# WORK, WAGES, AND SHIFTING CULTIVATION ON NIUE

by Nancy J. Pollock

The decline of traditional agriculture with urbanization in Oceania, and in particular the "continuing breakdown in the subsistence base of village life"[1] is NOT characteristic of the western Polynesian island of Niue. Rather, the Niuean economy is marked by a combination of wage work and growing taro and other crops by shifting cultivation. Moreover, the same persons use these two forms of economic support both to provide subsistence and to build a house or buy a truck to improve the quality of life. It will be argued firstly that this combination of work patterns is the most rational, given certain features of Niuean environment and culture; and secondly, that by adding wage work to the shifting agricultural means of subsistence provisioning, Niueans keep their options open and maintain the flexibility which is a noteworthy part of their socio-economic system. If a particular source of cash income is worth the effort, then it will be added to the inventory of jobs to be done, but only so long as the returns are considered worthwhile. When the returns decline then it will be dropped. All the while in the bush plots, taro and other root crops have been planted and tended so that they will continue to be available both for household consumption and for communal events. Thus, wage work may be seen as additional to subsistence agriculture.

Niue lies some 300 miles east of Tonga, its nearest neighbor, and slightly more than 350 miles southeast of the Samoan islands. See map on page 157. This almost circular, raised-coral island consists of 100 square miles of very rocky land surrounded by precipitous cliffs and a very narrow fringed reef. The land is divided into two terraces. The first terrace, ninety feet above sea level, is only about a quarter of a mile wide, marked by many outcrops of limestone rocks and caves; most of the villages are located on this rim of the island. The second terrace covering the main part of the island slopes from 200 feet on its fringes to a 100 foot depres-

[1]Dougles E. Yen, "Effects of Urbanization on Village Agriculture in Oceania," in Roland W. Force and Brenda Bishop, eds., *The Impact of Urban Centers in the Pacific* (Honolulu: Pacific Science Association, 1975), pp. 171-80.

sion at the center of the island. It is on this second terrace that all the shifting cultivation takes place. Silt and clay loam soils are found in small pockets between the numerous coral outcrops and have supported heavy stands of vegetation in the past, the remnants of which can be seen in the Huvalu forest area.[2] A considerable area of this primary vegetation has been cleared in the process of shifting cultivation which has been the basic means of economic support.

Land use patterns indicate that some 22 percent of the land has been worked out (Table 1) and agricultural personnel have looked at ways to bring this land back into production, but all are costly. When considering the area listed as in continuous cultivation (25,000 acres or 38.5 percent of the total area) it is not clear whether this includes export crops as listed in Table 2 (Annual Reports). Wright estimated a total area of 12,550 (7,300 acres for taro, etc. and 5,250 for coconuts) acres was necessary to raise subsistence and export crops in 1958, but Walsh argues this figure is too high as he feels Wright and Van Westendorp underestimated the intensity of subsistence production.[3] The amount of land necessary for subsistence production is thus open for debate, but it would appear that it never exceeded 2,000 acres in any one year. Even taking Wright and Van

TABLE 1

Patterns of Land Use on Niue

| | **Acres** |
|---|---|
| Continuous Cultivation | 25,000 |
| Worked out-scrub and fern | 15,000 |
| Coastal forest and scrub | 3,000 |
| Light forest | 10,000 |
| Heavy forest | 12,000 |
| TOTAL | 65,000 |

*Source:* Reports on Cook Islands, Niue, Tokelau Islands, Maori and Island Affairs Department, presented annually to New Zealand House of Representatives. These same area figures have been reported since 1953 without change.

[2]C. Wright and Van Westendorp, *Soils and Agriculture on Niue Island* (Wellington: Department of Scientific and Industrial Research, Bulletin 17, 1965).

[3]Allen C. Walsh, "Aspects of Subsistence Agriculture in Niue," *Compass,* 6 (n.d.), 1-7.

Westendorp's upper estimate, "the annual area actually under arable crops in any one season cannot amount to more than 1/4 to 1/3 acre per person."[4] Thus with a high population in 1959 of 4,719 persons, between 1,200 and 1,600 acres was being cropped in that year; but with a population of 3,843 in 1976 between 925 and 1,200 acres are being cropped a year for subsistence and coconuts.

It would thus appear that there is plenty of spare land available on Niue, especially if these are maximum figures as Walsh suggests. But much of the land not widely used is exceedingly rocky, difficult to use for the majority of subsistence crops and quite unsuitable for export crop production. There are less than 7,500 acres which are considered to be reasonably well suited for agricultural development.[5] Thus agricultural intensification is not possible as a means to cash income on Niue. They must seek cash elsewhere. But shifting cultivation remains the basis of subsistence.

Shifting cultivation now utilizes areas of secondary growth that have been fallow for ten years. An area is cleared for a bush garden by a family; a sequence of taros is planted for a couple of years before the land is

TABLE 2

Land Area by Crop

| | **Acres** |
|---|---|
| Coconuts | 5,000 |
| Taro | 350 |
| Limes | 42 |
| Passionfruit | 25 |
| Yams | 25 |
| Siratro | 1,500 |
| Cassava | 25 |
| Bananas | 275 |
| Kumaras | 100 |
| TOTAL | 7,387 |

*Source:* Annual Report for 1974

[4]Wright and Van Westendorp, p. 69.
[5]Wright and Van Westendorp, p. 70.

left again for another ten years fallow. From these bush plots comes the bulk of the subsistence foods for all meals. Taro *(Colocasia esculenta)* is the main staple, while sweet potato *(Ipomoea batatas)*, yams *(Dioscorea alata)*, and cassava *(Manihot esculenta)* are daily components of the diet. Some people have added tomatoes, spring onions and cabbage to their inventory of plants grown in their bush plots. A family is likely to have four or five bush plots in different stages of growth.

The work involved in clearing a bush plot, and preparing it for planting typically necessitates the involvement of all hands in a household. The men cut down any major secondary growth, while the women weed the pockets of soil and prepare a big earth oven full of food to feed the workers. Since the ground is so uneven and thus hard to walk on, cultivating bush plots is no easy task. The digging stick and the machete are the main tools employed and indeed are the most suited to Niue's environment. Because of the many areas which are so rocky attempts by the Agricultural advisors to introduce the plough have not met with much success; claims that "growers were changing rapidly from planting stick to modern tools and equipment" and that "Niueans are learning methods of permanent land cultivation"[6] have never in fact been proven. As Walsh points out in his study of ploughed versus traditional areas, the differences in numerical yields, in terms of how crops were planted, were not significantly large enough to argue that plough agriculture provided an efficient margin in terms of profitability. Walsh argues strongly that traditional methods are more suited to Niuean conditions than ploughing which gives much lower yields in the second year, turns over the thin soils and hastens alkalinity, opens up larger areas denying taro its necessary shade cover and permits the fast encroachment of weeds in the rainy season. So it would seem that local knowledge has provided the most suitable subsistence method. Dreams by expatriates of introducing "modern rotational methods" (Annual Report 1962) have not come true. Traditional agriculture is alive and well in Niue and contributes significantly to basic food supply.

Agricultural development of Niue has also concentrated on attempts to develop an export crop. Copra, bananas, kumaras, passionfruit and siratro seeds, as well as honey have all been tried, but none has proven to be a satisfactory long-term source of cash income for the farmer/producer (see Table 3--produce exported over a sixty-year period). These crops are

[6]Wright and Van Westendorp.

TABLE 3

Major Items of Export from Niue

| Year | Coconuts | Bananas | Kumaras | Passionfruit | Seed | % of Total Exports | Total Exports |
|---|---|---|---|---|---|---|---|
| 1913 | $ 9,993 82.11% | | | | | 82.11% | $ 12,170 |
| 1923 | 10,979 83. | | | | | 83. | 13,227 |
| 1933 | 1,760 15.24 | $8,542 74. % | $ 41 .35% | | | 89.59 | 11,542 |
| 1943 | 8,543 27.79 | 8,049 26.19 | 1,363 4.43 | | | 58.41 | 30,733 |
| 1953 | 41,066 56.49 | 2,858 3.93 | 17,740 24.4 | | | 84.82 | 72,685 |
| 1963 | 18,652 36.44 | 4,229 8.26 | 10,010 19.95 | | | 64.65 | 51,185 |
| 1973 | 20,012 14.64 | | | $31,198 22.83% | $19,055 13.94% | 51.41 | 136,640 |
| 1974 | 41,000 24.4 | | | 39,000 23.2 | | | 168,000 |
| 1975 | 74,000 37.75 | | | 83,000 42.34 | | | 196,000 |

*Source:* Annual Report on Niue Island, *Pacific Islands Year Book.*

Note: No kumaras were grown for export in 1972. Resources were diverted to passionfruit and limes which were more promising export crops.

still planted (Table 2) but returns from export fluctuate and thus are not a reliable means by which a man can support his household.

Coconut trees are planted mainly around the periphery of the island. Coconuts are both exported as copra and used at home for drinking and in cooked dishes as well as bait for catching crabs and to feed pigs and chickens. Hurricanes, drought and drop in price of copra on the world market as well as shipping problems all reduce or annihilate the returns to the farmer.

Bananas are grown wherever the soil is considered suitable, sometimes near the house site, and sometimes in bush plots. Banana production on Niue has fluctuated wildly, a fact which can be correlated with copra prices and with the effort for return.

> In 1958 in all a total of almost twenty-days' work (on banana production) was needed to earn the sum of £4.6s.3d. and the natural consequence is that amongst able-bodied men remaining on Niue, banana production as an occupation comes a poor fourth behind salaried work, casual laboring work and copra manufacturing. It should also be remembered that £4.6s.3d. is the equivalent of sixty-four pounds of dried copra which takes only a few days to prepare.[7]

Limes, passionfruit, and pandanus palm whose leaves are used extensively in the plaited ware for export are all planted in close proximity to the home. The passionfruit vines in particular require daily attention. The vines have to be hand-pollinated, mainly by women and children. Most Niuean families have a 1,000 square meter plot of vines near their homes and the cost of erecting poles and wires on which the vines grow is met by the Niue Development Board. The grower repays the installation cost over several seasons. Production figures for the three-year period prior to 1977 had been on the decline primarily because the women who normally work the industry had been working on the round-the-island electric power reticulation scheme.[8]

An assured cash return is safer than the fluctuating prices of agricultural produce! In 1977, however, the Development Board made an all-out

[7]Wright and Van Westendorp, p. 65.

[8]S. L. K. Guest, "There's a Blight on Niue's Passionfruit Industry," *Pacific Islands Monthly*, 48 (April, 1977), 60. See also "Niue: Sex and the Passionflower," *Pacific Islands Monthly*, 50 (January, 1979), 53-55.

effort to increase production to twice the area under cultivation. In 1978, eighty-six tons of pulp and juice were produced all of which was shipped to New Zealand.

There is no market for taro and other subsistence crops on Niue itself because every man is expected to provide these for his own household. They cannot be translated into cash income. Only kumara was a successful cash earner on the export market for a while, until it became plagued by a weevil infestation. Thus, because taro plays such an important part both in the production sphere and the consumption sphere it is not considered "right" for a Niuean to buy taros from others. This social sanction enforces a level of equality and is itself reinforced by village ethics of which the most potent leveller is gossip and shame. So that, every man must plant enough taros for his household consumption needs and for participation in the frequent community events. He must calculate his needs almost a year ahead of time so that he can clear the appropriate area of bush and plant the taros nine months before they will be needed. For an event of major importance to a family, such as a boy's hair cutting ceremony, he may seek the assistance of his brother and adult sons to extend their planting areas too in order to provide for the occasion. If a man miscalculates, and his family is short of taro, he is to blame and is the subject of local ridicule and is made to feel inadequate and brings shame to his wider family. Thus, there is great pressure at the village level for every' man to have sufficient taros and a bit extra for his needs. Such a system obviates the need for a market. The small Friday market in Alofi consists of ladies selling a few bananas and kumaras, tomatoes or drinking coconuts mainly to Europeans and visitors. Niuean social structure emphasizes equality so that no Niuean should profit at the expense of another, particularly when such an important subsistence crop that everyone can grow is involved.

Wage work is thus the only possible source of a regular cash income and of access to the means to make life a little better. Cash is spent on particular food items, particularly canned corned beef and biscuits and snack foods for the children.[9] But wage work is also the means to improving the house structure with windows, toilet and cooking facilities as well as for purchasing major goods such as a motor bike or car. As I have argued in my 1976 paper, these goods are an important means of regulating the differences in the way of life between Niue and Auckland and thus for

[9]Nancy J. Pollock, "Niue Resources and Their Uses," mimeographed paper.

providing an incentive to stay on Niue rather than migrate to New Zealand. If you can live on Niue and have your electric stove, electric iron and a car or motor bike to get you to the bush easily, then your relatives in Remuera don't seem so much better off!

The government is the major employer on the island, employing some 90 percent of all wage earners. Private companies such as Burns Philp and Morris Hedstrom and other smaller enterprises operate mainly in the retail sphere. The lack of skilled trained Niueans to fill every sector of the employment sphere has meant that many Niueans have been trained with assistance from New Zealand and other governments either in New Zealand, Fiji, Australia or the United States. This training is reflected in the gradual increase in the number of persons employed in public service jobs (Table 4). The main shortage in 1974 was of secondary school teachers. Thus, 344 Niueans were employed for regular wages out of a total estimated population of 4,142 (December 1973, Annual Report E.14 1974), and an additional 312 persons were listed as casual employees working mainly for Public Works on the roads and loading and off-loading ships.

Since 1966 the island population has fallen drastically as more and more Niueans leave for New Zealand. The population in 1966 was 5,065;

TABLE 4

Public Service Employment

| Year | Niuean | Non-Niuean | Total | Casuals |
|---|---|---|---|---|
| 1952 | 129 | 17 | 146 | |
| 1959 | 184 | 25 | 209 | |
| 1961 | 202 | 45 | 247 | |
| 1964 | 246 | 37 | 283 | |
| 1965 | 265 | 47 | 312 | |
| 1967 | 294 | 50 | 344 | |
| 1968 | 326 | 57 | 383 | |
| 1969 | 323 | 50 | 373 | |
| 1970 | 323 | 45 | 368 | 312 |
| 1972 | 262 | 43 | 300 | 339 |
| 1974 | 344 | 48 | 392 | 312 |

*Source:* Annual Reports to New Zealand House of Representatives.

for 1971, 4,990; and in 1976, 3,843. In 1976, 62 percent was under the age of fifteen and another 10 percent over the age of sixty, thus leaving some 1,077 (or 28 percent) persons potentially employable. These are the persons who manage to combine an eight-hour work day with their shifting agriculture or growing of an export crop. They are the persons who must clear their bush plot, weed it, and then plant taro either after work (at 4:30 p.m.) or on Saturdays. They have double the pressures but also double the need to maintain their participation in both sectors of the economy. The result is they must work harder, put in more effort, not less.

Wages earned average $15.00 per week which would be far from adequate if a man had to buy all the food items plus other necessities for his family of six. Thus, he is obliged to maintain the subsistence sector, reinforced by kin and village mechanisms, and he can then utilize his money on non-local purchases such as beer, yard-goods and other material possessions. The wage economy is thus broadening the base of Niuean economy by increasing the demand for imported goods. But such a demand would be much higher if Niueans had lost the emphasis on subsistence agriculture and become dependent on rice, flour and other imported staples. The maintenance of traditional agriculture enables Niue to move into the modern wage economy and the concomitant materialism, but by combination not by substitution.

## Conclusions

Niue's rocky environment limits the possibilities for agriculture. Taro is the most suited crop, but it too is narrowly adapted to its environment as shown by non-significant yield increases from plough cultivation (Walsh 1972). Thus, an important factor about taro as the main cultivated staple is that it takes a particular knowledge and a particular mode of propagation to get it to grow at all on Niue. If we assume that one level of their economic rationale includes the idea of least effort, but also includes assessing (probably unconsciously) the returns for labor involved in producing taro then it would appear that traditional methods win out over ploughing because the yield of the latter is not significantly larger to warrant the expense, inconvenience and dependence that a plough suggests. As Walsh says, "traditional practices, though time consuming and

onerous, appear to be highly successful in utilizing a wide range of local environments."[10]

Taro as a subsistence base to the economy enables Niue to avoid increasing its import economy. Therefore, subsistence production alongside wage labor is a fortunate base to the economy and avoids some of the economic polarizations of other developing economies. Positive encouragement for this combination of means of economic support is therefore needed. Also the number of wage jobs is fairly finite and, therefore, maintenance of the subsistence base has a stabilizing effect on the economy. The one possible disturbance might come from the introduction of mining which would upset both wage and subsistence work patterns.

Attempts to develop an export economy on Niue have floundered, largely because they have been instigated by well-meaning non-Niueans who fail to comprehend the many factors working against those products. Drought (1958), hurricanes (1959, 1960, 1968) and pestilence (affecting bananas, coconuts and kumara) are as unpredictable as war was in earlier times. Niueans have learned to cover themselves against such eventualities by cultivating several small plots, containing several different crops, in different areas of the island where protection may be sufficient to allow a few taros, yams or tapioca to survive. It may seem uneconomical in terms of a man's time and returns for the effort of clearing a plot measuring only one-eighth of an acre, but that plot may assure him the few root crops that he and his family need. Export crops seem synonymous with plantation-size clearing and sophisticated technology and/or heavy applications of fertilizer. All of these are costly, particularly when cash is not easy to come by. Niueans are prepared to gamble a little with their labor--Wright and Van Westendorp call it "energetic farming,"[11] but they cannot afford to throw away their cash, or watch a cash crop rot because no ship has arrived. They are prepared to put their effort where they see the best returns, a view not always shared by *palagis.* The Niuean environment has always been a harsh one, one that has no doubt left its imprint on the generations of Niueans who have attempted to maintain a livelihood there. Several early commentators[12] have noted that the comparatively industrious nature of Niueans might well be related to the continual struggle that was necessary to maintain food supplies. This in-

[10]Walsh, p. 5.

[11]Wright and Van Westendorp, p. 56.

[12]Edwin M. Loeb, *History and Traditions of Niue* (Honolulu: Bishop Museum Press, 1926).

dustriousness has also been noted of Niueans in New Zealand.[13] Perhaps the continuing fight for survival has had long lasting effects by molding their physique and their character.[14]

Because Niue is a reasonably small island, it is possible for the people to maintain their village residence patterns while commuting daily by one of the many linking roads to Alofi where most of the wage work is located or based. The villages are placed fairly equidistant around the narrow first terrace surrounding the island thanks to missionary influence. By maintaining their village residence pattern and all that this has come to mean culturally, wage workers still have access to the larger areas of land around their villages so that shifting agriculture can continue to be practiced. With wages invested in a truck, car or bike some of the effort of shifting cultivation, i.e. managing several small plots, is minimized.

Continued out-migration, mainly to New Zealand, has relieved the direct pressure on the economy by siphoning off to another economic system those who would have needed their share of the land and possibly one of the limited jobs on Niue. But at the same time this out-migration has applied indirect pressure to the economy through the transfer of experienced workers to New Zealand. Incentives to obtain cash are thus more marked than if Niue was emerging straight from an agricultural background with minimal outside influences.

Egalitarianism is a mark of Niuean society which differentiates it from other Polynesian systems, particularly the three-rung stratification of Tonga and the *matai* system of Samoa. Since the original settlers of Niue are reputed to have come from these two neighboring island groups we can argue that part of the adaptation to life on Niue required living without chiefs (apart from a reconstructed form at the time of Western contact). Their social organization was based directly and indirectly on the traditional system of land tenure under a *leveki mangafaoa* or family guardian, and a *patu* at the head of several family groups. These were people who re-allotted land or through whom disputes were arbitrated. But for the most part each family was fairly autonomous in producing its own crops and taking care of its individual needs. This has carried over into modern times when the family guardian makes sure that each member of his family has enough bush plots for his needs.

But he gets no tribute or cut from the proceeds of those plots as each

[13]Margaret Lee, *Nga Kaimahi: Polynesians in Industry* (Wellington: Vocational Training Council, 1974).

[14]Wright and Van Westendorp, p. 56.

Niuean male is expected to manage his own affairs. Thus, there is a considerable degree of autonomy as well as co-operation, but with out-migration and outside influences the Niuean social system has developed a resiliency stemming in part from its flexibility. Thus, a man is allowed to meet his obligations to family, village and Niue as a whole in various ways, but he must never forget to plant his taro. He must plan his work so that his obligations are met, both in the subsistence sphere and in the wage work sphere.

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