Development and Inequity: The Case of Tubuai, a Welfare Economy in Rural French Polynesia

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Social scientists note that development encourages the growth of wealth differences and structured social inequality in peasant communities. Recognizing this, some have advocated welfare and equity-oriented development strategies. It is proposed that development on Tubuai, an island society dominated by a welfare economy, approximates such strategies and that this case can be examined to assess their value. The structure of household socioeconomic differentiation which has emerged in response to these economic opportunities is described. The paper then examines the impact of a new potato cash-cropping project, documenting the structure of differential participation and isolating household level factors which are strongly associated with variable levels of development participation. It is argued that although development strategies are welfare and equity-oriented, development does not have a broad base of participation among Tubuai families and that a small segment of the population is expanding cultivation and rapidly concentrating capital. This case suggests that such strategies are not an effective means of encouraging equitable growth in the context of a regional capitalist economy. The implications of development trends for the future structure of Tubuai society are projected.

Key words: agricultural development, French Polynesia, social stratification, socioeconomic change, welfare economics

Social scientists note that the growth of wealth differences and structured social inequality in traditional/peasant communities is a commonly-encountered consequence of community development or modernization. Research in diverse areas (e.g., Finney 1973; Cancian 1972; Esstein 1962; Pelto and Pelto 1973; Firth 1946) points to the emergence of the same social process: development "benefits are concentrated among a few, while the majority are at least relatively, if not absolutely, worse off after economic development" (Smith 1980:801).

A number of social scientists (Adelman 1979; Adelman and Morris 1973; Todaro 1977; and others) have suggested long-term policies aimed at promoting the more equitable distribution of benefits, as well as broad community participation in the development process. While there is no clearly formulated framework of such strategies focused on the community level, one can extrapolate from the national level policies advocated by Adelman and Morris to posit the form they might take when implemented in rural communities.

The primary emphasis of welfare and equity-oriented development strategies is to improve the standard of living and social welfare of rural populations (i.e., eradicating poverty, providing health care and education, etc.); this counters the debilitating effect of rural poverty, broadening the base of community participation in the development process. In addition, development programs should: 1) be locally planned, financed, and implemented, 2) serve the economic needs of the rural community, not of external developers, and 3) be non-exploitative. Peasant producers would then be in a position to reinvest earned income, stimulating production, economic diversification, and growth. Furthermore, broad participation in development projects would be encouraged by providing credits, subsidies, and other infrastructural supports.

Finally, equitable growth has as its prerequisite a relatively equitable distribution of productive resources (land, labor, capital, and technology) in the community. Significant inequalities in the distribution of land, for example, prevent widespread participation in agricultural development projects, allowing only land-rich families to benefit from new opportunities.

While some believe that development strategies rooted...
in planning” can be formulated which would assure more equitable distribution of development benefits, “world systems proponents would discount that possibility since they see inequality as endemic to the system” (Nash 1981:407). According to this view, Third World development (which is the means whereby capitalism expands) has as its basis structured inequality and exploitation (Wallerstein 1974). Thus, no amount of equity planning and development implementation are sufficient to counteract the impact of what are fundamental working principles of capitalism.

The issue, then, is whether or not the growth of structured social inequality in developing traditional/peasant communities is the product of the capitalistic development process (i.e., is endemic to it), or if social welfare and equity-oriented development policies can be formulated. For many reasons, the implementation of welfare/equity strategies in rural communities is relatively rare. I would like to propose that, due to the special political and economic conditions of the region, development programs on Tubuai (Austral Islands, French Polynesia) approximate this model.

Tubuai is a rural island community (total population 1,600) located 700 km south of Tahiti, in France’s Overseas Territory. It is populated by smallholder farmers and fishermen who identify themselves culturally as Tahitians. Since the early 1960s, the Tubuai community has been the object of government-financed modernization and agricultural development programs; these have been part of an extensive plan for regional modernization (e.g., Service du Plan 1965, 1970). Because of the welfare and equity orientation of these programs, this community can serve as a case study in which to examine the local level effects of such strategies during the process of economic transformation.

I propose that development conditions on Tubuai approximate the welfare and equity-oriented model for the following reasons. First, Territorial development (funded largely by the French government) has been aimed primarily at improving the standard of living and social welfare of island populations. Although islanders pay no taxes, they receive a great many social services from the government. These include universal family welfare allocations, social welfare programs, and the provision of economic subsidies and credits for all segments of the community. As a result, Tubuaians today possess a high standard of living and poverty is non-existent on the island. Second, islanders themselves reap the economic benefits of agricultural development programs; programs are not economically exploitative. The island economy has been both growing and diversifying. And finally, the island economic structure was relatively egalitarian at the point that development was started. This was due to islanders’ isolation, minimal market integration, and continued reliance on subsistence agriculture and fishing. Families continue today to own their lands collectively (see Joralemon 1983b) and to organize household production with family labor; as yet, no market in either land or agricultural labor has developed.

The apparent financial benevolence with which regional modernization has been pursued by the Territorial/French government is not, however, guided primarily by social principles. The implementation of expensive “welfare-oriented” modernization in French Polynesia can be understood in terms of France’s desire to maintain its political/strategic presence in the region. This is accomplished by massive infusions of financial “goodwill” (see Thompson and Adloff 1971), a policy followed by the United States in the Trust Territory of Micronesia (see Peoples 1978). One component of France’s presence is the location of its nuclear testing facility in the area.

Tubuai development, then, has come to approximate the welfare and equity-oriented development model, not through direct socially principled government planning, but through the conjunction of: 1) the financially benevolent, welfare and subsidy development strategies of the government, 2) development policies which seek to encourage broad community participation in the development process, and 3) the relatively egalitarian structure of Tubuai’s rural economy prior to development.

In the analysis which follows, I examine the impact of such policies on Tubuai from their initiation in the early 1960s to the present. I look particularly at the structure of household socioeconomic differentiation which has evolved in response to new economic opportunities. I then examine the specific impact of the first successful agricultural development program, a capital-intensive potato cash-cropping project introduced in the late 1970s. The household-level factors which are strongly associated with differential participation in potato cultivation are identified, and I conclude that development-created wealth is being concentrated by a small number of island families in spite of the overall welfare and equity-orientation. Finally, I speculate about the future structural implications of these patterns for Tubuai society.

**Modernization and Agricultural Development on Tubuai**

Prior to the 1960s, remote outer islands such as Tubuai were, for the most part, isolated from the modernization taking place on Tahiti and neglected by the French administration (Cook 1976). Islanders maintained a household subsistence economy based on taro gardens and fishing (see Aiten 1930; Cook 1976). Tubuaians were occasionally able to obtain Western goods—sugar, cotton cloth, tools, canned foods—from sailors and merchants on passing schooners by bartering their garden produce and copra. Islanders were involved in several commercial enterprises during the 1800s, but none proved to be successful or of lasting consequence. These included the purchase of a trading schooner in the 1850s which was lost through mismanagement, and the export of taro to the Tuamotus for a short period of time (see Cook 1976; Newbury 1980). Thus, with the exception of the growing reliance on Western manufactured items, the rural household economy was in many ways not unlike what it had been prior to contact (compare Sahlin 1958; Aiten 1930; Cook 1976).

It was in the late 1950s and at the start of the Territorial/French government's push for regional modernization that Tubuai's transformation began. Tubuai was designated as the seat of government for the Austral Islands group, an administrative subdivision of the Territory, and a French administrator and his staff came to reside on the island. The government purchased and subsidized the calls of a cargo ship (the Tuhaa Pae), which visits each Austral Island.
monthly. In 1972 an airport was built at one end of the island and it now receives subsidized flights from Tahiti twice a week. And, in 1981, the government began to install electricity on the island.

The government also implemented a number of programs to improve social welfare and augment islanders’ standard of living. The first high school was built on Tubuai and students attend free of charge. A French doctor and dentist were brought to the island to provide free health care for islanders. A family allocation subsidy, designed to improve the health and welfare of children, was instituted. Today, islanders receive $29/month per child; the average family with six to eight children receives about $200/month.

In 1972 many new jobs were created for islanders (raising the total number to approximately 120) with the newly organized “municipality of Tubuai.” These government-sponsored and funded jobs (mostly involving unskilled manual labor maintaining the roads and bridges for the municipality, or other unskilled work for the Agricultural Service or Public Works) greatly increased the previously negligible employment opportunities on the island and offered high salaries to employees (average $300–400/month). Today, approximately 57% of all families include an employed member. The creation of these low-skill, service-related positions appears to have been an effort on the part of the government to infuse capital into the rural economy, raising islanders’ standard of living.

Most importantly, Tubuai became the focus of government-organized, agricultural development programs in the Austral Islands. Developers projected that the island’s temperate climate would be well-suited to the cultivation of European vegetables as cash crops. These were being imported in ever-increasing amounts by Papeete’s burgeoning population of Tahitians, tourists, and foreign residents. In addition, agricultural development would integrate rural farmers into the Tahiti market system, making available to them new cash-earning opportunities.

An office of the Service de l’Économie Rurale (hereafter, Agricultural Service or SER) was installed on Tubuai to oversee the vegetable cash-crop program, as well as diverse other development projects such as the modernization of fishing, livestock raising, and coffee cultivation. Small quantities of coffee were exported from Tubuai in the early 1960s; this increased somewhat in the mid-1970s when the government raised and fixed the price to producers. The Agricultural Service provided farmers (free of charge) with fertilizers, insecticides, and seeds. The Service also arranged transportation and marketing of the harvest in Tahiti (see SER, Rapports Annuels, 1961, 1965, 1969). Farmers responded enthusiastically to the new opportunity and the production of green vegetables increased annually.

By 1969, however, this program began to fail as problems transporting and marketing the perishable vegetables arose (SER, Rapports Annuels, 1969, 1971, 1972). In 1981, vegetable cultivation was at an all-time low. However, a small number of farmers still cultivate vegetables for island sales and several farmers export them to kin in Papeete for marketing.

Despite the failure of green vegetable cultivation, the Agricultural Service implemented a new program for seasonal potato cultivation in the late 1970s. This has proven to be more viable (potatoes do not spoil for long periods of time and they are thus more easily transported and marketed), and both output and farmer participation have increased steadily since 1979.

While these various programs which comprise Tubuai modernization have substantially raised the standard of living and social welfare of islanders, it is important to remember that Tubuai’s development transformation was initiated, and has been funded in full, by external government sources. Islanders are highly dependent on the Territorial/French government for the maintenance of their relatively high standard of living and various economic opportunities. The degree to which the everyday functioning of the island is subsidized is largely taken for granted by islanders.

The Economic Impact of Welfare Development on Tubuai. Programs for island modernization and development have substantially transformed the structure of the Tubuai household economy since the early 1960s. Islanders now have a number of diverse economic alternatives available for making a living, including important new options in the market sector. In response, households have become increasingly specialized in one or more cash-earning options. The market sector includes not only export-oriented cash-crops, but also household products (root crops, fish, etc.) sold in the recently developed internal market. This internal market evolved in response to demands of the island’s first contingent of consumers (who were not also producers): French residents, boarding students, and to a lesser degree, employed Tubuai families.

In addition to these new opportunities, islanders now have access to substantial amounts of cash income through salaries, family allocations, market sales, and various credits and subsidies. One can estimate that in the early 1950s, when economic activity centered on subsistence agriculture and fishing, the annual income of the average Tubuai family could not have exceeded several hundred dollars (see Aitken 1930; Cook 1976). Average yearly income for the typical family is now approximately $3,000–$4,000. This is a large sum when it is remembered that islanders grow most of their own food, own their own land, and make no payments such as rents, taxes, or other bills.

Household Economic Strategies and Income Levels. Whereas prior to the early 1960s Tubuai households were relatively homogeneous in their focus on subsistence agriculture, fishing, and small-scale copra sales, they are now differentiated and families pursue various economic strategies to make a living. Wage employment is preferred because it provides a high and steady income. However, there are not enough jobs for all who want one and so many islanders must pursue other means to earn cash. This can include cash-crop agriculture (for local or export sales), or the intensification of a subsistence activity for the purpose of selling the surplus (production beyond family needs) to the schools or other consumers. Some households partially specialize in fishing, others in livestock (cows, pigs, chickens—in order to sell the meat), pandanus or wood crafts (mostly to sell to the French), or seasonal coffee gathering (from aging mountain plantations). Almost all households, including those with wage employment, are economically diversified, pursuing many.
TABLE 1. HOUSEHOLD INCOME LEVELS AND THE DISTRIBUTION OF INCOME PRIOR TO THE INTRODUCTION OF POTATO CULTIVATION

<table>
<thead>
<tr>
<th>Income level</th>
<th># of households</th>
<th>% of all households</th>
<th>Major economic activities</th>
<th>Average annual income</th>
<th>Total annual income of households in category</th>
<th>Share of income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>49</td>
<td>29%</td>
<td>Subsistence-oriented, sells less than $500/yr</td>
<td>$2,000–4,500 ($3,250)</td>
<td>$159,250</td>
<td>18%</td>
</tr>
<tr>
<td>Middle</td>
<td>104</td>
<td>62%</td>
<td>Holds a wage job or sells more than $500 a year</td>
<td>$4,500–7,000 ($5,750)</td>
<td>$598,000</td>
<td>67%</td>
</tr>
</tbody>
</table>
| High         | 15              | 9%                  | a) Both spouses employed or
b) Holds a wage job and sells more than $500 a year | $7,000–11,000 ($9,000) | $135,000                                    | 15%             |
| Total        | 168             |                     |                          |                       |                                             |                 |

options simultaneously (at least on a small scale) and relying on subsistence gardens and fishing for the majority of their food needs (see Joralemon 1983a). In order to obtain comprehensive and quantitative information on the nature of household socioeconomic differentiation on Tubuai, I conducted an island-wide household economic census. This consisted of detailed interviews with 170 of Tubuai’s 200 households. These data suggest that island families fit into one of three broadly-defined economic categories (which actually form a continuum), delineated on the basis of major economic strategy and total cash income. The household economies of island families are either: 1) subsistence oriented (members are not employed, they do not cultivate cash crops, and they are only minimally involved in the market sector); or 2) oriented towards the production and sale of marketable products, including cash crops; or 3) focused on the wage employment of a household head. A small group of families successfully combines wage employment and substantial market production.

I gathered information on income ranges for families who pursue each of the major strategies so as to determine the distribution of wealth in the community and to assess how earnings from potato cultivation had affected this distribution. Table 1 describes these income levels, however, cash earned from potato cash-cropping is specifically omitted for those 47 households which cultivate.

Subsistence-oriented households (49 families, or 29% of all households) earn approximately $2,000–4,500. Employed households and those which specialize in market production  (104 families, 62% of all households) earn approximately $4,500–7,000/year. A small group of families (15 families, or 9% of all households) earn the highest incomes, $7,000–11,000/year; these are families in which either both spouses are employed, or one household head is employed and the family is heavily involved in market production as well. All incomes noted include family allocations.

Table 1 shows that there are a large number of households in the middle income category (62%) and a relatively small number in the low (29%) and high (9%) income categories. Of the three levels, the low income category (average household size is 4–5 members) is the easiest to make generalizations about. This group includes a high proportion (44%) of elderly, widowed, and single household head families. One would not expect that many of these families would have access to a wage job or that they would produce substantial household surpluses for sale. Middle income households (average household size is 5–6 members) and high income households (average household size is 6 members) include a range of both young and older, well-established families whose household heads are middle-aged adults, as well as some elderly couple households. It should be noted that all household income categories include families in each stage of the developmental cycle, from new nuclear families with small children to elderly couples with small adopted children.

Patterned variation in contemporary household economic strategies is illustrated by three representative families described in Table 2. The table notes the composition of each household, its major economic pursuit, the proportion of total income acquired from each of its activities, and total monthly income earned. The table also lists each household’s total cash expenditures and the nature of those expenditures, as well as major capital items owned.

Household #1 is a young family which is subsistence-oriented and earns a low cash income. None of its members is employed and cash crops are not cultivated. This particular family sells fish several times a month at the Saturday market to earn cash to buy sugar, rice, and canned milk at the Chinese-operated store. Their total monthly cash income is approximately $320–450, of which family allocations provide almost 30%. The family owns an old Vespa motorbike; even fishing is done in a borrowed outrigger canoe.

Household #2 exemplifies middle income families who do not have wage employment and who are heavily involved in market-oriented agriculture and crafts. The household heads cultivate green vegetables to sell to the schools on a steady basis and potatoes through the new development pro-
### TABLE 2. SUMMARY OF HOUSEHOLDS’ ECONOMIC STRATEGIES

<table>
<thead>
<tr>
<th>Household composition</th>
<th>Household #1</th>
<th>Household #2</th>
<th>Household #3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major economic occupation</td>
<td>3 adults, 4 children</td>
<td>2 adults, 5 children, + married son &amp; family</td>
<td>2 adults, 2 teenagers, 3 children</td>
</tr>
<tr>
<td>Subsistence agriculture and fishing</td>
<td>Wood crafts, vegetable cash-cropping</td>
<td>Wage employment</td>
<td></td>
</tr>
<tr>
<td>Monthly income from:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fishing</td>
<td>$100–200 39%</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Crafts</td>
<td>20–50 9%</td>
<td>$185 34%</td>
<td>—</td>
</tr>
<tr>
<td>Livestock</td>
<td>17 4%</td>
<td>45 8%</td>
<td>—</td>
</tr>
<tr>
<td>Coffee</td>
<td>70 18%</td>
<td>42 8%</td>
<td>$14 1%</td>
</tr>
<tr>
<td>Wage Employment</td>
<td>—</td>
<td>—</td>
<td>$650 72%</td>
</tr>
<tr>
<td>Vegetable Cash-cropping</td>
<td>—</td>
<td>47 8%</td>
<td>$70–90 9%</td>
</tr>
<tr>
<td>Potato Cash-Cropping</td>
<td>—</td>
<td>120 22%</td>
<td>—</td>
</tr>
<tr>
<td>Small Cash activities</td>
<td>—</td>
<td>—</td>
<td>$50 6%</td>
</tr>
<tr>
<td>Family Allocations</td>
<td>$112 29%</td>
<td>$112 20%</td>
<td>$112 12%</td>
</tr>
<tr>
<td>Average total monthly income</td>
<td>$320–450 100%</td>
<td>$550 100%</td>
<td>$900 100%</td>
</tr>
<tr>
<td>Land area cultivated:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Taro</td>
<td>1,600 m²</td>
<td>1,300 m²</td>
<td>1,100 m²</td>
</tr>
<tr>
<td>Vegetables</td>
<td>—</td>
<td>2,900 m²</td>
<td>900 m²</td>
</tr>
<tr>
<td>Potatoes</td>
<td>—</td>
<td>7,500 m² (includes veg. area above)</td>
<td>—</td>
</tr>
<tr>
<td>Monthly expenditure on:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Imported foods</td>
<td>a. Approx. $250 (65% of total income)</td>
<td>a. Approx. $300 (33% of total income)</td>
<td>a. Approx. $300 (33% of total income)</td>
</tr>
<tr>
<td>b. Gasoline/oil</td>
<td>b. None</td>
<td>b. $120</td>
<td>b. $200</td>
</tr>
<tr>
<td>Major capital items owned</td>
<td>Old Vespa motorbike</td>
<td>Old truck, chain saw</td>
<td>New small truck (monthly payments = $200) Electric generator, freezer, motorboat</td>
</tr>
</tbody>
</table>

gram. The male head is also a skilled wood sculptor who sells replicas of ancient Polynesian bowls and utensils to the French residents. This family earns approximately $550/month. It owns an old, rundown Peugeot truck and several electric wood-working tools which are operated from the local Craft Association’s generator.

Household #3 is a well-established, high income family in which the father works as a maintenance man at an administration building and the mother works part-time as a maid for a French administrator. Although they rely mainly on wage income, they maintain subsistence gardens and grow vegetables, gather coffee, and participate in other economic activities on a small scale. Their total monthly income is approximately $900. This family recently took out a two-year loan with SOCREDO (Société de Crédit et de Développement d’Océanie) to purchase a new Datsun truck. It also owns an electric generator.

Taking Table 1 as an approximation of what Tubuai income levels were generally like in the mid-1970s prior to potato cultivation (because household incomes do not include potato earnings and because other economic activities have changed little), it is apparent that wide gaps in wealth did not exist and that income was relatively equitably distributed among households. For example, the lowest income households, 29% of all families, earned 18% of the island’s total income. The wealthiest group, 9% of all families, earned only 15% of all income.

The relatively small differences in family wealth which existed prior to the start of the potato program were related to the largely undeveloped household economy. There were few opportunities on the island for families to invest in production beyond minimal levels or to concentrate wealth. Green vegetable cash-cropping had never proved to be a viable enterprise. In addition, the limited local market for household production, vegetable cultivation uncertainties due to highly variable climatic conditions and poor soils, and various export market inefficiencies all worked to keep market-oriented production at low levels. Tubuans expended
their high cash incomes on luxury consumption items. The standard of living was relatively homogeneous; the major difference between households was in levels of consumption, i.e., ownership of a truck or a motorscooter, of a homemade outrigger canoe or a purchased boat with motor.

**The Impact of Potato Cultivation.** Potato cultivation was introduced to Tubuai in the mid-1970s. Because it requires extensive mono-crop fields for cost-effective cultivation and can be quite profitable for farmers, it has had an important impact on both local agriculture and the household economy. In 1979, 40 farmers produced approximately 118,000 kilograms of potatoes (yields of 6 tons/ha); by 1981, 47 farmers had produced about 379,000 kilograms of potatoes with yields of ten to eleven tons a hectare (SER, Rapports Annuels 1979–1981).

In order to encourage farmer participation in the project and high levels of output, government officials and the Agricultural Service have implemented this program so as to minimize production uncertainties and remove barriers, such as a lack of capital, which might prevent farmers from cultivating.

The Agricultural Service, working in conjunction with an independent government development agency, the SDAP (Société de Développement d’Agriculture et de la Peche) handles all aspects of potato production and marketing, except the cultivation process itself. It orders and purchases seed potatoes (from New Zealand and Australia), fertilizers, insecticides, and other products. Farmers need only sign up with the Agricultural Service in advance, stating how many kilograms of seed potatoes they wish to plant in the coming season. At that time, farmers can also sign up to rent the Agricultural Service’s tractor and bulldozer (operated by employees of the Agricultural Service) to clear their fields and prepare the soil for planting. Islanders are instructed on how to plant and how to use the various chemical products. Farmers are paid, by weight, for their potatoes; the purchase of all production is guaranteed by the Agricultural Service. The Agricultural Service and the SDAP also arrange transport and marketing in Papeete. In the past, the Territorial Assembly has aided the sale of Tubuai potatoes by halting the importation of less expensive foreign potatoes.

Whereas at the start of vegetable cultivation on Tubuai in the early 1960s, seeds, fertilizers, and other products were given free of charge to farmers, these items must now be purchased. The government subsidizes their cost, however, as well as the cost of machinery rental, at 60% so that farmers pay only 40% of the actual cost. Even so, the prices of imported seed potatoes and other products are high. Thus, the capital costs of cultivation, particularly for islanders without steady paychecks, are substantial. For the farmer who is not employed and who decides to plant 0.5 ha, his capital costs, approximately $1,200, may represent as much as half of his total annual income. (Table 3 describes all capital costs and potential returns of potato cultivation.) However, in order to encourage even the poorest family to cultivate, farmers are not required to pay their expenses until the harvest is in. Thus, capital is not required to participate in potato cultivation, although farmers recognize that they are incurring a cash debt on the security of an unknown harvest.

It is farmers themselves who profit from potato cultivation;

<table>
<thead>
<tr>
<th>Field size</th>
<th>0.5 hectare</th>
<th>1.0 hectare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital costs:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seed potatoes, fertilizers, insecticides</td>
<td>$890</td>
<td>$1,780</td>
</tr>
<tr>
<td>Machinery rental (tractor and bulldozer)</td>
<td>$270</td>
<td>$290</td>
</tr>
<tr>
<td>Total capital costs</td>
<td>$1,160</td>
<td>$2,070</td>
</tr>
<tr>
<td>Total income (estimated yield of 8 tons/ha, sold at 50 CFP/kg, or 55$/kg)</td>
<td>$2,220</td>
<td>$4,440</td>
</tr>
<tr>
<td>Total profit (income minus capital costs)</td>
<td>$1,060</td>
<td>$2,370</td>
</tr>
</tbody>
</table>

they retain the majority of the market value of their surplus product. Because the government transports and markets the potato crop, the surplus product is not appropriated by developers or middlemen. In 1981 farmers were paid, for example, $0.55/kg for their potatoes; the Agricultural Service then adds a small increment (about 10 CFP, or $0.11/kg) to cover transportation and marketing costs and then sells the potatoes to Papeete retail markets for about 60 CFP/kg ($0.67/kg). The Agricultural Service determines how much planters will be paid for their harvest based on what it can be sold for in Papeete.

The successful one hectare planter earns approximately $2,370 profit (total income minus capital costs—see below) for his (and his family’s) three months of labor (see Table 3), while the small planter (0.5 ha) earns about $1,000 profit. A large planter (i.e., 2–4 hectares) can earn approximately $4,000–8,000 profit in one season. Referring to Table 3, one can see that the profit margin, approximately 40–50% in a successful season, is significant even though the costs of imported agricultural products (albeit subsidized) are high. As these figures indicate, potato planters are able to greatly augment their total incomes; large farmers can as much as double or triple their previous annual incomes.

In a mediocre season, however, the earned income can dwindle to nothing. According to the head of the Agricultural Service on Tubuai in 1981, about 10–15% (4–5 planters) did not make enough money in 1980 to pay back their debt. These farmers encountered various cultivation difficulties with which all farmers must deal, including variable weather conditions, insect pests, and poor/swampy soils (Tercier 1962). Thus, although potato cultivation can be profitable, it involves substantial cultivation uncertainty.

In addition to capital investments, farmers must also invest their own and their family’s labor during the three-month cultivation season. With the help of machinery the overall labor requirements of potato farming are not prohibitive. The farmer calls upon most of the members of his family, as well as any other available kin, for one to two weeks of full-time work preparing the field and planting. At harvest time the entire family will again be activated for several days. In between the labor requirements of potato cultivation are minimal and can be met by one to two individuals working several hours a day (see Joralemon 1983a).
The value (or opportunity cost) of unpaid family labor is not included in the computation of potato cultivation costs and returns for several reasons. First, I do not believe that Tubuai farmers, like other peasant cultivators (Chayanov 1966), impute a monetary value to unpaid family labor when they assess the “profitability” of potato cultivation. (See Barlett 1980 for a discussion of alternative approaches for measuring the value of unpaid family labor; she concludes that Chayanov’s method most accurately reflects the criteria used by peasant farmers and best predicts their productive decisions.) Moreover, the true opportunity cost of family labor on Tubuai is probably close to zero as alternate uses for such labor are few. To assign a monetary cost to such labor, such as the wages which might be earned or the value of other crops produced instead, would be a significant distortion of the Tubuai situation.

Compared to many other development cases, one can characterize potato cultivation on Tubuai as a success. Nevertheless, only a relatively small number of households plant potatoes (47 households, or 23% of all households, planted in 1981), a smaller proportion than one might expect considering both the limited nature of other economic opportunities and the desire for cash income.

The relatively small number of potato cultivators suggests that although developers have made efforts to facilitate the participation of all farmers, there are factors at work which hinder or preclude wide involvement. While the number of planters has increased gradually each year, the vast majority (85%) of planters in 1981 had planted potatoes in previous years. Moreover, a few large planters are responsible for most of the expansion in area cultivated. The majority of farmers plant on a small scale (less than half a hectare), while a few large planters cultivate on a scale five to ten times that of the average farmer; their profits were correspondingly large. The average field size in 1980 was less than half a hectare. Twenty-five farmers (62%) cultivated less than half a hectare, ten (25%) cultivated between 0.5 ha and 1.0 ha, and five (12%) cultivated between one and four hectares of land. In short, participation in the development program is not broadly based and it is apparent that a small number of large planters are rapidly expanding production and concentrating capital.

**Differential Household Participation in Agricultural Development**

To analyze the conditions under which households participate in or reject potato cash-cropping, I have adopted Chibnik’s “statistical behavior” method of decision analysis (Chibnik 1980). This decision analysis technique involves statistically relating relevant socioeconomic characteristics of actors to the choices they make. In this technique the characteristics which are considered in the decision analysis are of two types. One consists of factors offered by informants in explaining what influenced them to take a particular course of action. The second type consists of relevant socioeconomic factors which have not been put forward by farmers themselves, but which the researcher nevertheless feels are involved in the decision. Chibnik asserts that the second type of factors must be included in the analysis because farmers, particularly in situations of rapid socioeconomic change, frequently cannot articulate, or may not perceive, all of the criteria which may cumulatively lead to their decision to plant a cash crop.

I use this decision analysis technique to evaluate the role of various factors in the potato cultivation decision on Tubuai. The factors considered in the analysis are: 1) access to agricultural lands, 2) household labor availability/household size/stage in the developmental cycle of the family, 3) previous commitment to wage employment, 4) total cash income, and 5) the household’s dominant economic strategy.

**Access to Agricultural Lands.** Land availability is frequently a factor which determines the intensity of agricultural activity. In peasant communities, land shortages, either in absolute terms or because of subsistence priorities, can discourage market-oriented production. Access to land may also be complicated if land is owned collectively by groups of kin, as on Tubuai. Some farmers do express concern over land availability and I knew of two cases in which farmers wanted to plant potatoes and could not because of land problems.

As one part of the household census, I asked household heads the general question, “If you wanted to expand cultivation, do you have available land?" Although both general and subjective, this question provides valuable information on farmers’ own evaluation of their land situation. Of the 159 households for which information was obtained, 105 (66%) said they did have available land to expand cultivation; 54 (34%) said they did not. This indicates that at the present level of both land use and cash-cropping, land is not yet in short supply.

It is conceivable that while land is abundant overall, those families that do not cultivate potatoes may lack sufficient land; I therefore compared the self-assessed land availability of potato planters and non-planters. The distribution did not prove to be statistically significant and thus there appears to be no relationship between land availability and participation in potato cash-cropping.

Part of the explanation for the absence of a relationship is that access to land on Tubuai is extremely flexible and farmers have several routes available to them to acquire rights to use the land of others, usually kin (see Joralemon 1983b). In addition, subsistence crops utilize different types of soils than potatoes (i.e., taro is grown in swampy soils) and thus do not compete for available lands. The typical small scale of all cultivation and high rates of emigration in the past are other features.

**Labor Availability/Household Size/Stage in the Developmental Cycle.** A family’s available labor resources (number of workers in the household) and its overall consumption demands (determined by the number of consumers and their “needs”) are important factors which influence the intensity of labor investment, as well as a family’s labor allocation decisions (see Chayanov 1966). Both the household’s labor resources and needs will change over time as the family evolves through its developmental cycle. Thus, differentiation among families (size of farms, levels of production and income) is, according to Chayanov, directly correlated with demographic factors.

Although Tubuai farmers do not say that they plant po-
TABLE 4. RELATIONSHIP BETWEEN HOUSEHOLD SIZE, LABOR AVAILABILITY AND STAGE IN THE DEVELOPMENTAL CYCLE OF THE FAMILY AND PARTICIPATION IN POTATO CULTIVATION

<table>
<thead>
<tr>
<th>Average household size</th>
<th>Number of households with 2 or fewer workers</th>
<th>3 or more workers</th>
<th>Stage in the developmental cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potatoes (N = 37)</td>
<td>5</td>
<td>17</td>
<td>20</td>
</tr>
<tr>
<td>(average household size)</td>
<td>(3 members)</td>
<td>(6 members)</td>
<td></td>
</tr>
<tr>
<td>No potatoes (N = 37)</td>
<td>6</td>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td>(average household size)</td>
<td>(5 members)</td>
<td>(7 members)</td>
<td></td>
</tr>
</tbody>
</table>

* A: Household heads are younger than 40 years, only young children in household.
* B: Age of household heads is between 40 and 60 years; children are teenagers.
* C: Household heads are in 60s or older; many have small, adopted children or household heads are in their 50s or older and all offspring have left the household.

Potatoes so as to meet the consumption needs of a large household, to make use of available and underemployed family labor, or even that family labor availability can either hamper or encourage cultivation, it seems apparent that these factors may play some role in the decision to grow potatoes. For this reason I compared the sample of potato planting families to a sample of non-planting families in terms of: 1) average household size, 2) stage in the developmental cycle of the family, and 3) the presence of two or fewer, or three or more, economically active members in the household. Active members were defined as those over the age of 15 (and thus out of school), but not including elderly grandparents. These data are presented in Table 4.

While one might expect that larger families with more labor resources would be those that cultivate potatoes, household data indicate that potato cultivating families on Tubuai are slightly smaller (average size 5 members) than those that do not cultivate (average 6 members). Indeed, several of the largest planters have families composed of fewer than four members, while there are large households of 12–14 members which do not cultivate cash-crops and produce at basically subsistence levels, “wasting” their large supplies of labor. Potato cultivating families do include a higher proportion (54%) of families with three or more economic personnel than those who do not plant (48%); this difference is not particularly great, however. From these data one can conclude that household size and labor availability are not good predictors of the choice to plant potatoes. The absence of a relationship can be largely attributed to the availability of labor-saving farm machinery for all families.

What is most interesting in the comparison of planting and non-planting households is the proportion of families in each stage of the developmental cycle. Those families who cultivate potatoes are almost all either middle-aged (43% of all planters) or elderly households (46%); young families comprise only 11% of all planters. On the other hand, non-planting households are more representative of the population at large and include a large number of young/new families (32%) and middle-aged families (35%); elderly families make up 24% of this sample. It should be noted that the average household size of both planting and non-planting families in each stage of the cycle is approximately the same (see Table 4).

The relationship between the stage in the developmental cycle of the family and potato cultivation suggests that there are factors (other than family size and labor availability) related to the maturity of the family unit which facilitate potato farming. Two factors which stand out regarding young families (who do not generally plant) are: 1) as a group, they have a relatively high proportion of employed male household heads, and 2) they typically have low incomes (those that are not employed).

If one looks only at the group of potato farming families, a relationship between family labor resources and the scale of cultivation is found. If one examines these families in terms of their scale of cultivation, average household size, and number of active economic members, it is apparent that both household size and number of workers are closely related to the scale of cultivation. Small families with few workers tend to cultivate on a small scale (0.5–1.0 ha) and large families (five or more members) with three or more workers tend to cultivate on a larger scale (average 1.0–2.0 ha).

WAGE LABOR. Wage labor is one activity, because of its full-time demands and because it takes the male household head away from the home, which directly affects participation in other activities, particularly cash-cropping (see Harding 1971; Chibnik 1980). However, on Tubuai, 13 of the 40 farmers (32%) who planted potatoes in both 1980 and 1981 were employed full-time. A comparison of households with an employed male head with households whose male head is not employed (or who is employed sporadically or part-time) indicates that full-time employment does not necessarily preclude participation in cash-cropping. The distribution of households relating potato cultivation to employment is not statistically significant. Wage labor and potato cultivation can be successfully combined (although the scale of cultivation will be reduced—see Table 5) because potato cultivation is a seasonal activity which takes up only three months out of the year, and because the labor requirements of potato cultivation during most of the season are readily met by other household members.
TABLE 5. DISTRIBUTION OF HOUSEHOLDS BY HOUSEHOLD INCOME AND PARTICIPATION IN POTATO CULTIVATION

<table>
<thead>
<tr>
<th>No Potatoes</th>
<th>No potatoes</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>High income</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Middle income</td>
<td>25</td>
<td>79</td>
</tr>
<tr>
<td>Low income</td>
<td>6</td>
<td>26</td>
</tr>
<tr>
<td>Totals</td>
<td>40</td>
<td>111</td>
</tr>
</tbody>
</table>

χ² = 9.80
p < .01
Gamma = .41

Some of the most active households, particularly in cash-cropping, are those in which the female household head is employed and the male is not. What is most interesting here is that this small number of households are substantially more involved in cash-cropping than households in which no one is employed (and thus the male head is free, as well). The important difference appears to be the family’s access to a steady cash income provided by the female head. The role of income is discussed in more detail below.

INCOME LEVEL: ACCESS TO CAPITAL. Although capital is not required to plant potatoes, farmers constantly discuss the costs of cultivation and speculate about how much money they will earn. The high cash costs of cultivation were of greater concern to farmers than any other aspect of the program, including uncertainties due to soils, rainfall and insects.

For these reasons I examined the relationship between a household’s total cash income and its involvement in potato farming. As the distribution of households by income level in Table 5 shows, high income families cultivate potatoes more frequently than one would expect if potato planters were evenly distributed by income, and low income households cultivate less frequently; the latter also cultivate on a much smaller scale than other households (see Table 6). The distribution is statistically significant (χ² = 9.80, p < .01) and the value of gamma, a coefficient of ordinal (rank) association (see Freeman 1965:79–87), is .41, indicating a moderately strong rank association between these two variables.14

Reduced participation by low income households is striking because one would expect that this group would be among the most heavily involved, particularly since such families have no reliable source of cash income. In addition, the potato program was specifically planned so that capital was not required to participate.

The relationship between income and potato cultivation can be understood in terms of the consumption, expenditure, and savings behavior of the typical Tubuai household. Potato cash-cropping involves substantial cultivation uncertainty and the capital costs of cultivation are relatively high. One way to minimize this uncertainty would be to save cash and to have it available in case one did not do well enough to cover one’s debts. However, as household budgets suggest, islanders do not choose to alter their strong priority for consumer goods purchases so as to have savings available to pay back debts in a bad season.

Representative consumption patterns for households at different levels of income are presented for the three case households in Table 2. As the cases show, Tubuai families tend to expend all of their monthly cash income on Western foods, small manufactured items, gasoline, and oil. There is little overall variation in cash spent for purchased Western foods, regardless of income. The three case households each spend between $45–60 a week at the Chinese-operated store. Each purchases basically the same items—sugar, rice, canned meat, gasoline, etc.—all of which are considered to be basic necessities. Families with the smallest income, like #1, spend almost all of it for these items. Wealthier families who have larger total incomes spend approximately the same amount, but it represents a small proportion of total income. Once basic Western foods have been purchased, further expenditures on expensive, imported foods fall off rapidly. The utility of additional foods declines relative to the utility of other consumer goods (i.e., a radio, clothing, etc., and for wealthier families—a truck, boat, or electric generator).

Thus, the Tubuai case agrees with Finney’s (1973) contention for the Tahitian cultural group in general, that islanders are avid consumers and “... saving is considered to be, if not a vice, at least an un-Taian trait displayed by miserly Chinese, Europeans, and Demis” (Finney 1973:75). The absence of saving and emphasis on consumption is a phenomenon which has been noted in many other developing communities (e.g., Salisbury 1962) and Guzman (1978) describes it for the Panama case: “Money is not stored and hoarded, nor is it used for a fund of investment; it is expended on food and market goods, luxuries” (Guzman 1978:131).

Although cultivation uncertainty (risk to capital) does not lead to changes in well-entrenched expenditure/consumption patterns, it is reflected in which households decide to cultivate potatoes. Low income families who earn just enough cash to buy basic “necessities” would be jeopardizing this minimum lifestyle (which is the product of welfare development policies and is quite high by world standards) if they risked capital in potato cultivation. Wharton (1971) has termed this basic living level as the minimum subsistence standard of living and its value is culturally determined.

Another way of stating this is that there is a “budget threshold” (see Cancian 1979:13), or amount of total income, which facilitates risky behavior (cash-cropping) because beyond this level of income the minimum standard of living is assured. For middle and high income families, this minimum standard of living would not be jeopardized by risking a proportion of total income on cash-cropping.

The economic implications of income expenditure patterns on Tubuai vary significantly, then, for households at different levels of income. For low income families, it virtually negates the potential for productive investment because all income is expended on foods and other non-permanent consumption goods.

Other studies (e.g., Johnson 1971; DeWalt 1975) have examined the hesitation of farmers to participate in uncertain cash-cropping activities in terms of their need to ensure bare subsistence minimums or even survival. The Tubuai case clearly suggests that even in well-to-do communities where social welfare is assured and absolute poverty does not exist, the lower income group (relatively speaking) will not place at risk its access to imported consumption goods (and the
TABLE 6. RELATIONSHIP OF HOUSEHOLD INCOME/ECOOMIC STRATEGY TO POTATO CULTIVATION*

<table>
<thead>
<tr>
<th></th>
<th>No Potatoes</th>
<th>Potatoes</th>
<th>Totals</th>
<th>% of all households category represents</th>
<th>Average scale of cultivation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A1 Both household heads employed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A2 One household head employed and <em>markets</em> household production</td>
<td>9</td>
<td>1</td>
<td>10</td>
<td>7%</td>
<td>1,900 kg planted</td>
</tr>
<tr>
<td>(Totals)</td>
<td>(9)</td>
<td>(6)</td>
<td>(15)</td>
<td>(10%)</td>
<td></td>
</tr>
<tr>
<td><strong>Middle income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B Wage labor (of either household head)</td>
<td>11</td>
<td>70</td>
<td>81</td>
<td>54%</td>
<td>900 kg</td>
</tr>
<tr>
<td>C <em>Markets</em> household production</td>
<td>14</td>
<td>9</td>
<td>23</td>
<td>15%</td>
<td>2,500 kg</td>
</tr>
<tr>
<td>(Totals)</td>
<td>(25)</td>
<td>(79)</td>
<td>(104)</td>
<td>(69%)</td>
<td></td>
</tr>
<tr>
<td><strong>Low income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D Subsistence-oriented</td>
<td>6</td>
<td>26</td>
<td>32</td>
<td>21%</td>
<td>900 kg</td>
</tr>
<tr>
<td>Totals</td>
<td>40</td>
<td>111</td>
<td>151</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

* The relationship between marketing households (A, and C)/non-marketing households (A, B, D) and potato cultivation/non-potato cultivation: \( \chi^2 = 38.52, p < .001 \).

standard of living they make possible) by investing cash in an uncertain activity.

In order to interpret the degree of participation in development by middle and high income groups, it is necessary to consider another dimension of the problem, the economic strategy which is the source of income.

**HOUSEHOLD ECONOMIC STRATEGIES.** Within middle and high income groups the degree to which the household is involved in the market sector (prior to its decision to plant potatoes), even if this involvement is not related to agriculture (i.e., the family markets fish, fresh meat, crafts, etc.), is a strong predictor of potato cash-cropping. I have classified households by major strategy within income levels. This distribution is presented in Table 6. One can see that a large proportion of potato planters fall into two relatively small segments of the population, categories A2 (high income, market-oriented households) and C (middle income, market-oriented households). The small group of 33 households in categories A2 and C (22% of all households) dominate the local market for household production.

If one groups and then compares market-oriented families to those who are wage laborers (A1 and B) or subsistence-oriented (D), one can see that there is a strong correlation between a household's economic strategy and its involvement in potato cash-cropping. This distribution may be seen in Table 6; it is statistically significant (\( \chi^2 = 38.52, p < .001 \)).

The families who cultivate potatoes on the greatest scale belong to group C. The average scale of cultivation among this middle income group is approximately 2,500 kg of seed potatoes planted; the island average is 500-1,000 kg. Because of the large profits which can be earned by extensive cultivation, one would expect that these households will, with a little time, move up into the high income category.

The 15 families in the high income, market-oriented category (A) are of two types. In ten families, one of the household heads is employed and the family produces at high levels for market sales as well; nine of these households grew potatoes and their average scale of cultivation was 1,900 kg of seed potatoes planted. The other five families in group A have a high income because both of the spouses are employed; of these, none grew potatoes.

Thus, at middle and high income levels, households which participate in development are those that are primary economic producers (they may also include an employed member) and well-integrated into the market sector. These primary producers are unlike subsistence-oriented households (which sporadically sell small surpluses) in that the former specifically direct their activity towards market exchange.

In producing for the market, they do something that neither low income households nor simple wage earning households do, they reinvest earned income to further productive enterprise. Families that make their living by cultivating gardens or fishing in order to sell their production augment their economic activities by investing in seeds, fertilizers, and land clearing to grow vegetables, by investing in a boat and motor to catch more fish, or by investing in the feeding and care of livestock in order to sell the meat. Compared to other families
who spend little on fertilizers or who fish from a canoe, these families are more efficient producers and have largely cornered the local market.

Simple wage earning households purchase some of the same items as market producers, such as trucks, possibly a motorboat, or a kerosene-powered refrigerator. However, these purchases do not significantly increase the household's productive capacity because the majority of these families (with the exception of a small number in the high income category) do not produce on any scale for market exchange; they produce for their own needs and purchase what they do not produce. Most importantly, the majority of simple wage earning households are not substantially involved in cash-crop agriculture.

Thus, it appears that on Tubuai, where government-created jobs are service-related and labor does not produce new inputs into the economy, artificial employment waste labor and diverts it from primary productive enterprise. Furthermore, one cannot say that wage employment serves the positive social function of creating human capital. Most jobs on the island require little experience or skill and do not teach new skills. In the past, wage jobs did infuse cash into the island economy, while not diverting labor from opportunities which did not exist. With recent cash-cropping programs, this is no longer true.

CONCLUSIONS. In the preceding analysis, I have documented the factors which have shaped differential household participation in potato cultivation on Tubuai (1979–1981). Although development strategies are welfare and equity-oriented, development does not have a broad base of participation among Tubuai families and a small segment of the population is expanding cash-crop cultivation and rapidly concentrating wealth. In short, agricultural development on Tubuai is encouraging the growth of substantial wealth differences among Tubuai families.

The analysis has shown that the eradication of poverty and the provision of credits, subsidies and other infrastructural supports have done little to promote the development participation of low income households. Although a relatively high standard of living and social welfare have been guaranteed for such families (and this is certainly of much social value), these strategies have not contributed to the ability or willingness of low income families to make productive economic investments. Instead, because of the central focus on consumption present in the regional capitalist economy at large, these policies have been instrumental in fostering high consumption expectations.

The analysis has also shown that the provision of service-related, artificial employment opportunities (and thus salaries for islanders) has not promoted growth and investment in the island economy. Instead, it has achieved the same result noted above, inflated consumption expectations. It also hampers (for some families, but not all) participation in primary production.

The failure of Tubuai development strategies to elicit broad community involvement in agricultural development has important policy implications for governments attempting to weigh the possible outcomes of similar policies. The Tubuai case also lends support to the contention that development strategies “rooted in planning” will prove to be ineffective in discouraging the growth of inequalities in the context of a regional capitalist economy.

Implications for the Future

As the reported trends in differential development participation and wealth concentration on Tubuai span a relatively short period of time, it may be too soon to make predictions regarding the future implications of these trends for the future structure of Tubuai society. Nevertheless, I believe that there are clearly recognizable forces at work within the encompassing regional capitalist economy which, if island development continues on its present path, will foster a transformation to local-level capitalism. These forces include Tubuai’s growing incorporation into regional-level markets, the government’s long-standing goal to abolish the collective land tenure system and institute individual titles, the well-entrenched profit orientation and rising consumption expectations of islanders, the idealization of the French metropolitan lifestyle, and pressure from government and church authorities to “Westernize” Tubuai society (see Hanson 1973). A capitalist transformation on Tubuai would be consistent with similar changes which have already taken place on more modernized islands in the Territory (e.g., the Society Islands—see Finney 1973).

While present indicators suggest that the reported trends in Tubuai development will continue, there are exogenous political factors which must be considered in any discussion of Tubuai’s future. Most importantly, Tubuai development is entirely dependent on the French/Territorial government’s on-going interest in financing costly development programs for the Territory’s remote outer-islands (most of which have questionable economic potential). This is, of course, closely tied to the political and strategic vicissitudes of France’s presence and political policy in the region.

If the present trends continue, one can readily project the processes through which a local transformation to capitalism would occur. Differential participation in potato cultivation would effectively abolish the relatively egalitarian distribution of wealth which existed prior to potato development. Market producers (those heavily involved in potato cultivation) would become increasingly wealthy while low income, subsistence producers and wage workers (both of whom have static incomes and productive potentials) would become relatively poorer. Those farmers who are able to concentrate capital would become wealthy and would thereby be in a position to exercise control over the other factors of production—land, labor and technology (see Gamst 1974; Roseberry 1976).

The strong correlation between middle and high income households which are primary producers/marketers and those which are involved in development points to “the emergence of a new class in society, a class of profit-making entrepreneurs, who will think in terms of reinvesting income productively” (Lewis 1955:225ff, cited in Firth 1964:33). These households incur substantially greater economic risk and are more innovative than “non-entrepreneurial” households (see Barth 1963; Belshaw 1964).

The expansion of entrepreneurial cash-croppers on Tubuai can only be achieved if other islanders give up their present
control over the means of production, particularly land. At the present time, control over land is relatively equitably distributed among Tubuai families and a market for it does not exist. However, successful large-scale cultivators will seek to control greater areas of land, not only to expand production, but also to achieve important economies of scale (see Joralemon 1983b).

If the government succeeds (with the support of potato farmers) in encouraging the individualization of titles, one can project that the approximately 70% of all households which are not involved in market-oriented agricultural production will sell their parcels to acquire cash. As agriculture will always be the basis of the Tubuai economy (the island has little potential for industrial development or tourism), and because the existence of artificial wage employment opportunities are completely dependent on the “goodwill” of the French, the divestment of families of their access to land would be a critical process.

It appears reasonable, then, to project that the highly skewed pattern of development participation on Tubuai and the growing wealth differences among families are the first steps in the transition to local-level capitalism. The increasing individualization of land use rights and ownership, followed by land concentration by wealthy farmers and the divestment of other population segments of their land rights, will, in all probability, soon follow.

NOTES

1 I define exploitation following Roseberry (1976:45), “... to refer to the appropriation by non-producers of a portion of the total product of direct producers.” Specifically, development-created wealth, in this case the value of the surplus agricultural product sold in Tahiti markets (potatoes), is not extracted from the community, but is retained and reinvested by farmers.

2 Fieldwork was conducted on Tubuai from October 1980, through September 1981, with the gratefully acknowledged support of a Department of Anthropology, UCLA, Research Grant and a University of California Regents Travel Grant.

3 For example, total expenditures for French Polynesia’s fourth development plan (1966–1970) amounted to 13–14 billion CFP francs (approximately 150,000,000), of which France provided over 90% (Thompson and Adloff 1971:85).

4 The Territory has customarily relied on indirect taxation for its revenues. This has included various business taxes, taxation of foreign residents (mainly Chinese), and the collection of import duties. The latter has consistently supplied the bulk of Territorial revenues (Thompson and Adloff 1971).

5 The 30 families who were not included in the census were either: 1) French or Chinese residents, or 2) families from Tahiti who had recently moved to Tubuai to assume an administrative or teaching position.

6 The total income acquired by households which are employed and which produce for market sales must be estimated because many transactions, particularly those between island families, are informal and no records are kept. I used the high school records of purchases as a general measure of the scale of each household’s overall market involvement. The schools are the major bulk purchaser of household production on the island and those families who rely to any extent on market sales for income must sell mainly to them. A subsistence-oriented household might sell several hundred dollars’ worth of taro or fish to the schools in one year; market-oriented households consistently sell more than $500 and closer to the $1,000–1,500 range of household production. I used $500 as a delineator of a subsistence or market orientation.

7 In my view, this method of assessing income levels and the distribution of wealth prior to the potato program (by artificially separating out potato earnings) is a relatively accurate means of estimating earlier income levels. This is because: 1) income levels from all other sources have remained stable since the mid-1970s, 2) potato cultivation does not replace other production activities, but is added to them by using underemployed family labor; and, households which cultivate potatoes rarely reduce participation in other productive activities (or if so, minimally), and 3) prior to potato cultivation alternate income earning activities (other than those already taken into account) did not exist.

8 CFP (Colonies Francaises du Pacifique) francs are the monetary units of French Polynesia. In 1980–1981, their value rose from about 75 CFP to 110 CFP per U.S. dollar ($). For simplicity of computation, I take 90 CFP francs to equal one U.S. dollar throughout the text.

9 All available jobs on the island are held by a stable group of workers (there is little job turnover); thus, acquiring employment is not possible for most. Furthermore, because of the limited local market for household production and various problems in the export sector, devoting additional labor to expanding household production (of cash crops or other items) on any scale is not viable.

10 Of 34 potato planting households, 24 said that they could expand cultivation; of 125 households which did not cultivate potatoes, 81 said that they could expand cultivation. The distribution is not statistically significant, $x^2 = 32$.

11 Rates of emigration from Tubuai have not been documented, but I would estimate that as much as 50% of the present adult generation (in their 40s and 50s) has left the island. Most islanders who leave maintain little contact with relatives on Tubuai.

12 Of 40 potato planting households, 13 of the male household heads were employed full-time; of 128 non-planting households, 55 male household heads were employed full-time. This distribution is not significant, $x^2 = 1.22$.

13 First, however, I excluded 17 households in the low income category from the statistical analysis. These are the non-self-sufficient households of lone elderly couples, lone elderly individuals, or elderly female widows with small adopted children. Such families typically rely on support from adult offspring and would not become involved in development programs under any set of circumstances.

14 Chibnik (1980:110) states that although gamma is a measure of rank (ordinal) association between two variables, it can be used when one variable is ranked (i.e., level of income) and the other variable is nominal (i.e., plants potatoes, does not plant potatoes).

15 Robert Levy (1973:8) defines this social group: “a vaguely bounded cultural and social category of ‘Europeanized Tahitians’...” For the most part, they are persons of mixed Tahitian and French blood and they consider themselves to be of higher status than Tahitians.

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