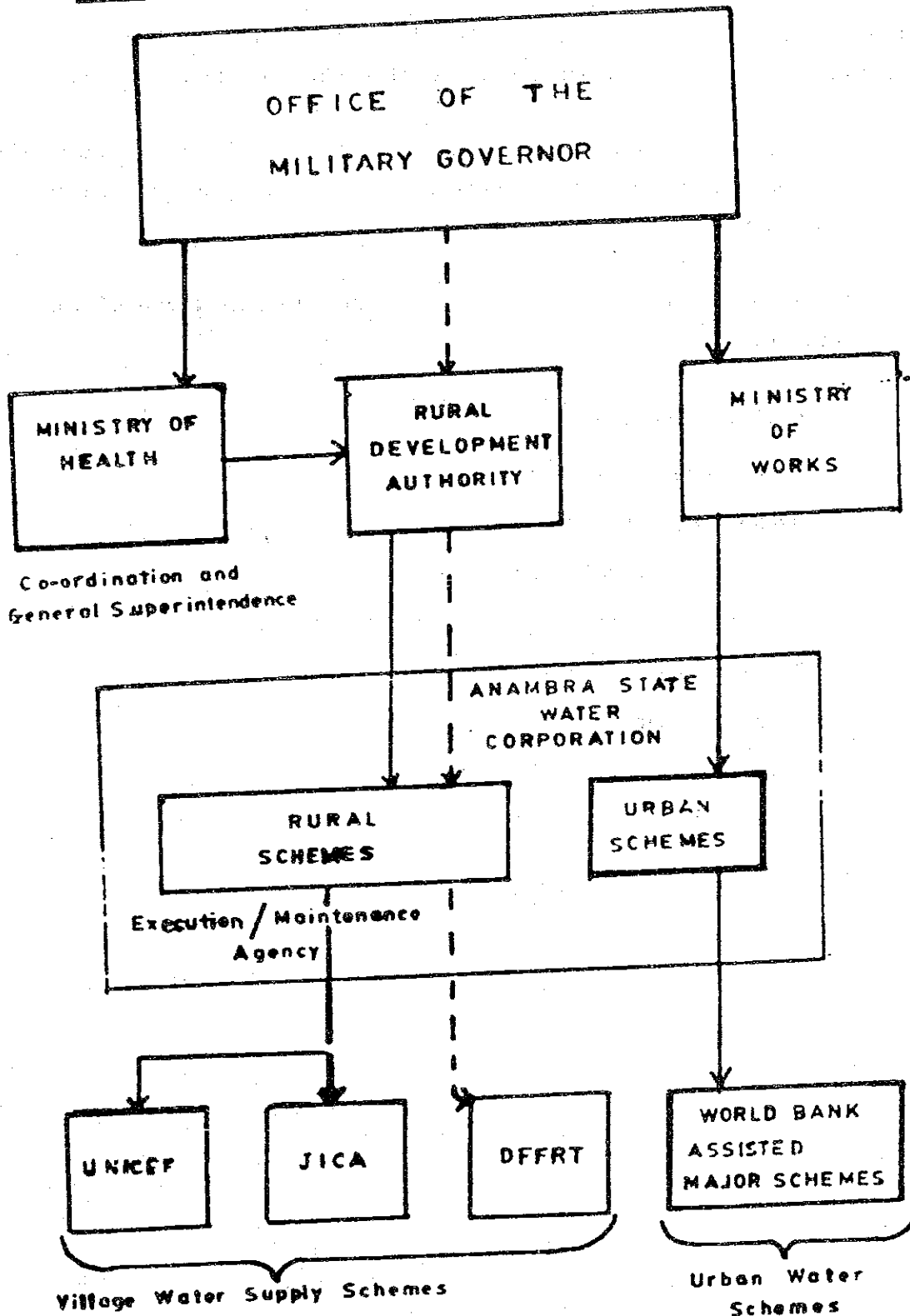
APPENDIX I  
LOCATION MAP



(A)

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ORGANOGRAM FOR THE IMPLEMENTATION OF POTABLE WATER SCHEMES IN ANAMBRA STATE



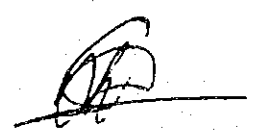
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### APPENDIX III

The request by the Government of the Federal Republic of Nigeria to be executed with the Japanese Government grant-aid is as follows:-

1. Construction of 150 boreholes and appurtenant facilities inclusive of supply of construction materials and installation of manual pump sets.
2. Provision of equipment necessary for the implementation of the Project:-
  - 1) Drilling Equipment
  - 2) Supporting Equipment
  - 3) Supporting Vehicles
  - 4) Equipment for Well Development
  - 5) PVC well casings and screens for boreholes
  - 6) Drilling mud and chemicals
  - 7) Hand pump set
  - 8) Spareparts

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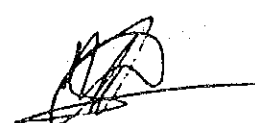
#### APPENDIX IV

Following arrangements are to be taken by the Government of the Federal Republic of Nigeria:-

1. To provide necessary data and information for basic design, detail design and construction
2. To secure land for the wells and other water supply facilities as needed before the start of the construction
3. To undertake incidental civil works such as planting and fencing, if needed
4. To provide the space necessary for temporary offices, working areas, stock yards and others
5. To secure necessary budget and personnel for the maintenance and operation and to organize proper maintenance program for the purpose of maintaining properly and effectively the water supply facilities and related equipment provided under the grant aid
6. To use properly the facilities constructed and equipment purchased under the grant aid
7. To bear the commissions to the Japanese foreign exchange bank for the banking services based upon the Banking Arrangement
8. To ensure prompt unloading, tax exemption and custom clearance at ports of disembarkation in Nigeria and prompt internal transportation therein of the products and related equipment purchased under the grant aid

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APPENDIX IV

9. To exempt Japanese nationals engaged in the Project from custom duties, internal taxes and other fiscal levies which may be imposed in Nigeria and with respect to the supply of the related goods and services under the verified contracts
10. To accord without delay to Japanese national whose services may be required in connection with the supply of the related goods and services under the verified contracts such facilities as may be necessary for the entry into Nigeria and their stay therein for the performance of their work
11. To bear all the expenses, other than those to be borne by the Grant for the Project

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JICA STUDY TEAM

<u>Name</u>	<u>Position</u>
Masao TSUJIOKA	Leader Deputy Division Chief, First Basic Design Study Division, Grant-Aid Cooperation, Planning & Survey Dept., JICA
Hiroshi OHARA	Public Health Doctor Experts Dispatch Service Division Department of International Cooperation National Medical Center Hospital
Yoshihisa SHIMIZU	Water Supply Planning Facility Department, Engineering Division Osaka Municipal Water Works Bureau
Hisao ANDO	Groundwater Development Sanyu Consultants Inc.
Haruhiko NAKAMURA	Hydrogeologist Sanyu Consultants Inc.
Mitsuharu KURAKAZU	Machinery Planning Sanyu Consultants Inc.

EMBASSY OF JAPAN

Takeaki IWATSUKI	First Secretary, Embassy of Japan
Toru YAMAMOTO	First Secretary, Embassy of Japan
Takashi KATO	First Secretary, Embassy of Japan

(S)



LIST OF ATTENDANCE

THE GOVERNMENT OF NIGERIA

<u>Name</u>	<u>Position</u>
Mr. M. SHITU	Secretary for Development Aid
Mr. J. C. CHALOKWU	Principal Secretary, Development Aid
Mr. D. A. ADESINA	Senior Assistant Secretary Development Aid
Prof. A. B. C. NWOSU	Commissioner for Health Anambra State
Dr. C. N. OBIONU	Ministry of Health, Anambra State

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APPENDIX-6

収集資料リスト

収集資料リスト

資料名	収集先	形状
Guinea Worm Control as a major contribution to Self-Sufficiency in rice production in Nigeria UNICEF 1987	UNICEF, Lagos/ 大使館	Publication
Directorate of Public Health Services 1988 Program of Activities, UNICEF	" "	Copy Sheets
From a Pilot Project to a National Strategy, UNICEF Nigeria Water and Sanitation Programme 1981-1986, June.1987	" "	Publication
Present Status and Future Requirements of the FM.H/ UNICEF Rural Clinic Water and Sanitation Project Nov. 1987.	" "	"
2nd Annual Symposium/Conference Rural Water Supply, NIGERIA Nigeria Water and Sanitation Asso.	UNICEF, Lagos	Copy
First Annual Symposium and Exhibition Ground Water Resources in Nigeria 1986.	UNICEF, Lagos	"
Imo State Project Evaluation	" "	"
Disability from Dracunculiasis	" "	"
Geological Map of Nigeria,1974 1:2,000,000	Geological Survey, ENUGU	Map Sheet
Nigeria 1:250,000 Geological Series OGOJA,UMUAHIA, OBAN HILL	" "	Map Sheets



資料名	収集先	形状
Map of Local Government Area 1:100,000 Anambra Awgu Ezza & Ikwo	Ministry of Works, Lands & Transports Survey Division Enugu	Map Sheets
Quarterly Abstracts of Statistics, Anambra	Statistic Division, Anambra	Publication
Economic Indicators	"	"
Anambra State Population Estimates by Local Government Area	"	"
Report on Rural Economic Survey, Anambra	"	"
Directory of Distributive Trades and Service in Anambra State	"	"
Report on Survey of Distributive Trade and Services in Anambra State	"	"
Digest of Social Statistics	"	"
Digest of Finance Statistics	"	"
Motor Vehicle Statistics	"	"
Estimated Population of Anambra State by Local Government, Age Group, and Sex	"	"
Facts and Figures about Anambra State 1986	"	"
Directory of Educational Institutions in Anambra State 1984/85	"	"
Statistics of Higher Educational Institutions in Anambra State, 1986	"	"
Rural Economic Survey, Anambra Time Series of 1980-84	"	"

資料名	収集先	形状
Anambra State Prices Bulletine October 1987	Statistic Division, Anambra	Publication
Economic and Social Statistics Bulletine 1986	Federal Office of Statistics	〃
The Health of Nigeria 1983/84	〃	〃
Digest of Statistics 1985	〃	〃
National Integrated Survey of Households 1984	〃	〃
Distribution Survey of Nigeria 1978	〃	〃
Review of External Trade 84-85	〃	〃
Nigeria Trade Summary '86	〃	〃
Nigerian Gross Domestic Product and Allied Macro-Aggregates 1973-1981	〃	〃
Forth National Development	〃	copy 抜粋
Primary Atlas for Nigeria	Book Shop	Publication

## APPENDIX-7

### 「ナ」国 カントリー・データ

#### (1) 基礎データ

1) 国 名：ナイジェリア連邦共和国(The Federal Republic of Nigeria)

首 都：ラゴス、人口 307万人(1987年推定)

独 立：1960年10月

旧宗主国：英国

2) 国 土：面積 924 千km<sup>2</sup>

人 口：9,850万人(1987年推定)

人口増加率：2.6%

都市人口比：30%

平均寿命：50才

3) 政体：連邦共和制

元首：ババンギダ大統領

4) 宗教：キリスト教、イスラム教

5) 言語：英語、ハウサ語、ヨルバ語、イボ語

6) 民族：ハウサ族、ヨルバ族、イボ族

7) 教育：成人識字率 34%

高等教育就学率 3%

8) 通貨：ナイラ(1 US\$=4.2 ナイラ、1988年)

9) 気候、地勢

北緯 4°-14°、東経 3°-15°に位置する。国の南端はギニア湾に面するが、北部は、標高 1,000-1,500 mの山地高原となる。降水量は南部で1,500mm、亜赤道気候を示し、北部では降水量は少なく 500mm程度となり熱帯大陸性の気候を示す。月平均気温は南部で22°-29°、北部では18°-35°を示す。

(2) 社会経済データ

SECTORAL DISTRIBUTION OF GDP (1970—1985) in %

SECTOR	1970	1980	1981	1982	1983	1984	1985
TOTAL ALL SECTORS	14217.9	29132.6	29907.3	29909.3	27359.9	25854.2	26472.2
Agriculture	45.43	19.86	20.53	23.29	24.05	25.88	26.08
Mining & Quarrying	13.24	28.28	17.85	15.65	16.44	18.85	18.94
Manufacturing	3.70	6.55	10.58	12.73	13.26	11.48	11.75
Utilities	0.25	0.47	0.57	0.84	0.70	0.79	0.79
Building & Construction	4.71	13.24	14.14	12.48	11.35	9.58	9.08
Transport & Communication	3.70	3.99	4.06	5.03	4.20	3.40	3.23
Wholesale & Retail Trade	23.12	19.40	21.23	18.88	18.22	17.64	17.74
Government Services	3.94	5.44	7.16	7.59	7.85	8.45	8.37
Other Services	1.92	2.77	3.06	3.72	3.93	3.93	4.02

Source: CBN Annual Report, various issues

GROSS DOMESTIC PRODUCT AND EXPENDITURE: CURRENT PURCHASERS' VALUES

	M <sup>a</sup> million				
	1981	1982	1983	1984	1985
1. Government Final Consumption Expenditure	5,503.54	5,504.04	5,560.73	5,607.05	5,658.29
2. Private Final Consumption Expenditure	36,827.23	38,789.13	41,249.33	44,210.82	49,667.91
3. Increase in Stocks	673.49	450.00	391.50	330.00	403.19
4. Gross Fixed Capital Formation	14,346.94	12,001.21	9,273.12	6,974.12	6,290.38
5. Exports of Goods and Services	11,584.50	9,542.16	8,031.81	9,425.18	12,002.80
6. Less Imports of Goods and Services	15,723.20	12,439.04	8,302.30	5,749.48	7,022.50
Expenditure on the Gross Domestic Product	53,212.50	53,847.50	56,204.19	60,797.69	67,000.07
7. Compensation of Employees	13,789.82	15,373.36	15,275.83	15,243.96	15,188.21
8. Operating Surplus	36,247.46	35,334.35	38,029.27	43,319.53	49,586.74
9. Consumption of Fixed Capital	1,578.16	1,320.13	1,020.04	767.15	691.94
10. Indirect Taxes	1,887.45	2,048.25	2,136.22	1,724.22	1,790.35
11. Less Subsidies	290.39	228.59	257.17	257.17	257.17
Gross Domestic Product	53,212.50	53,847.50	56,204.19	60,797.69	67,000.07

Source: Federal Office of Statistics.

RECURRENT EXPENDITURE OF THE FEDERAL GOVERNMENT

(N million)

	Actual		Provi- sional	Percentage change between		As percentage of total		
	1984	1985	1986	(1) & (2)	(2) & (3)	1984	1985	1986
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Administration .....	2,677.3	2,638.2	2,087.9	-1.5	-20.9	42.7	36.6	27.3
General Administration .....	1,381.2	1,001.5	982.7	-27.5	-1.9	22.0	13.9	12.9
Defence .....	801.9	1,100.9	691.2	37.3	-37.2	12.8	15.2	9.0
Internal Security .....	494.2	535.8	414.0	8.4	-22.7	7.9	7.5	5.4
Economic Services .....	326.9	315.4	556.4	-3.5	76.4	5.2	4.3	7.3
Agriculture and Water Resources .....	41.7	41.1	30.5	-1.4	-25.8	0.7	0.6	0.4
Construction .....	202.5	184.9	304.6	-8.7	64.7	3.2	2.5	4.0
Transport and Communication .....	46.1	57.7	118.2	25.2	104.9	0.7	0.8	1.6
Other Economic Services .....	36.6	31.7	103.1	-13.4	125.2	0.6	0.4	1.3
Social and Community Services .....	768.0	1,132.2	985.0	47.4	-13.0	12.2	15.7	12.9
Education .....	657.9	697.2	599.5	6.0	-14.0	10.5	9.7	7.9
Health .....	87.0	164.3	253.0	88.9	54.0	1.4	2.3	3.3
Other .....	23.1	270.7	132.5	1,071.9	-51.1	0.3	3.7	1.7
Transfers .....	2,503.5	3,129.5	4,012.2	25.0	28.2	39.9	43.4	52.5
Public Debt Charges .....	1,528.9	2,883.6	3,120.6	88.6	8.2	24.4	39.9	40.8
Internal .....	(769.3)	(1,903.1)	(2,133.4)	147.4	12.1	(12.3)	(26.3)	(27.9)
External .....	(759.6)	(980.5)	(987.2)	29.1	0.7	(12.1)	(13.6)	(12.9)
Pensions and Gratuities .....	231.2	220.4	367.7	-4.7	66.8	3.7	3.0	4.8
Non-statutory Appro. to States .....	—	—	—	—	—	0.0	0.0	0.0
Other .....	743.1 <sup>1</sup>	25.5	523.9 <sup>1</sup>	-96.6	1,954.5	11.8	0.4	6.9
Fed. Govt. own Recurrent Expenditure .....	6,275.7	7,215.3	7,641.5	15.0	5.9	100.0	100.0	100.0
Add. ....	(1)	(2)	(3)					
Statutory Appro. to states and local Govts. ....	4,195.2	4,965.8	4,332.6					
i State governments .....	(2,865.1)	(3,344.2)	(2,915.6)					
ii Local governments .....	(1,061.5)	(1,327.5)	(1,166.9)					
iii Dev. of Mineral Producing Areas .....	(159.5)	(158.2)	(132.4)					
iv Ecological Problems .....	(109.1)	(135.9)	(117.7)					
Transfer to Development Fund .....	671.4	1,299.2	2,941.8					
Total .....	11,142.2	13,480.3	14,915.9					

<sup>1</sup> Unclassified "Other" CRF charges.

Source: i Federal Government Gazettes

ii Federal Ministry of Finance.

CAPITAL EXPENDITURE OF THE FEDERAL GOVERNMENT

(N million)

	Actual		Provi- sional	Percentage change between		As percentage of total		
	1984	1985	1986	(1) & (2)	(2) & (3)	1984	1985	1986
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Administration .....	262.7	459.5	457.6	74.9	-0.4	4.8	5.6	9.2
General Administration .....	119.2	146.9	201.0	23.2	36.8	2.2	1.8	4.0
Defence .....	99.0	284.2	134.5	187.1	-52.7	1.8	3.5	2.7
Internal Security .....	44.5	28.4	122.1	-36.2	329.9	0.8	0.3	2.4
Economic Services .....	656.3	956.6	1,957.6	45.8	104.6	12.2	11.7	39.1
Agriculture .....	160.9	198.8	384.4	23.6	93.4	3.0	2.4	7.7
Manufacturing & Craft, Mining & Quarrying .....	82.3	368.0	727.1	347.1	97.6	1.5	4.5	14.5
Transport and Communication .....	248.3	203.5	214.2	82.0	5.3	4.6	2.5	4.3
Water Resources .....	156.1	170.9	—	9.5	—	2.9	2.1	—
Other .....	8.7	15.4	631.9	77.0	4,003.2	0.2	0.2	12.6
Social and Community Services .....	237.6	1,090.2	889.3	358.8	-18.4	4.4	13.4	17.8
Education .....	87.6	126.2	399.5	44.1	216.6	1.6	1.5	8.0
Health .....	34.6	59.1	70.9	70.8	20.0	0.7	0.7	1.4
Housing .....	108.2	261.1	414.3	141.3	58.7	2.0	3.2	8.3
Other .....	7.2	643.8	4.6	3,841.7	-99.3	0.1	7.9	0.1
Transfers .....	4,254.1	5,647.5	1,696.0	32.8	-70.0	78.6	69.3	33.9
External Financial Obligations .....	25.9	26.4	63.0	1.9	138.6	0.5	0.3	1.3
Capital Repayments <sup>1</sup> .....	1,598.8	2,737.5	1,515.1	71.2	-44.7	29.5	33.6	30.3
Loans on-lent to States .....	2,133.1	2,148.6	117.9	0.7	-94.5	39.4	26.4	2.4
Loans on-lent to Parastatals & Govt-owned companies .....	496.6	735.0	—	48.0	—	9.2	9.0	—
Total .....	5,411.0	8,153.8	5,000.5	50.7	-38.7	100.0	100.0	100.0

<sup>1</sup> 1985 and 1986 figures were from Public Debt Office, Central Bank, Lagos.

Source: (1) Federal Government Gazettes

(2) Federal Ministry of Finance.

**SUMMARY OF FEDERAL GOVERNMENT'S FINANCE**

(N million)

	1984	1985	1986
<b>Revenue</b>			
Total Federally-collected revenue.....	11,133.7	14,606.1	14,189.9
Federal-retained revenue.....	6,938.5	9,640.3	9,857.3
Share of Federation Account.....	(6,435.4)	(9,062.5)	(6,168.2)
Independent Revenue.....	(503.1)	(577.8)	(1,509.4)
National Economic Recovery Fund.....	(—)	(—)	(2,179.7)
<b>Expenditure</b>			
Recurent expenditure.....	6,275.7	7,215.3	7,641.5
Capital Expenditure.....	3,277.9	6,005.2	4,882.6
<b>Balance of Revenue &amp; Expenditure</b>			
Current Surplus (+)/Deficit(-).....	+662.8	+2,425.0	+2,215.8
Overall Surplus (+)/Deficit(-).....	-2,615.1	-3,580.2	-2,666.8
<b>Financing</b>			
External Loans.....	1,184.5	1,045.9	11,835.4 <sup>2</sup>
Internal Loans of which:.....	3,450.2	2,277.0	487.6
The Banking System.....	2,892.0	2,491.4	498.8
Central Bank.....	-646.0	820.5	6,199.6
Commercial Banks.....	3,538.0	1,670.9	-5,700.8
Non-Bank Public.....	558.2	-214.4	-11.2
Other Funds <sup>1</sup> .....	-2,019.6	-417.7	9,656.2

<sup>1</sup>Includes Public, Special and Trust Funds, etc: Minus (-) denotes increase; Plus (+) denotes decrease.

<sup>2</sup>A first-tier foreign exchange rate of US\$1 to N2.5954 as at December 1986 was used and so not directly comparable with earlier years.

Sources: Federal Ministry of Finance and Central Bank of Nigeria.

**CURRENT REVENUE OF THE FEDERAL GOVERNMENT**

(N million)

	Provisional			Percentage change between		As percentage of total		
	1984 <sup>1</sup> (1)	1985 <sup>1</sup> (2)	1986 (3)	(1) and (2) (4)	(2) and (3) (5)	1984 (6)	1985 (7)	1986 (8)
Oil Revenue.....	8,209.7	10,915.1	8,244.5	33.0	-24.5	73.7	74.7	58.1
Petroleum Profit tax.....	4,761.4	6,711.0	4,811.1	41.0	-28.3	42.7	46.0	33.9
Rent, Royalties and NNPC earnings.....	3,448.3	4,204.1	2,859.0	21.9	-32.0	31.0	28.7	20.1
NERF (Petroleum subsidy).....	—	—	574.4	—	—	0.0	0.0	4.1
Non-Oil Revenue.....	2,924.0	3,691.0	5,945.4	26.2	61.1	26.3	25.3	41.9
Federal Inland Revenue Department.....	808.2	1,049.9	1,102.5	29.9	5.0	7.3	7.2	7.8
Customs and Excise Duties.....	1,612.7	2,063.3	1,728.2	27.9	-16.2	14.5	14.1	12.2
NERF (Others).....	—	—	1,605.3	—	—	—	—	11.3
Federal Government Independent Revenue.....	503.1	577.8	1,509.4 <sup>3</sup>	14.9	161.2	4.5	4.0	10.6
<b>Total Federally-Collected Revenue.....</b>	<b>11,133.7</b>	<b>14,606.1</b>	<b>14,189.9</b>	<b>31.2</b>	<b>-2.8</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>Less:</b>								
Statutory Allocations to State:								
Local Governments and Others <sup>2</sup> .....	4,195.2	4,965.8	4,332.6	18.4	-12.8			
Federal Government Retained Revenue ...	6,938.5	9,640.3	9,857.3	38.9	2.3			

<sup>1</sup>Revised

<sup>2</sup>These are gross allocations less any deductions arising from loan or other obligations to the Federal Government.

<sup>3</sup>Made up of loan recoveries and other miscellaneous sources.

Sources: 1. Central Bank of Nigeria.  
2. Federal Government Gazettes.  
3. Federal Ministry of Finance.

**BALANCE OF PAYMENTS — SUMMARY STATEMENT**  
(N million)

Category	1984 <sup>1</sup>			1985 <sup>2</sup>			1986 <sup>3</sup>		
	Oil	Non-oil	Total	Oil	Non-oil	Total	Oil	Non-oil	Total
<b>CURRENT ACCOUNT</b>									
Merchandise <sup>4</sup>	8,152.3	-8,108.2	+44.1	10,177.3	-9,071.2	+1,106.1	7,386.7	-6,731.8	+654.9
Exports (f.o.b.) <sup>5</sup>	8,558.2	-6,258.4	+2,299.8	10,591.2	-6,765.3	+3,825.9	7,873.0	-4,423.8	+3,449.2
Imports (f.o.b.)	8,840.6	247.4	+9,088.0	10,890.6	324.2	+11,214.8	8,273.0	240.0	8,513.0
Services and Income (Net)	-282.4	-6,505.8	-6,788.2	-299.4	-7,089.5	-7,388.9	-400.0	-4,663.8	-5,063.0
Unrequited transfers (Net)	-317.5	-1,684.4	-2,001.0	-341.6	-2,146.2	-2,487.8	-440.6	-2,113.3	-2,553.9
Long-term capital (Net)	-88.4	-165.4	-253.8	-72.3	-159.7	-232.0	-45.7	-194.7	-240.4
Direct investment (Net)	+137.3	+24.2	+161.5	-47.8	-387.3	-435.1	-242.5	-859.7	-1,102.2
Portfolio investment	+89.7	+270.7	+360.4	+75.9	358.2	434.1	+40.1	+298.7	+338.8
Other Capital (long-term) Net	47.6	-246.5	-198.9	-123.7	-745.5	-869.2	-282.6	-1,158.4	-1,441.0
Official	—	-432.2	-432.2	—	-472.7	-472.7	—	-1,004.8	-1,004.8
Other	47.6	+185.7	+233.3	-123.7	-272.8	-396.5	-282.6	-153.6	-436.2
Balance on Current Account and Long-Term Capital (Basic Balance)	8,289.6	-8,084.0	+205.6	10,129.5	-9,458.5	+671.0	7,104.2	-7,342.5	-198.3
Other Capital (Short-term) (Net)	-539.5	+549.9	+10.4	-847.4	+644.5	-202.9	+1,411.5	+670.9	+2,082.4
Balance on Current and Capital Accounts	7,750.1	-7,534.1	+216.0	9,282.1	-8,814.0	+468.1	8,555.7	-6,920.6	+1,635.1
Balancing item	—	—	+138.9	—	—	+93.0	—	—	+311.2
Overall balance	—	—	+354.9	—	—	+561.1	—	—	+1,946.3
Reserves Movement <sup>6</sup>	—	—	-345.9	—	—	-561.1	—	—	-1,946.3

<sup>1</sup> Revised

<sup>2</sup> Provisional

<sup>3</sup> Estimated

<sup>4</sup> Adjusted for balance of Payments

<sup>5</sup> Crude oil exports are valued at realised prices

<sup>6</sup> Minus (-) sign indicates increase in assets/Decrease in liabilities

Plus (+) sign indicates decrease in assets/increase in liabilities



**SUMMARY OF STATE GOVERNMENTS' FINANCES, 1986<sup>1</sup>**

(N<sup>o</sup> million)

State	Revenue			Expenditure			Surplus (+)/ Deficit (-)		Financing	
	Statutory Allocation	Others	Total	Current	Capital	Total	Current	Overall	Capital Receipt	Unspeci- fied
Anambra.....	151.5	114.0	265.5	260.5	87.0	347.5	+5.0	-82.0	20.7	61.3
Bauchi.....	145.0	22.4	167.4	78.0	46.6	124.6	+89.4	+42.8	5.7	-37.1
Bendel.....	198.2	103.2	301.4	323.0	51.1	374.1	-21.6	-72.7	34.1	38.6
Benue.....	114.2	45.9	160.1	194.4	97.9	292.3	-34.3	-132.2	—	132.2
Borno.....	159.6	41.9	201.5	149.4	27.0	176.4	+52.1	+25.1	—	-35.1
Cross River.....	144.8	49.9	194.7	252.4	5.4	257.8	-57.7	-63.1	13.5	49.6
Gongola.....	132.8	27.0	159.8	168.9	50.2	219.1	-9.1	-59.3	—	59.3
Imo.....	152.6	179.6	332.2	370.5	43.1	413.6	-38.3	-81.4	25.4	56.0
Kaduna.....	198.1	61.4	259.5	227.8	54.6	282.4	+31.7	-22.9	—	22.9
Kano.....	254.6	92.3	346.9	261.7	87.3	349.0	+85.2	-2.1	—	2.1
Kwara.....	87.2	51.6	138.8	206.0	15.9	221.9	-67.2	-83.1	—	83.1
Lagos.....	140.7	423.9	564.6	318.1	269.1	587.2	+246.5	-22.6	146.5	-123.9
Niger.....	90.3	19.1	109.4	108.5	29.9	138.4	+0.9	-29.0	30.4	-1.4
Ogun.....	111.4	64.7	176.1	163.6	43.0	206.6	+12.5	-30.5	—	30.5
Ondo.....	106.3	42.5	148.8	162.4	37.2	199.6	-13.6	-50.8	—	50.8
Oyo.....	214.4	107.4	321.8	383.3	90.4	473.7	-61.5	-151.9	16.6	135.6
Plateau.....	77.6	19.8	97.4	185.6	4.5	190.1	-88.2	-92.7	—	92.7
Rivers.....	171.0	86.0	257.0	286.0	10.2	296.2	-29.0	-39.2	6.1	33.1
Sokoto.....	193.5	34.8	228.3	270.2	71.2	341.4	-41.9	-113.1	—	113.1
Total.....	2,843.8	1,587.4	4,431.2	4,370.3	1,121.6	5,491.9	60.9	-1,060.7	299.3	761.0

<sup>1</sup> Provisional.

Source: Same as in Table 68.

**SUMMARY OF STATE GOVERNMENTS' FINANCES**

(N<sup>o</sup> million)

	1984 <sup>1</sup>	1985 <sup>1</sup>	1986 <sup>2</sup>	Percentage change between	
	(1)	(2)	(3)	(1) & (2)	(2) & (3)
Current Revenue.....	4,180.3	4,844.9	4,431.2	15.9	-8.5
(i) Internal Revenue.....	(1,381.3)	(1,584.1)	(1,587.4)	14.7	2.1
(ii) Statutory Allocation.....	(2,799.0)	(3,260.8)	(2,843.8)	16.5	-12.8
Recurrent Expenditure.....	4,125.9	4,823.1	4,370.3	-59.9	-9.4
Current Surplus(+)/Deficit(-).....	+54.4	+21.8	+60.9	59.0	179.4
Capital Expenditure.....	650.3	1,034.0	1,121.6	69.9	8.5
Overall Deficit.....	-595.9	-1,012.2	-1,060.7	104.3	5.8
Financing:					
Capital Receipt.....	238.6	487.5	299.3	104.3	-38.6
(i) Internal Loans.....	—	—	—	—	—
(ii) External Loans.....	—	—	—	—	—
(iii) Federal Grants.....	—	—	—	—	—
(iv) Miscellaneous.....	—	—	—	—	—
(v) Unspecified.....	357.3	524.7	761.4	46.8	45.1

<sup>1</sup> Actual

<sup>2</sup> Provisional

Sources: (i) Returns of States Finances submitted to the Cabinet Office. Lagos

(ii) Federal Ministry of Finance.

APPENDIX-8 AREA AND POPULATION BY L. G. A. ANNAMBRA STATE

L. G. A.	AREA (Square km )	POPULATION			Density 1987
		Census 1963	Projected 1986      1987		
ABAKALIKI	2,257.96	208,724	409,034	421653	186.8
AGUTA	806.30	250,010	441,174	452,206	560.8
ANAMBRA	1,321.99	198,609	350,822	359,595	272.0
AWGU	775.84	170,647	301,119	308,646	397.8
AWKA	602.29	176,138	374,414	387,597	643.5
ENUGU	74.03	174,361	488,629	511,477	6909.0
EZEAGU	626.59	110,184	194,432	199,165	317.8
EZZA	763.28	139,535	246,255	252379	330.6
IDEMILI	301.45	109,094	192,512	197,326	654.6
IGBO-ETITI	415.09	119,232	210,402	215,664	519.6
IGBO-EZE	475.9	158,117	279,015	285,991	600.9
IHIALA	327.89	136,975	241,707	247,751	755.6
IKWO	381.59	87,585	154,758	158,528	415.4
ISHIELU	347.08	251,458	443,723	454,819	248.9
ISI-UZO	1,287.58	140,136	247,285	253,466	196.9
NJIKOKA	347.08	251,458	443,723	454,819	1310.4
NKANU	1,528.19	154,908	273,52	281,308	184.1
NNEWI	298.80	181,864	320,921	328,942	1100.9
NSUKKA	415.99	154,032	305,079	315,538	758.5
ONITSHA	502.35	196,203	559,010	585,506	1165.5
OJI-RIVER	387.51	61,143	107,837	111,077	286.6
UDI	994.09	107,895	190,330	195,090	196.3
UZO-UWANI	1388.95	117,836	207,916	213,125	153.4
TOTAL	17,675.00	3,596,631	6,879,073	7,084,668	400.8

SOURCE: Statistic Division, Ministry of Finance and Economic Planning.

ENUGU.

APPENDIX-9 POPULATION OF THE PROJECT AREA

(1) EZZA LOCAL GOVERNMENT AREA

EZZA LOCAL GOVERNMENT AREA  
TOTAL AREA IN SQ. KM. = 763.28

AUTONOMOUS TOWNS/ COMMUNITIES	1983 POPULATION	PROJECTED POPULATION		
		1985	1986	1987
AMAKA	8,797	15,145	15,524	15,912
AMUSU	4,175	7,139	7,368	7,552
AMUDO	3,861	6,647	6,813	6,983
AMAGU	3,556	6,122	6,275	6,432
AMUDA	2,000	5,163	5,292	5,424
AMANA	4,327	7,466	7,535	7,827
AMAWULA	1,209	2,031	2,133	2,186
ACHARA UKWU	1,647	2,835	2,906	2,979
ECHARA	1,255	2,161	2,215	2,270
EKKA	8,663	14,917	15,290	15,672
EZZAMA	6,693	11,522	11,810	12,105
IDEMBIA	6,920	11,913	12,211	12,516
INYERE	1,686	2,905	2,976	3,050
AMAEZEKWE	2,342	4,032	4,133	4,236
NSOKRA	2,258	3,887	3,984	4,084
OGBOJI	4,132	7,111	7,289	7,471
OKAFIA	5,426	9,341	9,575	9,814
ORIZOR	15,119	26,026	26,679	27,346
UMUEZEOKA	11,107	19,122	19,600	20,090
UMUOGHARA	16,309	28,077	28,779	29,499
UMUEZEKOHA	16,382	28,205	28,908	29,631
UMU-UWAGU/IDEMBIA	6,179	10,633	10,904	11,177
NKOMORO	4,491	7,782	7,925	8,123
TOTAL	139,535	240,218	246,255	252,379
NO. OF PERSONS PER SQ. KM.	183	315	313	320

(2) IKWO LOCAL GOVERNMENT AREA

IKWO LOCAL GOVT. AREA

TOTAL AREA IN SQ. KM = 381.59

MUNICIPAL TOWNS/ COMMUNITIES	1965 POPULATION	PROJECTED POPULATION		
		1985	1986	1987
Enyibichiri /Alike	8,160	14,048	14,399	14,759
Ndufu Alike	3,633	6,254	6,410	6,570
Echarlike	3,322	5,719	6,067	6,219
Noyo	3,844	6,618	6,783	6,953
Ndufu-Amagu	8,299	15,320	15,703	16,096
Ndiagu-Amagu	10,600	18,249	18,705	19,173
Inyimagu	9,534	16,413	16,825	17,244
Igbudu	7,533	12,969	13,293	13,625
Ndiagu Echara	8,034	13,831	14,177	14,531
Akpa Nwudele	6,125	10,545	10,809	11,079
Eka Awoke	4,521	7,783	7,978	8,178
Ekpelli	2,698	4,645	4,761	4,880
Amainyima	5,380	9,262	9,494	9,631
Ettam	5,502	9,128	9,356	9,590
Total	87,585	150,784	154,758	158,528
No. of Person Per Sq. km.	230	395	406	415

## (3) AWGU LOCAL GOVERNMENT AREA

AWGU LOCAL GOVERNMENT AREA H. Q. AWGU  
 TOTAL AREA IN SQ. Km. = 775.84

AUTONOMOUS TOWNS/ COMMUNITIES	1963 POPULATION	PROJECTED POPULATION		
		1985	1986	1987
NDEABO *)	9,351	16,098	16,500	16,913
AGBOGUGU	14,506	24,973	25,597	26,237
AMOLI	3,441	5,921	6,069	6,221
ANIKENANO	4,255	7,325	7,508	7,696
AWGU	18,504	31,856	32,652	33,468
NWE MGBIDI	5,597	9,636	9,877	10,124
IHE	11,922	20,525	21,038	21,564
ISU/AGBUDU	3,065	5,277	5,409	5,544
ITUKU	2,287	3,937	4,035	4,136
NENWE *)	17,703	30,477	31,239	32,020
MAKU	8,710	14,995	15,370	15,754
MGBOWO *)	11,160	19,213	19,693	20,185
NFU *)	3,816	6,570	6,734	6,902
OBEAGU	2,226	3,832	3,928	4,026
OGBAKU	7,348	12,650	12,966	13,290
OGUGU	2,979	5,129	5,257	5,388
OKPANKU *)	5,910	10,174	10,428	10,689
OWELLI	9,049	15,578	15,967	16,366
ODUMA *)	20,426	35,165	36,044	36,945
UGBO	3,678	6,332	6,490	6,652
UGWUEME	4,714	8,115	8,318	8,526
TOTAL	170,647	293,788	301,119	308,646
NO. OF PERSONS PER SQ. KM	220	379	388	397

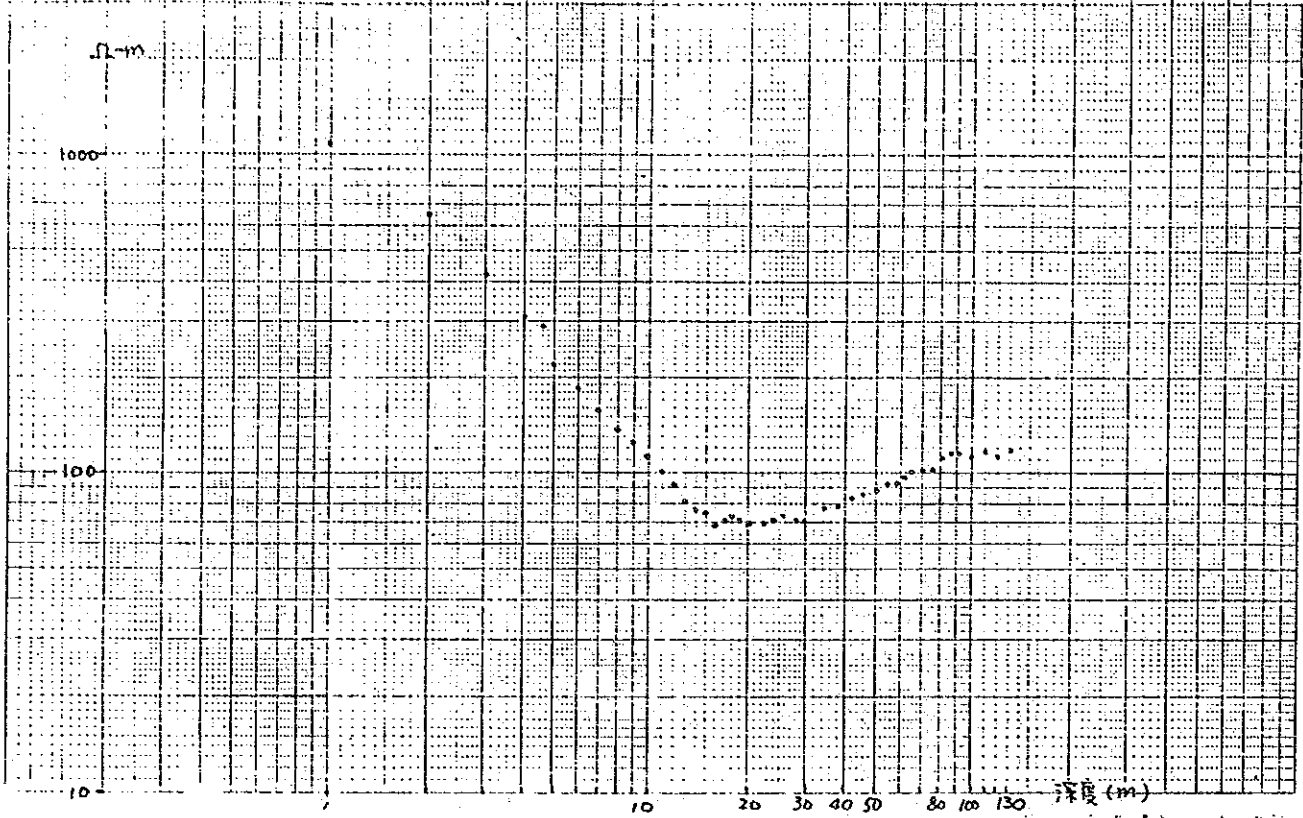
\*) Project area

APPENDIX-10. RAINFALL DATA AT THE LOWER ANNAMBRA IRRIGATION PROJECT OFFICE

YEAR	DESCRIPTION	JAN.	FEB.	MAR.	APR.	MAY	JUN.	JUL.	AUG.	SEPT.	OCT.	NOV.	DEC.	TOTAL
1982	Rainfall (mm)	0.0	88.8	36.6	95.5	219.9	290.8	223.1	167.0	141.3	225.7	15.0	0.0	1,503.7
	Days	0	3	3	9	13	20	24	18	18	19	1	0	128
1983	Rainfall (mm)	0.0	0.0	10.0	19.5	136.6	182.3	297.4	204.8	351.0	36.3	0.0	0.0	1,237.9
	Days	0	0	1	5	13	17	15	18	18	3	0	0	90
1984	Rainfall (mm)	0.0	0.0	50.8	142.8	197.8	323.6	335.1	286.6	410.6	99.4	10.3	0.0	1,857.3
	Days	0	0	3	10	8	13	16	14	14	10	2	0	90
1985	Rainfall (mm)	14.2	0.0	181.2	124.1	161.5	187.6	252.8	309.6	158.4	133.8	6.0	0.0	1,529.2
	Days	2	0	7	6	13	11	17	20	19	11	2	0	108
1986	Rainfall (mm)	3.4	0.0	73.9	85.1	140.5	205.3	253.7	143.6	328.0	254.8	80.2	0.0	1,576.7
	Days	1	0	7	6	8	10	12	11	16	10	2	0	83
1987	Rainfall (mm)	1.2	4.3	7.2	1.6	18.7	22.3	262.0	335.5	154.2	249.0	0.0	0.0	1,056.0
	Days	1	2	2	1	5	8	8	8	7	8	0	0	50
Average	Rainfall (mm)	3.1	15.5	60.0	78.1	145.8	171.2	270.7	241.2	257.3	166.5	18.6	0.0	1,428.0
	Days	0.7	0.8	3.2	6.2	10.0	13.2	15.3	14.8	15.3	10.2	1.2	0.0	90.9

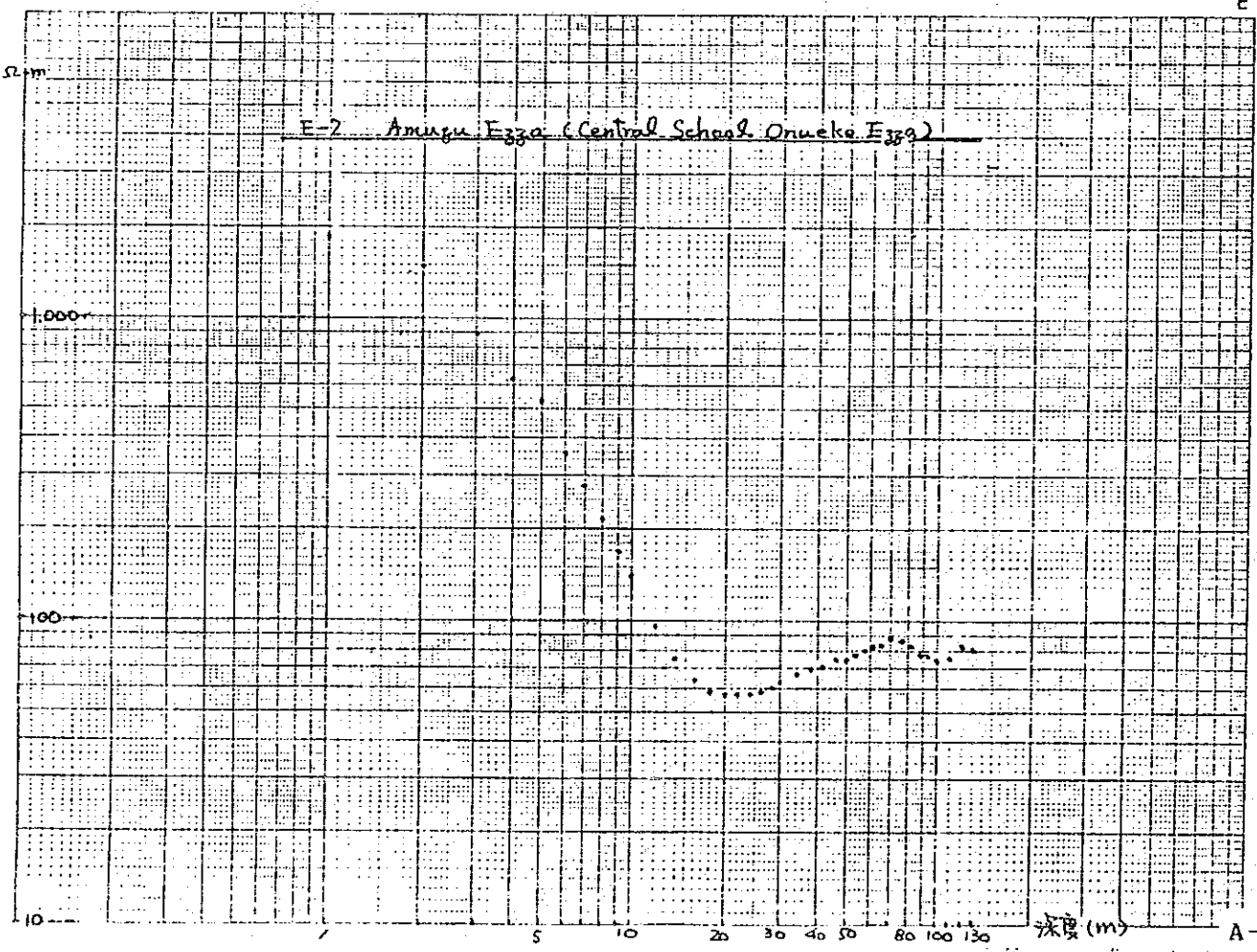
APPENDIX-11  $\rho$ -a Curve (1)

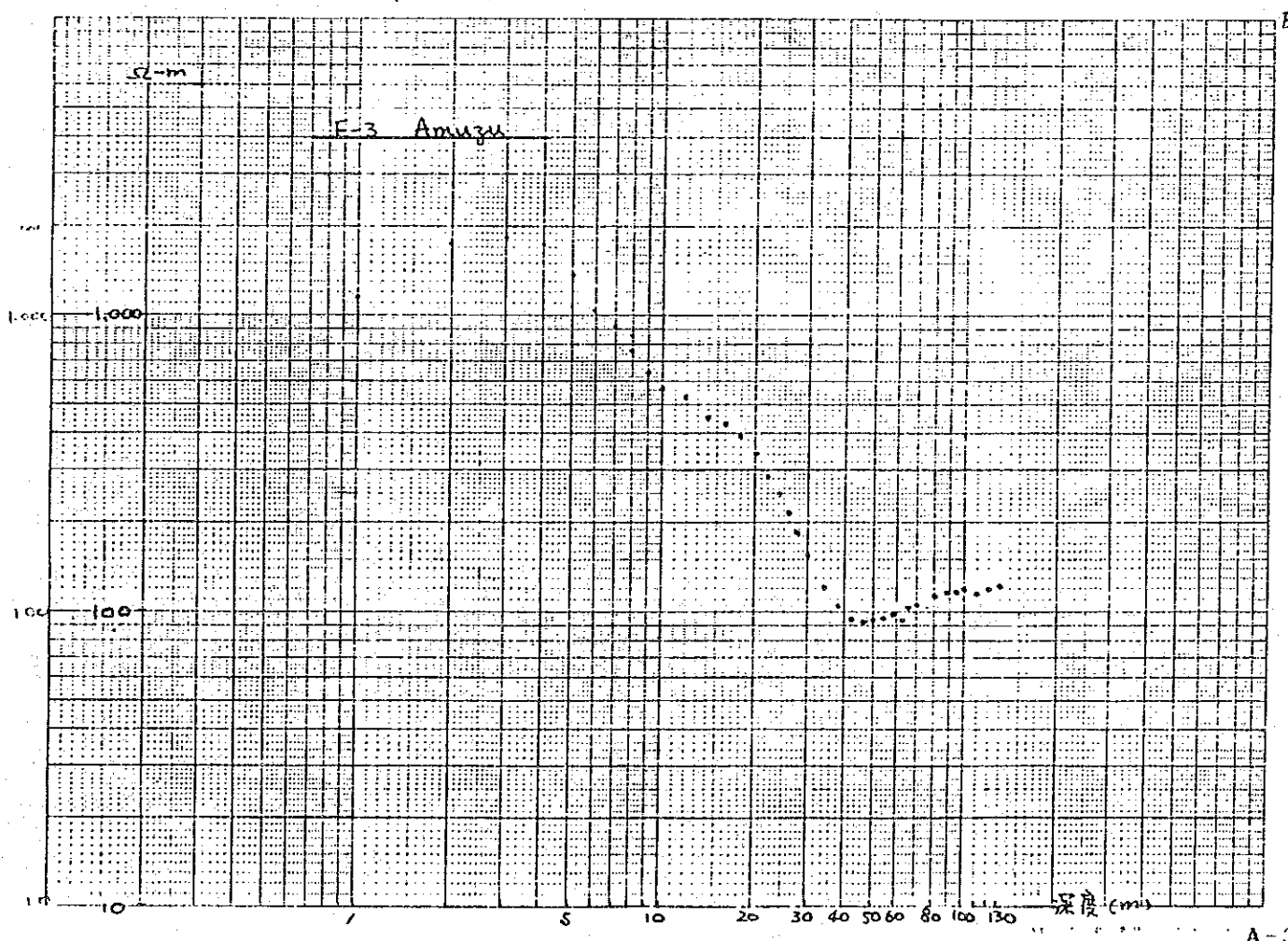
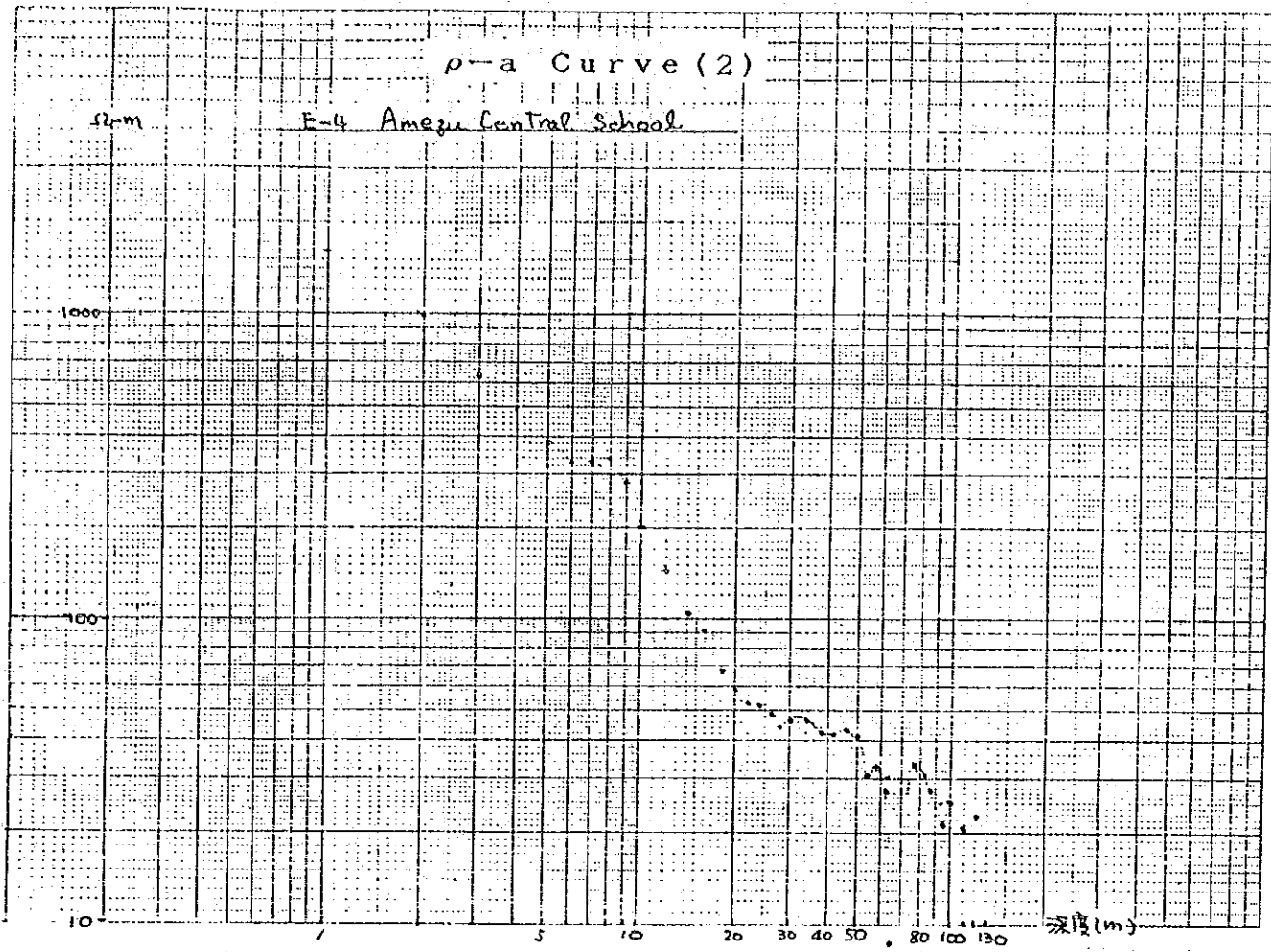
E-1 Odoboji (close to an existing bore hole)



E-2

E-2 Amigu Ezza (Central School Onueke Ezza)



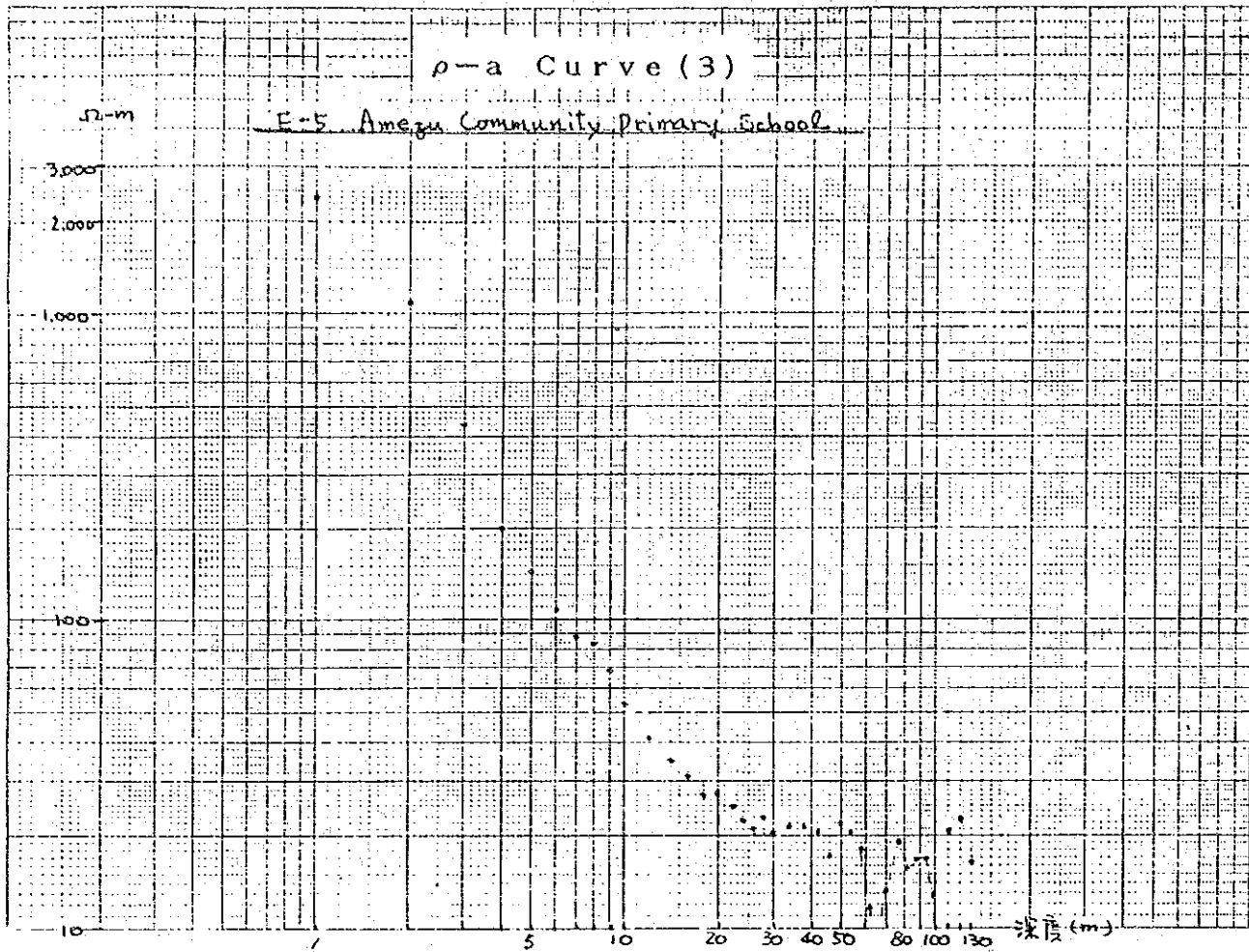




E-5

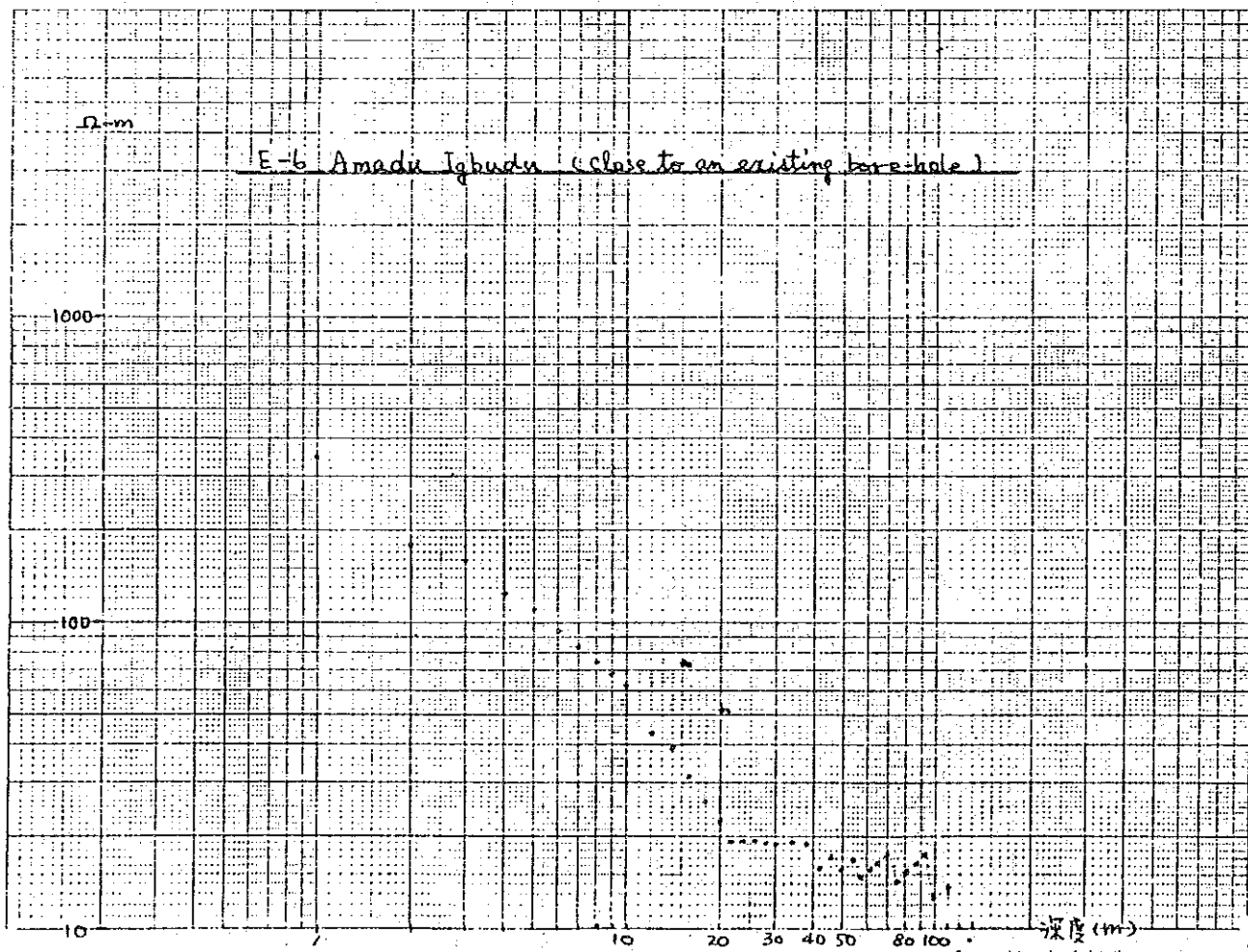
$\rho$ -a Curve (3)

E-5 Amegwu Community Primary School



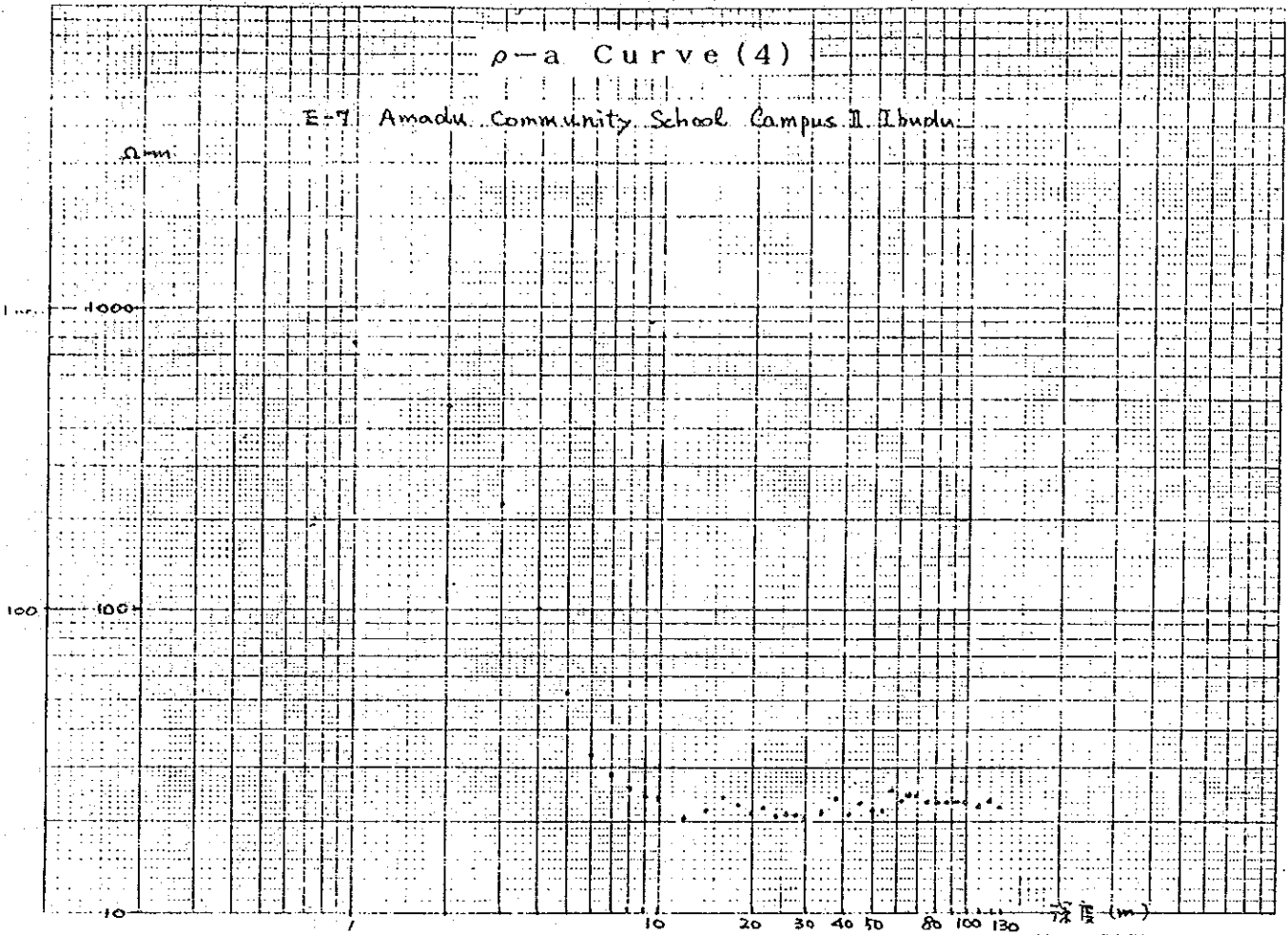
E-6

E-6 Amadi Igbudu (close to an existing bore-hole)



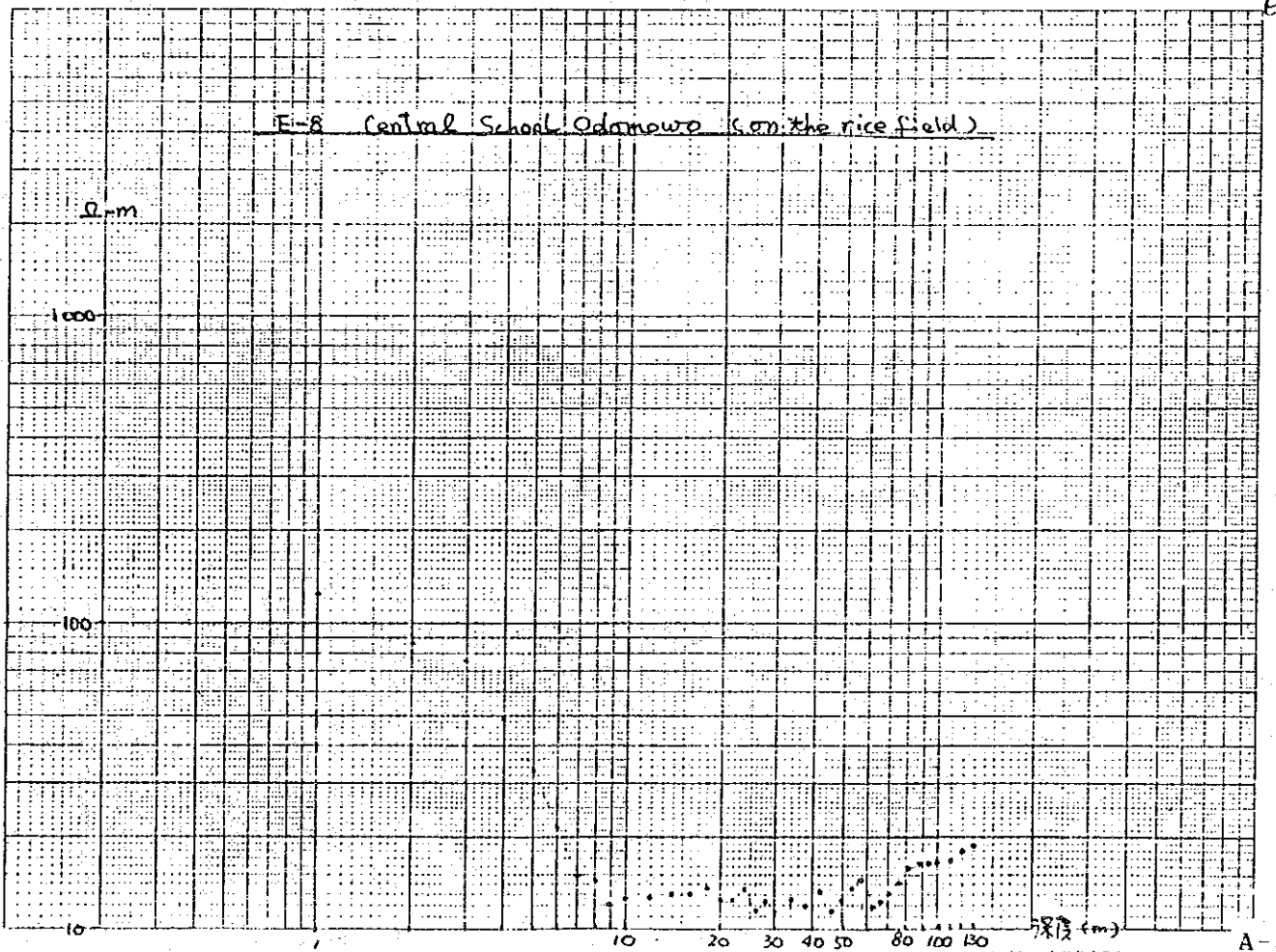
$\rho$ -a Curve (4)

E-7 Amadu Community School Campus I, Ibadan



E-8

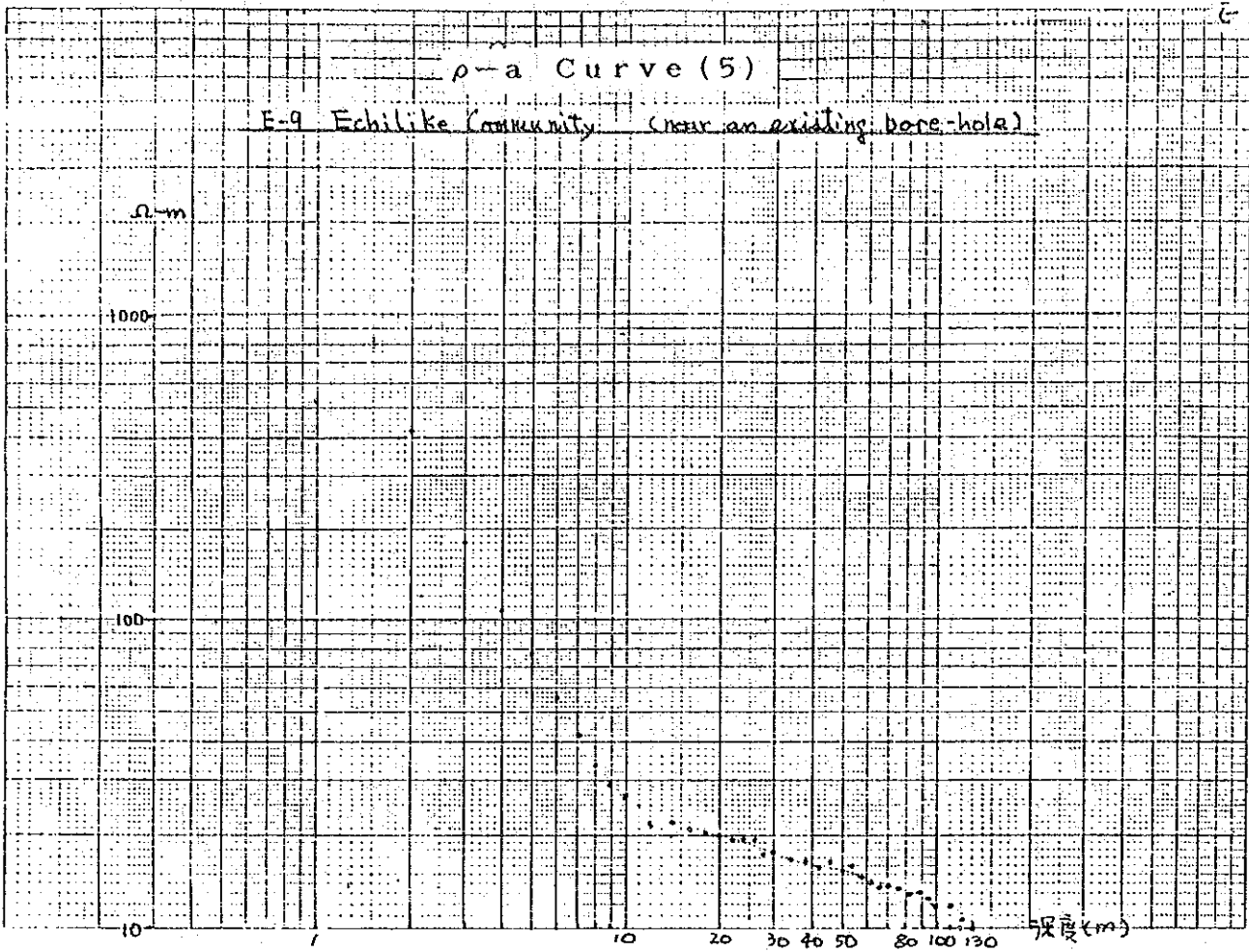
E-8 Central School Odumowo (on the rice field)



E-7

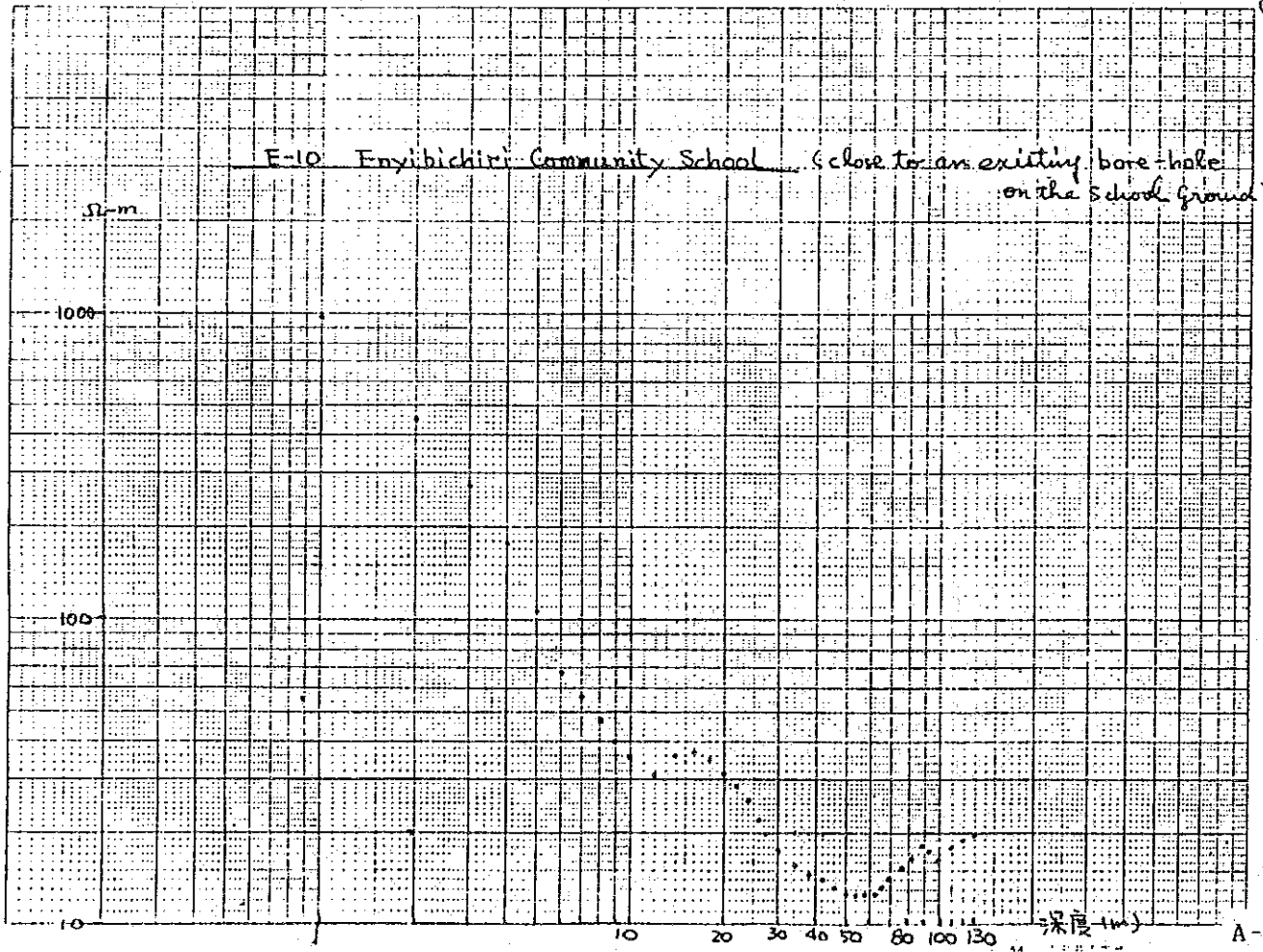
$\rho$ -a Curve (5)

E-9 Echilike Community (near an existing bore-hole)



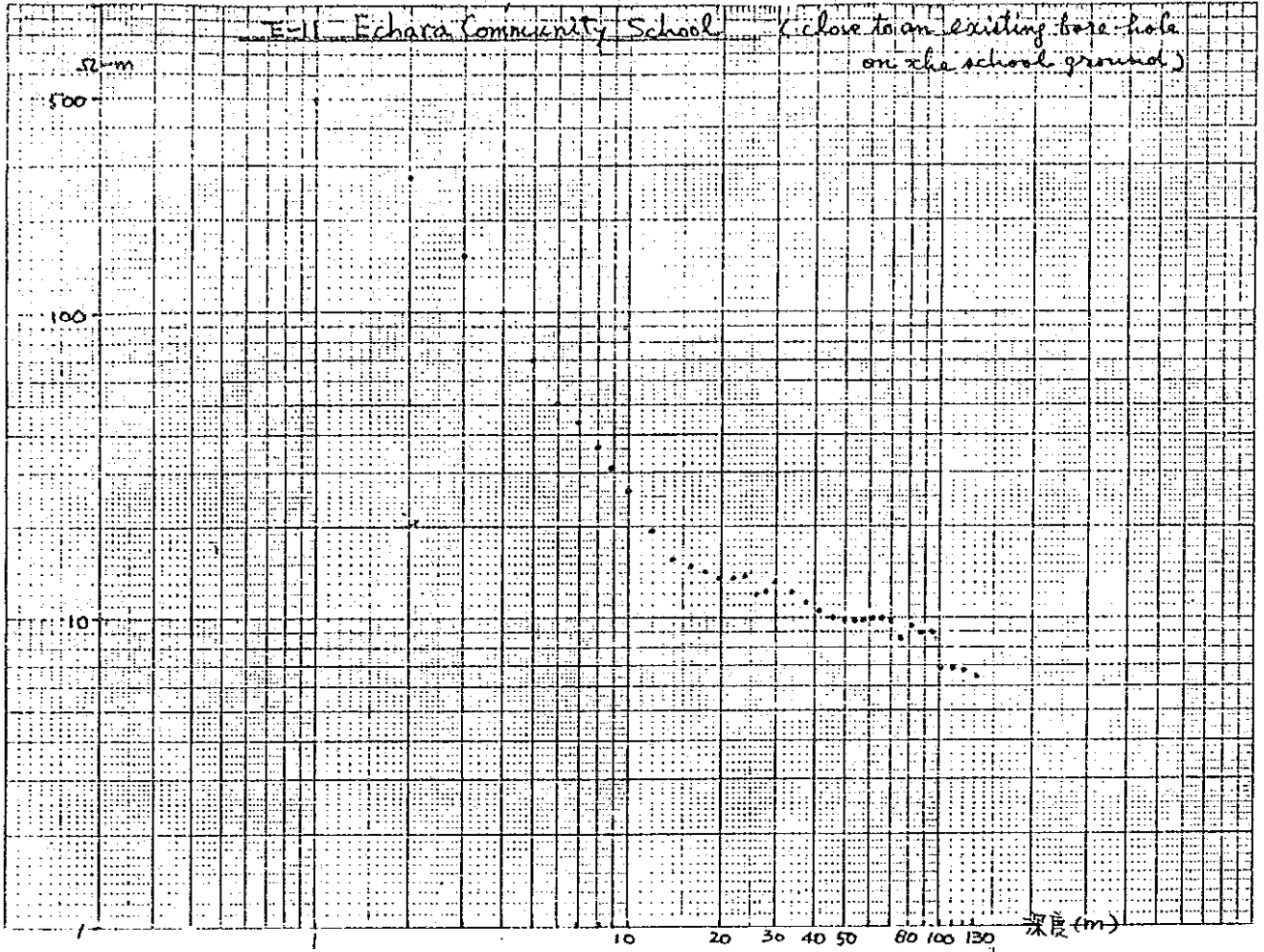
E-10

E-10 Fnyibidiri Community School (close to an existing bore-hole on the school ground)

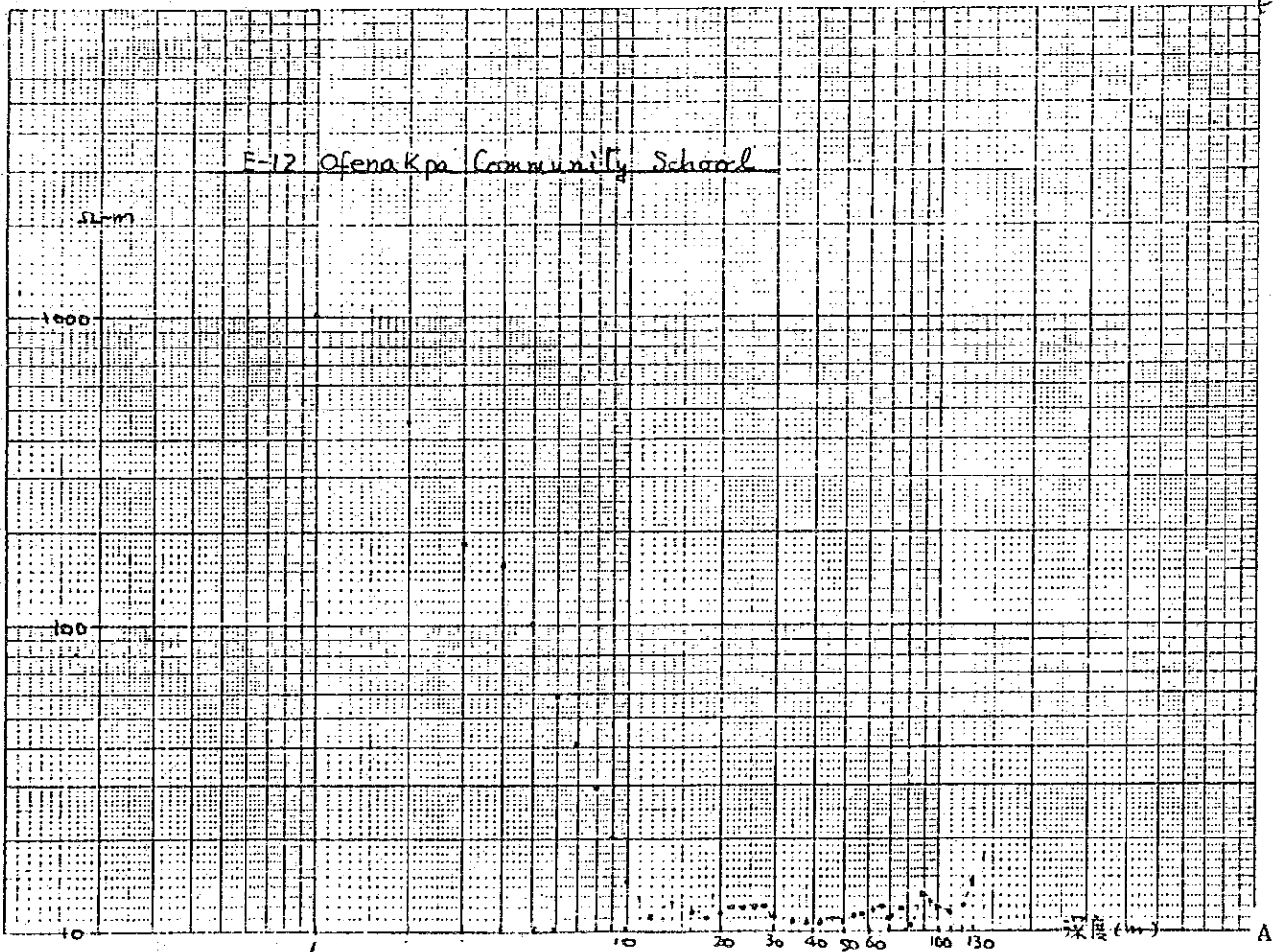


$\rho$ -a Curve (6)

E-11



E-12

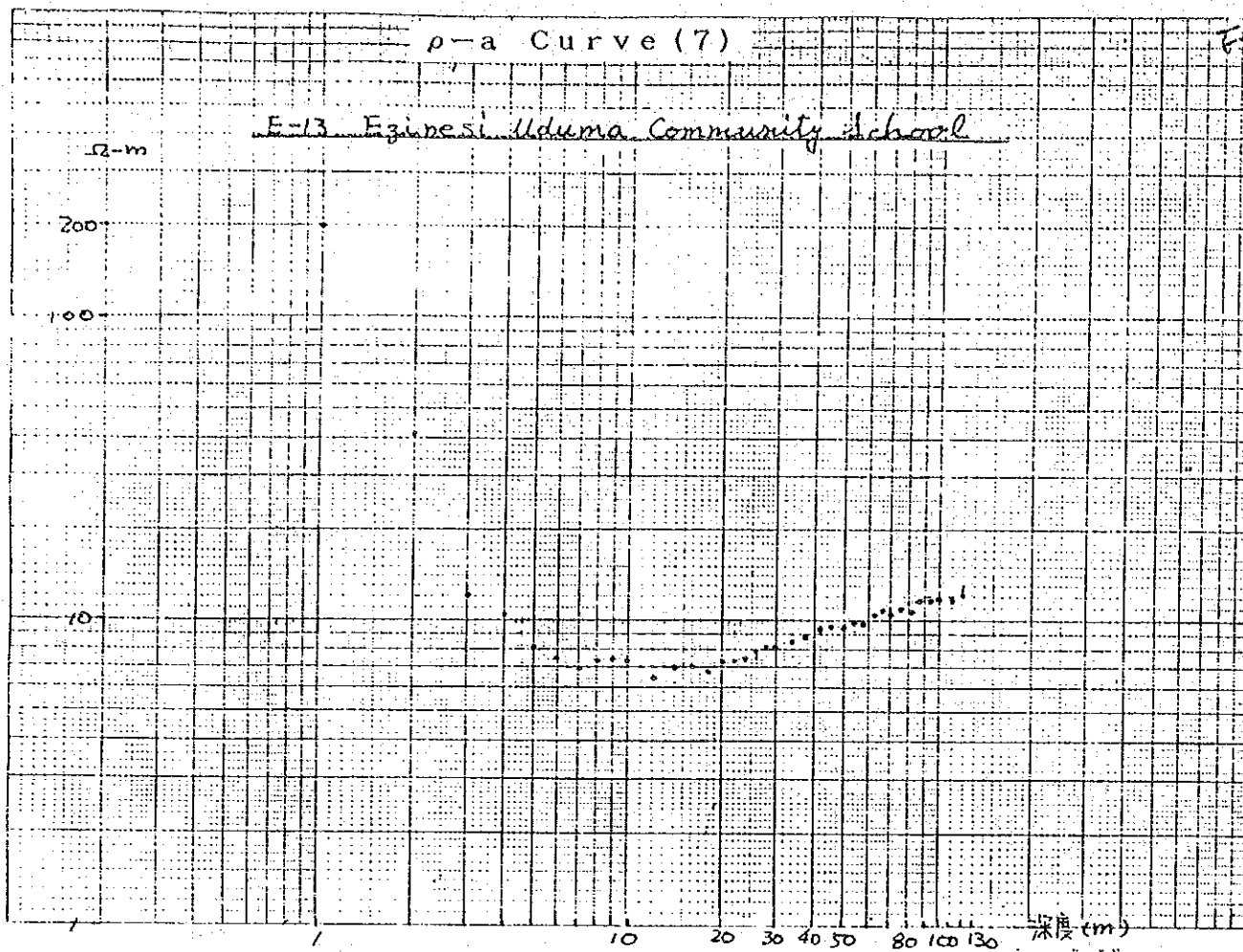


A-39

$\rho$ -a Curve (7)

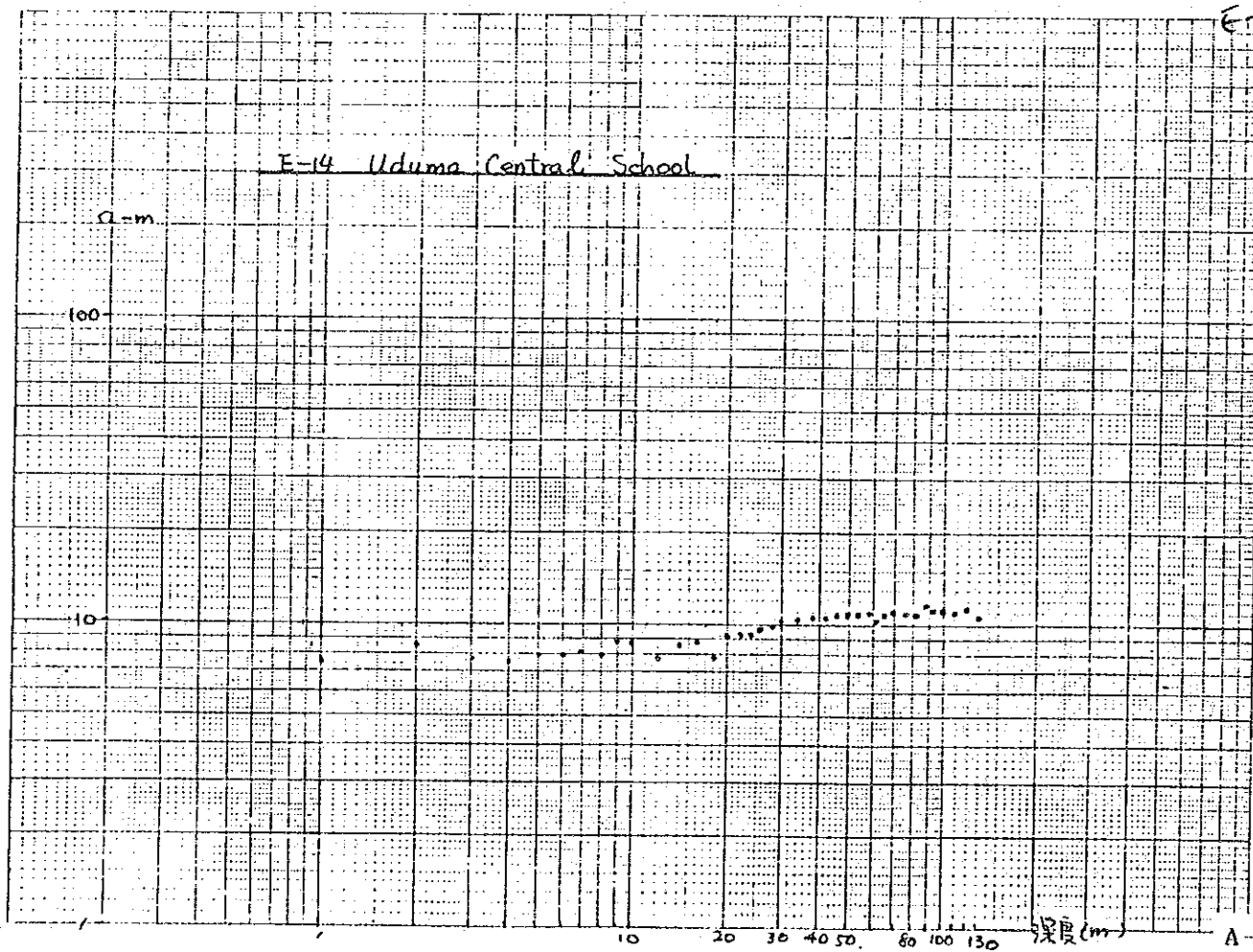
E-13

E-13 Eginesi Uduma Community School

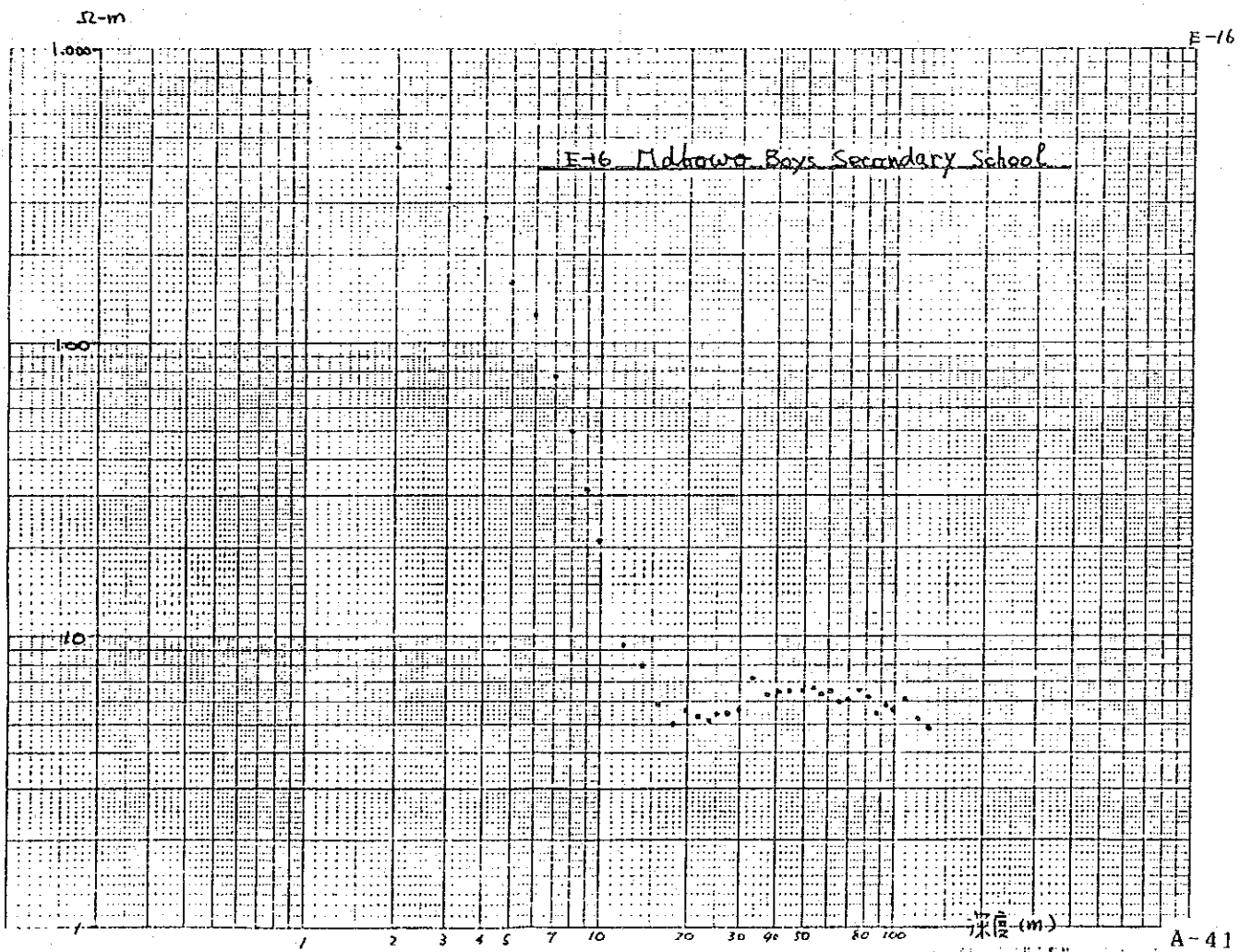
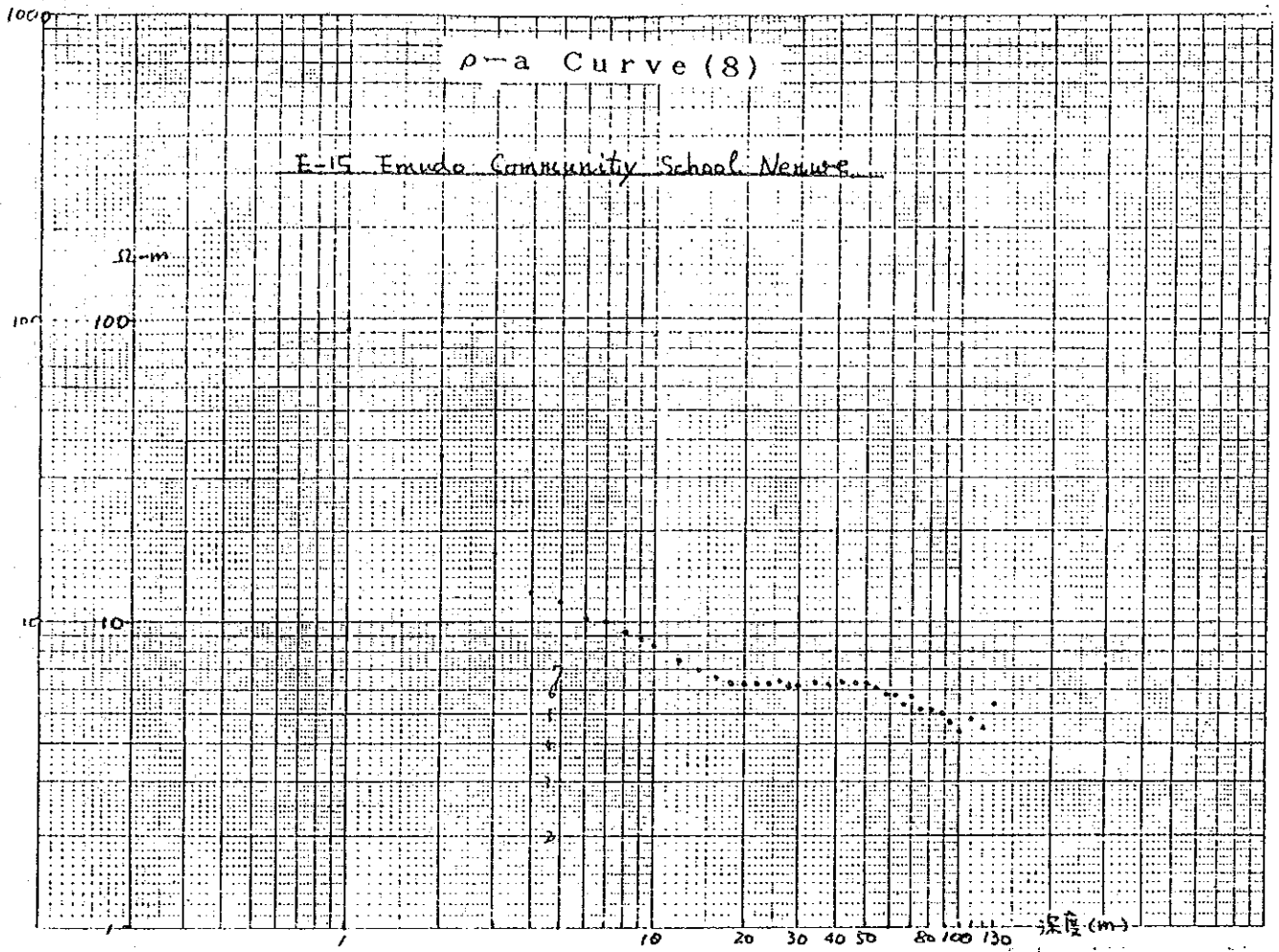


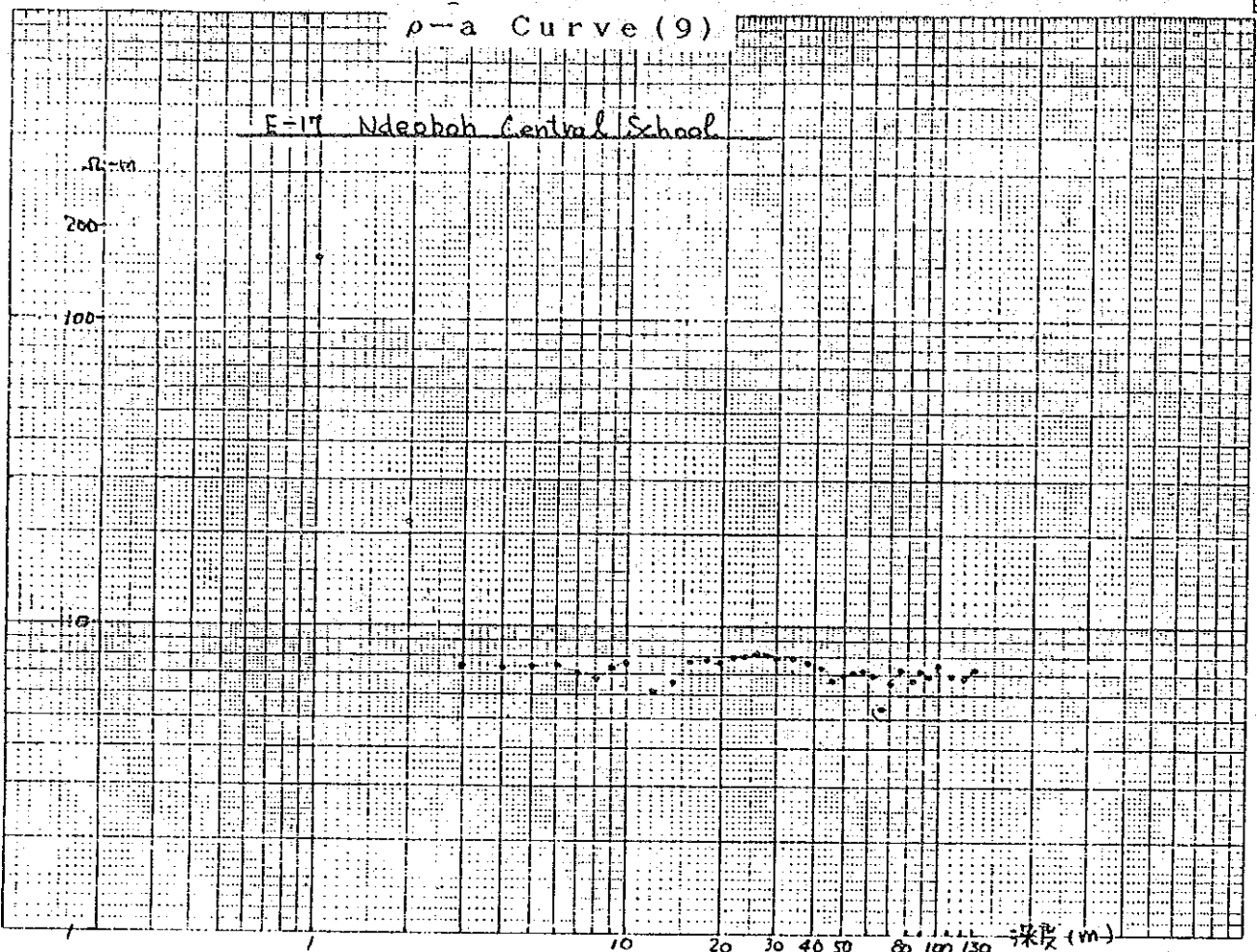
E-14

E-14 Uduma Central School



A-40





## APPENDIX-12 WORKSHOP EQUIPMENT

### WORKSHOP EQUIPMENT

1. <u>Equipment and Tools for Drilling Unit and Vehicles</u>	<u>1 Set</u>
Tool box with complete tool set	1 box
Socket spanners set with wrench (9 - 26 mm)	1 box
Tap and dice set	1 set
Vernier caliper	1 no.
Bench level	1 no.
Measuring tape (3 m, 5 m)	2 each
L-type metric rule	1 no.
Metric straight rule (1 m)	1 no.
Standard thickness gauge	1 no.
Hacksaw (spare blade 100)	1 no.
Wire brush (big and small)	5 each
Megger tester (rated V.500)	1 no.
Electric soldering iron with solder 5 kg and paste	1 no.
Adjustable pipe wrench( (4 sizes)	1 set
Chain wrench (450 mm, 600 mm)	2 each
Double-face sledge hammer (900 g)	1 no.
Plastic hammer (3 sizes)	1 set
Electric cord reel (20 m)	2 nos.
Bench drilling machine	1 no.
Electric bench grinder (500 w)	1 no.
Cutter for wire	1 no.
Bench vice (jaw width 150 mm)	1 no.
Electric air compressor (8 kg/cm <sup>2</sup> , 150 L/min)	1 no.
Electric welder (welding rod, 20 kg)	1 no.
Gas cutting tool and regulator set	1 set
Pipe slotting machine	1 set



Hydraulic garage jack (5 ton)	1 no.
Portable hydraulic jack (2 ton)	1 no.
Chain block (3 ton)	1 no.
Rigid rack (5 ton)	1 set
Aluminium folding service ladder (4 m)	2 nos.
Tool cabinet (1 ton)	1 no.
Work table, 1,500 mm x 700 mm	2 nos.
Pulley (6 inch)	2 nos.
Turn buckle (12 mm)	5 nos.
Shackle (12 mm, 6 mm)	5 each
Sling wire	2 sets
Cast iron anvil (30 kg)	1 no.
Bearing pullet set	1 set
Battery charger (12/24V, 15A)	1 set
Spark-plug cleaner	1 no.
Battery hydrometer set	1 set
Tire pressure gauge (3 kg/cm <sup>2</sup> )	3 nos.
Grease gun (200 cc)	3 nos.
Oil measure (polyethylene make, 1 L and 2 L)	5 each
2. <u>Equipment and Tools for Hand Pump</u>	<u>1 Set</u>
Bench vice (jaw width 100 mm)	1 no.
Socket wrench set	1 set
Screw driver set	2 sets
Adjustable pipe wrench (4 sizes)	1 set
Ratcheting spanner set (8 sizes)	1 set
Hammer	1 set
Chisel set	1 set
Wood hammer (300 mm)	3 nos.
Dies handle	1 set
Pipe cutter	1 set
Monkey wrench	1 set
Caliper gauge	1 no.
Metric straight rule (1 m)	1 no.
Measuring tape (50 m)	1 no.
Portable electric drill set (300W)	1 set
Hacksaw (spare blade 100)	2 nos.

Combination plier (200 mm)	1 no.
Wire brush	10 nos.
Brush	10 nos.
Sling wire	1 set
Sand paper	1 set
Portable electric grinder with accessories (200W)	1 set
Iron bar	2 nos.
Bolt clipper	1 no.
Water pump plier (L = 250 mm)	2 nos.
Tool box with complete tool set	2 boxes

3. Diesel Generator, 50KVA 1 Set

The generator shall be skid mounted type, having capacity not less than 50KVA, 200V, 50Hz, 3 phase, 4 wire. The generator shall be powered by diesel engine not less than 65 PS.

4. Tools for Earth Work 1 Set

Wheel barrow	5 nos.
Mixing iron plate for concrete (t = 2 mm)	1 no.
Scaffolding wooden plate (4.0 m x 0.2 m x 3 cm)	10 nos.
Water/flame proof sheet (2.7 m x 3.6 m)	20 nos.
Scoop (round, flat)	10 each
Pick	4 nos.
Saw for wood	2 nos.
Trowels for concrete	2 sets
Bench level (L = 30 cm)	2 nos.
Manila rope (dia. 9 mm, 100 m)	2 rolls
Wooden maul	2 nos.
Iron maul	2 nos.
Cutter for reinforcing bar (9 mm)	1 no.
Transit with tripod mast, stadia rod and steel tape	1 no.
Fuel tank, 6 m <sup>3</sup> capacity	2 nos.

5. 5 Ton Folk Lift, Diesel Engine Driven 1 Set

The folk lift shall be 5 ton capacity having 1.2 m folk length and max. 3 m lifting height. The engine shall be 6 cylinders diesel type, having not less than 70 PS output.

6. Concrete Mixer 1 Set

Type:	Portable, manual tilting system.
Wet capacity:	Approx. 0.25 m <sup>3</sup> .
Power:	Diesel engine driven.
Diesel engine:	4-cycle, water-cooled, single cylinder, 5 HP at 2,000 rpm.
Accessories:	As necessary.



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