

French Republic
 Secretariat of State for Foreign Affairs
 Bureau of Coordination and Control of
Assistance Agencies

Paris, October 14, 1970

MEMORANDUM

French Aid to Tropical Research

One form of French assistance to the developing countries, especially to the French-speaking African countries and Madagascar, of which the importance to the beneficiaries is not given sufficient emphasis, is the aid to scientific research provided by the agencies concerned with the tropics under the Secretariat of State for Foreign Affairs.

These agencies are the eight applied agricultural research institutes of the Groupement d'Etudes et de Recherches pour le Developpement de l'Agronomie Tropicale (GERDAT) (Study and Research Group for the Development of Tropical Agriculture) (see Annex I) and the Office de la Recherche Scientifique et Technique Outre-Mer (ORSTOM) (Office for Overseas Scientific and Technical Research).

In 1969 the eight applied research institutes had at their disposal F. 169 million. Of that amount F. 68 million was provided by appropriations from the budget of the Secretariat of State for Foreign Affairs (subsidies and agreements) and F. 54 million by budgetary credits from the fourteen African States and Madagascar (subsidies and agreements).

The ORSTOM budget for the same period was F. 95 million, of which F. 82 million was in the form of appropriations from the French budget.

These agencies together spent F. 264 million on tropical research and F. 150 million of that amount, provided out of the French budget, represented 0.02% of the gross national income of France.

The African States and Madagascar, for their part, spent approximately F. 59 million on research in 1969 (54 million for the applied research conducted by the institutes, 5 million for the basic research carried out by ORSTOM). This expenditure represented 0.3% of their gross national income.

This is an average which conceals the importance attached to research by certain countries (Ivory Coast, Senegal, Madagascar, Cameroon) that are aware of the essential contribution that research makes to their economic and social development.

The ratio of the expenditure of the applied research institutes on rural development in the African states and Madagascar (F. 158 million) to the active agricultural population of those states amounted, in 1969 to F. 21 per peasant family per year.

In the preparatory work for the Sixth French Plan (1971-1975), the amount of funds to be devoted to tropical research during that period was programmed so as to ensure a considerable increase of French assistance in that field.

The general goals of tropical research were defined:

I. Applied Research The establishment of GERDAT, comprising the eight specialized research institutes, will make it possible to draw up more clearly an overall program for applied agricultural research and to coordinate the individual programs of each Institute.

The goal must be to ensure that there is a considerable and continuing improvement in the living standards of rapidly growing populations. This involves the development of all their agricultural and livestock resources, which are practically the only economic potential of these countries.

This development will have to be undertaken in the light of international market conditions and therefore of competitive prices. Consequently, agricultural development must be placed on a scientific basis involving research and studies and methods and techniques that reconcile the interests of both producer and consumer.

Research activity will be strengthened through additional staff and increased funds, but even more by better coordination of the work of the GERDAT institutes. Through such coordination, it should be possible to formulate a common scientific policy for the development of tropical agriculture over a relatively long period, with the aim of achieving not merely an increase in certain lines of production but also a harmonious economic development of all activities in each State, with due regard for regional differences.

An attempt will be made to pool the resources of the eight institutions. These resources will be available to teams of expert research personnel ready to be sent at any time to tropical countries to activate programs, the content, methods and duration of which will be precisely determined after consultation with the most highly qualified specialists.

The priority to be given to inventories and to basic experimentation at each point will be determined by the status of research and economic development in the various regional groups.

In tropical forest countries, where research has been actively pursued, efforts will have to be directed at maintaining the existing scientific potential, forest resources and experimental sectors, improving conservation and marketing techniques, seeking new uses for products, exploring and developing new timber resources, introducing and developing stockraising and providing socioeconomic conditions that will permit effective exploitation of technical discoveries and progress in the light of the actual human needs and aspirations.

In Sahelian countries, hitherto more neglected, research should begin with basic inventories to ascertain growing conditions, especially for groundnuts, cereals and garden crops and conditions for livestock raising. Research should at the same time be undertaken in the socioeconomic field, in order to permit full-scale immediate application without delays and distortions, of the results of the agricultural surveys.

Technological research will be concerned chiefly with methods of preserving and canning produce and with the industrial utilization of fresh water and livestock (cattle and sheep).

II. As regards basic research, ORSTOM is responsible for undertaking and developing, outside the temperate zones, basic research on natural or manmade environments and on the rational utilization of the resources of the biosphere, especially animal and vegetable products.

With its overseas organization, ORSTOM can make continuing field studies of the physical, socioeconomic and human aspects of varied and extreme environments (tropical, subtropical and arid). A knowledge of these may open the way to further research and also fertilize and reanimate some scientific studies in a number of sectors.

ORSTOM is the mainspring of French scientific aid to the countries of the Third World.

It gathers the basic data on which rational use of the resources of these countries is founded and which cannot be obtained simply by transposing results obtained in France. Data is fed to the specialized applied research institutes and development corporations and also to the government departments of the countries that come within ORSTOM's geographic jurisdiction.

ORSTOM's three main goals under the Five Year Plan are:

1. To plan a rational use of resources, it is necessary to know exactly what resources are available, and what their quality, potential and rate of growth will be. The only way to obtain such information is through a program designed to inventory and survey resources (geophysics, geology, pedology, hydrology, oceanography and hydro-biology).
2. Natural resources are produced within functional wholes where living organisms and physical factors of the environment react on each other. In order to appraise the possibilities of using them and the pattern of their development when they are used, it is essential to study the structure and behavior of the natural environment (botany and plant biology, biology and improvement of useful plants, soil biology, phytopathology and applied zoology, agronomy...).
3. Man is part of the biosphere; he affects his environment and is affected by it and his behavior is closely bound up with his environment.

He transforms his environment, but ultimately the latter must enable him to survive under optimum living conditions.

Human societies in the countries of the Third World present specific problems whose solution is vital to development. For these two reasons, ORSTOM continuously studies social, economic and human problems (nutrition and microbiology, parasitology and medical entomology, sociology and psychosociology, economics and demography).

Achievement of these fundamental goals of the French tropical scientific research agencies must make a decisive contribution to the economic and social development of the African states and Madagascar.

GROUPEMENT D'ETUDES ET DE RECHERCHES POUR
LE DEVELOPPEMENT DE L'AGRONOMIE TROPICALE
(G.E.R.D.A.T.)

Economics Group Governed by Ordinance of

September 23, 1967

5, Square Petrarque, Paris 16e

The agencies belonging to this group are:

Le Centre Technique Forestier Tropical (CTFT) (Tropical Forest Technical Center), a Government corporation with headquarters at 45 bis, avenue de la Belle Gabrielle, 94 Nogent sur Marne.

L'Institut d'Elevage et de Medecine Veterinaire des Pays Tropicaux - IEMVT (Institute of Livestock and Veterinary Medicine for Tropical Countries), a public establishment with headquarters at 10, rue Pierre Curie, 94 Maisons-Alfort.

L'Institut Francais de Recherches Fruitières Outre-Mer - IFAC (French Institute for Overseas Fruit Research), an association under the Law of 1901, with headquarters at 16, rue du General Clergerie, Paris 16e.

L'Institut Francais du Cafe, du Cacao et autres plantes stimulantes - IFCC (French Institute for Coffee, Cacao and other stimulants), an association under the Law of 1901, with headquarters at 34, rue des Renaudes, Paris 17e.

L'Institut de Recherches Agronomiques Tropicales et des Cultures Vivieres - IRAT (Institute of Research on Tropical Agriculture and Garden Crops), an association under the Law of 1901, with headquarters at 45 bis, avenue de la Belle Gabrielle, 94 Nogent-sur-Marne.

L'Institut de Recherches sur le Caoutchouc en Afrique - IRCA (Institute for Rubber Research in Africa), an association under the Law of 1901, with headquarters at 42, rue Scheffer, Paris, 16e.

L'Institut de Recherches du Coton et des Textiles Exotiques - IRCT (Institute for Research on Cotton and Exotic Textiles), an association under the Law of 1901, with headquarters at 34, rue des Renaudes, Paris, 17e.

L'Institut de Recherches pour les Huiles et Oleagineux - IHO (Institute for Research on Oils and Oleaginous Seeds), an association under the Law of 1901, with headquarters at 11, Square Petrarque, Paris, 16e.

ORSTOM BUDGET 1969DISTRIBUTION OF EXPENDITURES AND RESEARCH PERSONNEL/ BY SUBJECT

	<u>Expenditure</u>	<u>Research Personnel</u>
I. <u>Environmental Factors:</u>		
a) <u>Land</u>		
Geology, Geophysics,) Pedology, Hydrology)	F 37 million	197
Agronomy, Soil Biology	F 5 million	35
b) <u>Ocean and Inland Waters</u>		
Oceanography) Hydrobiology)	F 17 million	86
II. <u>Direct Factors of Production</u>		
a) <u>Vegetable Production</u>		
Botany and Vegetable Biology) Biology and Improvement of) Useful Plants) Phytopathology and Applied) Zoology)	F 13 million	101
III. <u>Human Factors of Development</u>		
a) <u>Health</u>		
Microbiology) Parasitology) Medical Entomology) Nutrition)	F 6 million	45
b) <u>Socioeconomic Factors</u>	F 12 million	123
IV. <u>Expenditures on Activities Associated with Research</u>		
- Documentation) - Teaching)	<u>F 5 million</u>	—
TOTAL	F 95 million	587

1/ ORSTOM also has a staff of 310 technicians.

INSTITUTES OF APPLIED RESEARCH

Distribution of Staff by Goals and by Production in 1970

	<u>Research and Technical Personnel</u>
<u>I. Increase of Food Production</u>	
Rice (IRAT)	27
Other food crops (IRAT)	44
Animal genetics (IEMVT)	55
Animal pathology (IEMVT)	55
Fishing and fish nurseries	<u>4</u>
Total	185
<u>II. Maintenance of the Balance of Nature to Ensure Continuity of Resources</u>	
Forests and soils (CTFT)	35
<u>III. Diversification and Quantitative and Qualitative Increase in Marketable Crops</u>	
Groundnuts (IRHO)	16
Coconut (IRHO)	19
Oil palm (IRHO)	32
Tropical woods (CTFT)	28
Coffee (IFCC)	36
Cacao (IFCC)	30
Tea, cola (IFCC)	5
Natural rubber (IRCA)	43
Cotton and other exotic textile fibers (IRCT)	89
Tropical fruit (IFAC)	130
Miscellaneous industrial crops (sugar-cane, tobacco) (IRAT)	<u>19</u>
Total	447
<u>IV. Increase of Productivity of Various Types of Farms</u>	
Improvement of physical environment (IRAT)	39
Farming systems (IRAT)	28
Agricultural mechanization (CEEMAT)	<u>11</u>
Total	<u>78</u>
Grand Total	<u><u>745</u></u>

BASES FOR EVALUATING THE ACTIVITIES OF THE
APPLIED RESEARCH INSTITUTES AND SOME RESULTS

ACHIEVED

1. Increase of Yields and Production

Cotton. Through the research conducted by IRCT and the close ties between this institute and the development corporations, average yields on peasant farms have risen in recent years from 250 kg to 400 kg per ha under traditional methods and from 1,000 kg to 1,500 kg under improved farming methods.

Under very intensive cultivation yields of 2,500 kg to 3,000 kg per ha have been obtained. The total production of the cottongrowing States of French-speaking Tropical Africa amounted to 450,000 tons of seed cotton in 1968/1969 as compared to 240,000 tons in 1963/1964.

Cacao. The IFCC has made remarkable progress in selecting seeds and improving techniques of cultivation.

The species traditionally grown yielded about 300 kg per ha. Improvement of cultivation techniques may make it possible to obtain yields of the order of one ton.

The selected varieties now being disseminated should make it possible to obtain 2 to 3 tons per hectare.

Total cacao production in the countries concerned amounted to about 270,000 tons in 1968/1969 as compared with 200,000 tons in 1963/1964.

Oil Palm and Coconut. IRHO research has resulted in oil palm yields of 3 tons of oil per hectare. With the dwarf hybrid coconut trees 2 tons of copra can be produced from the age of 6 years and 3 tons or more from

the seventh year onward.

Rice. IRAT's achievements were particularly spectacular in Madagascar where, for example, in the prefecture of Tananarive, as a result of the use of improved ricegrowing methods more than 65,000 farmers produced yields of over 50 quintals per hectare.

2. Examples of Technical and Human Improvements

The activities of the Institutes are not confined to pure scientific research and the selection of seeds; they extend beyond that: through development corporations to the perfecting of better techniques of cultivation. In cotton, for example, in North Cameroon the area worked by plow has increased over a period of ten years, from 3,000 to 40,000 hectares, fertilized areas from 1,000 hectares to 36,000 hectares and areas treated with insecticides from 1,000 to 6,000 hectares.

In Mali over the same period, plowed areas have increased from 5,000 to 50,000 hectares and fertilized areas from 2,000 to 40,000 hectares.

Thousands of plows and carts have been sold to farmers who have thus been able to improve their farm techniques.

The experience elsewhere has been similar. The production increases sought for a given marketable product bring about a general improvement of the farms. All crops benefit from the new techniques introduced and the knowledge imparted to develop a single product.

Improvement of techniques cannot be achieved, however, without some preliminary training of manpower. Agricultural modernization thus sparks social and human change and higher living standards in their turn accelerate its pace.