REPORT

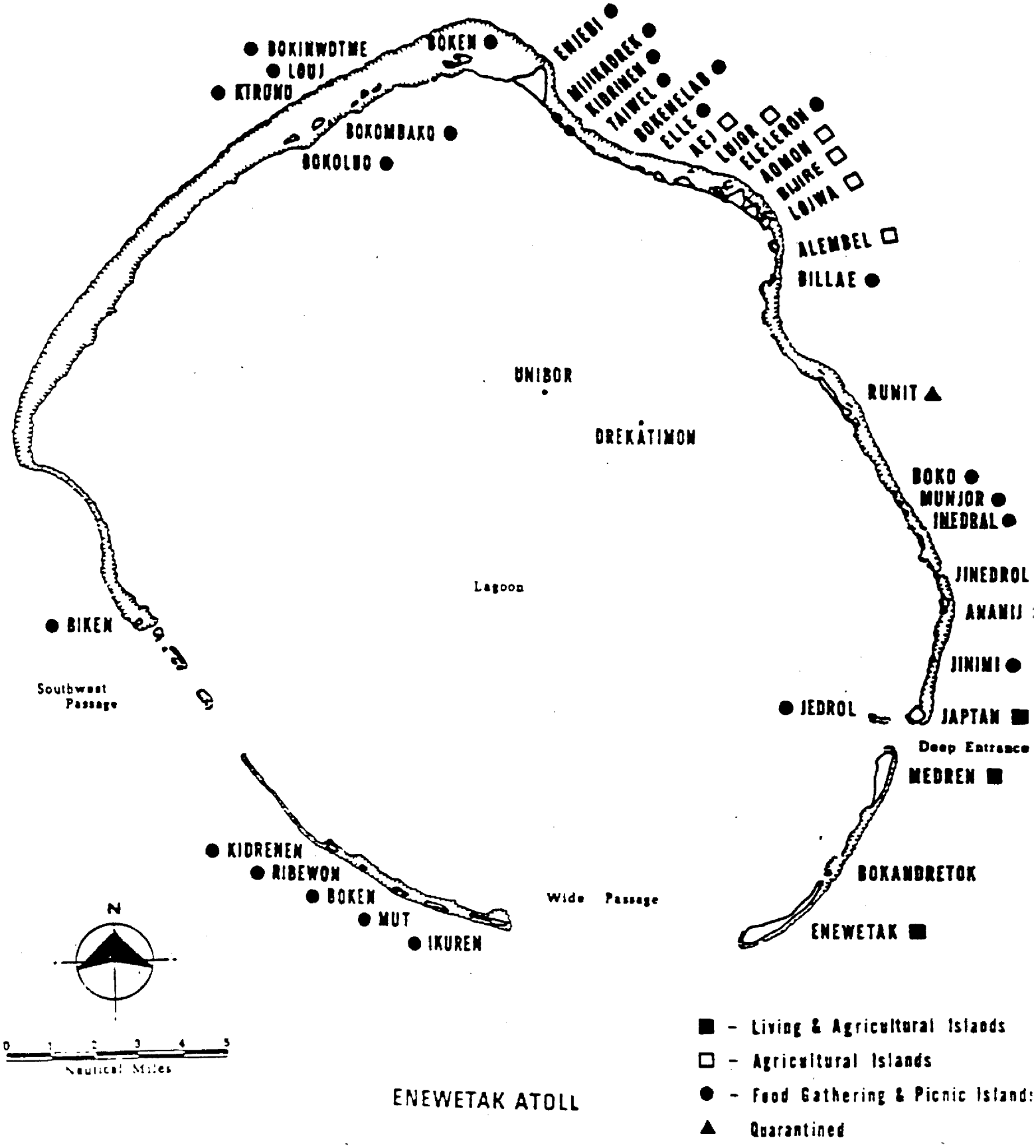
on the

ENEWETAK FOOD AND AGRICULTURE PROGRAM

Fiscal Year 1987

OFFICE OF TERRITORIAL AND INTERNATIONAL AFFAIRS

UNITED STATES DEPARTMENT OF THE INTERIOR



ENEWETAK ATOLL

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I INTRODUCTION

The Enewetak people returned to Enewetak in May of 1980 after an absence of 33 years. Prior to their return, an extensive radiological and debris cleanup program was completed. One hundred sixteen (116) new homes were constructed on 3 islands and 10 islands were planted with coconuts. Initially, breadfruit and pandanus were planted on 4 islands. Subsequently, various other foods have been planted.

During their absence from Enewetak the people of Enewetak lived on Ujelang, an atoll 125 miles southwest of Enewetak. Now that Enewetak is habitable the dri-Enewetak actively live on both atolls.

There are several major areas of DOI involvement in the resettlement of Enewetak Atoll. These programs interrelate and have the common goal of providing food and transportation for all of the people of Enewetak. These areas are described below.

II AGRICULTURAL PROGRAM

Background

Much of the natural vegetation on the inhabited islands of Enewetak Atoll was destroyed during World War II. During the subsequent testing operations, many of the islands were occupied by various facilities, and roads and airports were constructed. On Enewetak Island, concrete or asphalt covered much of the surface and in many cases the fragile topsoil layer was removed or displaced.

The southern residence islands of Enewetak, Medren, and Japtan were planted with pandanus, breadfruit, coconut and bananas along with garden vegetables such as melons, cabbages, and eggplants.

Program Summary

The various crops are maintained by local residents under the supervision of the contractor to the DOI and part-time Agricultural Consultant. The coconut palms have been weeded and fertilized on regular schedule in 1987. Circle weeding and fertilizer application is scheduled on Enewetak, Japtan, Medren and Ananij through 1988.

In March 1984, a complete brushing operation was initiated except for a 100' strip on the windward side and 50' strip on the remaining perimeter. All non-cultivated foliage was manually chopped down and left to decompose. This process will add humus to the soil, assist in retaining moisture and provide natural nutrients.

The northern islands of Aej, Lujor, Aomon, Bijiri, Alembel, and Lojwa were planted at the request of the Enewetak people with the full knowledge that the coconuts would contain levels of Cesium 137, which would render them unacceptable for human consumption. The idea was, when the decision was made, in 1979, that continuing scientific efforts might produce a solution to the problem in the 6-8 years it takes to produce these nuts. Since then, DOE and DOI have been conducting studies on Bikini towards that end. However, until an acceptable solution is identified, agricultural efforts have been concentrated on the southern islands, which are now beginning to produce edible crops. The Council and people are aware that the northern island coconuts are not usable as a food source at this time.

In March 1987, an inspection of all southern agricultural islands was made as part of the program review. The following is a summary of the present number of surviving plants, their heights and cumulative bearing projections through 1990. The bearing projections have also been converted to projections for potential copra tonnage.

LIVE PLANT STATUS AS OF MARCH 1987

PLANT TYPE	ENEWETAK		MEDREN		JAPTAN		ANANIJ		TOTAL	
	1986	1987	1986	1987	1986	1987	1986	1987	1986	1987
COCONUT										
Planted	7,941	7,941	11,572	12,502	2,892	2,892	897	897	23,302	24,232
Present Count	5,410	5,410	9,190	10,040	2,840	2,840	666	666	18,106	18,956
Number Lost	2,531	2,531	2,382	2,462	52	52	231	231	5,196	5,276
Survival Rate	68%	68%	79%	80%	98%	98%	71%	71%	77%	79%
PANDANUS										
Planted	1,126	1,126	280	400	329	360	158	158	1,893	2,144
Present Count	410	625	117	229	166	170	71	71	764	1,095
Number Lost	716	601	163	171	163	190	87	87	1,129	1,049
Survival Rate	36%	51%	41%	58%	50%	48%	45%	45%	40%	52%
BREADFRUIT										
Planted	500	510	203	203	148	156	30	30	881	899
Present Count	100	107	70	11	34	19	0	0	204	137
Number Lost	400	403	133	192	114	137	30	30	677	762
Survival Rate	20%	21%	34%	.06%	23%	13%	0%	0%	23%	16%
BANANAS										
Planted	100	100	63	63	30	30			193	193
Present Count	80	50	20	7	30	30			130	87
Number Lost	20	50	43	56	0	0			63	106
Survival Rate	80%	50%	31%	12%	100%	100%			67%	46%
WINDBREAK TREES										
Planted	704	750	310	310	93	93			1,037	1,153
Present Count	600	716	200	215	63	28			863	959
Number Lost	104	34	110	95	30	65			174	194
Survival Rate	86%	96%	65%	70%	67%	31%			84%	84%

COCONUT PALM HEIGHT OF MARCH 1985-MARCH 1987

	3-4 FT			4-6 FT			OVER 6 FT		
	1985	1986	1987	1985	1986	1987	1985	1986	1987
ENEWETAK	1000	1000	800	1000	1000	1500	3000	3600	4000
MEDREN	500	500	1000 *	2000	1500	1000	6700	6700	7400
JAPTAN	0	0	0	300	200	300	2500	2500	2700
ANANIJ	0	0	0	100	100	50	600	500	500
	1500	1500	1800	3400	1800	2850	12800	13300	14600

*Replanted with coconuts from Ujelang

COCONUT PALM BEARING PROJECTIONS

AND

COPRA POTENTIALS

ISLANDS	DATE PLANTED	ORIGINAL COUNT	PRESENT COUNT	1983	1984	1985	1986	1987	1988	1989	1990
ENEWETAK	3/80	7,607	5,410	0	150	450	1,000	2,000	2,500	3,000	4,000
MEDREN	10/79	11,572	10,040	0	100	700	1,000	2,500	4,000	6,000	8,000
JAPTAN	8/79	2,892	2,840	0	300	850	1,100	1,800	2,200	2,400	2,800
ANANIJ	7/79	797	666	0	0	20	100	200	300	400	500
TOTAL		22,868	18,956	0	550	2,020	3,200	6,500	9,000	11,800	15,300
No. Nuts/Year @ 40 Nuts/Tree					22,000	80,800	128,000	260,000	360,000	472,000	612,000
			*For this report period the 260,000 nuts or 43 tons copra equivalent were all utilized as green drinking nuts and "spooning" nuts. Ripe brown nuts were brought over from Ujelang on the Wetak II.								
No. Tons Copra Equivalent* @ 6000 Nuts/Ton					4	13	21	43	60	79	102

Coconut trees are now bearing on Enewetak, Japtan, and Medren; the main residence islands. These islands were not involved in the nuclear testing program except as residence and administrative centers. The breadfruit continue to do poorly with a few exceptions, and are particularly vulnerable to the salt spray and low season rainfall. Pandanus is now universally successful with 1095 established plants.

Two tropical typhoons back in the early 1980's have contributed to the breadfruit loss rate as has the lack of windbreak; however, breadfruit was only available on one section of Enewetak Island prior to World War II, and conditions are marginal for its cultivation.

The 1985 and 1986 Fertilizer Test Plot results showed clearly that both nitrogen and potassium are being utilized by the coconut palms. There is no further need to carry on the Fertilizer Test Plots. The results of the test plot showed that the application of Osmocote (N-O-K) 17-0-23 at the rate of 1-1/4 pound per palm per year will ensure adequate palm growth.

A nursery is well established on Enewetak Island, producing various tree seedlings, squash, eggplant, taro, guava, papaya, Chinese cabbage, head cabbage, tomatoes, banana, lime and breadfruit plants.

The propagation of breadfruit, pandanus, and various plants and vegetables will require participation on the part of the dri-Enewetak. Some families are growing bananas and papayas but to date interest in agriculture has been minimal, except for paid members of the work crews.

The DOI will continue through its Contractor to provide an Agricultural Consultant on a quarterly basis for two weeks to one month, who will work closely with the Contractor Station Manager and the agricultural crew and residents; and provide detail instructions of agricultural practices to follow and leave written recommendations to be carried out between visits.

In the past year a number of new plant introductions have been made. The three common taros grown throughout Micronesia are successfully established and plantings will be expanded in the coming two years. They are the common taro, Colocasia esculenta, which can be grown either as dry or wet (pit) culture method; Xanthosoma sagettifolium, strictly a dry land taro; and giant swamp taro, Cyrtosperma chamissonis, which can be grown only in taro pits close to fresh water. Also introduced for trial purposes were Guava, Passion Fruit (Lilikoi), Chinese Dwarf

Banana, Waimanalo Dwarf Papaya and Sour Sap. Expansion of taro pit culture will be the main emphasis in the coming year for the production of starchy foods. This will involve the digging of about 20 pits, each about 300 square feet and down to the fresh water lens which is anywhere from 5 to 8 feet deep.

The following shows current plants for new plantings through 1989. Individual sections follow which cover the program history and plans for the southern islands of Enewetak, Medren, Japtan and Ananij, as well as the garden project and the newly initiated taro pit project.

REPLANTING AND NEW PLANTING THRU 1989

PLANT TYPE	ENEWETAK	MEJREN	JAPTAN	ANANIJ	TOTAL	SOURCE OF PLANTING MATERIAL	WHEN PLANTING MATERIALS NEEDED	LENGTH OF TIME IN NURSERY(MOS)
COCONUTS	500	500	0	0	1000	Ujelang	Jan 88	6 months
PANDANUS	200	150	50	0	300 (cuttings)	Ujelang/Local	May/Jun 87	Direct field planting
BREADFRUIT	30	50	20	0	100 (cuttings)	Ujelang	Apr/May 87	6-8 months
PASSION FRUIT	0	0	100	0	100	Hawaii	Now Available	Planted Feb 87
LIME	50	50	50	0	150 (seedlings)	Kosrae	Apr/May 87	6-8 months
CASUARINA	1000	1000	0	0	1000 (seedlings)	Local Seeds	Mar/Apr/May 87 & 88	3-4 months
BANANA (CORMS)	10	10	10	0	30	Hawaii	Apr/May 87	Field Plt. Aug
TARO*	2500	600	300	0	2900	Majuro/Kosrae/ Local	When Available	Direct Taro Pit Planting
GUAVA	20	20	20	0	60	Hawaii	Now Available	Plant Jul/Aug
*Taro Pits of	about	300 sq	are fe	et each	will be dug	on various and su	table Wetos.	

III FOOD PROGRAMS

At the inception of the Enewetak Resettlement, there were no significant food bearing trees or crops in especially the southern islands. Thus, there was precious little food available for local consumption. In order to immediately support and sustain the population resettled from Ujelang, USDA basic commodities were issued quarterly to the people, augmented by the USDA's supplemental food service program (for elementary students, September to May). The DOI program also authorized a follow-up on community-wide supplemental food program consisting of commercially-procured food. Moreover, in order to complement the essentially imported food diet, local food was obtained and procured at Ujelang Atoll in the Marshalls and at Kosrae and Pohnpei Islands in the Federated States of Micronesia.

These foods were procured and conveyed to Enewetak on the community's motor vessel, the Wetak II during FY 87. This year the vessel made five round trips to Ujelang and five round trips to Kosrae. A total of 48,354 pounds of copra nuts were procured at Ujelang and 72,159 pounds of produce was procured at Kosrae. The fresh food procurement also assisted in stimulating local agricultural production and served to keep money in the local economies.

The food program was also incremented by the establishment of an on-island poultry project which produced fryers as well as laying hens. In 1987, 11,000 chicks were imported. The net results were 22,000 pounds of chickens available to the community. The side product of this program was the fertilizer produced by the chickens and used in the agricultural program.

The total amount of nutritional food, which is available to the community, has improved over the past few years, but the following supplemental food has been imported under the consultation of the TTPI Nutritionist through July 1987:

USDA	SUPPLEMENTAL (Commercial)
Enriched rice	Baby food (assorted meats, fruits, vegetables)
Flour	Baking powder
Shortening	Corned beef
Evaporated milk	Flour (enriched)
Canned chicken	Pineapple juice
Fruit cocktail	Mackerel in oil
Peas	Sliced pineapple
Fruit juice	Sweet potatoes
	Salt
	Sardines
	Soy sauce
	Beef stew

Wetak II	Local
Bananas	Garden produce
Pandanus	Coconuts
Grapefruit	Fish
Taro	Live chickens
Limes	
Oranges	
Tapioca	
Sweet potatoes	
Papaya	
Cucumber	
Mature coconuts	
Drinking coconuts	
Fish	

It should be noted that the program also provides another service to the dri-Enewetak, through the procurement, purchase, and delivery of kerosene which is used as a cooking fuel on Enewetak. This will remain the case until such time that local coconuts are harvested in sufficient quantities to provide a plentiful and uninterruptible supply of husks, the traditional cooking fuel. During the year, the program purchased and delivered 11,000 gallons of kerosene to the atoll.

The program also assisted the community by providing a worker trained in kerosene stove/cooker repair, to ensure the families' stoves were in good operating order.

IV TRANSPORTATION

The major, locally owned and directed transportation activity is the Wetak II, Enewetak's motor sail vessel. This 53 ft. schooner-rigged, fiberglass constructed ship was a gift of the U.S. Government in 1983 and was intended to provide the dri-Enewetak with a means of inter-atoll transportation and trading.

It is unique in that it is the only sail assisted trading vessel operating in Micronesia. In addition to sails, the vessel is equipped with a GMC 371 series diesel engine. Voyages are planned with an anticipated speed of six knots (6.9 mph). If this speed cannot be maintained under sail, the engine is used, usually in conjunction with the sails.

The vessel was launched and delivered to Enewetak in 1983. In order to operate the vessel on the high seas, maintain it, and manage finances, passenger operations and procurement functions, as well as crew training programs, an initial, management team of captain and engineer was hired. The present team joined the boat in May of 1984. There were five Enewetak crew members and they receive "hands on" instruction in sailing, boat handling, and maintenance, engine maintenance, navigation, cargo handling, seamanship, and safety procedures.

During FY 1987, the vessel made eighteen "extra atoll" voyages, traveling 11,120 nautical miles, carrying 111 passengers and roughly 300,000 pounds of cargo (100,000 pounds more than 1986). Typical trips were as follows:

Ujelang

To procure coconuts, transport cargo, carry mail and transport passengers.

Kosrae

To purchase fresh produce (fruits and vegetables), transport cargo, pick up supplemental food order of sardines, and transport passengers.

Kwajalein

To pick up supplemental food, kerosene and diesel fuel for the ship.

Majuro

To carry passengers, transport cargo and drydock.

Ponape

To pick up supplemental food order of sardines, carry passengers and cargo.

In addition, numerous trips are made inside the Enewetak Atoll for the purpose of fishing, food gathering, and ferrying passengers back and forth between the southern residential islands of Enewetak, Japtan, and Medren.

This is an ongoing program to train the Enewetak people to operate the Wetak II, free and independent of outside help. Unfortunately, at this time, additional training will be required through FY 1988-89.

V PROGRAM EXPENDITURES

	FY 87	FY 88* Estimate
Food Programs	275K	310
Agricultural Programs	130K	160
Wetak II	75K	120
Field Station Operations	345K	410
Administration Grant to RMI		100
Total	825K	1,100

* The FY 1988 House and Senate Appropriation Bills include funds ($1.1 million in report language) to continue the Enewetak food and agriculture support program. The Administration did not request funding for this activity in the FY 1988 President's Budget.