

**Report of the Japanese Implementation Survey Team for
Japan-Uruguay Vegetable Research Cooperation Project**

October, 1978

The Japan International Cooperation Agency

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Report of the Japanese Implementation Survey Team for Japan-Uruguay Vegetable Research Cooperation Project

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Preface

The Japan International Cooperation Agency dispatched a team to explore the possibility for the cooperation in agricultural research to four Latin American countries, Argentine, Uruguay, Costa Rica and Guatemala in February, 1976. On that occasion the Oriental Republic of Uruguay strongly requested Japan's cooperation in technical development for vegetable and potato production.

In compliance therewith the Agency dispatched a preliminary survey team to Uruguay for the period of 20 days from November 28, 1976 headed by Dr. S. Niiuchi, Director of the Vegetables and Ornamental Plants Research Station of the Ministry of Agriculture, Forestry and Fisheries to study the possibility of cooperation project based upon the report of the project-finding team stated above.

As a result thereof, a basic plan for vegetable research cooperation scheme including potato has been clarified with Las Brujas Horticultural Experiment Station as a base.

Based upon the procedures stated above, in order to discuss with the Uruguayan side the content of concrete research activities in the proposed project and the number of Japanese experts to be dispatched, the Agency dispatched the Implementation Survey Team, headed by Mr. S. Ito, Lecturer of the Hokkaido Agricultural College for the period of three weeks from February 20, 1978. Since then after some adjustment-discussions through diplomatic channel a Memorandum of Discussion has been finalized duly signed by the Director of Agricultural Development Cooperation Department of the Japan International Cooperation Agency and the Chief of Minister's Secretariat of the Ministry of Agriculture and Fishery of Uruguay on July, 19, 1978. And based thereon it has been decided to proceed with Japanese cooperation.

This is a report on the results of on-the-spot investigation of the said Implementation Survey Team as well as on the discussion with various persons concerned in Uruguayan side and it is safe to assume that this report will serve as a guiding direction in the operation of the Project.

In the light of a fact that such a cooperation as this is the very first under-taking in the history between Japan and Uruguay, a great interest of related persons is being focussed on the Project. And it is highly anticipated that the Project will contribute to the furtherance of a friendly relation between the two countries.

In conclusion, the undersigned wishes to acknowledge his gratitude to Dr. Ito, Leader of the Implementation Survey Team and to each and every Team members. And he further wishes to present his deep gratitude to those concerned in Uruguay and to those in related Japanese government agencies for their undivided guidance and cooperation.

Sinsaku Hogen

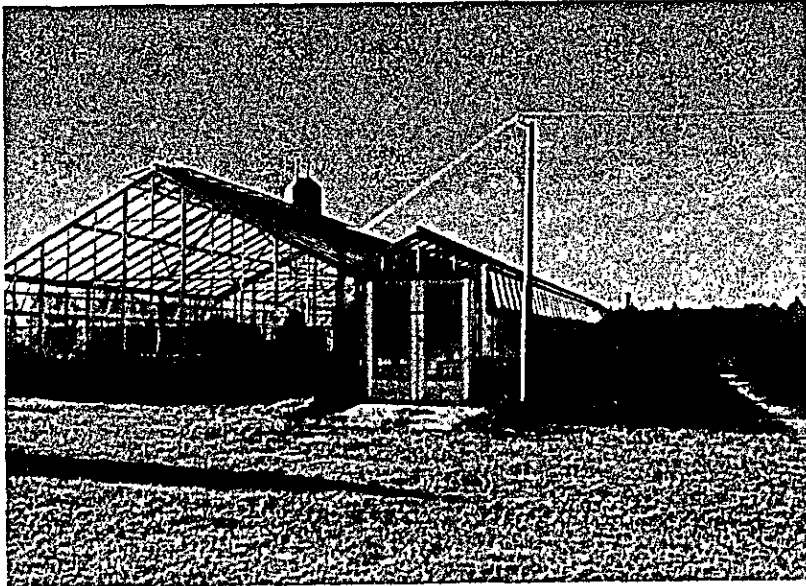
President
Japan International Cooperation Agency.



The entrance, Las Brujas Experiment Station



Research buildings, Las Brujas Experiment Station



Glass greenhouse, Las Brujas Experiment Station



Open produce shop, Montevideo

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1. Background for Dispatching the Implementation Survey Team and
Survey's Objective

... ..

1. Background for Dispatching the Implementation Survey Team and Survey's Objective

(1) The Japan International Cooperation Agency dispatched a fact-finding teams for agricultural technical cooperation to four Latin American countries: Argentina, Uruguay and Costa Rica, Guatemala in February, 1976. The Government of the Oriental Republic of Uruguay has atrongly requested the said team on the vegetable production technique development project including potato which was a program of the Ministry of Agriculture and Fishery of Uruguay now being considered.

(2) The same Agency dispatched the Preliminary Survey Team with Dr. S.Niiuchi, Director of the Vegetables and Ornamental Plants Research Station of the Ministry of Agriculture, Forestry and Fisheries as Leader, for the period of 20 days from November 28, 1976. The Team studied the state of production, production technique, research and marketing of vegetable and potato as well as a concrete concept for this project.

(3) In October, 1977 Dr. Antonio Saravia, Director of the Alberto Boerger Agricultural Investigation Center, was invited to Japan to inspect Japan's vegetable research and experiment institutions and vegetable cultivating farms. On the other hand, as a result of his repeated consultations with our related persons, a possibility that this proposed project is to be inaugurated as a vegetable research cooperation project including potato became great.

(4) The Agency then dispatched the Implementation Survey Team with Mr. S. Ito, Lecturer of the Hokkaido Agricultural College, as Leader for the duration of 21 days from February 20, 1978. The Team made on-the-spot survey centering Las Brujas Experiment Station and carried out several consultations with the Uruguayan officials concerned. As a result thereof, the Record of Discussions (Hereinafter referred as 'R/D') except few provisions, and preparation for the signing has progressed. After the Team's return home some pending questions were settled through diplomatic channel. Then on July 19, 1978 the document was signed between the Director of the Agricultural Development Cooperation Department of the Japan International Cooperation Agency (JICA) and the Chief of the Minister's Secretariat of the Ministry of Agriculture and Fishery of Uruguay. Thus, the Project's inauguration in 1978 became definite.

(5) The objectives of dispatching the Implementation Survey Team are summerized as:

a. Investigation of the actual state of research activities in Las Brujas Experiment Station, Litoral Norte Experiment Station and Del Norte Experiment Station.

b. Based upon the findings of the above investigations, concrete sphere and scope of Japan's cooperation shall be determined.

(6) As for the content of R/D, a consultation shall be carried out with the Uruguayan officials concerned.

2. Composition of the Survey Team

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Leader: Masasuke Ito, Lecturer, Hokkaido Agricultural College

Vegetable Cultivation: Mikiyo Kageyama, Chief, Greenhouse Cultivation
Department, Vegetables and Ornamental Plants
Research Station, Ministry of Agriculture, Forestry
and Fisheries

Potato: Kichiro Yasunaga: Deputy-Director, Upland Crops Development
Division, Agricultural Production Bureau,
Ministry of Agriculture, Forestry and
Fisheries

Research Planning: Hiroshi Takasawa, Technical Cooperation Chief, General
Affairs Division, Agriculture, Forestry and Fisheries
Research Council Secretariat, Ministry of Agriculture,
Forestry and Fisheries

Coordination: Umeo Koganemaru, Agricultural Development Division,
Agricultural Development Cooperation Department, Japan
International Cooperation Agency

3. Survey itinerary

3. Survey itinerary

Date	Hour	Activities and content of survey
Feb.20 (Mon.)	10:00	Leave Tokyo JL via Anchorage
	10:20	Arrive New York
Feb.21 (Tue.)	20:45	Leave New York, PA201
Feb.22 (Wed.)	15:30	Arrive Montevideo
	16:30	Arrive Hotel Columbia, Consultation with Counsellor Nagata and other Embassy staffs
	19:00	Courtesy call to Ambassador
Feb.23 (Thu.)	12:00	Courtesy call to Dr. Adolfo Donamari Director-General of Trade Bureau, Ministry of Exterior Relation
	16:00	Courtesy call to Dr. Estanislao Valdéz Otero Minister of Agr. and Fishery
	18:30	Courtesy call to Brig João Cardozo, Secretariat of Planning Coordination and Diffusion
Feb.24 (Fri.)	9:00	1st Joint meeting at the Embassy Dra. Ines Ubici de Busso of the Ministry of Exterior Relation Ing. Luis E. Plouvier (Secretariat of Planning, Coordination and Diffusion), Ing. Juan A. Curotto (Interim Director of Alberto Boerger Agricultural Investigation Center), Ing. C.M. Tavella (Director General of Estanzuela Experiment Station), Dr. Armando Rabuffetti (Director General of Las Brujas Experiment Station)
	17:00	
Feb.25 (Sat.)	10:00	Consultation among the members of the Team
	12:00	
Feb.26 (Sun.)	9:00	Leave Montevideo
	18:00	Arrive Salto
	21:00	Consultation with Ing. Hector Masa (Director General, Litoral Norte Experiment Station)
Feb.27 (Mon.)	9:00	Inspection of Litoral Norte Experiment Station & neighboring
	13:00	Vegetable farms
	14:00	Leave Salto
	18:00	Arrive Tacuarenbo
Feb.28 (Tue.)	9:00	Inspection of Del Norte Experiment Station and neighboring
	16:00	potato farms
	16:00	Leave Tacuarenbo
	22:00	Arrive Montevideo
Mar. 1 (Wed.)	10:00	Consultation among the members, rest
	12:00	
Mar. 2 (Thu.)	9:00	Investigation of Las Brujas Experiment Station
	16:00	
Mar. 3 (Fri.)	9:00	Second joint meeting (at the Embassy)
	12:00	Estanzuela's Director and Las Brujas's Director

Date	Hour	Activities and content of survey
Mar. 4 (Sat.)	10:00 12:00	Consultation among the members, rest
Mar. 5 (Sun.)		Rest
Mar. 6 (Mon.)	8:00 17:00 10:00 13:00	1st party (Kageyama and Yasunaga) inspect vegetable cultivation conditions in the suburb of Montevideo 2nd party (Ito, Takasawa and Koganemaru) meets Messrs. Luis W. Cicalese and Adolfo Donamari to Request for the agreement of obligation clause, Counsellor Nagata accompanied
Mar. 7 (Tue.)	9:00 12:00 17:00 17:30	Final joint meeting Ing. Luis E. Plouvier (Secretariat of Planning, Coordination and Diffusion), Dra. Ines Ubici de Busso (Ministry of Exterior Relation), Ing. C.M. Tavella (Director General, Estanzuela Experiment Station), Dr. Armando Rabuffetti (Director General Las Brujas Experiment Station) Meet Alberto Boerger, Agr. Research Center Interim Director, Ing. Juan A. Curotto
Mar. 8 (Wed.)	11:00 11:30 17:00 18:00 19:00 22:00	Courtesy call to Juan C. Cassou, Vice-Minister of Agr. and Fishery, report of survey and bid good-bye Receives agreement on the matters related to the Ministry of Agr. and Fishery and approval as a member of signatory of the Uruguayan side on R/D. Courtesy call to Director-General of Trade Bureau, Ministry of Exterior Relation, report on the survey and bid good-bye. Greeting and agreement on obligation clause (Survey Team's level) Courtesy call to Ambassador Komuro, report on Survey and bids good-bye
Mar. 9 (Thu.)	16:00	Leave Montevideo for Japan, PA202 via Rio de Janeiro and Los Angeles
Mar.12 (Sun.)	16:20	Arrive Tokyo

4. Comprehensive Opinion

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The Oriental Republic of Uruguay corresponds to Japan's west Kansai region in latitude. The country's climate is mild with rainfall around 1,000 mm distributed practically even all the year round, and the daily difference in atmospheric temperature is around 10°C. In the light of those conditions it is safe to assume that the country is favorably suited to horticulture. This assumption was verified as correct in economical cultivation of oranges and apples and in good taste of Starking and Delicious apples just before the harvest at Las Brujas Station and in watermelons purchased in the city of Montevideo. They all tasted very good. And it also seemed that the country was well blessed with natural horticultural conditions as a great stretch of pampas harboring potential cultivation land prevails. It seemed that a great potentiality was hidden in the country for the development of horticulture.

The production level of vegetable in Uruguay (The term, "vegetable" as used herein and hereafter shall be defined to include potato) is very low in comparison to that in Japan except asparagus. Because such a situation was so incredible to us, we asked about it at every opportunity but the answer which came back was that the figures were about right although there was a difference by district and by individual vegetable grower. However, there was a great difference between the above production level and the production level of experiment stations and some advanced farmers. And with respect to the cultivation technique of farmers within the scope of our observation it does not mean that their cultivation techniques are low but it did seem to us that they have reached certain level. In the light thereof, it can be reasonably assumed that considerable production increase is highly possible if the existing advanced technique can be extended to farmers.

As for the demand and supply situations of vegetables in Uruguay, according to the last report, only a small amount of garlic and asparagus is exported to Brazil and Europe. As for import, the items are only 10,000 - 15,000 tons of seed potatoes from Canada besides lentil and Egyptian bean that it seemed that domestic demand was practically managed by domestic production. And as for the annual consumption of potato per person per year, it is about 40 Kg, about three times that of Japan but for general vegetable, conversely, the consumption is about one third of Japan, as a whole about a half of Japan. Diet habit of Uruguayan seemed to depend on meat as staple but vegetable consumption is small in comparison to meat so that diet pattern lacks a balance. However, during our stay not on a single occasion did we hear that vegetable is in shortage. Yet, annual price fluctuation of vegetable seems to be considerably violent (according to the last report). And as it can be comprehended from a fact that vegetable grown in the vicinity of Salto by utilizing winter season's high temperature is being marketed profitably to Montevideo that considerable large fluctuation in seasonal supply of vegetable seems inevitable. Yet, how are we going to understand a fact that particular shortage in vegetable has never been mentioned in our talks. Are we to accept that demand and supply of vegetable is in balance for the time being?

At any rate, in order to cope with the seasonal fluctuation in vegetable supply it seemed that a further study of various cropping types (sowing period, variety and disease and insect control, etc.,) is an important matter.

As for the country's customary farming technique there were some sectors which were so incredible from the common sense of our country. For instance, the transplanting-cultivation is the main constituent with three typical cropping patterns -- (1) sowing in March to April, harvested at the end of November, (2) sowing in April to June, harvested in February to March and (3) sowing in February to April and harvested green at any time. In all those cropping patterns

so much time is spent on seedling raising --- 4 to 5 months, sometimes as long as 6 months. So we asked whether this practice is due to the use of dry set but we have been informed that it was seedling raising of green-set, in which about 20 cm seedlings are transplanted. Needless to state, because customary technique of any country or district has its own particular reason, this matter should be studied by fully comprehending their practice and reasons therefor.

It is only a short time ago since the experiment and research on vegetable have been inaugurated in Uruguay that is seemed there are many, many problems and the demand against the Project covers a very wide scope --- problem of variety, improvement of cultivation method and disease and insect control, etc.

As for variety, at present it is imported from abroad rather than breeding in the country and emphasis is laid on the method to select variety and how to evaluate variety, including potato. Problems confronted are multifarious --- establishment of high-yielding cultivation technique for tomato, more concrete method of seedling raising for dry onion, weed control and mechanization. Among the diseases and insects virus-related diseases seems to predominate extending widely over tomato, green pepper and garlic. Studies on those diseases and insects seemed to be not advanced. Pathological investigation and confirmation and comprehensive control measure should be established.

In such a way there are so many problems that it might be possible to solve some of them by applying the existing methods but solving of those problems in limited period is difficult. And there are many cases which require separate countermeasure.

The impression we received from those concerned in the investigation at this time the direction of research and experiment in Uruguay seems to emphasize the export of fresh or processed vegetable and as for domestic demand they showed an interest in forcing cultivation in Litoral Norte but even that they seem to be passive against the direction of installation-horticulture, because of economical reason.

As pointed out in the last report vegetable export of Uruguay harbors many difficult problems. If so, is there a possibility of a large production increase to meet the domestic demand? In the light of various conditions stated above there remain problems. Accordingly, first of all, improvement of productivity and production stabilization should be promoted which will contribute to the expansion of domestic production which will ultimately contribute to the improvement of people's health, moreover, it might cut a path to export which as of now seems difficult.

5. Outline of the Vegetable Research Cooperation Project

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5-1 Basic concept against the cooperation

It is no exaggeration to state that the vegetable production in Uruguay has not achieved a status of industry with the exception of potato. Because thereof production technique of vegetable is in unstable condition.

The food life of Uruguay is centered on meat (the meat consumption is at a very high level even in South America) and as a subsidiary-food vegetable, potatoes and green peas are consumed to some extent, but the consumption of leaf and fruit vegetables is very small.

However, some agricultural administrators of Uruguay have awakened to the importance of vegetable from the standpoint of its value as export commodity, for the improvement of people's health and to increase small farmers' income.

So, with the Alberto Boerger Agricultural Research Center (in charge of agricultural research administration corresponding to Japan's Agricultural, Forestry and Fisheries Research Council Secretariat. Herein referred to as Alberto Boerger Center) as nucleus, the experiment and research of vegetable have been inaugurated. However, the country's history in research and experiment of vegetable is so short and because of a dire shortage in the number of researcher the aid from abroad became necessary. Thus, Japan's technical cooperation has been requested.

Upon the receipt of this request Japan dispatched to Uruguay a Preliminary Survey Team from November to December, 1976, headed by Dr. Niiuchi, Director of the Vegetable and Ornamental Plants Research Station of the Ministry of Agriculture, Forestry and Fisheries to investigate possibility of technical cooperation on vegetable production by carrying out technical survey.

As the result thereof, the Team recommended that Japanese technical cooperation should be launched within a possible scope because vegetable production's expansion in Uruguay has a great potentiality in the light of the country's favorable natural environments in climate and soil, etc. However, because the present technical research level was at an elementary stage, the improvement thereof was regarded as a matter of highest command. And the Team pointed out that Japan's cooperation should be concentrated on experiment and research for the development of production techniques and further recommended that cooperation in marketing and utilization of vegetable which were strongly desired by Uruguay, such as marketing research for export should be undertaken by Uruguay itself.

Based upon the result of this preliminary survey with JICA taking the lead with the cooperation of the Ministry of Foreign Affairs and the Ministry of Agriculture, Forestry and Fisheries, our basic concept for cooperation has been compiled as follow:

(Basic concept of cooperation)

(1) The form of cooperation shall be agricultural research which was also the request of Uruguay, and its purpose shall be directed to the improvement of production technique of vegetable;

(2) The site of cooperation's implementation shall be centered on Las Brujas Experiment Station which is the center of horticultural research in Uruguay;

(3) The content of cooperation shall be limited to specific sectors related

to important problems now being confronted in Uruguay;

(4) The duration of cooperation shall be, for the time being, three years. As for the cooperation after the expiration of three years, it shall be studied anew upon the record of performance in the three-year period;

(5) The arrangement of the cooperation shall be in accordance with the R/D.

Based upon the above provisions, research cooperation plan with the contents specified in paragraph 5-2 as essentials has been compiled, and upon submitting the same to Uruguayan side there was no objection. Thus, basic agreement has been concluded between the Ministry of Agriculture and Fishery of Uruguay and the Survey Team.

Furthermore, as for details of basic plan, such as research theme, design of experiment, required cost and Uruguayan counterparts, etc. and for the implementation plan by each year, they are to be studied by joint committee provided for in Article VI of R/D. Actually, they will be decided by having Japanese experts visit Uruguay and after having comprehended the on-the-spot situations and upon fully discussing with related persons of the Uruguayan side.

5-2 Content of cooperation

With the objective directed to the expansion of production, quality improvement and whole-year-round production of vegetable as well as the improvement of the related research level of Uruguay, Japan-Uruguay Vegetable Research Cooperation Project (Hereinafter referred to as the 'Project'.) shall be enforced under the cooperation of Japan and Uruguay on: (1) operation of research, (2) supplying of machines and installations, (3) exchange of informations, test materials and research reports and (4) improvement of research capacity of Uruguayan researchers.

(1) Research work

Research problems stated hereunder shall be the objects of cooperation:

Research Scheme for the Project

Research problem	Substance of major research	Remarks
Breeding technique of vegetable	Research on the introduction of varieties which will become the foundation for the breeding of variety suited to Uruguay.	In Uruguay there is practically no improved variety suited to the country. For the present superior varieties are imported from abroad and the assessment thereof is the nucleus. However, soon the introduction of F ₁ variety will be necessary and for that purpose basic experiment is required.
Cultivation technique of vegetable	In order to improve the cultivation technique research will be carried out on physiology, ecology, cultivation technique of vegetable, followed by cultivation technique under installation.	In order to establish the country's own cultivation technique suited to Uruguay physiological and ecological investigations will be carried out on major vegetables and the cultivation technique thereof will be established. At the same time a simple installation-cultivation method suited to Uruguay will be established.

Plant protection (disease and insect control)	Major diseases and insects of vegetable shall be identified in order to establish control technique.	Calendar shall be established for the control of disease and insect, a technique suited to Uruguay
Research on breeding technique of potato	Research on selection technique such as introduction and assessment of variety in order to select high-yielding variety suitable to Uruguay.	
Cultivation technique of potato	In order to establish all-the-year-round cultivation technique of potato, two cropping technique, regional standard cultivation technique and storage technique of seed potato shall be studied.	
Cultivation technique of virus-free potato	Research on production technique of virus-free potato.	To liquidate the country's dependency on imported seed potato, necessary technique for domestic production of seed potato shall be established.

(2) Supplying of machines and equipments

Japan shall supply laboratory-use instruments and equipments and field-test-use machines, installations and other materials required in research provided for in (1).

(3) Exchange of informations, test materials and research reports

Japan shall supply technology, research information, seed, seedling, seed potato and research papers concerned with the research problems provided for in (1).

(4) Improvement of research capacity of Uruguayan counterparts

Uruguayan counterparts and research administrators related to the Project shall be invited to Japan for training and an inspection travel in Japan.

5-3 Site of Project implementation

Las Brujas Experiment Station in the suburb of Montevideo shall be the site for the Project. On-the-spot experiment of potato shall be carried out at the Del Norte Experiment Station (Tacuarembó) and on-the-spot experiment of vegetable at Litoral Norte Experiment Station. Those two experiment stations are added to the Project within the sphere of on-the-spot experiment.

As stated hereinabove, in the light of a fact that Las Brujas Experiment Station is the national center for horticultural research in Uruguay and the Station's research installations have been consolidated to certain extent under the aid of the United States it has been judged that the Station is the optimum.

And it has also been judged that because the two stations of Del Norte and Litoral Norte are respectively located in potato producing district as well as in early maturing cultivation districts of major vegetables, the Stations have been incorporated as the sites of on-the-spot experiment suitable to ensure a higher result of the Project, although some research installations are inadequate.

5-4 Concrete implementation method

(1) Dispatching of Japanese experts

	Assignment	1st year	2nd year	3rd year	Remarks
Researcher	Vegetable breeding	12 m/m	12 m/m	12 m/m	One long-term expert for continued stay
	Vegetable cultivation	24 m/m	24 m/m	24 m/m	Relay from one long-term expert to 6-months short-term expert
	Potato breeding	3-6m/m			One short-term expert
	Potato virus	12 m/m	12 m/m	12 m/m	Relay of 6-months short-term expert
	Pathology	3-6m/m	3-6m/m	3-6m/m	One short-term expert each year
	Disease and insect	3-6m/m	3-6m/m	3-6m/m	One short-term expert each year
Liaison Officer		12 m/m	12 m/m	12 m/m	One long-term expert for continued stay

(2) Receiving of Uruguayan researcher and counterpart in Japan

Training	1st year	2nd year	3rd year	Remarks
1. Senior researcher	2	2	2	Inspection trip in Japan for about 2 weeks
2. Counterpart (vegetable)	1	1	1	Individual training at research institution
(Potato)	1	1	1	Individual training at research institution

5-5 Problems in the implementation of cooperation

(1) Research system

Agricultural research operating agencies in Uruguay are experiment stations of the Ministry of Agriculture and Fishery (at 5 places) and agricultural department of national university. Actually no research is being carried out at university due to situation in national budget. So those 5 experiment stations of the Ministry of Agriculture and Fishery can be termed as the only agricultural research institutions in Uruguay.

And experiment and research of the Ministry of Agriculture and Fishery are charged to the Alberto Boerger Agricultural Investigation Center under the supervision of Vice-Minister of Agriculture and Fishery. And the horticultural sector thereof is charged to Las Brujas Experiment Station, the site of the cooperation at this time.

As for the content of research such as research problems and research methods, it is under the jurisdiction of Minister or Vice-Minister, particularly with respect to any matter related to foreign aid. Even a detailed matter must obtain the approval of Minister or Vice-Minister. Because such a practice might create a bottleneck in smooth operation of cooperation it might be wise to utilize a joint committee to full extent to determine the content of cooperation concretely such as the number of counterpart and budget. Those matters should be fully discussed with the Uruguayan side beforehand.

Next, a matter which deemed as a very important factor on which depends the success of failure of cooperation is the shortage of vegetable researchers in Uruguay.

At present, the force at Las Brujas Experiment Station as of this investigation, was only 17 researchers with university degree including Director. Out of which 3 researchers are in charge of vegetable, 2 researchers in potato concurrently in charge of other crops, 2 researchers in soil and fruit and 2 researchers in disease and insect.

Perhaps, in the light of the state of Uruguay there might be only a few who desire to pursue the course of researcher, but even so, number the of researchers is far too small. So the increase in the number of researchers is highly desired within possible scope. It is also highly hoped that this Project might become an opportunity therefor. Moreover, as most of the researchers are young, their training in Japan might be an important step to improve their capacity in practical research.

(2) Relation with the cooperation of other country

The cooperation between Uruguay and other country related to this Project is the cooperation of the USAID. One sector thereof is the establishment of agricultural extension system and research development. Concrete content in research development is the purchase of research materials under the AID loan, sending of Uruguayan researchers to the United States (graduate course and technical training) and the receiving of American experts to Uruguay.

And as for research development the Team has been informed by Director of La Estanzuela Experiment Station of Alberto Boerger Center that vegetable research will be excluded from American cooperation because request therefor has been made to Japan. However, it seemed as necessary to study this matter in detail and assignment of cooperation sector should be clearly defined. Moreover, acquisition of degree by trainee which is difficult under the present Japanese system should

be fully studied on its feasibility.

One more project is for the production of certified seed potato. This project is directed to two targets --- to reduce the seed potato import and increase in the domestic production of seed potato by two-cropping a year. Although it does not directly compete with Japanese research cooperation but because correlation is deemed as very high it might be necessary to promote the mutual coordination.

6. State of Vegetable Research in Uruguay and Problems Confronted

6. State of Vegetable Research in Uruguay and Problems Confronted

The investigation at this time to implement research cooperation is to pick out the points which present problems and to devise countermeasure for each problem. And for the purposes the existing state of things of two experiment stations at Las Brujas and Litoral Norte where vegetable research is in progress has been studied, at the same time Team has been briefed on various situations and demands from the Stations' Directors or researchers in charge. Accordingly, this report contains future plan or desire.

As for research cooperation in vegetable the Japanese researcher in charge will stay at all time with the Las Brujas Station as base and as for Litoral Norte Station traveling guidance will be carried out.

6-1 State of Vegetable Research Activities of the Las Brujas Experiment Station

The Station is a horticultural experiment institution for fruit and vegetable. In the implementation of this Project 70% of the operation is expected to be carried out at this Station. The Station's agricultural land is 70 ha and 75% thereof is being used for fruit and 25% for vegetable.

The fruit development project has been enforced at this Station by the aid of USAID under a 5-year program since 1972, under which installations have been consolidated. The buildings are stylish but experimental installations can not be said as fully complete. Glasshouse is designed so as to make it available in high-temperature summer season by lowering the temperature to certain extent but because the capacity of machine is inadequate it is not being operated. It is highly desirable to operate the installation along with the progress in experiment.

The soil is sandy loam or sand which has been observed as suitable for vegetable cultivation. And at the time research cooperation starts there is no shortage of test farm.

The composition of personnels at the Station is as shown in Table 1 hereunder besides 3 watchmen. There are 12 full-time laborers but the number is far too insufficient to carry out the research. However, because the hiring of temporary laborers is prohibited by law in Uruguay there is no temporary laborers. Working hour is 7 hours in winter season and 8 hours in summer time. Wage per day is 20~25 pesos (Japanese currency equivalent of 1,000~1,200 yen).

Table 1 Composition of Personnels at Las Brujas Experiment Station

Assignment	Researcher with University degree	Assistant researcher	Laborer
Vegetable	3	-	
Fruit	5	2	
Cultivation	2	-	
Meteorology	2	-	
Soil	2	-	
Disease and insect	2	2	
Pasture grass	1	-	
Total	17	4	12

And the kinds of fruit and vegetable handled are as follows: For vegetable sector ---- tomato, onion, garlic, lentils, green pea and melons and for fruit sector ---- grape, apple, peach and pear and for cultivating sector --- potato and maize.

Among the vegetable products in Uruguay onion is exported to the United States and garlic to Brazil. Export to France is now being planned and the negotiation between the two countries is now in progress.

The cultivation of processing-use vegetable to expand export is being planned and for that purpose varietal experiments are now in progress --- since 7~8 years ago on tomato, since 3 years ago on onion and since the last year on green pea. And as a result of varietal experiment for processing-use tomato using such varieties as Loica (long type), Roma (long type, French variety), Napoli (long type), Heinz 1,370 (round type), San Marzano (long type) and Huilqui (long type) it has been found that the varieties of Loica and Huilqui are promising and that both varieties harvest a good yield.

Research cooperation desired from Japan is a method of assessment how to evaluate virus resistant variety in the variety selection.

The yield decline in green pepper by virus reaches as high as 100% at times. Even in ordinary case 50~60% damage is common. Virus of green pepper has been a research problem since old time and up to now many good varieties have been reared as a result of variety selection but because the type of virus is unknown, its identification is being expedited. Furthermore, the breeding of virus resistant variety should be promoted also.

As for tomato, virus infection may be avoided by identifying new virus and by improving cultivation method. In this case there is a method of preventing the infection by aphids by using net-covering, but because the net has to be purchased it does not pay. Because high-yielding varieties of tomato are now available, there is no need of breeding a new variety for the time being. The varieties now being cultivated are those introduced from the United States but they want to introduce some from Argentina and other countries. There is a problem of virus in fresh table-use tomato and also a problem of disease damage by bacteria. An electron microscope is required in virus research but the one installed at the biological research institute should be made available.

Among the research on onion, because research on variety is now underway for solution the future research direction should be focussed on the improvement of cultivation method and control of disease and insect. And there is a need to expand cultivating acreage from now on. In such a case mechanization and weed control measure should be studied. At present there is practically no mechanized farming in Uruguay. Take for instance the transplanting, it is all made by hand. So the mechanization in onion cultivation is highly desirable. Cultivation of onion under mechanized method is being tested on 60ha farm and is achieving a good result.

The acreage in which vegetable can be cultivated by family labor in Uruguay is around 1/4~1/2ha in general and vegetables which have been produced in such way are marketed for domestic consumption. In recent years some farmers have ventured to cultivate about 2ha but to manage over 2ha by hand labor is difficult. Uruguayan farmers in general own a large tract of land and operate animal husbandry and as vegetable cultivation requires so much hand labor vegetable culture can not be expanded unlimitedly.

The price of onion purchased by processing plant operators is 0.3 peso/Kg. And plant operators refuse to pay a higher price than that, but upon marketing the same product as fresh the price is 1.5 peso. In the light thereof, if a large tract of land can be cultivated for the production of processing onion under mechanized farming method, the production cost can be brought down. In such a case medium type machinery can be assumed as more economical than large type. As for the improvement of fertilization method in cultivation, improvement experiment

has just been inaugurated, but there are many inadequate phases. General fertilization standard per hectare is 60 Kg of N, 120 Kg of P and 30 Kg of K. Because the soil of Uruguay generally lacks P with sufficient K, perhaps the above fertilization method has been adopted. The yield is 10-15 tons/ha in general so that there remains several phases to be improved. Three varieties, Amarilla de Vertus variety introduced from France, Yellow Spanish and Colorado are fashionable. No dry set is used, and general cultivation method of sowing and raising of seedling is a common practice. Farming operation from sowing to harvesting is as shown hereunder.

Table 2 Cultivation of onion

	Sowing	Transplanting	Harvesting	Remark
Early Cultivation	Mar.~Apr.	August	End of Nov.	Harvest when bulb is formed
	Apr.~June	Sept.~Oct.	Feb.~early Mar.	
	Feb.~Apr.	August		Harvested at any time as purple onion

One big problem on onion in future is the control of disease and insect. Disease damages are caused by Botrytis (outbreak of gray mold) and Peronospora (outbreak of Downy mildew). The most important injurious insect is thrip. There is also Damping-off during the seedling raising. Experiment in soil disinfection has been carried out before but so far no effective control method has been found. Various kinds of agricultural chemical and their application methods for respective disease and insect have been experimented and some findings are being put into practical use.

The problem in garlic is that quality of seed bulb is poor. And that is because the farmer does the seed production by himself. Harvested bulb differs in size, lacking uniformity and with various skin colors. Brazil which is one of the importing countries demands reddish colored and France a whitish one. So it is necessary to produce two kinds, but most probably the varieties get mixed during the cultivation. Reddish variety seeds are purchased by specifying the color but upon cultivating the same some come out as a pink bulbs which is undesirable from the standpoint of uniform variety. Virus of garlic is another problem. The leaves should be green in general but upon having infected by virus yellow stripe outbreaks. And sometimes new bud sprouts from the bulb and that is also a big problem. The phenomenon is assumed to be physiological. Among the disease and insect damages damage by virus and Puccinia (causes the outbreak of Rust) and for insect the damage by thrip is great. From 1978 experiment on fertilizer and weed control are being carried out.

As for beans, experiment has just began recently. At present, the Station has collected about 70 varieties of lentils. This bean brings in a good yield in the first year's cultivation but after the second year the yield is not so good. This is due to the outbreak of Fusarium so that domestic consumption is dependent on import. As for chick pea, because there is no experience in experiment it is unknown where lies the problem. Recently some varieties have been introduced from abroad.

The greatest bottleneck in beans cultivation is the disease and insect, among which control of Halo blight caused by bacteria is a big bottleneck.

As for green pea a big research problem at present is to find out suitable variety for processing.

As the vegetables for processing, tomato and onion are the important ones. Tomato is processed into paste by pressing, and onion is cut up thin and completely dried and dehydrated then made into powder. The importing countries of onion powder are France, Germany and other European countries. Green pea is water-boiled into which a little salt is added, and then canned or bottled.

Experiment on processing-suitability of processing-use vegetables has been launched, as stated above, 7~8 years ago for tomato, about 3 years ago for onion and since the last year for green pea. And although no experiment has been made heretofore on the freezing-suitability of strawberry, it is a matter to be considered in future. This experiment seems to be suited in major strawberry producing district of Salto.

From now on the expansion of the kinds of vegetable both fresh and processed for the country's export is conceivable and the export of melon is also desirable, so a sample has been sent to importing countries to have it examined.

As stated above, the biggest problem in the production of vegetable of superior quality is first of all, the selection of right varieties or strains and for that purpose the evaluation of variety is important, then control of disease and insect and improvement of cultivation method.

Major experiments carried out at Las Brujac Station are as shown hereunder.

Table 3 Recent major experiments at the Las Brujas Experiment Station

Crops	Names of experiment	Period
Tomato	1. Comparison (includes introduction) of fresh table-use varieties	1972, 1975
	2. Comparison (includes introduction) of processing-use varieties	1968~69, 1971~72 and 1977~78
	3. Planting density of processing-use varieties	1972~73
	4. Transplanting method and period of processing-use varieties	1971~72
	5. Yield stabilization of processing-use varieties	1977
	6. Effectiveness of Ethephone solution on processing-use Roma VF variety	1977
	7. Phosphorous fertilizer and planting density in processing-use varieties	1974~76
	8. Comparison of irrigation methods	1975~78
	9. Post-harvest ethephone treatment on the fresh table-use fruit	1977
	10. Application volume of fertilizer's 3 major elements	1972~73
	11. Comparison of early varieties	1975~77
	12. Comparison of weed killer	1977~78
Onion	1. Comparison (includes introduction) of varieties	1974~75
	2. Comparison of dehydrated processing-use varieties	1974~75 and 1976
	3. Relation between varieties and planting period	1971, 1973
	4. Density under row-planting and varieties	1974
	5. Storage of bulb	1972
	6. Use of Hidracin and Muleica in storage	1974
	7. Application volume of 3 major elements of fertilizer	1975, 1978~

	8. Comparison of irrigation methods	1975, 1977~ 1978
	9. Impact of seedling raising period on the yield of Valenciana variety	1971 74
Lentil bean	1. Comparison (includes introduction) of varieties	1967, 1974~ 1975
	2. Selection and propagation of variety (includes line)	1977
	3. Comparison of variety and sowing period	1973, 1977
	4. Effect of green vernalization	1977
Green peas	1. Comparison (includes introduction) of varieties	1977
Chick bean	1. Comparison (includes introduction)	1974, 1977~ 1978
Kidney-bean	1. Comparison (includes introduction) of varieties	1971, 1977~ 1978
	2. Mixed planting of Poroto Manteca (one kind of kidney-bean) and sweet corn	1977~78
Melons	1. Comparison (includes introduction) of varieties	1973~74
	2. Mulching	1977
Garlic	1. Comparison of weed killer	1976~77
	2. Variety improvement	1977
Sweet potato	1. Comparison (includes introduction) of varieties	1977
Pepper	1. Selection of virus resistant composit	1971

6-2 State of research activities on vegetable at the Litoral Norte Experiment Station

The Station is located about 500 Km northwest of Montevideo at the suburb of Salto. Formerly it was a citrus sector of the Labor College (corresponds to vocational training insitute). And vegetable research at the Station has been launched from 1974. The personnel composition of the Station is as shown here-under in Table 4. There was a vegetable researcher up to the last year but he resigned and now one assistant researcher is taking charge of vegetable research. The equipments and installations are very poor. If vegetable research is to be pursued here, the increase in the number of researchers and the consolidation of installations seem to be an urgent matter.

Table 4 Composition of personnels at the Litoral Norte Experiment Station

Assignment	Researcher with univ. degree and assistant		Laborer
Vegetable	-	1	
Fruit	3 (include Director)		
Cultivation	-	>3	Full-time
Soil	-		
Total	3	4	7

Next, a background for vegetable production in Salto district and research activities of the Station shall be described in outline.

This district is a little warmer than Montevideo (see Table 5) and the photoperiod is longer. So the district is the production center of early maturing vegetables of Uruguay. Factors which are responsible for the production of early maturing vegetable is that the land here is divided into the plots of 25~50 ha. The large tract of land with 100~500 ha are all grazing land where vegetable cultivation can not be conceived.

The soil is sandy loam or sand which forms a layer of 40cm from the top soil and clayey soil is distributed underneath. The soil nature of top layer is suitable for vegetable cultivation. And irrigation water is available from the river where the Salto power station is located and from other rivers running in the vicinity of Salto.

Table 5 Meteorological table of Montevideo (latitude 34° 55S, elevation 25.9m)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annu. Ave Total
Atmo.	Min.	17.6	15.6	15.4	14.2	10.4	8.7	8.7	5.3	7.1	9.1	13.5	15.7	11.7
Temp.	Max.	28.1	26.2	25.1	21.8	20.1	16.7	16.3	14.9	17.1	19.9	24.2	25.7	21.3
(°C)	Aver.	22.8	20.8	20.2	17.7	15.0	12.5	12.2	9.9	11.9	14.7	18.6	20.7	16.4
Rainfall(mm)		83	74	104	102	91	88	73	87	84	73	79	77	1,014

As for vegetable cultivation in this district:

(1) Promote more early-maturing cultivation and scale of vegetable cultivation should be expanded. This means that market will be expanded also. For that purpose the problem is how early in season can vegetable seedling be planted.

Early-maturing cultivating vegetable, such as tomato, onion, strawberry and green pepper are important followed by small pumpkins and beans. Small pumpkins and beans are not the so-called early-maturing cultivation so that their degree of importance is lower than those tomato and onion. Eggplant is also cultivated but quantity is small, accordingly, the degree of importance is low.

Problems concerned with tomato are variety, fertilization method and control of disease and insect, besides a research for disease resistant variety. General concept in fertilizer application is that effectiveness of organic fertilizer is lower than chemical fertilizer. There is an example where organic fertilizer is applied on tomato to control frost damage but for other vegetable chemical fertilizer is mainly applied. The reason therefor is that chemical fertilizer is easily available from the domestic chemical fertilizer plant and the purchasing price of chemical fertilizer is cheaper. On the contrary, bone meal and blood powder are not being used despite a fact that Uruguay is a livestock country. And in tomato cultivation organic fertilizer is applied 30cm below the surface because of farmers' belief that the practice is effective for aeration, but it does not contribute so much to increase the yield. At one time the Station experimented the application of organic matter but no effectiveness has been recognized, so we have been told. Accordingly, the Station is inclined not to apply compost to soil but it is due to their judgement that plowing under immature compost the soil stimulate the dryness of the soil because of sandy nature of soil, although it invites good aeration. So productivity is not improved. Against this, it seems that farmers are inclined toward the application of compost which is made under the following method. Grazing cattles seek the shade under the eucalyptus trees, and fallen leaves of eucalyptus trees are mixed with the droppings of cattles which farmers collect and by piling it up a good compost manure is produced. And

by mixing this compost manure into the soil, the soil fertility greatly improves. Farmers also use this compost manure as mulching material in the cultivation of green pepper.

The onion seedling is raised from March to April, transplanted in early to middle April and harvested in November. The target is directed to early marketing and farmers always aim to ship their product as early as possible.

The application of fertilizer per hectare by farmer is 70~80 Kg of N, 160~180 Kg of P and 60~70 Kg of K. But this numerical values are not the ones obtained from the finding of the Station. The reasons why the yield of onion is so low at farmers level are the lack of agricultural advisory work and credit. No matter how good a cultivation method is recommended to farmers it can not be practiced because they have no capital.

Problems in onion are the variety, transplanting period, irrigation, fertilization method and disease and insect control.

The 80% of strawberry in Uruguay is produced in this district of Salto due largely to the abundance of labor force. Strawberry cultivation extends over a long period. In general there are early ripening cultivation and ordinary cultivation. The Station has collected about 40 varieties so far. No organic fertilizer is applied in strawberry cultivation.

Besides the above, there are such early-maturing cultivation crops as sweet potato and potato but there is a desire to increase the production of small pumpkin. Small pumpkin is classified into two varieties --- that which is green with the shape of football and the another with yellow colored with round shape. The green variety called Angola produces sunburn unless early-maturing cultivation is enforced. And those produced under early-maturing method is handled as an extra fancy produce and brings in a good price. This early-maturing cultivation can be termed as a simple installation-agriculture by preventing cold with reed. The frost falls up to August, sometimes in September. Small pumpkin is planted in September and late frost is prevented by using reed. Potato under early maturing cultivation is shipped from the district of Salto and Tacuarembó.

(2) Production of processing-use vegetables (drying, freezing and canning)

In future vegetable processing plant is to be built in the Salto district for the processing of dried vegetables. In such a case it is advantageous to prolong the plant's operation period as much as possible. And for that purpose it is hoped to increase the production of vegetable. In processing the quality of vegetable as well as finished product becomes important.

The tomato cultivation in non-frost period produces sunburn in most cases. So in cultivating processing-use tomato a full study should be rendered to transplanting and harvesting periods. Paste is being conceived for the processing of tomato.

As for the processing of onion, sliced thin and dried and further make it into powder is being conceived. Dry onion is put into solid soup. For this, Cristal Wax variety seems to be the best.

Strawberry is important next to tomato and onion. A possibility of freezing strawberry is now being studied.

For the cultivation of processing-use vegetable besides tomato, onion and strawberry various kinds of bean can be conceived such as glass bean, green pea

and white kidney-bean. Those products are for domestic market and because of inadequate research findings research on variety should be given the first consideration.

We have investigated installation-cultivation of a farmer near the Litoral Norte Experiment Station but because of high cost of plastic film in Uruguay there was not much to see. The time of our investigation was in summer season so no film cover was used. According to this farmer the use of film in strawberry cultivation does not pay but it is used in tomato cultivation because it brings in a good price.

6-3 Direction of research program

Research cooperation desired by the Uruguayan side can be summerized as follow from the result of investigation at this time:

- a. Method of assessing superior variety (includes line) and identification of new virus

In the rearing of superior variety vegetable the first priority is to be given to technical guidance in evaluating and selecting variety and the breeding of superior variety or line is a matter of secondary importance. For instance, in case virus resistant variety or new virus of tomato emerges the guidance is desired on the method of identification.

Against this desire, it is desirable to have Japanese researcher well versed in vegetable's breeding work be stationed for a long period, and virus researcher of vegetable will be sent to offer the guidance on the identification and classification method of virus. In this case it might be necessary to give the guidance on the operation of electron microscope. For this purpose the dispatching of virus expert for short duration is sufficient.

And the guidance on selection method of processing-suitable variety is being desired because they envisage processed vegetable besides dried vegetable for export in future. Already, selection of tomato variety for processing-use has achieved a considerable progress, but if this technical cooperation system consolidates and make progress the evaluation of existing varieties might not be useless.

- b. Improved cultivation of major vegetables.

This matter covers a very wide sphere. But the important ones are by far the control of disease and insect and the improvement of fertilization method. For this long-term expert stated above will be fully adequate. Upon summerizing the above matters it is as shown hereunder in Table 6.

Table 6 Research program by year

Research subject	1 st year	2nd year	3rd year	Remark
Evaluation method of superior var. & identification of new virus				
Comparison of var. & its evaluation				Tomato, onion, green pepper, garlic & beans
Selection of var. & line				Tomato, onion, green pepper, garlic & beans
Evaluation of suitable processing var.				Tomato, dry onion & strawberry
Identification of new virus		3 months	3 months	
Improved cultivation				
Control of dis. and insect				On major vegetables
Fertilization method				On major vegetables

6-4 Consolidation plan for experiment fields

The experiment shall be implemented at the two stations of Las Brujas and Litoral Norte. And in consolidating test farms matters stated hereunder should be given a due consideration: (1) sunshine is fully available, (2) no flooding by rain, (3) soil is uniform as much as possible and (4) irrigation water is available from nearby. And in case of land preparation by tractor care should be given not to produce hardpan in soil.

As for the acreage of land needed for research, although it depends on the scale of a research, 1.5 ha is desirable at Las Brujas Experiment Station which will become the operating center of research activities and about 0.5 ha at Litoral Norte Experiment Station where touring guidance is to be carried out.

6-5 List of required materials

It is assumed that priority in providing materials from Japan should be given to vehicles, farm machineries and disease and insect control equipments. And as for the materials for experimental-use and laboratory such instruments and equipments as those stated hereunder are deemed as adequate for the time being and from the second year when all cooperation experts are stationed and research promotion directions become definitely established necessary equipment and materials will be supplied in accordance with actual conditions.

- (1) Sugar meter (portable)
- (2) Asman ventilation hygroscopic meter (spring type, attached with 1/5 graduate)
- (3) Photosynthesis emission meter (composed of detection meter for all short-wave use, 6-point type recording meter, 2-point-use analogue integrating meter)

- (4) Microscope (binocular, 1,000 times)
- (5) Thermostatic dryer (45cm x 40cm x 40cm or 60cm x 50cm x 50cm)
- (6) Thermostat (45cm x 40cm x 40cm or 60cm x 50cm x 50cm)

7. State of Experiment and Research on Potato in Uruguay and Problems
Confronted

7. State of Experiment and Research on Potato in Uruguay and Problems confronted

In order to clearly grasp the state of cultivation, experiment and research of potato in Uruguay and to study how the future cooperation in research is to be carried out, Las Brujas Experiment Station and Del Norte Experiment Station have been investigated as well as the cultivating conditions as practiced by farmers in the vicinities of the two Stations.

7-1 Conditions of experiment and research activities on potato at Las Brujas Experiment Station

The experiment and research on potato at this Station are being carried out by two university-degree researchers on: selection of superior varieties (including varieties introduced from abroad), improved fertilization method and seed volume for sowing and planting density. But there was a total absence of research and experiment on disease and insect control and on the production of disease-free seed potato.

7-1-a Research on the selection of superior variety

Potato is cultivated in Uruguay under the system of two-cropping-a-year by seed potato imported from Canada, and next year the seed potato is imported again from Canada. And with this Canadian Kennebec variety as standard many varieties are imported from various countries, from which varieties suited to Uruguay are being selected.

This experiment has been inaugurated in 1977 after having imported some 80 varieties from Canada, the Netherland, West Germany, Belgium and Poland and upon the results of two croppings of those varieties in 1977 some 45 superior varieties have been selected (see Table 7).

The target for variety selection was on: (1) growth period, (2) dormancy period, (3) resistance to disease, insect and cold (frost) and (4) quality in comparison to Kennebec as standard variety. Out of which items from (1) to (3) have been deemed as important and item (4) has not been regarded as not much of a problem.

This experiment has been repeated continuously and based upon the findings of 1978 8 superior varieties have been selected from among the said 45 varieties. And those selected varieties are to be tested for regional adaptability. We have requested the results thereof and the names of varieties but they were not available. And as a method of selecting superior variety, as a report of the last Preliminary Survey Team touches, at the present stage it might be more advantageous to Uruguay to select superior varieties from among the imported foreign varieties rather than carrying out own breeding work to find out the right varieties suited to Uruguay in the light of a fact that (1) breeding work requires at least 10 years from the crossing to rearing, (2) there is no production system of seed potato in the country, (3) breeding works have been carried out in advanced countries for many years and many superior varieties have already been bred. However, if production technique of seed potato becomes a reality in future, this concept of breeding in the country might change.

7-1-b Research on the improvement of fertilization and cultivation methods

As the last report of the Preliminary Survey Team points out this matter, fertilization method has already been established for each soil type, which is good enough to be extended to farmers, and as for a research on cultivation method, the size of seed potato and planting density are being carried out by

irrigation district and non-irrigation district.

The research and experiment subjects on potato now performed in Uruguay at Las Brujas Experiment Station are as stated hereunder, but to our Survey Team no further explanation has been offered except the above. As for the control of disease and insect, particularly on Alternaria solani (ELLIS et MARTIN) SORAUER and various viral diseases of potato, no experiment and research is being performed with no researcher in charge.

Furthermore, we have investigated the state of experiment and research at the Del Norte Experiment Station which inaugurated the experiment and research on potato in 1970 but at present the mainstay of research is on pasture grass and not on potato. We have been informed that there is a senior researcher in charge of crop cultivation, who is engaged in the experiment and research on evaluation of variety, planting density, planting period and fertilization volume for maize, soybeans, sunflower and sorghum. If technical cooperation with Japan materializes, they envisages the implementation of potato's regional adaptability test.

As stated above, it was safe to assume that experiment and research on potato in Uruguay is far behind with shortage of researchers because it has just been inaugurated at Las Brujas Experiment Station recently.

Furthermore, a fact that a system of supplying completely disease-free superior seed potato has not been established as an integral part of potato's experiment and research is a death-blow. Experiment and research being performed under such a state of things seem to create many problems. And it is also questionable as to what extent the findings of experiment and research in the country can be relied on.

In this connection the items of experiment and research on potato implemented at Las Brujas Experiment Station and other places up to September, 1976 as stated in Table 8.

7-2 Technical cooperation on potato

The level of potato cultivation in Uruguay is very low, which has also been pointed out by the last report. In the light of our on-the-spot investigation of potato cultivation of farmers their yield was 10-7 tons per hectare which is only one fourth to one fifth of Japanese yield.

The main reason therefor is the absence of a system to supply seed potato and disease and insect control technique. That is, the supply of seed potato is dependent on the import from Canada, thus, planting of seed potatoes can not be carried out at the right time. Because of no established technique for disease and insect control the damage from viral diseases and Alternaria solani is great. The elimination of those two factors seems to be the highest command in potato cultivation in Uruguay. And if potato cultivation is to make any progress in the country, these two factors should be given the highest priority.

Accordingly, in the implementation of technique research cooperation the highest priority should be rendered on: (1) research on the production technique of healthy, disease-free superior seed potato, (2) research on the selection of superior variety, (3) research on the control of disease and insect and (4) technique to supply potato all the year round. And upon the implementation thereof it is safe to assume that a good result is achievable. And in the implementation thereof experiment and research should be concentrated at Las Brujas Experiment Station in the light of shortage of men and materials in the country at present. Then it should be expanded to other stations in accordance with the progress in consolidation of various matters.

Table 7 Introduction experiment of 1977-fall-season potato varieties

No.	Name	Origin	No. of stems/hill	Wt. dried stem & leav.		Duration of 80 days after Planting					
				Gm/hill		Total wt.		Potato		Consumption-use (45mmφ)	
				Gm/hill	hill	Gm/hill	Kennebec	Gm/hill	Kennebec	Gm/hill	Kennebec
1.	ALKA	Poland	3.0	200	408	110	387	109	236	87	
2.	ALPHA	Holland	3.2	525	356	99	329	92	117	43	
3.	AMANDA	Poland	3.5	850	379	102	372	104	234	87	
4.	ASTARTE	Holland	1.6	400	201	54	190	53	117	43	
5.	AULA	West Germany	3.5	375	190	51	161	45	109	40	
6.	AZALIA	Poland	2.5	387	400	108	292	82	261	97	
7.	BARAKA	Holland	2.6	262	231	62	214	60	58	21	
8.	BLANKA	"	3.6	612	492	130	471	132	295	109	
9.	CARDINAL	"	2.7	462	289	78	267	75	95	35	
10.	CLEOPATRA	"	6.2	750	768	208	752	211	576	213	
11.	COLMO	"	4.0	350	490	132	467	131	336	124	
12.	DESIREE	"	3.5	475	359	97	331	93	158	58	
13.	DIANA	"	4.1	525	340	92	331	93	235	87	
14.	DONATA	"	2.4	625	407	110	403	113	254	94	
15.	DRAGA	"	3.9	587	101	52	180	51	110	41	
16.	ESTIMA	"	2.0	312	389	105	364	102	181	67	
17.	EXODUS	"	2.1	325	357	96	321	90	110	41	
18.	FAVORITA	"	3.4	387	351	95	320	90	113	42	
19.	GLORIA	"	2.7	312	484	131	458	129	218	81	
20.	GRANDIFOLIA	West Germany	4.0	300	273	74	263	74	123	46	
21.	GRACIA	Holland	4.1	587	508	137	496	139	281	104	
22.	ISNA	West Germany	3.2	450	281	76	260	73	101	37	
23.	JANKA	Poland	3.9	425	259	70	246	69	122	45	

No.	Name of variety	No. of days from planting to harvest.	Harvesting period				No. of days from planting to harvest.	No. of days from planting to harvest.	Aver. wt. of 45mm ϕ potato Gm	No. of days from planting to harvest.	No. of days from planting to harvest.	No. of days from planting to harvest.		
			Total yield Gm/hill	Shipment-use (28mm ϕ) Kennebec Gm/hill	Consumption-use (45mm ϕ) Kennebec Gm/hill	% Cons. use/Total yield							No. of Total potato/hill	28mm ϕ
1.	ALKA	119	560	553	65	467	57	83	6.7	2.6	3.5	133	98	217
2.	ALPHA	98	490	483	57	363	44	74	6.4	2.9	2.6	140	140	238
3.	AMANDA	126	865	850	100	817	100	94	4.6	0.7	3.3	247	91	217
4.	ASTARTE	126	616	600	70	440	54	71	6.5	3.1	2.7	163	112	238
5.	AULA	126	410	397	67	270	33	66	4.4	1.0	2.3	117	77	203
6.	AZALIA	98	630	620	73	514	63	81	5.6	1.9	3.1	166	112	210
7.	BARAKA	119	662	653	77	560	68	84	7.0	2.0	4.3	130	119	238
8.	BLANKA	105	237	222	26	133	16	56	4.6	2.2	1.4	95	105	210
9.	CARDINAL	105	661	657	77	540	66	82	7.7	2.5	4.5	120	105	210
10.	CLEOPATRA	105	530	523	61	433	53	82	5.0	1.8	2.9	149	105	210
11.	COLMO	105	660	653	77	583	71	88	5.8	1.5	3.9	149	105	210
12.	DESIREE	105	428	420	49	350	43	82	4.2	1.3	2.5	140	105	210
13.	DIANA	105	513	503	59	400	49	78	5.9	2.3	2.9	138	112	217
14.	DONATA	98	578	560	66	433	53	75	6.7	2.5	3.2	135	105	203
15.	DRAGA	119	663	660	78	593	72	89	6.9	2.0	4.6	129	133	252
16.	ESTIMA	119	538	527	62	407	50	76	5.6	1.9	3.0	136	98	217
17.	EXODUS	133	963	957	112	807	99	84	10.3	3.8	5.9	137	112	245
18.	FAVORITA	119	583	580	68	527	64	90	4.5	1.4	2.9	182	119	238
19.	GLORIA	105	550	540	63	473	58	86	5.0	1.2	3.2	148	98	203
20.	GRANDIFOLIA	105	594	580	68	467	57	79	6.5	2.5	3.1	151	105	210
21.	GRACIA	126	541	533	63	447	55	83	5.2	2.0	2.7	165	84	210
22.	ISNA	126	962	913	107	830	101	86	6.1	1.6	3.7	224	98	224
23.	JANKA	116	581	569	107	474	81	81	6.4	2.3	3.3	143	102	218

No.	Name of variety	No. of days from planting to harvest.	Harvesting period						No. of days from planting to harvest.	Aver. wt. of 45mm ϕ potato days	No. of clor-mancy days	No. of days from planting		
			Total yield		Potato Shipment-use		Consunb-use						No. of potato/hill	Aver. wt. of 45mm ϕ potato days
			Gm/hill	Kennebec	Gm/hill	Kennebec	Gm/hill	Kennebec						
24.	JAERIA	119	437	50	430	51	377	46	1.7	2.5	151	98	217	
25.	KROKUS	133	640	74	620	73	550	67	3.1	6.1	90	91	224	
26.	KENNEBEC	133	776	90	776	91	717	88	1.1	4.2	170	77	210	
27.	MARI-JKL	133	775	90	762	90	690	84	2.0	4.3	160	98	231	
28.	MULIA	119	577	67	560	66	477	52	2.5	3.5	122	84	203	
29.	OSTARA	98	618	71	606	71	494	60	2.2	3.3	150	98	196	
30.	PATRONES	126	484	56	473	56	370	45	2.0	2.7	137	91	217	
31.	POLA	119	867	100	862	101	787	96	2.6	6.1	129	98	217	
32.	POMPADOUR	126	506	58	504	59	427	52	2.5	3.4	125	77	203	
33.	RADOSA	98	768	89	746	88	594	73	3.2	4.1	145	119	217	
34.	R. PONTIAC	105	730	84	720	85	600	73	2.4	4.2	143	91	196	
35.	RENOVA	126	504	58	487	57	377	46	4.2	3.0	126	105	231	
36.	RESY	105	454	52	450	52	367	45	1.6	2.9	126	133	238	
37.	ROBINIA	140	616	71	616	72	557	68	1.3	3.2	174	98	238	
38.	RONDA	126	343	40	333	39	273	33	1.1	2.1	130	112	238	
39.	ROSANNA	126	409	47	400	47	303	37	2.4	2.4	126	105	231	
40.	RYS	119	439	51	411	48	327	40	2.7	2.6	126	112	231	
41.	SOKOY	98	500	58	492	58	407	50	7.0	3.1	131	112	210	
42.	TARPAN	126	578	61	516	60	383	47	3.1	2.6	147	77	203	
43.	VITORINI	105	294	34	281	32	214	26	2.0	1.5	143	98	203	
44.	VEKARO	119	758	88	737	87	627	77	3.8	4.3	146	98	217	
45.	WINALDA	105	346	40	327	38	200	24	2.4	1.6	125	112	217	
	Average	126	548	63	520	61	410	50	2.7	3.9	137	91	217	

Variety			No. of stem hill	Wt. dried stem & leav.		Duration of 80 days after planting				
No.	Name	Origin		Gm/hill	No. of stem hill	Total wt. Gm/hill	Shipment-use (28mmφ) Kennebec	Consumption-use (45mmφ) Kennebec	Potato Consumption-use (45mmφ) Kennebec	
24.	JAERIA	Holland	375	3.6	479	129	444	125	274	101
25.	KROKUS	Poland	287	2.2	292	79	284	80	153	57
26.	KENNEBEC	Canada	587	2.5	370	100	356	100	270	100
27.	MARIJKE	Holland	412	3.7	349	94	319	90	68	25
28.	MULTA	Holland	200	3.1	260	70	232	65	60	22
29.	OSTARA	Holland	412	3.1	428	116	423	119	362	134
30.	PATRONES	Holland	337	3.0	396	107	369	104	124	46
31.	POLA	Poland	250	2.5	126	34	116	32	42	15
32.	POMPADOUR	Holland	275	3.6	332	90	326	91	172	64
33.	RADOSA	Holland	500	3.6	310	84	292	82	96	36
34.	R. PONTIAC	Canada	550	2.7	424	114	405	114	343	127
35.	RENOVA	Holland	362	2.2	266	72	254	71	152	56
36.	RESY	Holland	500	3.5	421	114	403	113	217	80
37.	ROBINIA	Holland	487	4.7	478	129	448	126	301	111
38.	RONDA	Poland	800	1.6	117	32	100	28	26	10
39.	ROSANNA	Holland	362	2.7	370	100	353	99	136	50
40.	RYS	Poland	612	2.7	148	40	132	37	31	11
41.	SOKOY	Poland	650	2.0	152	41	129	36	58	21
42.	TARPAN	Poland	600	4.4	322	87	310	87	233	86
43.	VITORINI	Holland	337	3.5	433	117	415	116	210	78
44.	VEKARO	Holland	637	2.4	248	67	238	67	173	64
45.	WINALDA	Holland	300	2.2	470	127	462	130	353	131
Average			451	3.1	346		320		184	

Table 8 Experiment and research on potato performed at Las Brujas Experiment Station and other places

1. Variety introduction experiment, 1973, at the Las Bruja Experiment Station and after 1975 at Rocha
2. Variety comparison experiment, 1973, in potato producing district
3. Investigation subterranean stem potato growth curve of 20 varieties, 1975, at San Jose
4. Influence of planting and harvesting period on return and on the production of seed potato, 1975, at potato producing district
5. Experiment on the reaction by the difference in the application volume of N, P. K., 1973, at San Jose and Rocha
6. Decomposition of N, 1972, at San Jose and Rocha
7. Investigation of fertilization-effectiveness of various nitrogenous fertilizers made from different raw materials, 1976, at Rocha
8. Experiment on cultivation management before and after planting, 1975, a after 1976 at Rocha
9. Experiment on various crop rotation systems customarily combined in potato cultivation, 1976, at San Jose
10. Break-down of dormancy of two varieties, Kennebec and Pontiac, 1975, at Las Brujas Experiment Station
11. Impact of planting density and size of seed potato on return, at Las Brujas and San Jose, from 1976 at Rocha
12. Research on Storage management of seed potato, 1975, at Las Brujas Experiment Station
13. Survey on the effectiveness of various types of intertillage, 1973, at Las Brujas Experiment Station and 1976 at Rocha
14. Influence of seed potato's storage conditions on the productive power of next seed potato crop, 1976, at Rocha
15. Experiment on the comparison of various irrigation methods, 1976, at potato producing district
16. Investigation of Arthropoda with *Solanum melongena* as host plant, at potato producing district
17. Investigation of annual and seasonal biology of aphid which inflicts damage on potato in various producing districts, 1974, at San Jose, after 1975 at Rocha
18. Movement survey of butterfly population with potato as host plant, 1975, at Las Brujas Experiment Station
19. Movement survey of leaf hopper population with potato as host plant, 1975, at Las Brujas Experiment Station

20. Movement survey of leaf beetle population which inflict damage on potato, 1975, at Las Brujas Experiment Station
21. Movement survey of Sirphydae population which stick to potato, 1975, at Las Brujas Experiment Station
22. Movement survey of Aphelinus population which stick to potato, 1975, at Las Brujas Experiment Station
23. Movement survey of thrips population which inflict damage on potato, 1975, at Las Brujas Experiment Station
24. Movement survey of bug population which inflict damage on potato, 1975, at Las Brujas Experiment Station
25. Control of aphid and other injurious insects which inflict damage on potato and possibility in the use of natural enemy, 1973, at Las Brujas Experiment Station
26. Implementation of aphid outbreak forecast warning system in potato cultivation, 1974, at San Jose and Rocha
27. Identification of disease damage of potato, 1973, at potato producing district
28. Bio-ecology of Phytophthora of potato, 1975, at potato producing district
29. Bio-ecology of Alternaria solani of potato, 1975, at potato producing district
30. Chemical control of Phytophthora infestans of potato, 1973, at Las Brujas Station
31. Control of Alternaria solani of potato, 1974, at Las Brujas Experiment Station
32. Investigation and research of climatological demarcation of districts in Canelones, Montevideo, San Jose and Rocha, related to the outbreak of Phytophthora infestans and Alternaria solani at Canelones, Montevideo, San Jose and Rocha in 1975
33. Evaluation of potato disease outbreak forecast warning system and elucidation of infection route, 1973, at Las Brujas Experiment Station and Rocha
34. Implementation of potato disease outbreak forecast warning system, 1974, at San Jose, Montevideo, Canelones and Rocha
35. Evaluation of outbreak district and period of virus diseased damage, 1975, at San Jose, Rocha and Tacuarembó
36. Outbreak forecast of Pseudomonas Solanacearum in potato producing districts, 1975, at potato producing districts
37. Selection of maternal line seed potato in the varieties of Kennebec and Pontiac, 1975, in potato producing districts

8. History and Result of R/D Consultation with the Uruguayan Side

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8. History and Result of R/D Consultation with the Uruguayan Side

The Japanese Implementation Survey Team has, during its stay in Uruguay, discussed three times with Ing. Agr. Juan A. Curotto, 'Alberto Boerger', Agricultural Investigation Center, Ministerio de Agricultura y Pesca, Ing. Agr. Cayo Mario Tavella, Director, Estación Experimental La Estanzuela of the same Ministerio, Dr. Armando Rabuffetti, Director, Las Brujas Experiment Station, Dra. Ines Ubici de Busso, Dirección para Asuntos Economicos Comerciales, Ministerio de Relaciones Exteriores and Ing. Agr. Luis E. Plouvier, of P.C.D. and once with Ing. Agr. Juan C. Cassou, Subsecretario de Agricultura y Pesca and Deputy-Director of P.C.D., and upon having repeated the discussion arrived at a basic agreement as stated hereunder at the level of the Implementation Survey Team.

(1) R/D V-1-d (domestic field trip of Japanese experts)

Japanese side demanded a payment for traveling allowance and offer of automobile (including gasoline cost), but the Uruguayan side advocated that a payment for traveling allowance is difficult in the light that Japanese experts are not the employees of experiment station and there is no incidence for the payment of domestic travelling expense to foreign experts, although the offer of automobile (including gasoline cost) is possible by allocating automobile supplied by Japan. Finally it has been agreed to specify the burden of gasoline cost and by deleting the wording, 'payment of field trip expense'.

(2) R/D V-1-3 (supply of living quarter to Japanese experts)

Upon demanding the supply of furnished living quarter to Japanese experts by our side the Uruguayan side strongly advocated that the matter is particularly difficult because no living quarter is provided to the employees of the Uruguayan national government and there is no such incidence in the case of receiving foreign aid. The Survey Team pointed out that in all cooperation of Japan with other countries supply of living quarter is stipulated. So instead of deleting this clause it has been proposed to insert a wording, 'upon considering the conditions of actual place and financial capacity of the agency concerned', to which the Uruguayan side agreed.

(3) R/D VI (person to be in charge of the Project)

Japanese side asked which of the two agencies will be responsible for the Project the Ministry of Agriculture and Fishery or Alberto Boerger 'Agricultural Investigation' Center. The Uruguayan side desired to appoint Alberto Boerger Center. It was agreed as proposed.

(4) R/D VII (claims against Japanese experts)

Japanese side advocated to insert a clause in R/D that 'the Government of Uruguay shall undertake to bear claims if any arises, against the Japanese experts engaged in the Project resulting from, occurring in the course of, or otherwise connected with the discharge of their official functions in Uruguay. However, the provision shall not apply to a case where any incidence occurs by willful misconduct or gross negligence of Japanese experts'.

Against the proposal the Uruguayan side advocated that in the light of a fact the Japanese experts are to be deemed by the Presidential Order as a special mission under the provisions of the United Nations' 'Convention on Special Missions and Optional Protocol concerning the Compulsory Settlement of Dispute', in case of any accident, although the party concerned shall not be put on trial, but because the Civil Code provides that the State shall not bear responsibility for any misconduct of individual, the Government of Uruguay can not bear the

responsibility of indemnification for damage. So actually experiment station shall bear the responsibility to cover by its own insurance (labor damage insurance covering the whole experiment station including the site and test farm and by automobile insurance at the time of field trip).

The survey Team advocated that this is a matter of vital importance on which a failure or success of the Project rests and further stressed that the matter has been entered as inevitable stipulation in the R/D with Argentine and Indonesia and further stressed that a clause of exemption from obligation is provided for in the exchange document of the West Germany's cooperation with Uruguay and in the light of a provision as provided for in the Constitution of Uruguay (responsibility of the State) that Japanese side can not understand a claim of the Uruguayan side that there is no legal basis. The team requested the Uruguayan side for reexamination. As a result thereof the Uruguayan side replied to acknowledge the insertion of a clause for the obligation-exemption in R/D by adding the wording, 'based upon the present laws and regulations of Uruguay'. With respect to this matter the Survey Team expressed their view that there was no problem, but made reservation to refer the matter to the home government. At that stage there was no time, so the Team returned home.

(5) R/D Annex III (privileges, exemption and benefits)

The Japanese side demanded that Uruguay should guarantee Japanese experts and their families (1) exemption from income tax, (2) exemption from import duty and any other charge on personal and household effects and (3) free medical service. The Uruguayan side said that there would be no problem in (1) and (2) as proposed by the Japanese side but for (3) it is difficult in the light of the medical treatment system of the country. The Survey Team agreed to change the clause to 'in case of emergency Alberto Boerger Agricultural Investigation Center shall do its utmost to introduce doctor and hospital and to obtain necessary help and medical assistance.'

(6) R/D Annex V-1-2 (Uruguayan side counterpart)

It has been agreed by both sides that the Director of the Project shall be the Director of the Las Brujas Experiment Station.

(7) R/D Annex (Joint Committee)

The Joint Committee shall be composed of a Chairman, Director of Alberto Boerger Agricultural Investigation Center, Director of Las Brujas Experiment Station and counterparts of Japanese experts.

Adjustment of R/D pending question 'Exemption of obligation of claim against Japanese experts' after the return of the Survey Team.

The Survey Team, upon their return, reported to the Japanese authorities concerned on the result of R/D negotiation and arrived at basic agreement. However, with respect to this provision, a fact that a clause agreed at the Survey Team level, to insert a clause at the opening of the provision 'based upon the present laws and regulations of Uruguay' requires a document stating the guarantee of exemption from obligation. So adjustment has been carried out through the Japanese Embassy in Uruguay and finally, upon the interchange of an oral statement between the Ministry of Foreign Affairs of Uruguay and Japanese Embassy in Uruguay that by adding a clause, 'based upon the present laws and regulations of Uruguay' at the opening of the provision, exemption from obligation against Japanese expert is to be ensured. Thus, the whole R/D agreement has been finalized.

At this point, after having the wordings corrected and upon compiling two copies of R/D as formal document and on behalf of the Japanese side it was signed by the Director of the Agricultural Development Cooperation Department of JICA and was sent to the authorities concerned of Uruguay through the Japanese Embassy in Uruguay in early July. The document was signed by the Chief of Secretariat of the Ministry of Agriculture and Fishery on July 19 and the agreed and signed R/D document has been sent to Japan in mid-August.

9. THE RECORD OF DISCUSSIONS BETWEEN THE JAPANESE IMPLEMENTATION
SURVEY TEAM AND THE AUTHORITIES CONCERNED OF THE GOVERNMENT
OF THE ORIENTAL REPUBLIC OF URUGUAY FOR THE JAPAN-URUGUAY
VEGETABLE RESEARCH COOPERATION PROJECT



9. THE RECORD OF DISCUSSIONS BETWEEN THE JAPANESE IMPLEMENTATION SURVEY TEAM AND THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE ORIENTAL REPUBLIC OF URUGUAY FOR THE JAPAN-URUGUAY VEGETABLE RESEARCH COOPERATION PROJECT

The Japanese Implementation Survey Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as JICA) visited the Oriental Republic of Uruguay from February to March for the purpose of working out details of the technical cooperation program concerning the Japan-Uruguay Vegetable Research Cooperation Project in Uruguay.

During its stay in Uruguay, the Team exchanged views and had a series of discussions with the Uruguayan authorities concerned in respect of the desirable measures to be taken by both Governments for the successful implementation of the above-mentioned project.

After the Team returned to Japan, several discussions and exchange of views took place between the Japanese and Uruguayan authorities concerned through the Embassy of Japan in Montevideo to finalized the Record of Discussions for the Project.

As a result of the above discussions and exchange of views, JICA and the Uruguayan authorities concerned agreed to recommend to their respective Governments the matter referred to in the document attached hereto.

Montevideo, 19/7, 1978

For the Japan International
Cooperation Agency

Shoji Kanatsu
Director,
Agricultural Development
Cooperation Department, JICA

For the Ministry of Agriculture and
Fishery of Uruguay

Cnel. Juan C. Fernández Bertoli
Director General
De Secretaria De Estado

THE ATTACHED DOCUMENT

I. COOPERATION BETWEEN BOTH GOVERNMENTS

1. The Government of Japan and the Government of the Oriental Republic of Uruguay will cooperate with each other in implementing the Japan-Uruguay Vegetable Research Cooperation Project (hereinafter referred to as "the Project") for the purpose of improving the vegetable production techniques including potatoes through the research activities at mainly Las Brujas Experiment Station.

2. The Project will be implemented in accordance with the Master Plan which is given in Annex I.

II. DISPATCH OF JAPANESE EXPERTS

1. In accordance with the laws and regulations in force in Japan, the Government of Japan will take necessary measures through JICA to provide at its own expense services of the Japanese experts as listed in Annex II through the normal procedures under the Technical Cooperation Scheme of Japan.

2. The Japanese experts referred to in 1. above and their families will be granted in the Oriental Republic of Uruguay the privileges, exemptions and benefits as listed in Annex III no less favourable than those granted to experts of third countries or international organizations performing similar missions.

III. PROVISION OF MACHINERY AND EQUIPMENT

1. In accordance with the laws and regulations in force in Japan, the Government of Japan will take necessary measures through JICA to provide at its own expense such machinery, equipment and other materials necessary for the implementation of the Project as listed in Annex IV, through the normal procedures under the Technical Cooperation Scheme of Japan.

2. The article referred to in 1. above will become the property of the Government of the Oriental Republic of Uruguay upon being delivered c.i.f. to the Uruguayan authorities concerned at the ports and/or airports of disembarkation, and will be utilized exclusively for the implementation of the Project in consultation with the Japanese experts referred to in Annex II.

IV. TRAINING OF URUGUAYAN PERSONNEL IN JAPAN

1. In accordance with the laws and regulations in force in Japan, the Government of Japan will take necessary measures through JICA to receive at its own expense the Uruguayan personnel connected with the Project for technical training or observation tour in Japan through the normal procedures under the Technical Cooperation Scheme of Japan.

2. The Government of the Oriental Republic of Uruguay will take necessary measures through the Ministry of Agriculture and Fishery to ensure that the knowledge and experience acquired by the Uruguayan personnel from technical training in Japan will be utilized effectively for the implementation of the Project.

V. MEASURES TO BE TAKEN BY THE GOVERNMENT OF THE ORIENTAL REPUBLIC OF URUGUAY

1. In accordance with the laws and regulations in force in the Oriental Republic of Uruguay, the Government of the Oriental Republic of Uruguay will take necessary measures to provide at its own expense through the Ministry of Agriculture and Fishery:

- a. Services of the Uruguayan experts and other personnel as listed in Annex V;
- b. Land, buildings and facilities as listed in Annex VI;
- c. Supply or replacement of machinery, equipment, instrument, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project (except for those provided by the Government of Japan through JICA under III above);
- d. Transportation facilities including fuel fees for the Japanese experts for the official travel within the Oriental Republic of Uruguay;
- e. Suitably furnished accommodations for the Japanese experts and their families, taking into account local conditions and financial possibilities of Uruguayan authorities concerned.

2. In accordance with the laws and regulations in force in the Oriental Republic of Uruguay, the Government of the Oriental Republic of Uruguay will take necessary measures through the Ministry of Agriculture and Fishery to meet the following expenses:

- a. Expenses necessary for construction or improvement of experiment fields and their incidental facilities for the implementation of the Project;
- b. Expenses necessary for the transportation within the Oriental Republic of Uruguay of the articles referred to in III. above as well as for the installation, operation and maintenance thereof;
- c. Customs duties, internal taxes and any other charges imposed in the Oriental Republic of Uruguay on the articles referred to in III. above;
- d. All running expenses necessary for the implementation of the Project.

VI. ADMINISTRATION OF THE PROJECT

1. Alberto Boerger Agricultural Investigation Center of the Government of the Oriental Republic of Uruguay will be responsible for the administration and implementation of the Project, and the Japanese experts will provide necessary technical guidance and advice for the implementation of the Project.

2. For the successful implementation of the Project, a Joint-Committee will be established as specified in Annex VII and will meet regularly. The Committee will formulate the details of the Master Plan referred to in Annex I and the annual operational work plan of the Project. The details of the Master Plan and the annual operational work plan will be submitted to the authorities concerned of the two Governments for their approval.

3. The Project will be implemented with close cooperation extended by the agricultural agencies and institutions concerned of the Oriental Republic of Uruguay.

VII. CLAIMS AGAINST JAPANESE EXPERTS

In accordance with the laws and regulations in force in the Oriental Republic of Uruguay, The Government of the Oriental Republic of Uruguay undertakes to bear claims, if any arises, against the Japanese experts engaged in the Project resulting from, occurring in the course of, or otherwise connected with the discharge of their official functions in the Oriental Republic of Uruguay except for those arising from the willful misconduct or gross negligence of the Japanese experts.

VIII. MUTUAL CONSULTATION

There will be mutual consultation between the two Governments on any issues arising from, or in connection with this Attached Document.

IX. TERM OF COOPERATION

The duration of the technical cooperation for the Project under this Attached Document will be three years from July 19 of 1978, and the authorities concerned of the two Governments will hold mutual consultation concerning the technical cooperation thereafter if necessity arises.

Annex I. Master Plan of the Project

1. The Project will be implemented for improving the vegetable production techniques including potatoes through the research activities, aiming at increase in production, improvement in quality and year-round production of vegetables in Uruguay.

2. The Project will be implemented through the following research activities:

a. Research works on the following subjects;

- (1) Breeding technique of vegetables
- (2) Cultivation method of vegetables including protected cultivation
- (3) Breeding technique of potatoes
- (4) Cultivation method of potatoes
- (5) Disease and insect control on vegetables
- (6) Disease and insect control on potatoes

b. Exchange of information, samples, materials and research reports for the Project.

c. Development of research capability of the Uruguayan researchers on the subjects mentioned in 2-a.

d. Other activities agreed by the authorities concerned of the two Governments.

3. Activities mentioned in 2. will be conducted in Las Brujas Experiment Station. The Station will conduct such activities in cooperation with other stations listed 4. below.

4. Other stations and their cooperation activities

<u>Name of station</u>	<u>Cooperation activities</u>
Del Norte Experiment Station	Implementation of applied research on potato varieties and their production methods
Litoral Norte Experiment Station	Implementation of applied research on vegetable varieties and their production methods

Annex II. List of Japanese experts

1. Researchers

- a. Vegetable breeding
- b. Vegetable cultivation
- c. Potato
- d. Plant pathology
- e. Entomology

2. Liaison Officer

Notes:

- 1) Team Leader will be assigned among the researchers specified in Annex II-1 above.
- 2) The experts will reside at Las Brujas Experiment Station, and will make their rounds of the other stations mentioned in Annex I-4 to provide technical guidance when necessity arises.
- 3) Some additional short-term experts in the fields mentioned above as well as others may also be dispatched when necessity arises.

Annex III. Privileges, exemption and benefits

1. Exemption from income tax and charges of any kind imposed on or in connection with the living allowances remitted from abroad.
2. Exemptions from import duties and any other charge in respect of personal and household effects, including one motor vehicle per family, which may be brought into the Oriental Republic of Uruguay from abroad.
3. In the case of accident or emergency, the Center referred in VI-1 above, will help by all its available means to obtain the necessary help and medical assistance to the Japanese experts and their families.

Annex IV. List of the articles to be provided by the Government of Japan

1. Equipment, machinery, implements and tools for laboratory work, and their spare parts;
2. Equipment, machinery, implements and tools for field work, and their spare parts;
3. Vehicles;
4. Fertilizer, agricultural chemicals and materials for chemical control;
5. Books and other necessary printed matters;
6. Audio-Visual aids;
7. Other necessary small-scale equipment and materials.

Annex V. The Uruguayan experts and other personnel

1. Experts
 - a. Director
 - b. Counterpart researchers for the Japanese researchers
2. Other personnel
 - a. Laboratory assistants
 - b. A private secretary for the leader of the Japanese experts

- c. Clerical personnel including a typist
- d. Drivers and other service personnel
- e. Field workers

Note:

At least one expert in charge of the Project will be posted at Litoral Norte Experiment Station and Del Norte Experiment Station respectively.

Annex VI. List of land, buildings and other facilities

- 1. Offices for Japanese Team Leader and experts
- 2. Laboratories and their incidental facilities
- 3. Meeting room
- 4. Glass-house and net-house
- 5. Facilities for seeds storage
- 6. Garage
- 7. Store-houses for machinery and other materials
- 8. Experiment fields and their incidental facilities

Las Brujas Experiment Station about 3 ha
 Del Norte Experiment Station about 1 ha
 Litoral Norte Experiment Station about 1 ha

- 9. Other necessary land and buildings

Annex VII. The composition of the Joint-Committee

Chairman Director of Alberto Boerger Agricultural
 Investigation Center

Japanese side:

Team Leader

Researchers

Liaison Officer

Uruguayan side:

Director, Las Brujas
 Experiment Station

Uruguayan counterparts to the
 Japanese experts

Note:

An official of the Embassy of Japan may attend the meeting of the Joint-Committee as an observer.

10. Living Environment of Uruguay

10. Living Environment of Uruguay

The Oriental Republic of Uruguay with its origin at the east bank of the Uruguay River, located between the two large South American countries of Argentina and Brazil with the whole country belonging to temperate zone climatically, has a population of about 2.8 million and the land acreage of 187,000 Km². This national land acreage is larger than that of the Netherland, Switzerland and Denmark, twice that of Belgium, a little more than a half of Japan and twice that of Portugal.

Uruguay is contiguous to the Uruguay River to the west and to the La Plata River and the Atlantic Ocean to the south with 240 Km coastal line and 850 Km river bank line.

The topography of the country is not steep, composed of the continuation of small hills with round tops, gentle sloping land and flat plain. Even the highest hills of the southern region do not exceed 500 m elevation with average elevation being below 200 m.

As for the land utilization of the country with such a large flat land, perhaps because of the country's racial trail, natural pasture land occupies 64% and despite a fact that flat land is so favorable as cultivating land, it accounts for only 10%, 2.5% for forest and 5.5% non-productive land and the rest for rivers and roads.

The shape of the country is triangular from lat. 30°05'S to 35°S and from long. 58°05'W to 58°25'W. Upon applying this position to Japan's latitude the country's capital, Montevideo facing the La Planata River at the southern tip of Uruguay is the same latitude as that of Kyoto of Japan and the northern tip of Uruguay is the same latitude as that of Tokara Islands of Kagoshima Prefecture.

The country's climate is warm and moderate. Moreover, it is healthy in that a good weather prevails for the nine months of a year. Four seasons, although the exact opposite of Japan, are characterized by the atmospheric temperature of 19°C in spring, 22°C in summer, 15°C in fall and 12°C in winter. June is the coldest month with high humidity and January is the hottest and dry. Seasonal changes in atmospheric temperature are similar to those of Japan but the difference in atmospheric temperature of Montevideo's summer and winter is not so rigorous as that of Kyoto. On the other hand, the country is blessed with the annual rainfall of about 1,000 mm throughout a year about 500mm less than that of Tokyo, and in stark contrast to highly humid summer and dry winter of Japan Uruguay's summer is dry and highly humid in winter. Atmospheric temperature does not drop below the freezing point in winter and also there is no snow. Furthermore, practically such torrid heat and severe cold as typified by 'tropical night' of mid-summer and 'dry and high wind' of Tokyo's summer and winter can be never experienced in Uruguay. Accordingly, the country is completely free from tropical disease and only a very few cases of infectious disease outbreak that the living environment from the standpoint of climate is one of the most pleasant countries the world over accepting Japanese experts dispatched by JICA. Particulaly, in Urugay a gentle wind blowing from the Atlantic Ocean softens the heat of mid-summer and as Montevideo and many summer resort places along the sea coast are the heavens for summer vacationers from home and the neighboring Argentina that to Japanese experts and their families who will live in Montevideo the sea coast district of the city will be the most pleasant place to live in their lives.

Although Uruguay is a nation found by the immigrants from Spain and Italy, from the eyes of Japanese the country is a mono-white-race nation. The country's educational level, culture and social custom are completely European. Uruguay is also famous for her complete social welfare system, often referred to as

Switzerland of South America'.

When Japanese experts are dispatched overseas, more often than not some of their actions and talks are put under a taboo in some countries because of the difference in religion. But in that respect Uruguay is a civilized and broad-minded country. The country is not bound by specific faith, and that not only under the Constitution but in the relationship among citizens. There is a complete religious freedom and all religions are respected. Catholic faith is dominant in most of the Latin American countries as witnessed by a fact that Catholic church is built in the central plaza not only in large and small cities and town but in remote villages. In some countries people are so dedicated to their religious faith sometimes that introduction of new technique or thinking to change the existing concept of value meets resistance. In Uruguay there is no such negative phase of religious faith that it is certainly safe to assume that the country is so pleasant that Japanese experts can tackle their duties much easier in comparison to other Latin American Countries.

The official language is Spanish. It is a signal significance that Uruguay is the very first country among the Spanish-speaking countries receiving Japan's cooperation in agricultural research. To Uruguay it is also the first time of receiving cooperation in the form of one-set-project and that rather than from Japan but from the Orient. Accordingly, all of us concerned with the Project highly hope that the Project will open a new page in the relationship between Japan and Uruguay. Therefore, we do respectfully request all those concerned in both countries to render their assistance and cooperation to complete this Project, overcoming the difference in history, culture and customs.

11. List of the Uruguayan Officials Concerned Who Consulted with the
Implementation Survey Team

11. List of the Uruguayan Officials Concerned Who consulted with the Implementation Survey Team

Excm. Dr. Estanislao Valdes Otero

Ministro de Agricultura y Pesca

Ing. Agr. Juan C. Cassou

Subsecretario de Agricultura y Pesca

Ing. Agr. Juan A. Curotto

Director General Interino del Centro de Investigación Agrícolas
"Alberto Boerger"

Ing. Agr. Cayo Mario Tavella

Director, Estación Experimental La Estanzuela

Dr. Armand Rabuffetti

Director, Estación Experimental Las Brujas

Ing. Agr. Hector Masa

Director, Estación Experimental Litoral Norte

Ing. Agr. Felipe Canale Valdez

Estacion Experimental Las Brujas

Ing. Agr. Cesar Maeso Estaeión Experimental Las Brujas

Ing. Agr. Julio Mendez

Estación Experimental Del Norte

Ing. Agr. Luis Amendola

Estación Experimental Del Norte

Dr. Adolfo Donamari

Ministerio de Relaciones Exteriores
Director para Asuntos Económicos Comerciales

Dra. Ines Ubici de Busso

Ministerio de Relaciones Exteriores
Dirección para Asuntos Economicos Comerciales

Brig. Jose D. Cardozo

Secretario de Planeamientos, Coordinación y Difusion

Cnel. Luis W. Cicalese

Subsecretario de la P.C.D.

Ing. Agr. Luis E. Plouvier P.C.D.

CONVENTION ON SPECIAL MISSIONS
AND
OPTIONAL PROTOCOL CONCERNING THE COMPULSORY
SETTLEMENT OF DISPUTES
(in English)

Treaty: Done at New York, December 8, 1969
As to the entry into force, see Article 53

Protocol: Done at New York, December 16, 1969
As to the entry into force, see Article 7

(Source: United Nations General Assembly:
A/RES/2530 (XXIV) 16 December 1969)

CONVENTION ON SPECIAL MISSIONS

The States Parties to the present Convention,

Recalling that special treatment has always been accorded to special missions,

Having in mind the purposes and principles of the Charter of the United Nations concerning the sovereign equality of States, the maintenance of international peace and security and the development of friendly relations and co-operation among States,

Recalling that the importance of the question of special missions was recognized during the United Nations Conference on Diplomatic Intercourse and Immunities and in resolution I adopted by the Conference on 10 April 1961,

Considering that the United Nations Conference on Diplomatic Intercourse and Immunities adopted the Vienna Convention on Diplomatic Relations, which was opened for signature on 18 April 1961,

Considering that the United Nations Conference on Consular Relations adopted the Vienna Convention on Consular Relations, which was opened for signature on 24 April 1963,

Believing that an international convention on special missions would complement those two Conventions and would contribute to the development of friendly relations among nations, whatever their constitutional and social systems,

Realizing that the purpose of privileges and immunities relating to special missions is not to benefit individuals but to ensure the efficient performance of the functions of special missions as missions representing the State,

Affirming that the rules of customary international law continue to govern questions not regulated by the provisions of the present Convention,

Have agreed as follows:

Article 1

Use of terms

For the purposes of the present Convention:

- (a) a "special mission" is a temporary mission, representing the State, which is sent by one State to another State with the consent of the latter for the purpose of dealing with it on specific questions or of performing in relation to it a specific task;
- (b) a "permanent diplomatic mission" is a diplomatic mission within the meaning of the Vienna Convention on Diplomatic Relations;
- (c) a "consular post" is any consulate-general, consulate, vice-consulate or consular agency;
- (d) the "head of a special mission" is the person charged by the sending State with the duty of acting in that capacity;
- (e) a "representative of the sending State in the special mission" is any person on whom the sending State has conferred that capacity;
- (f) the "members of a special mission" are the head of the special mission, the representatives of the sending State in the special mission and the members of the staff of the special mission;
- (g) the "members of the staff of the special mission" are the members of the diplomatic staff, the administrative and technical staff and the service staff of the special mission;
- (h) the "members of the diplomatic staff" are the members of the staff of the special mission who have diplomatic status for the purposes of the special mission;
- (i) the "members of the administrative and technical staff" are the members of the staff of the special mission employed in the administrative and technical service of the special mission;
- (j) the "members of the service staff" are the members of the staff the special mission employed by it as household workers or for similar tasks;
- (k) the "private staff" are persons employed exclusively in the private service of the members of the special mission.

Article 2

Sending of a special mission

A State may send a special mission to another State with the consent of the latter, previously obtained through the diplomatic or another agreed or mutually acceptable channel.

Article 3

Functions of a special mission

The functions of a special mission shall be determined by the mutual consent of the sending and the receiving State.

Article 4

Sending of the same special mission to two or more States

A State which wishes to send the same special mission to two or more States shall so inform each receiving State when seeking the consent of that State.

Article 5

Sending of a joint special mission by two or more States

Two or more States which wish to send a joint special mission to another State shall so inform the receiving State when seeking the consent of that State.

Article 6

Sending of special missions by two or more States in order to deal with a question of common interest

Two or more States may each send a special mission at the same time to another State, with the consent of that State obtained in accordance with article 2, in order to deal together, with the agreement of all of these States, with a question of common interest to all of them.

Article 7

Non-existence of diplomatic or consular relations

The existence of diplomatic or consular relations is not necessary for the sending or reception of a special mission.

Article 8

Appointment of the members of the special mission

Subject to the provisions of articles 10, 11 and 12, the sending State may freely appoint the members of the special mission after having given to the receiving State all necessary information concerning the size and composition of the special mission, and in particular the names and designations of the persons it intends to appoint. The receiving State may decline to accept a special mission of size that is not considered by it to be reasonable, having regard to

circumstances and conditions in the receiving State and to the needs of the particular mission. It may also, without giving reasons, decline to accept any person as a member of the special mission.

Article 9

Composition of the special mission

1. A special mission shall consist of one or more representatives of the sending State from among whom the sending State may appoint a head. It may also include diplomatic staff, administrative and technical staff and service staff.

2. When members of a permanent diplomatic mission or of a consular post in the receiving State are included in a special mission, they shall retain their privileges and immunities as members of their permanent diplomatic mission or consular post in addition to the privileges and immunities accorded by the present Convention.

Article 10

Nationality of the members of the special mission

1. The representatives of the sending State in the special mission and the members of its diplomatic staff should in principle be of the nationality of the sending State.

2. Nationals of the receiving State may not be appointed to a special mission except with the consent of that State, which may be withdrawn at any time.

3. The receiving State may reserve the right provided for in paragraph 2 of this article with regard to nationals of a third State who are not also nationals of the sending State.

Article 11

Notifications

1. The Ministry of Foreign Affairs of the receiving State, or such other organ of that State as may be agreed, shall be notified of:

(a) the composition of the special mission and any subsequent changes therein;

(b) the arrival and final departure of members of the mission and the termination of their functions with the mission;

(c) the arrival and final departure of any person accompanying a member of the mission;

(d) the engagement and discharge of persons resident in the receiving State as members of the mission or as private staff;

(e) the appointment of the head of the special mission or, if there is none, of the representative referred to in paragraph 1 of article 14, and of any substitute for them;

(f) the location of the premises occupied by the special mission and of the private accommodation enjoying inviolability under articles 30, 36 and 39, as well as any other information that may be necessary to identify such premises and accommodation.

2. Unless it is impossible, notification of arrival and final departure must be given in advance.

Article 12

Persons declared non grata or not acceptable

1. The receiving State may, at any time and without having to explain its decision, notify the sending State that any representative of the sending State in the special mission or any member of its diplomatic staff is persona non grata or that any other member of the staff of the mission is not acceptable. In any such case, the sending State shall, as appropriate, either recall the person concerned or terminate his functions with the mission. A person may be declared non grata or not acceptable before arriving in the territory of the receiving State.

2. If the sending State refuses, or fails within a reasonable period, to carry out its obligations under paragraph 1 of this article, the receiving State may refuse to recognize the person concerned as a member of the special mission.

Article 13

Commencement of the functions of a special mission

1. The functions of a special mission shall commence as soon as the mission enters into official contact with the Ministry of Foreign Affairs or with such other organ of the receiving State as may be agreed.

2. The commencement of the functions of a special mission shall not depend upon presentation of the mission by the permanent diplomatic mission of the sending State or upon the submission of letters of credence or full powers.

Article 14

Authority to act on behalf of the special mission

1. The head of the special mission or, if the sending State has not appointed head, one of the representatives of the sending State designated by the latter is authorized to act on behalf of the special mission and to address communications to the receiving State. The receiving State shall address communications concerning the special mission to the head of the mission, or, if there is none, to the representative referred to above, either direct or through the permanent diplomatic mission.

2. However, a member of the special mission may be authorized by the sending State, by the head of the special mission or, if there is none, by the representative referred to in paragraph 1 of this article, either to substitute for the head of the special mission or for the aforesaid representative or to perform particular acts on behalf of the mission.

Article 15

Organ of the receiving State with which official business is conducted

All official business with the receiving State entrusted to the special mission by the sending State shall be conducted with or through the Ministry of Foreign Affairs or with such other organ of the receiving State as may be agreed.

Article 16

Rules concerning precedence

1. Where two or more special missions meet in the territory of the receiving State or of a third State, precedence among the missions shall be determined, in the absence of a special agreement, according to the alphabetical order of the names of the States used by the protocol of the State in whose territory the missions are meeting.

2. Precedence among two or more special missions which meet on a ceremonial or formal occasion shall be governed by the protocol in force in the receiving State.

3. Precedence among the members of the same special mission shall be that which is notified to the receiving State or to the third State in whose territory two or more special missions are meeting.

Article 17

Seat of the special mission

1. A special mission shall have its seat in the locality agreed by the States concerned.

2. In the absence of agreement, the special mission shall have its seat in the locality where the Ministry of Foreign Affairs of the receiving State is situated.

3. If the special mission performs its functions in different localities, the States concerned may agree that it shall have more than one seat from among which they may choose one as the principal seat.

Article 18

Meeting of special missions in the territory of a third State

1. Special missions from two or more States may meet in the territory of a third State only after obtaining the express consent of that State, which retains the right to withdraw it.
2. In giving its consent, the third State may lay down conditions which shall be observed by the sending States.
3. The third State shall assume in respect of the sending States the rights and obligations of a receiving State to the extent that it indicates in giving its consent.

Article 19

Right of the special mission to use the flag and emblem of the sending State

1. A special mission shall have the right to use the flag and emblem of the sending State on the premises occupied by the mission, and on its means of transport when used on official business.
2. In the exercise of the right accorded by this article, regard shall be had to the laws, regulations and usages of the receiving State.

Article 20

End of the functions of a special mission

1. The functions of a special mission shall come to an end, inter alia, upon:
 - (a) the agreement of the States concerned;
 - (b) the completion of the task of the special mission;
 - (c) the expiry of the duration assigned for the special mission, unless it is expressly extended;
 - (d) notification by the sending State that it is terminating or recalling the special mission;
 - (e) notification by the receiving State that it considers the special mission terminated.
2. The severance of diplomatic or consular relations between the sending State and the receiving State shall not of itself have the effect of terminating special missions existing at the time of such severance.

Article 21

Status of the Head of State and persons of high rank

1. The Head of the sending State, when he leads a special mission, shall enjoy in the receiving State or in a third State the facilities, privileges and immunities accorded by international law to Heads of State on an official visit.

2. The Head of the Government, the Minister for Foreign Affairs and other persons of high rank, when they take part in a special mission of the sending State, shall enjoy in the receiving State or in a third State, in addition to what is granted by the present Convention, the facilities, privileges and immunities accorded by international law.

Article 22

General facilities

The receiving State shall accord to the special mission the facilities required for the performance of its functions, having regard to the nature and task of the special mission.

Article 23

Premises and accommodation

The receiving State shall assist the special mission, if it so requests, in procuring the necessary premises and obtaining suitable accommodation for its members.

Article 24

Exemption of the premises of the special mission from taxation

1. To the extent compatible with the nature and duration of the functions performed by the special mission, the sending State and the members of the special mission acting on behalf of the mission shall be exempt from all national regional or municipal dues and taxes in respect of the premises occupied by the special mission, other than such as represent payment for specific services rendered.

2. The exemption from taxation referred to in this article shall not apply to such dues and taxes payable under the law of the receiving State by persons contracting with the sending State or with a member of the special mission.

Article 25

Inviolability of the premises

1. The premises where the special mission is established in accordance with the present Convention shall be inviolable. The agents of the receiving State may not enter the said premises, except with the consent of the head of the special mission or, if appropriate, of the head of the permanent diplomatic mission of the sending State accredited to the receiving State. Such consent may be assumed in case of fire or other disaster that seriously endangers public safety, and only in the event that it has not been possible to obtain the express consent of the head of the special mission or, where appropriate, of the head of the permanent mission.

2. The receiving State is under a special duty to take all appropriate steps to protect the premises of the special mission against any intrusion or damage and to prevent any disturbance of the peace of the mission or impairment of its dignity.

3. The premises of the special mission, their furnishings, other property used in the operation of the special mission and its means of transport shall be immune from search, requisition, attachment or execution.

Article 26

Inviolability of archives and documents

The archives and documents of the special mission shall be inviolable at all times and wherever they may be. They should, when necessary, bear visible external marks of identification.

Article 27

Freedom of movement

Subject to this laws and regulations concerning zones entry into which is prohibited or regulated for reasons of national security, the receiving State shall ensure to all members of the special mission such freedom of movement and travel in its territory as is necessary for the performance of the functions of the special mission.

Article 28

Freedom of communication

1. The receiving State shall permit and protect free communication on the part of the special mission for all official purposes. In communicating with the Government of the sending State, its diplomatic missions, its consular posts and its other special missions or with sections of the same mission, wherever situated, the special mission may employ all appropriate means, including couriers and messages in code or cipher. However, the special mission may install and use a wireless transmitter only with the consent of the receiving State.

2. The official correspondence of the special mission shall be inviolable. Official correspondence means all correspondence relating to the special mission and its functions.

3. Where practicable, the special mission shall use the means of communication, including the bag and the courier, of the permanent diplomatic mission of the sending State.

4. The bag of the special mission shall not be opened or detained.

5. The packages constituting the bag of the special mission must bear visible external marks of their character and may contain only documents or articles intended for the official use of the special mission.

6. The courier of the special mission, who shall be provided with an official document indicating his status and the number of package constituting the bag, shall be protected by the receiving State in the performance of his functions. He shall enjoy personal inviolability and shall not be liable to any form of arrest or detention.

7. The sending State or the special mission may designate couriers ad hoc of the special mission. In such cases the provisions of paragraph 6 of this article shall also apply, except that the immunities therein mentioned shall cease to apply when the courier ad hoc has delivered to the consignee the special mission's bag in his charge.

8. The bag of the special mission may be entrusted to the captain of a ship or of a commercial aircraft scheduled to land at an authorized port of entry. The captain shall be provided with an official document indicating the number of packages constituting the bag, but he shall not be considered to be a courier of the special mission. By arrangement with the appropriate authorities, the special mission may send one of its members to take possession of the bag directly and freely from the captain of the ship or of the aircraft.

Article 29

Personal inviolability

The persons of the representatives of the sending State in the special mission and of the members of its diplomatic staff shall be inviolable. They shall not be liable to any form of arrest or detention. The receiving State shall treat them with due respect and shall take all appropriate steps to prevent any attack on their persons, freedom or dignity.

Article 30

Inviolability of the private accommodation

1. The private accommodation of the representatives of the sending State in the special mission and of the members of its diplomatic staff shall enjoy the same inviolability and protection as the premises of the special mission.

2. Their papers, their correspondence and, except as provided in paragraph 4 of article 31, their property shall likewise enjoy inviolability.

Article 31

Immunity from jurisdiction

1. The representatives of the sending State in the special mission and the members of its diplomatic staff shall enjoy immunity from the criminal jurisdiction of the receiving State.

2. They shall also enjoy immunity from the civil and administrative jurisdiction of the receiving State, except in the case:

(a) a real action relating to private immovable property situated in the territory of the receiving State, unless the person concerned holds it on behalf of the sending State for the purposes of the mission;

(b) an action relating to succession in which the person concerned is involved as executor, administrator, heir or legatee as a private person and not on behalf of the sending State;

(c) an action relating to any professional or commercial activity exercised by the person concerned in the receiving State outside his official functions;

(3) an action for damages arising out of an accident caused by a vehicle used outside the official functions of the person concerned.

3. The representatives of the sending State in the special mission and the members of its diplomatic staff are not obliged to give evidence as witnesses.

4. No measures of execution may be taken in respect of a representative of the sending State in the special mission or a member of its diplomatic staff except in the cases coming under sub-paragraphs (a), (b), (c) and (d) of paragraph 2 of this article and provided that the measures concerned can be taken without infringing the inviolability of his person or his accommodation.

5. The immunity from jurisdiction of the representatives of the sending State in the special mission and of the members of its diplomatic staff does not exempt them from the jurisdiction of the sending State.

Article 32

Exemption from social security legislation

1. Subject to the provisions of paragraph 3 of this article, representatives of the sending State in the special mission and members of its diplomatic staff shall, in respect of services rendered for the sending State, be exempt from social security provisions which may be in force in the receiving State.

2. The exemption provided for in paragraph 1 of this article shall also apply to persons who are in the sole private employ of a representative of the sending State in the special mission or of a member of its diplomatic staff, on condition:

(a) that such employed persons are not nationals of or permanently resident in the receiving State; and

(b) that they are covered by the social security provisions which may

be in force in the sending State or a third State.

3. Representatives of the sending State in the special mission and members of its diplomatic staff who employ persons to whom the exemption provided for in paragraph 2 of this article does not apply shall observe the obligations which the social security provisions of the receiving State impose upon employers.

4. The exemption provided for in paragraphs 1 and 2 of this article shall not preclude voluntary participation in the social security system of the receiving State where such participation is permitted by that State.

5. The provisions of this article shall not affect bilateral or multilateral agreements concerning social security concluded previously and shall not prevent the conclusion of such agreements in the future.

Article 33

Exemption from dues and taxes

The representatives of the sending State in the special mission and the members of its diplomatic staff shall be exempt from all dues and taxes, personal or real, national, regional or municipal, except:

- (a) indirect taxes of a kind which are normally incorporated in the price of goods or services;
- (b) dues and taxes on private immovable property situated in the territory of the receiving State, unless the person concerned holds it on behalf of the sending State for the purposes of the mission;
- (c) estate, succession or inheritance duties levied by the receiving State, subject to the provisions of article 44;
- (d) dues and taxes on private income having its source in the receiving State and capital taxes on investments made in commercial under-takings in the receiving State;
- (e) charges levied for specific services rendered;
- (f) registration, court or record fees, mortgage dues and stamp duty, subject to the provisions of article 24.

Article 34

Exemption from personal services

The receiving State shall exempt the representatives of the sending State in the special mission and the members of its diplomatic staff from all personal services, from all public service of any kind whatsoever, and from military obligations such as those connected with requisitioning, military contributions and billeting.

Article 35

Exemption from customs duties and inspection

1. Within the limits of such laws and regulations as it may adopt, the receiving State shall permit entry of, and grant exemption from all customs duties, taxes, and related charges other than charges for storage, cartage and similar services, on:

(a) articles for the official use of the special mission;

(b) articles for the personal use of the representatives of the sending State in the special mission and the members of its diplomatic staff.

2. The personal baggage of the representatives of the sending State in the special mission and of the members of its diplomatic staff shall be exempt from inspection, unless there are serious grounds for presuming that it contains articles not covered by the exemptions mentioned in paragraph 1 of this article, articles the import or export of which is prohibited by the law or controlled by the quarantine regulations of the receiving State. In such cases, inspection shall be conducted only in the presence of the person concerned or of his authorized representatives.

Article 36

Administrative and technical staff

Members of the administrative and technical staff of the special mission shall enjoy the privileges and immunities specified in articles 29 to 34, except that the immunity from civil and administrative jurisdiction of the receiving State specified in paragraph 2 of article 31 shall not extend to acts performed outside the course of their duties. They shall also enjoy the privileges mentioned in paragraph 1 of article 35 in respect of articles imported at the time of their first entry into the territory of the receiving State.

Article 37

Service staff

Members of the service staff of the special mission shall enjoy immunity from the jurisdiction of the receiving State in respect of acts performed in the course of their duties, exemption from dues and taxes on the emoluments they receive by reason of their employment, and exemption from social security legislation as provided in article 32.

Article 38

Private staff

Private staff of the members of the special mission shall be exempt from dues and taxes on the emoluments they receive by reason of their employment. In all other respects, they may enjoy privileges and immunities only to the extent permitted by the receiving State. However, the receiving State must

exercise its jurisdiction over those persons in such a manner as not to interfere unduly with the performance of the functions of the special mission.

Article 39

Members of the family

1. Members of the families of representatives of the sending State in the special mission and of members of its diplomatic staff shall, if they accompany such members of the special mission, enjoy the privileges and immunities specified in articles 29 to 35 provided that they are not nationals of or permanently resident in the receiving State.

2. Members of the families of members of the administrative and technical staff of the special mission shall, if they accompany such members of the special mission, enjoy the privileges and immunities specified in article 36 provided that they are not nationals of or permanently resident in the receiving State.

Article 40

Nationals of the receiving State and persons permanently

resident in the receiving State

1. Except in so far as additional privileges and immunities may be granted by the receiving State, the representatives of the sending State in the special mission and the members of its diplomatic staff who are nationals of or permanently resident in the receiving State shall enjoy only immunity from jurisdiction and inviolability in respect of official acts performed in the exercise of their functions.

2. Other members of the special mission and private staff who are nationals of or permanently resident in the receiving State shall enjoy privileges and immunities only to the extent granted to them by that State. However, the receiving State must exercise its jurisdiction over those persons in such a manner as not to interfere unduly with the performance of the functions of the special mission.

Article 41

Waiver of immunity

1. The sending State may waive the immunity from jurisdiction of its representatives in the special mission, of the members of its diplomatic staff, and of other persons enjoying immunity under articles 36 to 40.

2. Waiver must always be express.

3. The initiation of proceedings by any of the persons referred to in paragraph 1 of this article shall preclude him from invoking immunity from jurisdiction in respect of any counter-claim directly connected with the principal claim.

4. Waiver of immunity from jurisdiction in respect of civil or administrative proceedings shall not be held to imply waiver of immunity in respect of the execution of the judgement, for which a separate waiver shall be necessary.

Article 42

Transit through the territory of a third State

1. If a representative of the sending State in the special mission or a member of its diplomatic staff passes through or is in the territory of a third State while proceeding to take up his functions or returning to the sending State, the third State shall accord him inviolability and such other immunities as may be required to ensure his transit or return. The same shall apply in the case of any members of his family enjoying privileges or immunities who are accompanying the person referred to in this paragraph, whether travelling with him or travelling separately to join him or to return to their country.

2. In circumstances similar to those specified in paragraph 1 of this article, third States shall not hinder the transit of members of the administrative and technical or service staff of the special mission, or of members of their families, through their territories.

3. Third States shall accord to official correspondence and other official communications in transit, including messages in code or cipher, the same freedom and protection as the receiving State is bound to accord under the present Convention. Subject to the provisions of paragraph 4 of this article, they shall accord to the couriers and bags of the special mission in transit the same inviolability and protection as the receiving State is bound to accord under the present Convention.

4. The third State shall be bound to comply with its obligation in respect of the persons mentioned in paragraphs 1, 2 and 3 of this article only if it has been informed in advance, either in the visa application or by notification, of the transit of those persons as members of the special mission, members of their families or couriers, and has raised no objection to it.

5. The obligations of third States under paragraphs 1, 2 and 3 of this article shall also apply to the persons mentioned respectively in those paragraphs, and to the official communications and the bags of the special mission, when the use of the territory of the third State is due to force majeure.

Article 43

Duration of privileges and immunities

1. Every member of the special mission shall enjoy the privileges and immunities to which he is entitled from the moment he enters the territory of the receiving State for the purpose of performing his functions in the special mission or, if he is already in its territory, from the moment when his appointment is notified to the Ministry of Foreign Affairs or such other organ of the receiving State as may be agreed.

2. When the functions of a member of the special mission have come to an end, his privileges and immunities shall normally cease at the moment when he

leaves the territory of the receiving State, or on the expiry of a reasonable period in which to do so, but shall subsist until that time, even in case of armed conflict. However, in respect of acts performed by such a member in the exercise of his functions, immunity shall continue to subsist.

3. In the event of the death of a member of the special mission, the members of his family shall continue to enjoy the privileges and immunities to which they are entitled until the expiry of a reasonable period in which to leave the territory of the receiving State.

Article 44

Property of a member of the special mission or of a member
of his family in the event of death

1. In the event of the death of a member of the special mission or of a member of his family accompanying him, if the deceased was not a national of or permanently resident in the receiving State, the receiving State shall permit the withdrawal of the movable property of the deceased, with the exception of any property acquired in the country the export of which was prohibited at the time of his death.

2. Estate, succession and inheritance duties shall not be levied on movable property which is in the receiving State solely because of the presence there of the deceased as a member of the special mission or of the family of a member of the mission.

Article 45

Facilities to leave the territory of the receiving State and
to remove the archives of the special mission

1. The receiving State must, even in case of armed conflict, grant facilities to enable persons enjoying privileges and immunities, other than nationals of the receiving State, and members of the families of such persons, irrespective of their nationality, to leave at the earliest possible moment. In particular it must, in case of need, place at their disposal the necessary means of transport for themselves and their property.

2. The receiving State must grant the sending State facilities for removing the archives of the special mission from the territory of the receiving State.

Article 46

Consequences of the cessation of the functions of the special mission

1. When the functions of a special mission come to an end, the receiving State must respect and protect the premises of the special mission so long as they are assigned to it, as well as the property and archives of the special mission. The sending State must withdraw the property and archives within a reasonable period of time.

2. In case of the absence or severance of diplomatic or consular relations between the sending State and the receiving State and if the functions of the special mission have come to an end, the sending State may, even if there is an armed conflict, entrust the custody of the property and archives of the special mission to a third State acceptable to the receiving State.

Article 47

Respect for the laws and regulations of the receiving State and use of the premises of the special mission

1. Without prejudice to their privileges and immunities, it is the duty of all persons enjoying those privileges and immunities under the present Convention to respect the laws and regulations of the receiving State. They also have a duty not to interfere in the internal affairs of that State.

2. The premises of the special mission must not be used in any manner incompatible with the functions of the special mission as envisaged in the present Convention, in other rules of general international law or in any special agreements in force between the sending and the receiving State.

Article 48

Professional or commercial activity

The representatives of the sending State in the special mission and the members of its diplomatic staff shall not practise for personal profit any professional or commercial activity in the receiving State.

Article 49

Non-discrimination

1. In the application of the provisions of the present Convention, no discrimination shall be made as between States.

2. However, discrimination shall not be regarded as taking place:

(a) where the receiving State applies any of the provisions of the present Convention restrictively because of a restrictive application of that provision to its special mission in the sending State:

(b) where States modify among themselves, by custom or agreement, the extent of facilities, privileges and immunities for their special missions, although such a modification has not been agreed with other States, provided that it is not incompatible with the object and purpose of the present Convention and does not affect the enjoyment of the rights or the performance of the obligations of third States.

Article 50

Signature

The present Convention shall be open for signature by all States Members of the United Nations or of any of the specialized agencies or of the International Atomic Energy Agency or Parties to the Statute of the International Court of Justice, and by any other State invited by the General Assembly of the United Nations to become a Party to the Convention, until 31 December 1970 at United Nations Headquarters in New York.

Article 51

Ratification

The present Convention is subject to ratification. The instruments of ratification shall be deposited with the Secretary-General of the United Nations.

Article 52

Accession

The present Convention shall remain open for accession by any State belonging to any of the categories mentioned in article 50. The instruments of accession shall be deposited with the Secretary-General of the United Nations.

Article 53

Entry into force

1. The present Convention shall enter into force on the thirtieth day following the date of deposit of the twenty-second instrument of ratification or accession with the Secretary-General of the United Nations.

2. For each State ratifying or acceding to the Convention after the deposit of the twenty-second instrument of ratification or accession, the Convention shall enter into force on the thirtieth day after deposit by such State of its instrument of ratification or accession.

Article 54

Notifications by the depositary

The Secretary-General of the United Nations shall inform all States belonging to any of the categories mentioned in article 50:

(a) of signatures to the present Convention and of the deposit of instruments of ratification or accession in accordance with articles 50, 51 and 52;

(b) of the date on which the present Convention will enter into force in

accordance with article 53.

Article 55

Authentic texts

The original of the present Convention, of which the Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations, who shall send certified copies thereof to all States belonging to any of the categories mentioned in article 50.

IN WITNESS WHEREOF the undersigned, being duly authorized thereto by their respective Governments, have signed the present Convention, opened for signature at New York on 8 December 1969.

OPTIONAL PROTOCOL CONCERNING THE COMPULSORY

SETTLEMENT OF DISPUTES

The States Parties to the present Protocol and to the Convention on Special Missions, hereinafter referred to as "the Convention", adopted by the General Assembly of the United Nations on 8 December 1969,

Expressing their wish to resort, in all matters concerning them in respect of any dispute arising out of the interpretation or application of the Convention, to the compulsory jurisdiction of the International Court of Justice, unless some other form of settlement has been agreed upon by the parties within a reasonable period of time,

Have agreed as follows:

Article I

Disputes arising out of the interpretation or application of the Convention shall lie within the compulsory jurisdiction of the International Court of Justice and may accordingly be brought before the Court by a written application made by any party to the dispute being a Party to the present Protocol.

Article II

The parties may agree, within a period of two months after one party has notified its opinion to the other that a dispute exists, to resort not to the International Court of Justice but to an arbitral tribunal. After the expiry of the said period, either party may bring the dispute before the Court by a written application.

Article III

1. Within the same period of two months, the parties may agree to adopt a conciliation procedure before resorting to the International Court of Justice.

2. The conciliation commission shall make its recommendations within five months after its appointment. If its recommendations are not accepted by the parties to the dispute within two months after they have been delivered, either party may bring the dispute before the Court by a written application.

Article IV

The present Protocol shall be open for signature by all States which may become Parties to the Convention, until 31 December 1970 at United Nations Headquarters in New York.

Article V

The present Protocol is subject to ratification. The instruments of ratification shall be deposited with the Secretary-General of the United Nations.

Article VI

The present Protocol shall remain open for accession by all States which may become Parties to the Convention. The instruments of accession shall be deposited with the Secretary-General of the United Nations.

Article VII

1. The present Protocol shall enter into force on the same day as the Convention or on the thirtieth day following the date of deposit of the second instrument of ratification or accession to the Protocol with the Secretary-General of the United Nations, whichever day is later.

2. For each State ratifying or acceding to the present Protocol after its entry into force in accordance with paragraph 1 of this article, the Protocol shall enter into force on the thirtieth day after deposit by such State of its instrument of ratification or accession.

Article VIII

The Secretary-General of the United Nations shall inform all States which may become Parties to the Convention:

(a) of signatures to the present Protocol and of the deposit of instruments of ratification or accession in accordance with articles IV, and in accordance with article VII.

(b) of the date on which the present Protocol will enter into force in accordance with article VII.

Article IX

The original of the present Protocol, of which the Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations, who shall send certified copies thereof to all States referred to in article IV.

IN WITNESS WHEREOF the undersigned, being duly authorized thereto by their respective Governments, have signed the present Protocol, opened for signature at New York on 16 December 1969.

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