

A VIEW OF THE OUTER ATOLL ECONOMY

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A. The Pattern of Population Growth and Migration in the Outer Atolls

In 1948, 76% of the population lived on the "rural" outer atolls of the Marshall Islands. Fifty-two years later, in 1999, only 30% of a much larger total RMI population lived there, the remainder residing in the two "urban centers" of Majuro and Kwajalein Atolls and on Kili Island and Enewetak Atoll. Changes in the distribution of population between rural and urban atolls are reflected in the data in Tables 1 and 2 and Figure 1 below. Note that outer atoll population figures in this analysis exclude inhabitants of Enewetak and Kili because migrations to and from these areas were not principally a function of normative economic considerations common to the other outer atolls of the Marshall Islands.

Table 1:
Rural vs. Urban Population: 1948-1999

Census year	Population		Percentage	
	rural	urban	rural	urban
1948	7,362	2,364	76%	24%
1958	8,761	4,699	65%	35%
1967	9,261	8,789	51%	49%
1973	8,325	15,759	35%	65%
1980	11,192	18,415	38%	62%
1988	13,078	28,975	31%	69%
1999	14,657	34,578	30%	70%

Sources: Department of the Navy, *Handbook on the Trust Territory of the Pacific Islands*, 1950; RMI Statistical Abstract, 1995; RMI 1999 Census.

Table 2:
**Rates of Population Change
by Census Period**

Census periods	Annual Change over census periods	
	rural	urban
1948-58	1.8%	7.1%
1958-67	0.6%	7.2%
1967-73	-1.8%	10.2%
1973-80	4.3%	2.2%
1980-88	2.0%	5.8%
1988-99	1.0%	1.6%
1948-99	1.4%	5.4%

Sources: Same as for Figure 1.

Several factors reduced the apparent rate of annual population growth in the urban atolls from 10.2% between the 1967-73 censuses to 2.2% between 1973-80.

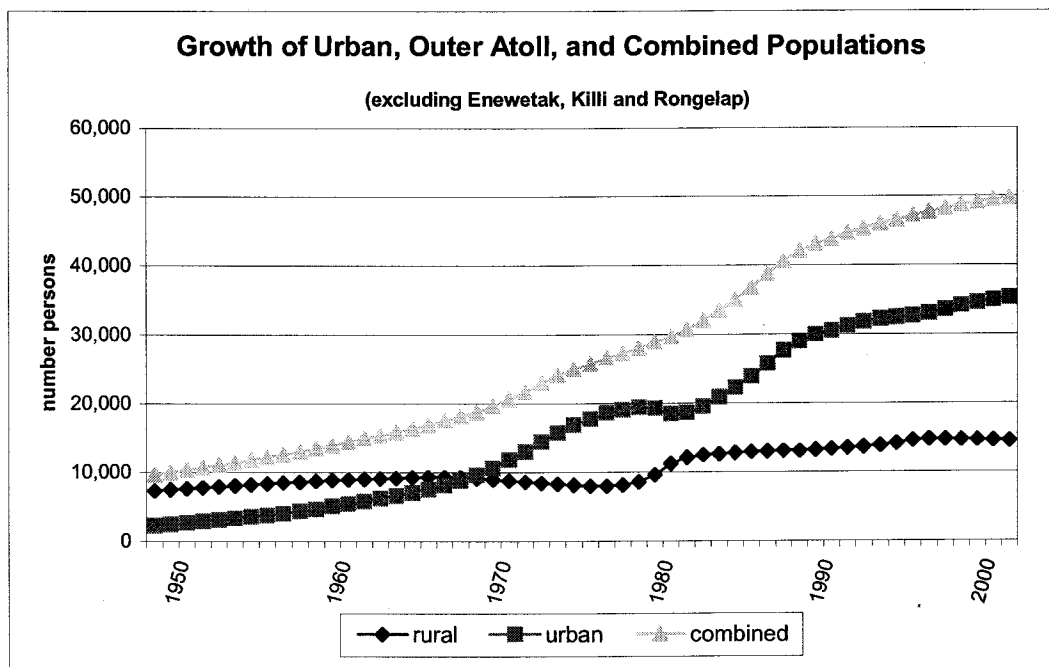
- The growth of the urban economies had begun to stall by the mid-1970s, the rapid increases in U.S. spending during the 1960s having attained a plateau of

about \$20 million by 1970. Many urban immigrants, unable to find employment, began to move back to their home atolls.

- The government-funded Tobolar copra processing plant started operations in 1978. Long promised as a panacea for the declining copra industry, many outer islanders had remained at their home atolls in anticipation of a boom in copra prices. The price did increase dramatically to \$940/ton¹ in 1979 from \$445/ton during the three previous years, but dropped back to the previous level in 1980, after which it drifted downward to under \$200/ton in 1991.
- In December 1979, a devastating flooding of Majuro, caused by huge ocean swells, rendered 10,000 people homeless and drove hundreds of unemployed migrants back to their home atolls during 1980.
- Demographers generally regard the 1980 census as an undercount, possibly because of the chaos in Majuro that year, where thousands lived among half a dozen makeshift 'tent towns' after the flooding.

Between the 1980-88 censuses, however, the urban growth rate began to increase again, climbing to 5.8% annually as significantly higher levels of funding from the Compact of Free Association began to flow to the newly affluent national government. The Trust Territory program of concentrating spending in Majuro and Kwajalein continued even as the price of copra, the mainstay of outer atoll economic life, kept dropping, and migration to the urban areas resumed. The rates of change and relative proportions of urban and outer atoll populations are depicted in Figure 1.

Figure 1



¹ All dollar amounts in this report are adjusted for inflation to their approximate equivalent in 2001 dollars. Inflation factors were derived from a composite of the US Department of Labor Consumer Price Index, the RMI Consumer Price Index and *Trust Territory Annual Reports to the United Nations* (1958-1977).

Sources: Department of the Navy, *Handbook on the Trust Territory of the Pacific Islands*, 1950; RMI Statistical Abstract, 1995; RMI 1999 Census.

Over the 52-year period between 1948 and 1999, rural population doubled from 7,361 to 14,657 while urban population increased by a factor of 13.6, from 2,364 to 34,578. But these numbers alone do not describe the full impact of migration from the outer atolls.

A considerably greater proportion of those who, by virtue of their age, are largely dependent on the productivity of others for their support reside on the outer atolls. According to the 1999 RMI Census, 51.3% of persons living on the outer atolls are between the ages of 0 and 14 years or are older than 59 years, compared to 43.8% at the urban atolls, a differential of 17%. This differential highlights a consequence of the migration of the most productive members of the society to the urban areas.

The establishment of public and private high schools in Majuro drew most of the best-qualified elementary students from the outer atolls. They became accustomed to enjoyment of the physical amenities and economic opportunities of urban life while in Majuro. The vast majority of them chose to reside there or at Kwajalein following graduation. Their high school diplomas and enhanced English language skills gave them easy entry into government and private sector employment.

In contrast, there were few amenities or opportunities for economic gain in the outer atolls. A handful of government jobs on their home atolls as teachers or health aides drew some graduates back there, but rather than face a lifetime of economic insecurity cutting copra, nearly all elected to seek jobs at the urban locations. Had there been stronger incentives for the better-educated students to return home, the economic and political potential of the outer atolls might have been more fully realized.

B. Profile of the 19 Outer Atolls and Islands Analyzed in This Study

The following analysis focuses on the 16 atolls and 3 islands (hereafter referred to collectively as "the outer atolls") whose economies have benefited least from outside assistance or compensation programs, thereby excluding the "urban centers" of Majuro and Kwajalein and the "nuclear-affected atolls" of Kili/Bikini, Enewetak, and Rongelap because of the high level of prosperity there relative to the other locations. Utirik Atoll, although nuclear-affected, fits the group's profile on most other measures and so is included in the analysis.

These nineteen outer atolls comprise 47.25 square miles of dry land and are inhabited by a population of about 14,500 persons at present. Average household size is 7.4 persons and average population density is 373 persons per square mile. For comparison, household size at the other four atolls averages 8.3 persons and average density is 2,900 per square mile.

Dividing the mid-point value of income categories used in the 1999 Census by the number of persons in those categories yields an average per capita income figure for these 19 outer atolls of \$424, ranging from \$87 on Lib Island to \$693 at Jaluit Atoll and \$273 at Ailiniplap, with a median of \$480. Mean per capita calculated in the same manner for the urban and nuclear-compensated atolls was \$2,426 and \$1,425, respectively. Using this method, national per capita is \$1,395.

Table 3 compares physical and economic characteristics of these 19 outer atolls and islands to each other and to those of the four urban and nuclear-affected atolls. Principal data is from the RMI 1999 Census.

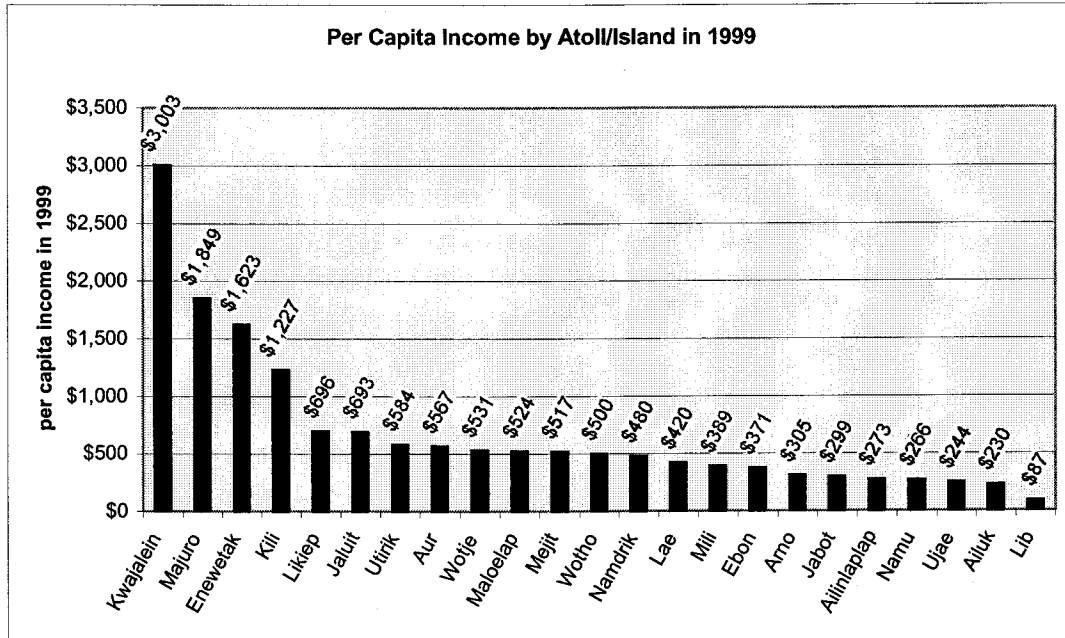
Table 3: Comparison of 19 Outer Atolls to 2 Urban and 2 Nuclear-affected Atolls

Atoll/ Island	Population (1999 Census)	Persons per household	Density/ square mile	Land (square miles)	Lagoon (square miles)	Latitude (degrees north)	Miles from Majuro	Median Household Income	Per Capita Income
Arno	2,069	8.5	414	5.0	131	7.07	30	\$1,965	\$305
Ailinlaplap	1,959	8.3	346	5.7	290	7.40	150	\$893	\$273
Jaluit	1,669	7.2	381	4.4	266	6.03	130	\$3,486	\$693
Mili	1,032	7.6	168	6.2	295	6.17	60	\$1,120	\$389
Namu	903	7.1	373	2.4	154	7.97	210	\$836	\$266
Ebon	902	7.4	406	2.2	40	4.63	220	\$1,048	\$371
Wotje	866	8.0	274	3.2	241	9.43	160	\$3,062	\$531
Maloelap	856	6.2	226	3.8	376	8.65	115	\$1,741	\$524
Namdrik	772	6.5	721	1.1	3	5.63	215	\$1,501	\$480
Aur	537	6.2	247	2.2	93	8.27	70	\$2,189	\$567
Likiep	527	6.4	133	4.0	164	9.92	205	\$2,272	\$696
Ailuk	513	5.8	248	2.1	69	10.33	205	\$679	\$230
Ujae	440	6.6	611	0.7	72	9.05	350	\$728	\$244
Utirik	433	6.7	461	0.9	22	11.47	265	\$3,461	\$584
Mejit	416	6.9	578	0.7	---	10.13	200	\$2,410	\$517
Lae	322	10.1	575	0.6	7	8.93	320	\$2,891	\$420
Wotho	145	8.1	87	1.7	37	10.10	365	\$2,983	\$500
Lib	141	9.8	408	0.4	---	8.32	245	\$666	\$87
Jabot	95	6.3	432	0.2	---	7.75	132	\$888	\$299
means	768	7.4	373	2.5	141	8.28	192	\$1,833	\$424
Majuro	23,676	7.7	6,314	3.8	114	7.13	0	\$9,030	\$1,849
Kwajalein	10,902	9.0	2,760	6.3	839	9.08	235	\$14,195	\$3,003
Enewetak	853	7.8	377	2.3	388	11.51	595	\$10,750	\$1,623
Kili	774	8.6	2,150	0.4	---	5.63	160	\$8,114	\$1,227
means	9,051	8.3	2,900	3.2	447	8.34	248	\$10,522	\$1,926

Source: 1999 RMI Census

Per capita income at the 23 atolls in Table 3 are depicted in Figure 2 below.

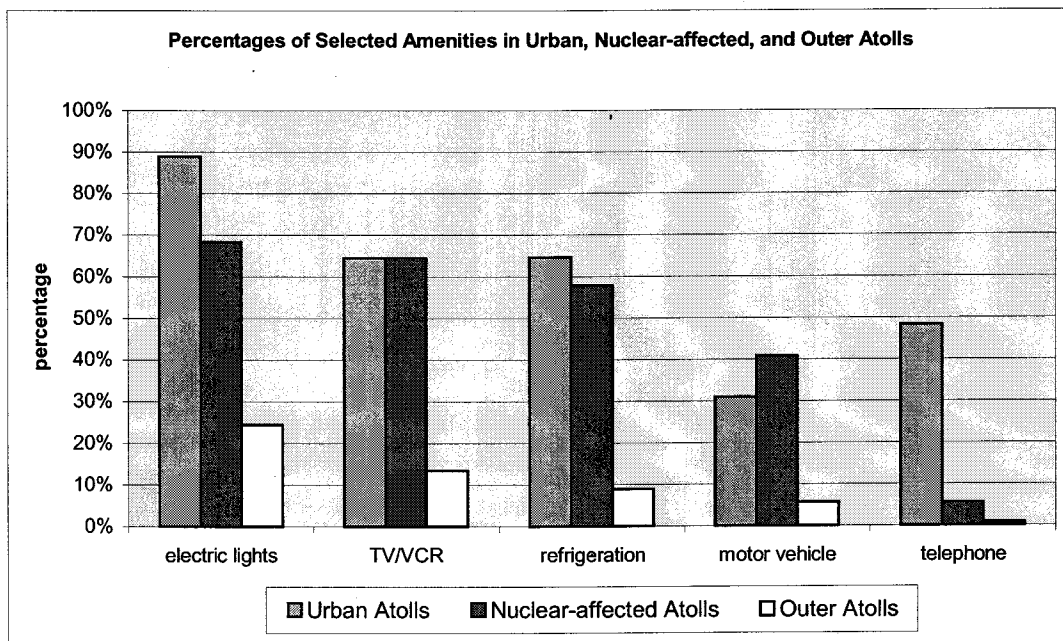
Figure 2



Source: RMI 1999 Census

Figure 3 shows the distribution of household amenities in each of these groups.

Figure 3



Source: RMI 1999 Census

C. Copra: Faltering Foundation of the Outer Atoll Economy

For the vast majority of outer atoll residents, the production of copra continues to be their principal source of cash income, following a pattern established nearly 150 years ago. The introduction of copra making by European traders was the first time Marshallese had encountered a system where they could trade a product formerly of little consequence to them for products of inestimable value in easing the burden of survival. When copra became a medium of exchange for foreign imports, the overabundance of coconuts on every island became a medium of good fortune for their inhabitants.

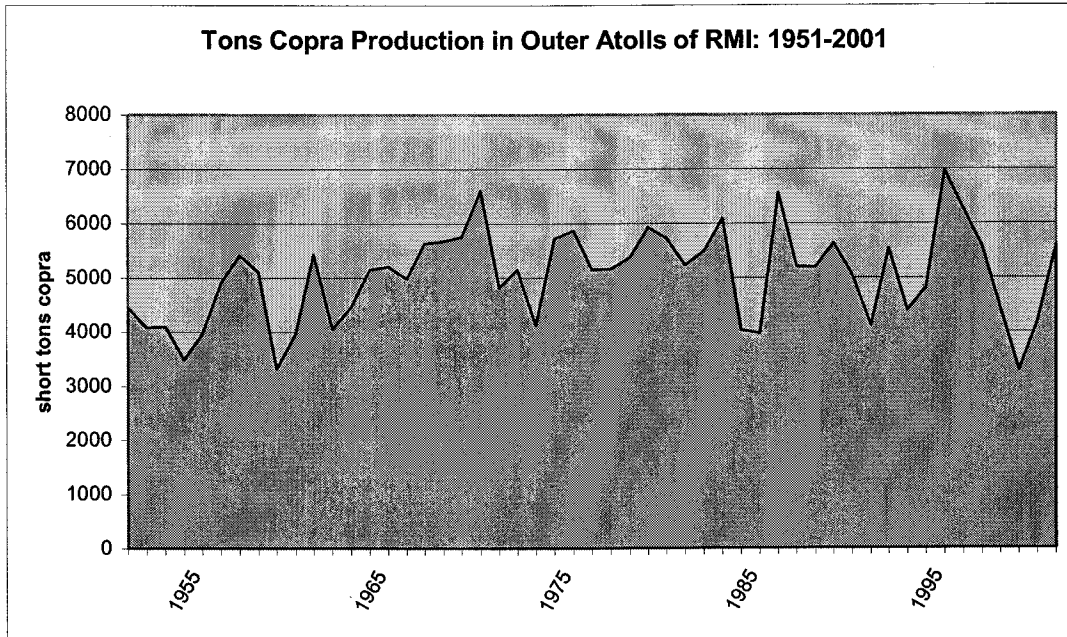
With income earned from copra, Marshallese were able to acquire steel cutting tools and cooking vessels, matches and kerosene lanterns, and easily prepared foods like rice and flour. These and other imported products were instrumental in changing the way they lived in fundamental ways. Their ancient political system, where the division of chiefs and commoners was absolute, was modified by the introduction of an intermediate political class, the alabs or "land managers," which endures today, serving an important economic, political and social function in the culture. The alabs were (and are) senior family members who were given responsibility by the chiefs to ensure that their families produced copra. Not only was the pattern of everyday household life changed by the copra industry, but the topography of the islands themselves was altered when interior virgin forests were cut down for replanting with coconut palms.

Because it was so plentiful relative to population in the Marshalls, copra provided a standard of living that other Pacific Island groups envied for well over a century. When the question of changing the political status of Micronesia from the Trust Territory (TT) was debated in the Congress of Micronesia in the early 1970s, a key issue was how tax revenues from copra produced in the Marshalls (40% of the total production of the TT), at that time the most important export product of the area by far, would be shared among the various districts of Micronesia. The inability of the Congress to find a formula for this satisfactory to the Marshalls was one of the reasons they asked the United States for a separate political status.

Coconut palms produce only so many nuts each year. In the Marshalls, the maximum workable yield in an average year is about 6,500 tons. Actual average copra production on the outer atolls, however, has been 5,230 tons annually over the past 30 years due to household use of ripe coconuts, low prices, infrequent shipping, and adverse weather conditions. Production levels in Figure 4 represent tonnages of copra delivered to Majuro for each year since 1951.

The price of copra, relatively stable for over a century, has been in decline worldwide compared to most other agricultural commodities over the past 25 years, due in part to substitutions for coconut oil of other, less expensive soybean and sunflower oils. Prices after 1986 would have been substantially lower had the RMI government not introduced subsidies that became effective in 1987. Figure 5 below shows how copra prices in RMI, corrected for inflation and including subsidies, have varied over the past 53 years.

Figure 4



Source: RMI Statistical Abstracts 1989/90, 1993/94, 2000; RMI Office of Planning and Statistics, 1985.

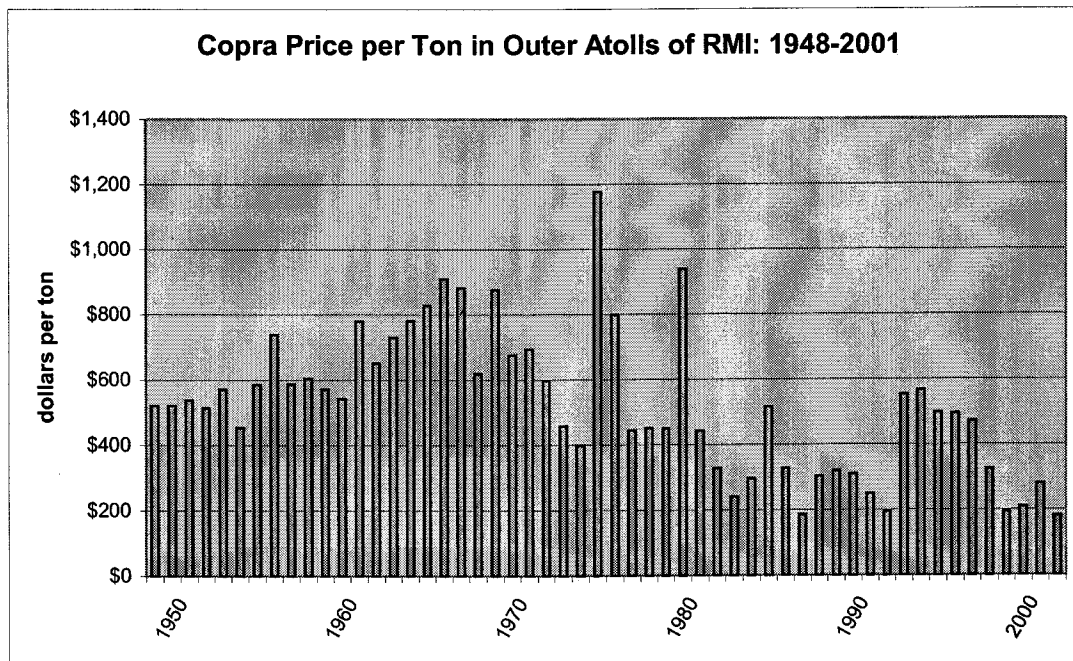


Figure 5 Sources: Robert Nathan Associates, *Economic Development Plan for the Trust Territory of the Pacific Islands*, 1966; RMI Office of Planning and Statistics, 1985; RMI Statistical Abstracts, 1989/90, 1992/94, 2000; Tobolar.

The U.S. Navy began purchasing copra late in 1946 for \$600/ton, the average price paid over the 35-year period ending in 1980. Annual per capita income from copra for these years is calculated to have averaged \$375.

World market demand for copra, and hence, its price, had begun to weaken and become more volatile during the 1970s. Growing global awareness of the highly unsaturated fat content of coconut oil and the health hazard this implied further lowered demand in the 1980s since coconut oil had been widely used as an ingredient in many processed foods. After so many generations as a stable feature of atoll life, the decline in value of copra began a 20-year downward spiral in standard of living for outer islanders.

Following the October 1973 war in the Middle East, the price of copra skyrocketed to an all-time high of nearly \$1,200/ton in 1974 when petroleum supplies dried up after establishment of the Arab oil cartel. For a brief period, coconut oil was substituted for certain petroleum-based products because it had become more cost effective. In 1974, per capita copra income in the Marshalls reached an all-time record of \$830 per person, more than twice the average for the previous decade.

Migration from the outer atolls, even at its high rates between 1960 through 1975, appears to have had no negative effect on copra production. During this period, annual production averaged 5,245 tons, an increase of 22% over the previous decade. It is important to note that there have never been enough coconuts in the outer atolls for copra making to be a full-time occupation, so there were still plenty of people available for this work even though outer atoll population had dropped to 8,000 by 1975.

Figure 6 shows the relationship between averaged per capita income from copra for the entire outer atoll population and averaged tonnage production since 1953.

World copra production in any given year is closely tied to weather conditions in the tropical and subtropical western Pacific. Typhoons and droughts in this area are largely unpredictable and can have devastating consequences for productive capacity. In 1979, the price spiked up to \$940/ton after a series of typhoons debilitated plantations in the Philippines and Indonesia, which together account for 60% of world production. The severe droughts associated with El Ninos have consistently affected productivity in the Marshalls more than any other single factor (see Figure 11). Because yields from coconut palms diminish following drought, the price inevitably rises shortly thereafter since demand increases as production levels drop.

As price declined and population increased, per capita income from copra² fell from an average of \$375 in 1946-1980 to \$110 between 1981 and 1986 (see Figure 6). Gross atoll income from copra also suffered an absolute decline, despite the much greater number of people residing on the outer atolls (see Figure 7). The government of RMI had begun to subsidize copra price after the Compact went into effect in October 1986 to stabilize falling per capita income, but in 1991 per capita income from copra had dropped to a then-record low of \$73.

² Per capita income from copra is computed by dividing the total of gross revenues received from sale of copra (gross atoll income from copra) during a given period by the number of persons inhabiting the atoll(s) during that time interval.