

# **Pacific Taro Markets: Issues and Challenges**

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## Introduction<sup>1</sup>

Intra-Pacific trade in taro began in earnest in the early 1950s when Fiji commenced exporting to New Zealand. Samoa followed in 1957 with other Pacific Islands following suit. The Australian market was explored soon after. Whilst New Zealand and Australia continue to be the destination of choice for South Pacific taro exporters, for two very different reasons these markets cannot be taken for granted. At the same time there are two other Pacific taro importers whose markets dwarf New Zealand and Australia. For these two markets to be developed to the full potential, South Pacific taro exporters will need to take a different approach to what they have shown in the past.

## New Zealand

Whilst Fiji initiated taro exports to New Zealand in the early 1950s it was Samoa who more fully developed this market. Following the 1963 severe floods in Fiji, Samoa increased its production to fill the gap. Samoan exports collapsed in 1993 due to the devastation caused by the Taro Leaf Blight. Following the Samoan industry's collapse, Fiji has recaptured the New Zealand market and now has more than 80 percent of the market. The New Zealand Samoans are the country's dominant Islander group. Their preference is for the "Samoa Pink" variety. When Fiji stepped up production in the early 1990s, to maintain the Samoan connection it called its taro *Tausala ni Samoa*<sup>2</sup>.

New Zealand imports around 6 000 t annually, reflecting the country's sizeable Pacific Islander population. More-over, this population is expected to double in the next 30 years. Detailed analysis is hampered by the lack of consistent import data and no wholesale data. Available data show that a surprising number of countries have exported to New Zealand. In the period 1992 – 2002, a total of 16 countries are recorded as taro import origins. A number of these origins would have been expected: Fiji, Tonga, Samoa, Niue, New Caledonia, Cook Islands, American Samoa. Some of the other suppliers are a little surprising but at least they have a taro producing tradition: Korea, Taiwan, China, Vietnam, Philippines. Three are most surprising – Australia, Egypt, and Saudi Arabia.

Explicit price and quantity import data are available for the five years to 2001. This shows that the volume of taro imports into New Zealand has been consistent around 6 000 t. In 2001 imports were 6 535 tonnes at an average CIF price of NZ\$1.78.

## NEW ZEALAND – Taro. Imports, 1988 – 2001

	Imports (t)	CIF Price (NZ\$/kg)
1998	5674	1.54
1999	6516	1.55
2000	6331	1.57
2001	6535	1.78

<sup>1</sup> This paper draws on Asian Markets Research (2003). Research for that was funded partially by two Rural Industries Research and Development Corporation (Australia) projects, UCQ-13A and NAME PROJECT NUMBER. Insights for this paper draw on projects funded by the FAO in 1994 and 2002, UNDP in 2002, Asian Development Bank (1997 –1998), and by Asian Markets Research from 1995 onwards.

<sup>2</sup> Ironically, in Samoa the variety is called "Taro Niue".

It is a common hypothesis that second generation emigrants start to move away from their traditional foods / cuisines and instead consume the cuisine of their adopted country. Despite this, taro in New Zealand is clearly still an important part of Pacific Islander culture and cuisine. Whilst there will always be a demand for taro, it is an extremely price sensitive market with there being adequate alternatives in the form of plantains, sweet potato *kumala*, and even potatoes. When retail prices are between NZ\$2.00 - \$3.00 / kg, demand for taro is strong. At these prices, Pacific Islanders will eat *dalo* several times a week. Above NZ\$3.00 /kg retail, demand starts to decline. At NZ\$4.00 /kg taro demand virtually dries up because taro ceases to be an everyday meal item. Consumption becomes limited to special occasions, such as the Sunday feast and other community-cultural events.

The New Zealand market cannot be guaranteed.

In mid-2002, taro mite *Rhizoglyphus minutus* was discovered by New Zealand Quarantine on a taro shipment from Fiji. The mite is a microscopic organism that attaches to the lower half of the corm. From Fiji's perspective, the mite is not a pest as such because it does not damage the corm. More-over, Fiji has argued that the mite is found in almost all the islands exporting taro to New Zealand, and they have been reported present in New Zealand. Nevertheless, the mite is a Regulated Quarantine Pest in New Zealand. As such, all taro imported from Fiji into New Zealand has to be fumigated with methyl bromide. This significantly reduces the products shelf life. At the time of writing, the South Pacific Commission had instigated a major project to establish if the taro mite being imported is the same as the mite currently present in New Zealand. If it is the same type, then no further action will be taken. However, if it is a different type, then it is likely that New Zealand will require disinfestation for the mite to occur back in Fiji. When account is made of the transit time, this will dramatically reduce taro's shelf life that will have major repercussions for the country's taro trade.

### **Australia**

Despite its much greater population, Australia is a vastly smaller market for imported taro. The obvious reason is that Australia's Islander population is much smaller than that of New Zealand. At the same time Australia is rapidly developing its own taro supplies. Australia produces three types of taro. All are *Colocasia esculenta*, one being the traditional Pacific – type taro of around 1.0 kg in size; the second being the vastly smaller 60 g type preferred by the Japanese; and the third being the 150 g smooth - skinned type preferred by the Vietnamese. This paper will use the terms Taro Pacific, Taro Supreme, and Taro Vietnam to describe these types<sup>3</sup>.

Taro Pacific appears to have arrived in Australia with the Chinese joining the Gold Rushes and a little later with the Kanakas when they were blackbirded to work in the Queensland sugar cane fields. Today in North Queensland is called, variously, “Chinese taro”, “*bun long*” and “purple taro”. In a number of the creeks and gullies of the hilly country in the hinterland of northern New South Wales, and along the Queensland coast, taro grows as a feral plant. Planting material continues to be imported in an undocumented manner. In the mid-1980's a considerable volume of Samoan Pink and other taro varieties were imported in order to generate material locally for a research project based at The University of Queensland investigating nutrition and diseases of root crops vital to the Pacific. The

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<sup>3</sup> See Asian Markets Research (in press).

imports were imported pursuant to all quarantine protocols. After the project had developed enough material, product was given to the cooperating growers and the Queensland Department of Primary Industries.

It is estimated that Australia produces around 1 000 t of Pacific Taro. Nearly all of this is grown in pockets along the east coast north of just south of the Queensland – New South Wales border by Pacific Islanders, Chinese, Vietnamese and Cambodians, and an increasing number of Australians: the Queensland-based Taro Growers Association has over 40 Australian members. A great deal of the production in North Queensland is marketed in Sydney and Melbourne with some produce being shipped as far away as Perth. The volume marketing through the Brisbane wholesale market is vastly smaller, largely as a result of the existence of a large back-yard growing industry and an extensive informal marketing systems that is essentially church-member based.

Australian taro production has received two major boosts over the past decade. One was the material and knowledge that came out of The University of Queensland nutrition and disease project. The second is another university-based project. Central Queensland University has received significant Rural Industry Research and Development Corporation funding to facilitate the development, *inter alia*, of a Taro Supreme industry focused on the Japanese market. Many of the findings of this project – fertilizer usage, pest and disease control – have immediate application to the Taro Pacific industry.

Australia currently imports around 3 000 t of taro. Whilst this is comprised principally Taro Pacific from the Pacific, a recent survey<sup>4</sup> reported that Taro Supreme is imported into Australia from China as (a) frozen, peeled and stand-alone, (b) peeled in brine, (c) frozen, peeled and with other products, principally burdock *Arctium lappa*, lotus *Nelumbo nucifera*, and bamboo *Dendrocalamus latiflorus*.<sup>4</sup>

Australia's move towards self-sufficiency in taro will continue. Wholesale prices at the moment are encouraging, especially for Taro Supreme. It is considered that Pacific exporters should no longer count on Australia as being an assured long term market. Indeed, it may be best if they viewed Australia as a potential rival for at least the New Zealand market. It is noted that over the past 18 months a number of exporters from Fiji as well as some New Zealand taro importers have visited North Queensland to assess the potential of exporting taro from there to New Zealand.

## Other Taro Markets in the Pacific

Taro is a crop of long tradition in Pacific Asia and has a significant presence in the region. China, for example, produces over 12 million tonnes. The Pacific contains a number of taro importers. The biggest market by far is Japan, followed by the United States, then Canada, with smaller volumes going into Hong Kong and Singapore.

### Japan

Taro *sato imo* is a traditional Japanese crop. Whilst six types are commonly recognised, three dominate:

- *Ishikawa-wase*: only the daughter tuber is used. By Taro Pacific standards, this is an exceptional small taro, usually around 60 g.
- *Dodare*: only the daughter tuber is used; a little larger than *Ishikawa-wase*.

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<sup>4</sup> See Hassals and Associates (2002).

- *Sereves* where the mother and daughter tubers are used.

*Sato imo* production in Japan had consistently trended downwards since the high levels of around 500 000 t in the 1960s to 258 000 t in 1999. The reasons for the decline in taro production are common across a large number of Japanese agricultural crops: and aging farmer population and the limited ability to off-set labour shortages through mechanisation due to the small plots involved. Throughput at the Tokyo wholesale market system has declined from 25 000 t in 1987 to 14 619 t in 2000.

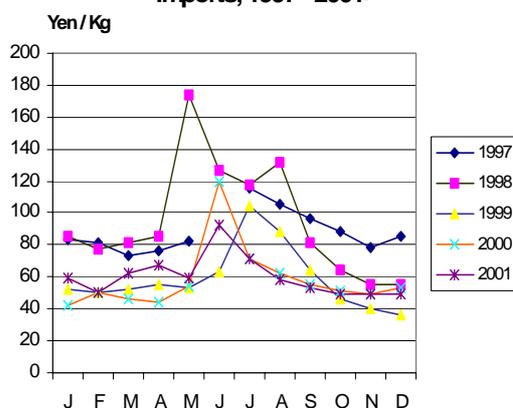
Japan imports *sato imo* in both the fresh and processed forms are consistent. As processed, taro is as stand-alone product and as a mixed vegetable with *gobo*, *renkon*, and *takenoko* in both brine and frozen forms. Data are available for fresh and frozen products. The data show a consistent growth pattern notwithstanding the sudden decline in fresh imports in 1997. China supplies over 90 percent of the estimated total imports of more than 100 000 t fresh equivalent.

#### Japan – Sato Imo. Imports, fresh and frozen, 1995 – 2001

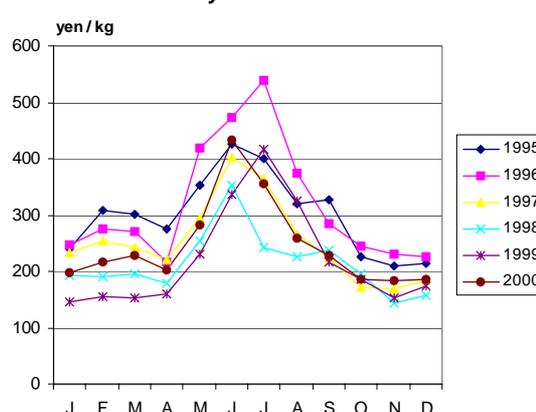
	Fresh	Frozen	Total
1995	26862	n.a.	26862
1996	25643	58662	84305
1997	c5643	53615	59258
1998	c6148	52043	58191
1999	10321	51861	62182
2000	20344	55873	76217
2001	20254	55012	75266

CIF prices for fresh *sato imo* show a distinct rise from May to around September, the same period when domestic *sato imo* wholesale prices also rise<sup>5</sup>. This is the Japanese and Chinese summer, clearly presenting a market window for southern hemisphere suppliers.

JAPAN - Sato Imo - Fresh. Monthly imports, 1997 - 2001.



JAPAN - Sato imo. Monthly wholesale prices, Tokyo: 1995-2000

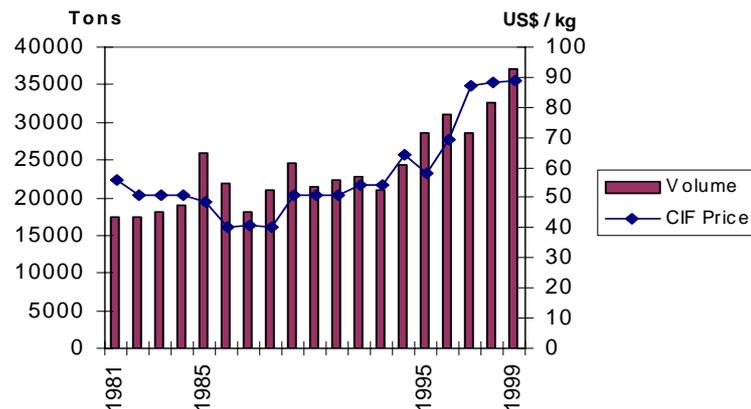


<sup>5</sup> Import data from Japan tariff Association. Wholesale data is based on *Dodare* and *Ishikawa wase* and comes from Tokyo Metropolitan Government.

## United States

Taro production in the United States is centred in Hawaii where it has declined over the past thirty years to just 3 975 t in 2000. Production of *poi* taro, the fermented mixture that comes from the pounding of a specific variety of *Colocasia esculenta*, is about ten times the volume of fresh or “Chinese” / “white type”. Taro is also grown in Florida: it is mainly *Xanthosoma* the preferred variety of Cubans. Data is not recorded. Imports of taro into the United States have shown remarkable growth both in terms of volume and CIF prices.

**TARO - United States. Annual imports, 1981 - 1999**



Given these growth figures, it is little wonder that the United States has been a favourite export destination. In the 20 years over which the previous graph was constructed, more than 30 countries have supplied taro. Costa Rica and the Dominican Republic provide over 90 percent of imports. Jamaica is the price leader by an exceptional margin. China, despite being a comparatively small supplier, is a price maverick, exhibiting a behaviour that indicates that its desire for foreign currency is greater than the need to consistently build a market presence<sup>6</sup>.

Taro has three markets in the United States that can be categorised in terms of ethnic groups and taro types:

- Pacific Islanders: pink and white Taro Pacific.
- Chinese and Hispanic: white Taro Pacific and Taro Supreme.
- Hawaiians: white and pink Taro Pacific, and, exclusively, *poi*

There is little doubt that the Islanders, especially the significant Samoan population based around Los Angeles, preferred the Samoan Pink. Nevertheless, following the Taro Blight in 1993 when this trade all but vanished, there was a willingness to accept the white types.

Potential exporters to the United States would be better off studying the techniques that Jamaica uses to make it the price leader<sup>7</sup> rather than the price behaviour of the Chinese.

<sup>6</sup> Our thanks to the then price reporting service of the United States Department of Agriculture, Los Angeles' Seventh Street Wholesale Market.

<sup>7</sup> This includes conditioning of the harvested product, dipping, and packaging.

## Canada

Until the late 1980s, Canada was a solid, albeit not great, market for Islander taro. The trade centred on Vancouver because of its Islander population and more direct transport links to the region.

As will be noted below in more detail, this market was destroyed by the non-commercial private trade that exploded after the first Fijian coup of 1987.

## Other Pacific Importers

Within the Asian-Pacific region, taro is imported into Hong Kong and Singapore. Official data does not exist.

Taiwan produces around 50 000 t, significantly down from the 80 000 t it produced at the beginning of the decade. Unlike in Japan and the United States, taro is a relatively low-priced item in Taiwan. Even at the peak months – which are highly erratic and inhibit clear interpretation – wholesale prices are still less than US\$1.00 / kg.

## Market development

Three issues needed to be addressed if South Pacific taro producers are to capitalise on the market opportunities identified above.

## Variety

The Japanese market concentrates on the *Dodare* and *Ishikawa wase* varieties. These types are significantly smaller to what most Pacific Islanders are used to:

**Domestic shipping grade standards for  
*Ishikawa wase* and *Dodare* types of *sato imo*.**

Type	2L	L	M
<i>Ishikawa –wase</i>	60 g	40 – 60 g	20 – 40 g
<i>Dodare</i>	90 g	60 – 90 g	30 – 60 g

To use smaller varieties of locally available plants, eg *dalo ni tana* in Fiji, would not meet Japanese requirements. To access this market, genetic material would have to be imported and adopted to local conditions. The Kingdom of Tonga has already started this process.

## Frozen product

Frozen taro addresses two major issues handicapping export market development: shipping and quarantine.

Maintenance of the cool chain is always a problem in the Pacific with less frequent calls and the need to tranship. It is for this reason that frozen product, albeit processed, should be considered. Despite the apparent contradiction, frozen product is more easily handled than fresh as there are clear protocols and well established procedures.

Being frozen and par-processed, that is at least peeled, the product escapes the rigorous attention usually accorded to a soil-based fresh product that already has a poor quarantine image.

Frozen Taro Pacific is currently imported into New Zealand, Australia, and the United States with varying success. Whilst the market preference is for fresh, expatriate Islanders in the three markets have shown that they have adapted to the local pace of life and that convenience has a higher priority compared with their countries of origin. Provided the product is peeled and cut into plate size pieces that can be boiled, or preferably micro-waved, then there is a market.

### **Private marketing**

One of the major issues bedevilling taro exports from the South Pacific has been private marketing. This is trade that, whilst perfectly legal, seriously handicaps commercial trade. Private trade is where the taro is sent on either a free or possibly transport-costs recovery basis. Common examples are from family groups in the Islands to family groups in the importing country, and church groups in the exporting country to church groups in the importing country. In Niue, where taro is one of the very few export income generators, in any shipment to New Zealand up to 50 percent of the total is being given away to family members: why should families buy Niue taro, allegedly the prized taro of the Pacific, when they can get it for free. Similarly, the Otaro, Avondale and Mangere Markets in Auckland New Zealand are supplied nearly solely by free taro. This product competes directly with commercial shipments that must recover not only transport costs but also purchase prices<sup>8</sup>.

A variation on this was seen in the Vancouver market just after the 1987 Fiji coup. Residents who fled the country received taro on a non-purchase price basis: whatever monies they received from the sale of the product was kept in Canada, effectively enabling them to export money. Unable to compete with such low priced competition, the commercial trade collapsed soon after<sup>9</sup>. A comparable behaviour was noted in San Francisco in 2000, again after the 2000 Fiji coup. However the size of the market has limited the impact of the practice.

The vexed question regarding the private trade is just how far does a government go in protecting income earning exports against a well established social action. Other countries have trade based on citizen-to-citizen action as distinct from company-to-company action but these have always been within the parameters of requiring an export license and the concomitant transparent paper trail of monies.

One of the advantages of the more distance Pacific markets of Japan and the United States is that the distances involved may militate against the widespread practice of private trade, notwithstanding that it does occur in the United States market.

### **Food Safety**

There are increasing incidents of disrupted trade in taro due to developed markets imposing more stringent food safety (sanitary) measures on Fijian and other Islander

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<sup>8</sup> Vinning (2002).

<sup>9</sup> Vinning (1998).

exporters. As small developing countries, the Pacific Islands would like to see that food safety standards are based on international standards, guidelines and recommendations such as Codex. It becomes too costly for the Islander exporters to comply with different sets of standards for different countries. However, it should be recognised that all Islander exporters face difficulties in implementing and complying with Codex standards. Under Article 9 and 10 of the World Trade Organization Agreement on Sanitary and Phytosanitary Measures, they can request for technical assistance and longer time frames to adjust and comply with Codex standards.

## **Conclusion**

South Pacific taro exporters face a paradigm shift in their industry. Previously assured traditional markets can no longer be taken for granted. At the same time, there are vastly bigger markets out there in the Pacific. To assess the new markets the Pacific Islands must adopt a plethora of new procedures. These include new varieties and new transportation arrangements. There is a significant need to change the approach towards taro production by giving it the same level of scientific approach as they give towards introduced crops<sup>10</sup>. There is the need to recognise that the rules of trade have changed and that in the new WTO world non-tariff barriers in the form of sanitary and phytosanitary standards will play a large role. Governments must also address the private trade issue if the commercial trade that brings in crucial foreign income is to survive.

The new markets are large. In most cases they are quite remunerative. Effort will be required to successfully exploit e them. It is argued that the effort is worth it.

## **References**

- Asian Markets Research. IN PRESS. Select markets for Sweet Potato, Taro and Yams. Rural Industries Research and Development Corporation. Canberra.
- Gonemaituba W. and Young J. IN PRESS. Fiji. IN Asian Markets Research (IN PRINT)
- Hassalls and Associates. 2002. Asian Vegetable Industry: situation assessment. Rural Industries Research and Development Corporation, Canberra.
- Vinning, G.S. 2002. The marketing of primary products from Niue. FAO CST-NIU 26/3/02
- Vinning, G.S. 1998. Management of the diversification of Fiji's agricultural economy. Asian Development Bank.

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<sup>10</sup> See Gonemaituba and Young (IN PRESS).