system. The mission also studied the progress of technical cooperation provided by third countries, conducted a field survey to grasp the existing state and problems of Nigerian agriculture, charted the future course of cooperation, and selected two project areas.

(2) Since the June - November period is the wet season in Nigeria, the Japanese government will dispatch a feasibility survey mission when the wet season is over. The mission will consist of 8 to 10 members and stay in Nigeria for about two months to conduct a survey in the two selected project areas.

(3) It is desirable that the mission be composed chiefly of the staffs of the consultant companies which can engage in the follow-up activities of the project after completion of the feasibility study.

(4) After completion of the feasibility study, the above-mentioned private consultant companies will undertake, under contract to be concluded directly with the Federal government of Nigeria, the construction of irrigation facilities, land clearance, and creation of farms and pilot farms, provided that the Federal government agrees to the conclusion of such contract. The consulting companies will also provide guidance in the operation and management of the farms.

As a model of such private-base cooperation, Nippon Koei's participation in the project in Anambra state can be cited.

It is considered appropriate to assign one consultant company to each project.

(5) As a result of the preliminary survey which covered six states (Anambra, Imo, Rivers, Bendel, Kwara and Niger), two project area were selected, one from Imo State and the other from Bendel State. However, final project site selection will be made by the Federal Government after consultation with the relevant state government.

(6) The present preliminary survey report was compiled after careful perusal of the official comments of the Nigerian government on the interim report presented by the preliminary survey mission.

4. Surveys to be Conducted in Future

4.1 Agriculture

(1) Soil survey and land classification.

(2) Crops statistics for 1974 and 1975.

(3) Market price of agricultural products, and price of production materials.

(4) Survey of farm household economy and production cost.

(5) Establishment of rotation system, with special reference to crop combination with paddy rice.

(6) Survey of organic fertilizers.

(7) Study of disease and pest resistance of recommended varieties.

(8) Experiments on direct sowing in dry fields.

(9) Drying and storage method of paddy.

4.2 Agricultural Economy

(1) Clarification of the function of pilot farms (200 ha) in relation to large farms (2,000 ~ 4,000 ha) and neighbouring farmers.

(2) Grasping the existing state of farmers in the neighbourhood of large farms for formulation of a management plan that can be extended in future.

(3) Survey for introduction of production facilities and machinery and on the division of labour force, production cost, funds, etc. for the establishment of a satisfactory management plan.

(4) Study for the establishment of the agricultural production system and for the improvement of the distribution system of production materials and products.

(5) Establishment of a long-range prospect for rice price and its countermeasures.

(6) Economic evaluation of the project.

(7) Others.

4.3 Irrigation

(1) Soil Survey

The experience of Nippon Koei points to the need for a careful and thorough going soil survey. Soil specimens should be sampled from as many places as possible (one or more places for each 20 ha). It is advisable that specimens be put to analysis in a number that can be considered large enough from the results of field survey.

(2) Discharge Observation

If any past data available, they should be checked in relation to the rainfall data to obtain the coefficient of run-off, referring to the data of similar projects in Nigeria. If no past

data are available, water-gauges and rain-gauges should be installed immediately. At the same, discharge observation should be conducted to clarify its relationship with rainfall.

(3) Rainfall and Evaporation Survey

Establishment of an exclusive observatory is desirable, although it is possible to make use of the existing meteorological observation station, if available in the neighbourhood of the project area.

This is because the climate in Nigeria varies largely by latitude and also because of the need of high accurate data.

(4) Flood Survey

Flood marks of rivers should be surveyed. Further, past occurrence of floods and their level should be surveyed through interviews with local inhabitants and other suitable means.

(5) Infrastructure

The connecting roads to the farm serve as construction road during the construction period and can be used industrial and daily traffic purposes after the development is completed. Hence, they should be designed carefully with account taken of their linkage with the existing roads.

The farm machinery storehouse, drying room, workshop, laboratory, warehouse and other buildings including the dormitory and office of the staff members, which are all indispensable for satisfactory farm management, should be designed in consideration of the tropical climate in Nigeria.

(6) Water Quality and Temperature Survey

The quality and temperature of irrigation water should be surveyed. In case from the river, domestic water is taken, the water quality survey is also to be carried out.

(7) Surveying

A master plan should be prepared on the basis of a 1/50,000 topographic map for levelling, cross-sectional levelling and planimetric surveying of intake sites, main driving channel and other facilities. Aerial surveying of the whole project area is most commendable at the stage of field reconnaissance.

(8) Cost Estimation and Construction Period

The construction cost should be estimated, for the whole construction period which starts with the establishment of pilot farms after the feasibility study and lasts until completion of the large farms.

Attached I.

7th June, 1976
Lagos, Nigeria

His Ecellency B.O.W. Mafeni,
Commissioner for Agriculture/Rural Development,
Federal Government of Nigeria

Dear Sir,

Re: RESULT OF PRELIMINARY SURVEY OF PADDY RICE CULTIVATION IN STATES CONCERNED IN NIGERIA

I have a great pleasure to submit herewith a note of the result of the Preliminary Survey of Paddy Rice cultivation in the states concerned in Nigeria, carried out by the Survey Mission from the Government of Japan, just before our leaving.

The contents, however, are tentative and accordingly subject to be modified on making the final report. I expect that the following action will be taken very soon by the Government of Japan.

I wish to express our hearty gratitude for your co-operation with us, and your convenience and hospitality given us all through the survey.

I remain,

Respectfully yours,

Junichi KITAMURA
Leader of Japanese Preliminary
Survey Mission for Agricultural
Development in Nigeria

A NOTE
ON RESULT OF PRELIMINARY SURVEY OF PADDY RICE CULTIVATION IN STATES CONCERNED IN NIGERIA IN MAY, 1976

CONTENTS

PRELIMINARY SURVEY MISSION
FROM
JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)

1. Circumstances

In response to the request from the Government of Nigeria for the technical co-operation for the third five year national development program from 1975 to 1980, the Government of Japan decided to send a preliminary survey mission consisting of five members as shown in Annex 1 to the Government of Nigeria from May 14 to June 10, 1976.

2. The Mission's Scope of Work given by the Japanese Government

(1) To confirm the detailed contents of the request for the technical co-operation made by the Government of Nigeria.

(2) To explain the technical co-operation system by the Government of Japan.

(3) To grasp the present condition and the existing problems in the agricultural development, by data collection, interviews, site surveys, etc. as well as the situation of the technical co-operation performed by the third countries.

(4) To study and find out such a way for immediate implementation of the technical co-operation as to meet the above mentioned system.

(5) To select the suitable rice cultivation areas.

3. The first joint meeting of the Permanent Secretary and the officials concerned of the Ministry of Agriculture/Rural Development, the Federal Government of Nigeria and the Japanese Survey Mission led by the Councillor and a Secretary of the Japanese Embassy in Nigeria was held on May 17th, 1976.

The summarized record of discussion is as follows:

1) It is acceptable that the main target of the Japanese technical co-operation is the Paddy Rice cultivation in Nigeria because of their highly developed technique.

2) This Preliminary Survey must be made to select one or two most suitable places to be implemented by the Japanese technical cooperation not to find many feasible places nor to put the alternatives.

3) The Permanent Secretary of the Ministry of Agriculture/Rural Development, suggested to make the survey in the six states along the Niger River, such as Niger, Kwara, Bendel, Imo, as well as Anambra and Rivers where the Nippon Koei, a Japanese private consulting company is cooperating or to start to cooperate in the same type of paddy rice cultivation under the contract on the state level.

Consequently the initial surveying itinerary prepared on the side of Japanese was revised as shown in Annex 3.

4) One counter-part and two vehicles with drivers and fuel are prepared, and the hotel accommodation is arranged by the host government, the hotel charge for the mission however must be borne by themselves.

5) The following detailed survery which is expected to be made by the Japanese Government will have to be not merely a feasibility study but also the survey for making the implementation program, and to be carried out as soon as possible.

6) The Project of 2,000 to 4,000 ha. in area will be implemented in technical partnership with the Japanese private consulting companies like the Nippon Koei which made a contract directly with the Federal or the State Government.

It includes irrigation facility construction, paddy field opening and drainage works in some cases.

Besides a pilot farm of one tenth to one twentieth of the project area will be established in the area.

7) In case of the Japanese governmental technical cooperation, the pilot farm has usually been established and managed financially on grant base, since the governmental budget for the pilot farms in this case, however has not yet been prepared, it would be better that the budget is fixed by the government of Nigeria and the Japanese private consultants are introduced for the purpose, if the pilot farms are planned to be set up very urgently.

4. Findings and Comments

1) There are three kinds of rice cultivations in Nigeria, that is, Upland rice, Paddy rice (it is called swamp rice in Nigeria) and floating rice.

2) The upland rice cultivation area occupies more than a half of the total rice cultivation area in Nigeria. It is widely raised from burnt fields among the hills down to low swamp areas..

It however, has such characters as collapsible long stem, weak responsivity of fertilizer and low yield. Although a large scale mechanized cultivation is possible in a flat land, the yield will be unstable without irrigation facilities. The yield to be expected will be albout 1.5 ton/ha.

And it is favorable that the upland rice cultivation in a low swamp area is excluded from our project areas, judging from presumable flood damage, ill drainage, difficult introduction of heavy machinery, and difficult acquisition of suitable weedcides.

3) The Floating rice is the one which is cultivated in the flooding area of the Niger River. It will also have to be excluded from our project, in view of the low quality and productivity.

4) The local varieties of paddy rice in Nigeria are Indian type with long stems, long grains and long growing term. However, in our project, the improved varieties, such as IR Lines or TOS are recommended to be cultivated due to their high yielding.

5) As a result of the survey of hte trial farm managed by the Nippon Koei at Adani, Anambra State, and based on the reports in the research institutes, Nigeria the yield of about 3 ton/ha. per one crop can be expected and about 5 ton/ha. per double crop can also be done. The mechanized rice cultivation system with large or medium size tractors can be considered. The transplanting system, however, can be considered within 200 ha. such as our planned pilot farm and it may gradually be moved to direct sowing method, in case the cultivated area is expanded.

6) In some cases the cooperative farming by a group of small holders who have about 20 ha. of farm each, which uses medium sized agricultural machinery may be taken into account.

7) The price of rice in Nigeria is generally on high level at present has compared with the ones of the other staple foods, and farmer's desire of rice cultivation seems to be strong, because it is supported by the high price. In the future, in case the rice cultivation area is expanded in order to increase the product, the demand should be stimulated at the appropriate price.

8) In this survey the selection of the suitable project site was made mainly based on rainfall data and topography owing to the limited time. In the following detailed survey, the data in the project site such as hydrology, soil, etc. will have to be collected.

For the implementation, the river stage observation, soil survey and the detailed topographic survey of the intake site will be needed.

9) In order to irrigate the area of 2,000 to 4,000 ha., the river catchment area of 100 to 200 km^2 will be necessary, judging from the result of monthly rainfall analysis. Although the double crop of rice in the project area is desireable, the whole area to be irrigated in the first season, will be unable to be irrigated in the second season, though.

5. Project Area Selection

1) Conditions for selecting appropriate area for irrigated paddy rice cultivation in Nigeria.

(1) So as to use irrigation water effectively, the yearly effective rainfall must be expected to some extent.

(2) The area to be benefited of 2,000 to 4,000 ha. must be topographically as

flat as possible.

(3) The irrigation water must be taken from a tributary of a river by a gravity and the water source must be situated as near as possible from the area to be benefited.

(4) The social infrastructure in or around the area to be benefited, such as roads, rural communities, electricity etc. must be well furnished.

(5) The soil condition in the area such as soil texture, fertility, acidity etc. must be suitable for the paddy rice cultivation.

(6) The area to be benefited must be located in the area without fear of flooding, and in no need of particular drainage works.

(7) The cost for land consolidation, such as land clearance, land levelling, plot disposing etc., must be comparatively small.

(8) No overlapping of the project area to be implemented by the other foreign agency should be taken into account.

2) Result of selection

The economic efficiency of the project is much influenced by the amount of the investment for the infrastructures, that is, irrigation drainage, polder, land consolidation works etc.

Therefore, our project areas were selected on condition that they need only the expenditure mainly for irrigation facilities and land consolidation, not for drainage and polder works.

In Bendel State, the Orle-Edion River Basin was proposed. Three on-going projects in the basin, that is, the small holders' rice project at Illushi, Tiffany Farm at Agenebode and Rauimex mechanized upland rice production project at Agbede, were inspected.

In Anambra State, Uzo Uwani Pioneer Irrigation Project at Adani was visited.

In Imo State, the Imo River Basin (in Ukwa division), the Oramiriukwa River Basin (in Owerri division) the Cross River Basin (in Arochukwu Division) and the Aboine River Basin (Afikpo Divison) are proposed.

Of the above river basins, the Oramiriukwa River Basin was surveyed.

In Rivers State the Nun River Basin (Pere-Mabiri Project, River Nun Project both in Oporoma Division and others in Ogbia Division) were explained. And then the Pere Mabiri Project was surveyed.

In Kwara State, five project areas along the Niger River, that is, Shonga-Tada,

Lade, Gakpan, Abugi-Eggan and Gerinya, are pointed out. Of the project areas, Abugi-Eggan and Gerinya project areas were proposed. The Shonga-Tada Rice Project was inspected.

In Niger State, several completed or on-going projects were explained and the two proposed areas, that is, Kuta in Minna Division and Nagyafu in Bida Division, both in the Kaduna River Basin were also introduced.

The Edozhigi project, one of the completed projects was surveyed.

As a result of the survey, the following project areas are put the priority to be taken as the paddy rice cultivation projects.

1) The Orle-Edion River Basin, in Bendel State, Since the basin stretches very widely, the detailed location cannot be shown this time. It will be shown in the following final report.

2) The Oramiriukwa River Basin, in Imo State. The scale of the area to be benefited, the size of the river and so on, are quite fit for the given conditions.

3) The other proposed project areas, have lower priorities. The upper and the middle part of Kaduna River Basin may have a possibility for this type of the paddy rice cultivation, although there was no chance to visit there.

Attached II.

FEDERAL DEPARTMENT OF AGRICULTURE
34/36 IROYI ROAD, OBALENDE,
LAGOS

12613
FEDAG
22111/

FDA/ASST/10/i/112
5th July, '76

The Ambassador,
Japanese Embassy,
Plot 24 - 25 Apese Street,
Viotoria Island,
Lagos

Dear Sir.

Rice Indentification

Please find enclosed minutes of our meeting with the Japanese Rice Identification Mission which visited this country some weeks ago.

The minutes contain our comments on the Mission's preliminary report.

Please forward to the team in Japan.

O. Awoyemi
Chief Agricultural Officer,
Federal Department of Agriculture

o File Notes on the Visit to Federal Department of Agriculture of the Japanese Rice Mission, on 7th June, 1976

At the conclusion of the mission, a five man team submitted a report on the 7th June, 1976. It was brought in by hand to the Federal Department of Agriculture.

The leader of the team was in a hurry to have the report discussed, since the team was leaving Nigeria on the 8th June, 1976. The Chief Agricultural Officer called my attention to attend at short notice.

The Director of Agriculture was away on tour.

Consequently, a meeting was held at the conference Room, attended by the members of the Japanese team, the Official escort Mr. Izewele, Mr O. Awoyemi (Acting Chief Agricultural Officer), and Mr. J.A. Eweka, Acting Director of Rural Developemnt. The notes were taken by Miss E.T.A. Ogunbekun, Stenographer.

The report was examined and generally discussed.

The team was proceeding to Japan to have the final report submitted to their government. Before doing this, they requested that the Federal Department of Agriculture should please forward any comment which they may have on the report.

Mr. J.A. Eweka presided over the meeting during which attention was given to the following points:

(a) It was noted that such a major report which would form the basis of technical link between the governments of Nigeria and Japan, was not submitted in advance to enable more detailed study and discussions.

(b) At page 2 of the report, it was noted that the word "acceptable" should be amplified to mean acceptable in reference to the Japanese team.

(c) In the selection of the project areas, it was necessary at this preliminary stage not to be too specific about exact location of the project, but to ensure that there is enough flexibility and room for possible changes as a result of further detailed investigations.

(d) In reference to the presence of the Japanese Private Consultant Company, the Federal Department of Agriculture would like to adopt a position of relative freedom to use whatever facilities that are available in the country. The Federal Department of Agriculture would not agree to preempt the Government of Nigeria in matters relating to the use of consultants on this project.

(e) The team's comment that there is need for preparatory budget to be established for the project is noted.

(f) At page 4 of the report, the technical notes and references on the cultivation of rice in Nigeria will need more factural information based on the major official publications of the Federal Department of Agriculture.

(g) The team's suggestion to exclude Upland Rice from the project is noted.

(h) The comments made on floating rice as cultivated in Bendel State is noted. There would have to be a more detailed discussion on the structure of the project in relation especially to choice of seed as well as management matters.

(i) It is strongly suggested that a small holder scheme should be built in into large scale projects. The purpose of this would be to ensure:

1) Employment generation

2) Income prospect for the Rural Family

3) Transfer of technology to the Rural areas

(j) At page 5, reference was made to the very high price of rice in Nigeria. It is suggested that this should be eleminated from the report because:

1) It is irrelevant.

2) It is touching on sensitive areas of policy of the Government.

This team's attention was drawn to various government publications particularly, Agricultural Developments in Nigeria from 1973 ~ 1985 published by the Federal Department of Agriculture where detailed technical and economic considerations have been given in respect to all crops grown within the country.

(k) At page 6, certain data on irrigation were quoted. These are noted, but it is suggested that comprehensive technical data available within the Department should be referred to before the project is implemented. The team's attention was also drawn to the need for more careful planning, taking account of overall water balance all the year, as well as other complementary projects in the project area.

(l) The team's attention was drawn to human development in the rural areas, and the need to place the small rural family in front of all other considerations. There had been a tendency in the past to talk about irrigation, dams, crops and livestock,

large scale projects without taking account of the needs of the small farmers who constitute the majority of our people. The new emphasis in rural development must be seen to focus attention on the welfare of the majority of our people, and to spread the development over a wider area of our country.

(m) The team was complemented before their departure, for the report that they have prepared.

(n) It was noted however, that inspite of the short time available for discussion, the report still serves as a useful basis for more detailed discussions. The team was assured of final comments as soon as possible to enable them to finalise the report. It is recommended that this is done early for Federal Department of Agriculture.

J.A. Eweka
(Director of Rural Development)