

## **An NGO approach for addressing the nutrition dilemma: Pohnpei focuses on awareness, food analysis, conservation, and food processing**

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### **Abstract**

*The establishment of the Island Food Community of Pohnpei, a non-governmental organization (NGO) based in Pohnpei, Federated States of Micronesia, presents a new approach for promoting Pacific Island food for its health and many other benefits. Its vision is holistic, stressing the importance of island food for sustainable development, economic benefits, self-reliance, improved health, cultural preservation, and human dignity, at the same time protecting the natural resources. A major reason for the establishment of this NGO is the emergence of an epidemic of nutrition-related health problems, including diabetes, heart disease, cancer, vitamin A deficiency, and anemia. Although health is at the cornerstone of the establishment of this NGO and health officers are integrally involved, the project is closely associated with the agriculture sector. The Island Food Community of Pohnpei works via an ethnographic participatory inter-agency approach, and its activities include the identification and promotion of nutrient-rich varieties of the traditional staple foods, incorporating the 'Yellow Varieties Message'. There are also activities to conserve rare varieties and to develop small-scale food processing. (PHD, 2005 Vol 12 No 2 Pages 79 - 84)*

### **Introduction**

The Island Food Community of Pohnpei,<sup>(a)</sup> based in Pohnpei, Federated States of Micronesia (FSM), was granted its legal status as a non-governmental organization (NGO) in January 2004. Its members include interested persons from a wide range of backgrounds, including health, agriculture, education, cultural/historic preservation, and local businesses. A major reason for its establishment was a local concern about the epidemic of dietary- and lifestyle related health problems, including diabetes, heart disease, certain cancers, vitamin A deficiency, and anemia.

(a) - website: <http://www.islandfood.org>

The 1987/88 FSM National Nutrition Survey, which was the last survey, found that approximately one-third of Pohnpei women were moderately overweight in every age group.<sup>1</sup> Around 20% of Pohnpei and FSM adults in the age group 45 to 65 years of age are afflicted with diagnosed cases of diabetes mellitus.<sup>2,3,4</sup> Although Pohnpeians were once shown to have low blood pressure,<sup>5</sup> there is now a growing problem with high blood pressure.<sup>6</sup> The last survey in 1994 showed that over half of Pohnpei preschool children suffer from vitamin A deficiency, as defined by low levels of serum retinol (<20 µg/dl),<sup>7</sup> far over the cut-off defining a problem of public health significance (15%). Vitamin A deficiency disorders include an increase in problems of infection, eye health and vision. Anemia, which causes problems with growth, cognitive development, and work capacity, affected 33% of Pohnpei children as determined by the Pohnpei Child Health Survey in 1994.<sup>8</sup>

Yet, a United States Navy medical survey was conducted at the close of World War II, finding no obvious problem of malnutrition or micronutrient deficiencies.<sup>9</sup> A literature review, which included both health and dietary assessments, concluded that the traditional Micronesian diet was good and that both chronic disease and vitamin A deficiency were new problems to FSM, related to dietary and lifestyle changes in the last four decades.<sup>10</sup> The dietary changes include a great increase in consumption of imported white rice, flour, sugar, refined foods and fatty meats and a decrease in production and consumption of local food.<sup>(b)</sup>

At the same time an alarming loss of traditional knowledge of local food has been documented.<sup>11</sup> Agriculture specialists have described concern over the increasing rarity of particular crop varieties, in particular, Karat banana, the traditional early infant food of Pohnpei, now identified to be rich in provitamin A carotenoids.<sup>12, 13</sup>

Discussions by Adelino Lorens and Lois Englberger in 2003 on the trend towards imported food consumption and increasing health problems then led to the idea of the formation of an inter-agency NGO devoted to the promotion of locally grown and gathered foods for addressing the nutrition dilemma in Pohnpei. A Foundation Meeting was held on October 16, 2003, World Food Day, a day commemorating the importance of food security and nutritional improvements globally. During the Foundation Meeting, participants fully supported the idea to establish the Island Food Community of Pohnpei. A Charter was then adopted for establishing legal incorporation. The Island Food Community of Pohnpei's Vision and Mission (see below) were a part of their charter.

*Vision: To live on a productive environmentally sound island where a diversity of locally grown Island Food is produced and consumed, providing food security, sustainable development, economic benefits, self-reliance, improved health, cultural preservation, and human dignity, and at the same time protecting the natural resources.*

*Mission: To promote the production, consumption, local marketing, and, if feasible, export of locally grown Island Foods in order to regain the dignity of relying on home food production, attain a greater degree of food security*

(b) Local food is the term referring to locally grown, island food, and will be used throughout this paper to include both plant and animal sources.

(c) A cultivar refers to a variety produced by cultivation.

*for the state, rescue cultural values, and improve health of the people. Pohnpeian community participation and empowerment is the cornerstone of our work.*

At the first Board Meeting, the Pohnpei Chief of Agriculture was unanimously selected as the Chairman of the Island Food Community of Pohnpei, cementing the close tie with the agriculture sector.

## Major Activities

A Strategic Planning Session was held on April 24, 2004, in which Island Food Community of Pohnpei (IFCP) members met and discussed how they should initiate their activities and to set forth clearly their aims. The local food issues in Pohnpei, the major strengths of local food, as well as the challenges and difficulties in increasing production and consumption of local food, were discussed.

## Food analysis

One participant working in the Public Health division of Pohnpei State Department of Health stated, "There is a big difference these days in our promotion of local food, and that is because it is based on information of analyses of our own foods." She pointed out that these data are essential in promoting local food and that information based on the actual Pohnpei cultivars<sup>(c)</sup> and varieties of local food is much more convincing than general information from food composition tables or from other parts of the Pacific.

Amazing findings have been established about the yellow- and orange-fleshed cultivars of Pohnpei bananas and giant swamp taro.<sup>13, 14</sup> Two examples are the *Karat* and *Utin lap* banana cultivars. These are known as Fe'i bananas, characterized by erect bunches growing straight up into the air. They contain as much as 100 times the level of beta-carotene (the most important of the provitamin A carotenoids) in the common white-fleshed banana (*Cavendish*). Certain Pohnpei giant swamp taro cultivars such as *Simihden* and *Sounpwongwenou*, were identified as having high carotenoid content and those same cultivars were rich sources of the essential minerals, zinc, iron, and calcium.

Foods rich in provitamin A carotenoids protect against vitamin A deficiency. Carotenoid-rich foods may help protect against chronic disease, including diabetes, heart disease, and cancers.<sup>15-18</sup> Thus, the promotion of the yellow- and orange-fleshed cultivars can potentially have multiple health benefits.

### Conservation of rare cultivars

Although *Karat* and *Utin lap* were once common bananas in Micronesia, they have now become rare, due to neglect and also to a shift to other cultivars. These include cultivars that are easier to grow, but unfortunately have lower micronutrient content. Thus, there is a need for conserving the traditional nutrient-rich varieties and developing clean planting materials for farmers in need of these. Many farmers after learning that *Karat* is a nutrient-rich banana said that they wanted to plant more, but proclaimed that they need planting materials. A genebank/nursery collection of banana and giant swamp taro varieties was established in 2003 by Pohnpei Agriculture at the Pilot Farm in Madolenihmw, supported by the Pacific Agriculture Plant Genetic Resources Network/Secretariat of the Pacific Community. Island Food Community of Pohnpei members agreed to support the maintenance and development of the genebank for important Pohnpei food crops. At the end of 2004, the genebank included 32 banana cultivars, 37 giant swamp taro cultivars, and 9 pandanus cultivars.

### Food processing development

At the Island Food Community of Pohnpei's strategic planning session in 2004, members also agreed that developing small-scale processing of local food is a primary need. Members pointed out that the convenience and availability of imported foods is one of the major factors for the shift towards those foods. A workshop in October 2004 created great interest, with over 100 participants from the community.<sup>19</sup> Many new food products were developed, including banana jam, chips from yam and other starchy staples, breadfruit snacks, chutneys, and citrus products.

### Activities related to awareness-raising

Increasing awareness on the importance of producing and consuming local foods for health and other benefits was agreed upon as critical. One part of the campaign for promoting local foods includes the "Yellow Varieties Message." This slogan assists with the aim of helping the community to increase production and consumption of yellow-/orange-fleshed varieties, which were common in the past. This "Yellow Varieties Message" was included in a variety of print materials and awareness activities: vitamin A rich food cards, detailed banana cultivar booklet and poster, newsletter, brochures, calendars, newspaper articles, and also website.

The World Food Day/Agricultural Fair event in 2004 was an important activity for raising awareness on food and nutrition in Pohnpei. Its theme was: "Grow and Eat

Yellow Varieties for Health and Wealth" or in Pohnpeian "Uhdak en Sakatail, Padok oh Sakan Soahng Kan me Oahngoang Ohng Roson oh Pai." The "Yellow Varieties Message" was communicated in a unique way. The high value of the yellow-fleshed varieties was emphasized by the high prizes (\$50, \$30, and \$30 for first, second, and third prizes) compared to \$15, \$10, and \$5 for the corresponding prizes for the common white-fleshed varieties. The youth were involved in an essay writing competition on the theme and a Healthy Cooking Competition focusing on yellow-fleshed varieties was held.

**"We do not want to lose any of the Pohnpei rare varieties, because if that would happen, we would not only lose a banana, but we would also lose part of our culture!"**

As this was the first state-wide Agriculture Fair held in Pohnpei for many years, the event attracted great attention. Over 500 people attended the event, with many more listening to the live radio broadcast and a video broadcast later on the local television. The Island Food Community of Pohnpei also hosted a conference in December, 2004,

this being the first conference held in Pohnpei to focus on the importance of promoting local food.

### Diabetes, physical activity, and local food production

The prevention and good control of diabetes (and other chronic disease) is important due to the high prevalence and the severity of potential complications. Lack of physical activity is one of the risk factors for developing diabetes, and is also important in the control of diabetes. Thus, increasing physical activity through food production activities would be an important health benefit. This is a further message that is being communicated to the Pohnpei community.

### Other strategies: memories and youth work

One strategy of the Island Food Community of Pohnpei has been to use memories and cultural values to promote rare varieties and cultivars. Older people fondly recalled memories of their childhood when they saw photos of the rare bananas and this became a way of promoting these valuable foods. The role of food in Pohnpei culture was also the topic of the keynote presentation of the IFCP conference in 2004.

Another strategy for IFCP is to involve youth, in order to develop local food interest among that age group. The Island Food Community of Pohnpei was involved in the Youth to Youth Program, as a collaborative activity with the Conservation Society of Pohnpei. Monthly classes were held with Class 6 students of Seinwar Elementary School, promoting rare banana varieties of Pohnpei, raising awareness of their health benefits and provitamin A carotenoid content, and carrying out

cooking and planting activities.<sup>21</sup> At the end of the year the students gave a presentation at a statewide event with the other schools. They not only made drawings of the different varieties but also prepared a food dish made of a carotenoid-rich variety, and one of the students in her speech said: "We do not want to lose any of the Pohnpei rare varieties, because if that would happen, we would not only lose a banana, but we would also lose part of our culture!" It is also hoped that this increased awareness on health issues will lead to better diets among youth, as it is well known that a balanced diet contributes to improved academic performance.

### Research

Research is another cornerstone of IFCP activities. It was research on the nutrient content of local foods that first sparked new interest in promoting local foods.

Research in this area and other areas of documenting the traditional food system continues, using a variety of methods, including an ethnographic approach with in-depth interviews, informal focus group discussions, photography, and literature search. In January 2005, the Island Food Community of Pohnpei was invited to be the 12th case study in a global health project.<sup>22</sup> This is in collaboration with the Centre of Indigenous Peoples' Nutrition and Environment, based at McGill University. This project is composed of two phases: Phase 1, a 3-month project looking carefully at a selected village of around 500 in population, and to document its traditional food system and to assess for selected health indicators, providing baseline data; and Phase 2, a two-year intervention in that same village for promoting those local foods selected in the first phase of the project and using the approach selected as most likely to being successful.

Documentation of the food crops is important in implementing a food-based intervention. One project in 2004, included the identification of 39 banana cultivars according to international classification.<sup>23</sup> Partnerships have also been developed with a number of other universities and other institutions, with the aims of collaboratively assessing Pohnpei foods and also exploring the nutritional beliefs and practices of Pohnpei.<sup>24</sup>

### Major Challenges

At the 2004 Strategic Planning Session, participants pointed out that there are major difficulties in promoting local foods. These include the availability of cheap and convenient imported foods, lifestyle changes, ongoing loss of traditional knowledge on local foods, habits that are difficult to change, resistance to the promotion of

local foods, laziness, and lack of planting materials of rare varieties. Challenges, which face the IFCP were identified as limited funding, no permanent office, and the limited time of members for devoting to Island Food Community of Pohnpei activities.

However, participants stressed their belief that the cause was a good one, and that there is local initiative and community involvement. Also participants stressed that there is great potential with the local Pohnpei foods and exciting new findings, which is sparking interest. Furthermore, it was stressed that people value their island lifestyle and want to preserve it.<sup>25</sup>

The strengths of the initiatives to date include the broad inter-agency involvement, combination of on-going research along with educational and promotional activities, close ties with the community, and the dedication and commitment of a number of IFCP members. The many publications and efforts to publicize the unique characteristics and striking nutrient content of some of the Pohnpei foods, including Karat and other

Pohnpei bananas and giant swamp taro cultivars, has led to a wide media coverage, capturing much international, regional, and local interest. The activities of IFCP have also assisted local agencies in attracting the support of regional and international agencies and institutes for work in the area of documenting and promoting local island foods.

However, the convenience and low price of imported foods presents a great hurdle. There is a lack of business and managerial skills for marketing local foods and few projects have been initiated in any kind of processing of local foods. Local foods are also particularly expensive in Pohnpei, due to high prices set on local foods during a previous US-supported school lunch program. The limited IFCP resources and total lack of employed staff severely limits its activities. It is envisaged that increased efforts are needed in raising awareness of the values of local foods, identifying the needed support for IFCP activities, and strengthening partnerships with other agencies, which will help to resolve some of these problems.

### Conclusions

It is still early to conclude on the impact of the activities so far of the Island Food Community of Pohnpei. However, ad hoc comments indicate that there is a wave of awareness on food, nutrition, and health, which is new and growing in Pohnpei. Further community-based, inter-agency, participatory activities, supported by messages relayed through the mass media (radio,

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television, newspaper) are needed. Staff and funding are critically needed in order to implement activities. Focusing on the "Yellow Varieties Message" appears to have some impact in communicating the message about the special benefits of those particular local foods as more of those varieties are now seen in the local market.

The on-going ethnographic participatory inter-agency approach is essential in identifying nutrient-rich foods and in understanding how best to plan and develop interventions for increasing local food production and consumption in Pohnpei. This approach may also be effective in other Pacific Island countries where similar foods are grown and consumed.

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## **The on-going ethnographic participatory inter-agency approach is essential in identifying nutrient-rich foods and in understanding how best to plan and develop interventions for increasing local food production and consumption in Pohnpei**

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**“AIDS came  
From the Cracks in the sky, First the plights of sex anarchy,  
Now the rights of condomocracy”  
(S. A. Finau – 1992)**