

A QUANTITATIVE STUDY OF CERTAIN ASPECTS OF THE MAN-LAND
RELATIONSHIP IN MARSHALLESE ECONOMY AT ARNO ISLAND

by Leonard Mason and Harry Uyehara

Quantitative data for the fiscal year 1949-50 were obtained* for atoll production of copra at Arno (by district and by season, sales value and weight, and distribution of money income) and for atoll importation of trade goods (by district and by season, sales value and, in the case of food supplies, specific itemization). Further quantitative studies had been intended, at Arno Island only, with special reference to individual and family participation in copra production, in preparation and consumption of food, in movement of persons within the atoll and between atolls, and in the distribution and use of other economic goods derived from the natural environment. Time, however, did not permit.

A feeling that generalizations about these activities, as based upon personal observation by the investigator or upon statements and estimates by Marshallese informants, were frequently too vague or unreliable, resulted from two conditions. The first was the great individual variation in work activity as noted in the few test studies on a quantitative basis that were attempted. The second was the unconcern on the part of the majority of Marshallese, in recalling past behavior, about the accuracy of numbers of hours expended, numbers of people involved, and amounts of work produced.

These are conditions, of course, which are not peculiar to the Marshallese situation. Other anthropologists working with other groups in the Pacific and in other parts of the world, have noted the same methodological difficulties among nonliterate peoples. Nonetheless, the value of quantitative data which can be obtained under controlled conditions with statistically reliable techniques is never doubted.

(in this case, Mr. Harry Uyehara)

It was proposed, therefore, that an anthropologist conduct an intensive quantitative study of certain aspects of the man-land relationship in Marshallese economics at Arno Island during the summer of 1951. This study was an extension of the 1950 field work referred to above, and utilized the materials already collected and analyzed. The results of the 1950 and 1951 field projects will eventually be integrated with other studies undertaken at Arno Atoll within the framework of the Coral Atoll Program for the better understanding of the Arnoese and their ecological relationship with other components of the total atoll environment.

In 1950 Arno Island, with a land area of 0.66 square miles or 422.4 acres, supported 201 persons who were combined in various numbers (ranging from 1 to 15, averaging 6) in 30 households. The island was divided into 63 land parcels, each averaging 6.72 acres and with boundaries from lagoon to ocean shores; only 30 of these parcels were actually occupied in 1950. The remaining 33 were either more or less abandoned although ownership and use rights were kept alive, or associated with parcels then occupied.

* by Mason in 1950.

In obtaining quantitative data for statistical treatment, 12 of the 30 households were selected by random sampling, thus 4 from each of three strata based upon size of household. After an inventory of economic resources available to each of these 12 households made by the anthropologist, with special attention to numbers and kinds of economic plants, animals, and fishing areas, building facilities and household goods, and personal effects, he checked each household daily during one month, and later for one week for a detailed quantitative report on a number of economic activities as listed below. A number of simple questionnaire forms were prepared in English and in Marshallese on which each household group recorded numbers, amounts, and times involved in production, distribution, and consumption of economic goods.*

The anthropologist lived at intervals of one to two weeks in several of these 12 households, reviewing daily the reports of the other 11, checking for accuracy wherever possible, filling in more complete information through interview with members of each household, and further instructing Marshallese assistants in a more reliable reporting of economic activities. The difficulties of employing questionnaires, among an essentially untutored people are realized, but it is believed that the carefully conceived forms were feasible in this case, since most Marshallese at Arno Island are literate in their own language, and many have become accustomed to reckoning in numbers and by weight through their transactions over half a century with foreign traders and tax collectors.

Within the three-month period, the anthropologist became acquainted with each household, providing thus a better basis for evaluation of the daily reports, and had adequate opportunity to take his own observations on economic activities of the people. The three summer months, roughly from mid-June to mid-September, coincide with the main breadfruit season, the most productive period of the year in terms of food. The results of the study have primary value for this season of the year; similar studies should be carried out at other seasons for a more complete understanding of the year-round relationship between Arnoese and their natural environment.

Subjects for Quantitative Study

The following subjects were basic in the daily reports from each of the households selected for this study. In general, the questions to be answered were:

- How much work is accomplished?
- Where is the work undertaken?
- How many persons are involved?
- Who are they? What is their social status?
- How much time is consumed in each activity?
- How much leisure time remains? How is it spent?

1. Food collection and preparation:

Kinds and amounts of food materials assembled (plant, animal, marine, store); time consumed in different stages of preparation; artifacts and accessories required; persons employed; location of activities.

* See sample cards attached (B and C, pp. 119 and 120)

2. Food distribution and consumption:

Food exchanges (raw, cooked, store); persons involved in exchanges; their relationships; quantities and kinds of food exchanged; occasions for exchange; quantities and variety of food consumed by individuals; number of meals, times, and composition of eating groups; visitors at mealtime, their relationship with host; their treatment by host; foods consumed by visitors.

3. Copra production:

Number and size of nuts husked; weight of meat cut from nuts and dried; weight of copra sacked and stored; weight and value of copra sold to trader; location of each activity; time involved; persons employed; distribution of income from sale of copra.

4. Production of artifacts and handicraft:

Amounts and kinds of raw materials collected, prepared, and processed; types of articles produced; value of articles sold to trader; use of articles retained; ownership in relation to producer; location of each activity; persons employed; time involved.

5. Clothing production, laundry, and repair:

Items of clothing produced or bought; value and quantity of clothing; materials employed in laundry and repair; time involved in work; persons employed; location of each activity.

6. Construction and repair of housing and water transport:

Quantities of raw materials for use in construction of housing units or canoes and boats; processing of raw materials (time consumed, persons employed, location of activity); ownership and use of completed structures and craft.

7. Weather conditions and events competing with economic activities:

Frequency and duration of weather conditions impeding work progress; Sundays and holidays; festivals and visiting; recreation and other leisure-time activities; frequency of these, degree of disruption of work program, persons involved.

8. Movement of persons.

Travel from one land-holding to another; from Arno Island to other islands in the atoll; from Arno Island to other atolls; kinds of transport used; occasions for travel; length of journeys; duration of stay; persons involved.

9. Participation in money economy:

Receipts of money; source of income; distribution of income; purchases and other transactions requiring money; persons involved.

SAMPLE CARD B.

INVENTORY OF LANDHOLDING - Arno Project - 1951

Name _____ Informant _____ Lot No. _____

Iroi j _____ Iroi j erik _____ Alab _____

Ri jermal _____

Occupants _____

Buildings _____

Sail canoes _____ Paddle canoes _____ Bicycles _____

Other transport _____

Land acreage _____

Pigs _____ Chickens _____ Ducks _____ Others _____

Breadfruit _____ Coconut _____ Pandanus _____ Banana _____

Papaya _____ Mangrove _____ Others _____

Taro _____ Arrowroot _____ Sweet potato _____

Cisterns _____ Wells _____

Household effects _____

Money _____

QUANTITATIVE SURVEY - ARNO ATOLL PROJECT - 1951

Household _____ Informant _____ Date _____

1. How much food was eaten here today?

Morning: _____

Noon: _____

Evening: _____

2. How much of this food was prepared before today? _____

3. How much food was prepared here today, but was not eaten today? _____

4. Who helped to make the food today? _____

5. Where did the food come from that was eaten or prepared today? _____

6. Who ate the food here today? _____

7. How much food was sent to people elsewhere? _____

8. What work was done on houses or canoes today? _____

9. Who did the work? _____ When? _____

10. What materials were used? _____

11. Where did the materials come from? _____

12. How much money was earned by people here today? _____

13. How was the money earned? _____

14. Who worked for the money? _____ Who received the money? _____

15. How much money was spent here today? _____ To whom was the money paid? _____

16. For what was the money spent? _____

Who spent it? _____

17. How many coconuts were collected today for husking? _____ Where? _____

Who did the work? _____

(Sample Card C - Cont'd)

18. How many coconuts were husked today? _____ Who did the work? _____

19. How many coconuts were cut today? _____ Who did the work? _____

20. How many bags of dried copra were sacked today? _____ Who did the work? _____

21. How many bags of copra were sold today? _____ To whom? _____

22. Who sold the copra? _____ How much money was received? _____

How was the money divided? _____

* * * * *

23. What new clothing do you have here today? _____

24. What clothing was washed here today? _____

25. What clothing was ironed here today? _____

26. What clothing was mended here today? _____

* * * * *

27. What handicraft was made here today? _____

28. Where did the materials come from? _____

29. Who did the work? _____ Who owns the finished products now? _____

30. Where is the handicraft now? _____

* * * * *

31. How much water was used here today? For what purpose?

Cistern: _____

Well: _____

Lagoon: _____

* * * * *

32. What work was stopped today because of bad weather, or for other reasons? _____

33. What other things did you do today besides work? _____

34. Whom did you visit today? _____ Where? _____ When? _____

35. Did anyone from here leave today for another place: house, island, or atoll? _____

How did he travel? _____ Where did he go? _____

How long will he be gone? _____ Where did he go? _____

36. Did anyone arrive today to stay here awhile? _____

How did he travel? _____ Where did he come from? _____

When was he here the last time? _____ Why did he come? _____