

## PROJECT OUTLINE

### Survey Team I : DEVELOPMENT OF AGRICULTURAL RESOURCES AND LAND USE

Mitsuru HAYASHI

The purposes of the investigation of this survey team were to understand the general situation in the transformation from traditional to modern farming. The specific subjects comprised were the geological environments of rural areas, agricultural practices and distributions of genetic resources of useful plants, and the recovery process of the vegetation of old fields in relation to various external factors.

To fulfill these objectives, the following activities were carried out: field surveys on subsistence and commercial agricultural systems in Lae and Wewak and their surrounding areas (HAYASHI and SARAVIA); comparative observations (with relation to the conditions of climate, soil, human disturbance, and so forth) of vegetation in old field sites at various stages after abandonment of swiddens in and around the Markham Basin (NAKANO); quantitative analyses of the vegetation in old field sites through ordination methods (NAKANO); and a survey on the geological environment in the Landolam Gold Deposits, Lihir Islands, and in the Sepik Basin (NEDACHI).

### Survey Team II : DEVELOPMENT OF AQUACULTURAL RESOURCES IN THE COSTAL REGIONS

Akio INOUE

The purpose of the investigation of the Survey Team II was, in the first place, to understand the current situation of the coastal fisheries of PNG. The second objective was to search for useful marine organisms as medical/industrial uses or foods. The third aim was to evaluate marine environments for possible grounds for the development of aquaculture.

To fulfil these objectives, the following activities were carried out in Lae, Madang, Wewak and their surrounding areas: 1) the distribution of marine benthic green algae and their habitats were surveyed for the development of marine algal resources (ENOMOTO); 2) an analysis of dissolved inorganic nutrients in sea water and a survey of the toxic dinoflagellate were performed to understand the general features of the coastal environment (INOUE); 3) soft corals (*Coelenterata*, *Octocorallia*, *Alcyonacea*) were collected to examine them for ichthyotoxic activity of their extracts (UCHIO); 4) a variety of sponges were collected to check the existence of some useful substances included in the organisms as metabolites (IWAGAWA); and 5) interviews with local fishermen were performed to understand coastal fishing gear and methods, both modern and traditional, and a survey of fish catches landed and sold at markets was done to comprehend the ways of living in fishing villages (KAWAMURA, USUDA and ANRAKU).

All these surveys were carried out in tight collaboration with PNG scientists as had been done before. In this monograph, the results on the survey of geographical distribution of seaweeds obtained in 1990 in the coral reef regions around Motupore Island are also included (OHBA).

### Survey Team III: SEROEPIDEMIOLOGICAL STUDY OF HUMAN T-LYMPHOTROPIC VIRUS

Shin'ichi TERASHI

One type of viral induced hematopoietic malignant diseases is well known as Adult T-cell Leukemia / Lymphoma (ATL) which is related to the infection of human T-Lymphotropic Virus type-I (HTLV-I). Anti-ATL virus associated antigen antibodies (ATLA) have been detected in the sera of most patients and a relatively high percentage of healthy individuals living in HTLV-I endemic areas.

Seroepidemiological studies in Papua New Guinea on the ATLA were done seven times by TERASHI with other researchers since 1983. The results revealed that PNG might be one of the endemic countries of HTLV-I. The purpose of the present survey is the collection of additional serum samples from Angau Memorial Hospital in Lae and Wewak General Hospital in Wewak.

### Survey Team IV: TRADITIONAL SOCIAL SYSTEMS AND THEIR TRANSFORMATION

Yasuyuki KARAKITA

The members of survey team IV tried to understand the economic, spatial and cultural aspects of the rural-to-urban transformation of social systems in Papua New Guinea. Major objectives were, first, to elucidate the impact of economic policies on socioeconomic transformation in general (MINAMURA); second, to clarify the processes of the formation of urban ethnic settlements (TAJIMA); and, third, to understand the cultural meanings of the penetration of a cash economy into traditional exchange systems (KARAKITA). In order to achieve these goals, the collection of official documents, library researches, and structured interviews with knowledgeable informants from both rural villages and urban settlements in Morobe Province and East Sepik Province were conducted.

### Survey Team V: OCEANIC STRUCTURES AND THEIR FLUCTUATIONS IN THE TROPICAL PACIFIC

Toshihiro ICHIKAWA

A long meridional oceanographic section was made at 131° to 142° e from 29° N to the equator in November to December, 1991 during the cruise of the R. V. Keiten-Maru of Kagoshima University. The section involved the Kuroshio Counter Current, the North Equatorial Current, the Equatorial Counter Current, and the South Equatorial Current.

The temperature and salinity were measured at 10 stations by a CTD system down to a depth of 1,100 m, and the depth profile of temperature was also examined at 20 stations down to 900 m by XBT.

Samples of planktonic foraminifera were collected at 11 stations by vertical haul with a plankton net from different depths in the upper 200 m. The distribution of planktonic foraminifera was described in comparison with the hydrographic structure.

Sea water samples were collected at 11 stations down to 500 m depth with a series of Niskin water samplers. The water samples were filtered on board, and the filter and the filtrate were kept frozen for analyses of particulate organic carbon, chlorophyll, and nutrients.