Fisheries centres in the Pacific Islands: Lessons learned?

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Introduction

Numerous schemes have been used over the years to promote the commercialisation of fisheries in rural areas and outer islands of Pacific Island countries by using fisheries centres. These facilities go by a variety of names in the region, including community fishing centres (Tuvalu), coastal fisheries stations (Papua New Guinea), fish bases (Marshall Islands), and rural fisheries service centres (Fiji).

These centres have various functions, such as ice making, serving as a collection points for fish transport to markets, mechanical repair, and a base for fisheries extension activities. In addition to promoting commercial fisheries development in rural areas, the wider objectives of fisheries centres have included improving cash incomes, mitigation of rural–urban drift, and diet enhancement.

Fisheries centres have assumed a very important role in Pacific Island countries, and are often the largest government expenditure in the fisheries sector and/or consume a substantial portion of overseas aid. In addition, considerable rural fisheries development in the region is predicated on these centres, and many are planned for the future.

A report by the Secretariat of the Pacific Community (SPC 2004) states: "The commercial success of rural fisheries centres, with either private sector or fishermen's associations/cooperatives management, is viewed as fundamental to having small-scale commercial fisheries play a positive role in the rural economy." These features combined suggest that a review of the lessons learned from establishing and operating fisheries centres could be a valuable exercise.

This brief study is undertaken from the perspective of guiding future initiatives dealing with fisheries centres. The objective is not to decide the value of the centres or whether it is appropriate to build more. The scope of a cost–benefit analysis, including social aspects, would be well beyond the three days dedicated to the present study.

By necessity, much of the information used in this study is anecdotal. Because most of the documentation on fisheries centres is purely descriptive, this exercise relies heavily on the experience of individuals familiar with fisheries centres in several countries. The 20 people mentioned in the acknowledgement section below contributed their ideas on lessons learned from fisheries centres in the region.

Country involvement with fisheries centres

The available documentation shows that most Pacific Island countries have had major involvement with fisheries centres.

Cook Islands: Fisheries centres were established on Palmerston Island in the early 1970s, on Penrhyn in 1982, and on Rakahanga and Manihiki in the early to mid-1980s. Most centres were closed within a couple of years due to poor maintenance of machinery, low catches and transport problems getting the catch to market (Chapman 2004).

Fiji: There are currently five rural fisheries service centres (Wainikoro, Levuka, Kavala, Vanuabalavu, Lekeba). A major component of the Department of Fisheries' strategy for rural fisheries development in the next decade is the use of rural fisheries service centres (ADB 2005; and Department of Fisheries 2009). There was an earlier wave of fisheries centres in the early 1970s.

Kiribati: Over the last 30 years, several aid-funded projects have attempted to set up fisheries centres on outer islands. A number of these centres have closed and been abandoned for lack of business management skills, maintenance capacity and commitment by local communities and government agencies. Four out of six established in the 1990s with European Union (EU) aid were still operating in 2007. The latest programme, supported by Japanese aid, has now established centres at Beru, Onotoa, Tamana and Arorae (ADB 2008).

Marshall Islands: Seven outer atoll fish bases were established using Japanese and government funds. These bases are at Arno, Likiep, Ailinlaplap, Namu, Aur, Maloelap and Jaluit atolls (McCoy and Hart 2002).

Papua New Guinea: One of the largest publicly-funded fisheries development activities in the 1980s was a proposal to establish 20 coastal fisheries stations around the country, separated by distances of about 120 miles, and each equipped with ice-making (5 t/day), freezing (1 t/day), and cold storage (20–30 t) facilities (Preston 1996). About 13 fisheries stations were actually established under the programme, operating 10 large fish transport vessels and at least 50 smaller collection boats. By 2005 all but one station was out of business.

Solomon Islands: Thirty fisheries centres and subcentres were established over the years in the

provinces under technical assistance from Japan, the United States, EU, Canada and The Nature Conservancy (Boape 1999). These centres, generally equipped with ice-making and/or cold storage plants, were intended to serve as market outlets (for fish caught by rural fishermen), sell fishing gear, and provide training in new fishing techniques and improved catch handling. Most centres fell into disrepair as soon as aid funding ceased, mostly in the early 1990s.

Tonga: The general scheme for outer islands fisheries development is based on a model of having fisheries centres that provide numerous fisheries-related functions, including the provision of ice to fishers. Several centres have been established, including three in Ha'apai, using funding from Australia and Japan (Cusack 1998).

Tuvalu: Community fishing centres have been established on each outer island, starting with Vaitupu (Japan funded, about USD 1.4 million), and then Nanumea and Nukufetau with funding from Australia (Anon 2004).

Vanuatu: Eleven EU-funded rural fisheries centres with ice making facilities were established under the Village Fisheries Development Project in the 1980s and were revived in the early 1990s (Hickey and Jimmy 2008). When EU money ran out in the mid-1990s, the Fisheries Department decided to privatise them. Since 2003, additional fisheries centres have been established in seven locations.

Observations

Around 150 fisheries centres have been established in Pacific Island countries in the past few decades. One of the most remarkable features of fisheries centres in the Pacific Islands region is that few, if any, have been commercially viable. Some documented examples are:

- Tuvalu: Community fishery centres in the outer islands — intended to promote fishing as an income earning activity — are mainly lying idle, while still receiving a costly annual subsidy (Ministry of Natural Resources 2008).
- Solomon Islands: A 1998 review concluded that the centres were not financially viable, and would probably be unable to sustain operations after the EU project's conclusion unless some other form of support could be arranged (Preston et al. 1998).
- Papua New Guinea: A study in the mid-1990s (Preston 1996) concluded that "the six stations for which published data are available only managed a collective throughput of about 600 tonnes during their best-ever year. The profit from such a product volume would probably be insufficient to cover the true economic cost of even one station if it were being run on a fully commercial basis". The same author also noted that making a profit was never stated as an objective of any of the coastal fisheries stations, and project documentation discusses the fish processing operations of the stations not in terms of profit, but what would be an acceptable level of subsidy.
- Vanuatu: None of the centres or satellites in the rural areas produce enough fish to create an adequate surplus of cash to cover the costs of the infrastructure. Thus, the long term viability of the centres hinge on the physical ability and willingness of the existing fishermen to spend approximately double the time fishing for the same net income (Lindley 1993).

The above comments on economic viability do not imply that the centres have been a waste. On the contrary, many centres have provided valuable services to the communities in which they were established (e.g. increasing cash income, generally improving standards of living) and to the wider society (e.g. helping to stem rural–urban migration, increasing domestic fish supplies). These social objectives are far less amenable to quantification than financial performance, and are likely to be less-appreciated by non-villagers. There is also the perception among coastal and outer-island communities that, because governments support schools and health centres in rural areas, there is strong justification for support of fisheries centres.

Having emphasised the important objectives of fisheries centres other than commercial viability, several financial points should be stressed. After all, few objectives of any kind are being accomplished by centres that have closed down due to being too expensive a burden on sponsors.

- Many, if not most, centres were established with the expectation (on the part of governments and recipient communities) that the centres would be profitable or at least not a financial burden.
- The insertion of fisheries centre infrastructure into a rural community typically does not alter the underlying economics of catching fish in isolated locations and marketing them in urban areas.
- "Handing fisheries centres over to island councils or provincial governments" is often the solution when national governments feel burdened by ongoing expenses of centres. In many cases, it is really dumping the centres on communities that cannot afford to provide the required subsidy.

Many of the fisheries centres have experienced similar difficulties. Box 1 summarises the problems identified by three country reviews, many of which are common to fisheries centres across the region.

One of the most expensive components of a fisheries centre is the production of ice. Quite simply, the making of ice in remote locations is inherently expensive. Careful planning for ice production can have a large positive effect on the expense of running a fisheries centre. The region has accumulated decades of experience on the use of ice in small-scale fisheries, but the collected wisdom (some points are given in Box 2) is not often used when planning for fisheries centres.

Box 1. Difficulties of fisheries centres identified in three reviews

Papua New Guinea: A review of four stations (Lorengau, Kimbe, Tufi and Kupiano) concluded that these were over-capitalised, under-utilised, economically non-viable, providing only minimal benefits to village communities, and incurring excessively high production and marketing costs in handling frozen fish. Principal difficulties associated with the stations were identified as:

- Modest landings due to motivational constraints associated with villages having conflicting agricultural and social obligations and disruption in collection schedules because of vessel breakdowns.
- High fixed costs of station operation, particularly in regard to energy requirements, because of the scale of freezing and frozen storage capacity and over-large collection vessels relative to the low throughput.
- Expensive and complex distribution systems for frozen products derived from isolated areas.
- Insufficient emphasis on the needs of urban markets, which demonstrate a clear preference for fresh rather than frozen product.

Solomon Islands: Situations in which the private sector does not make use of natural resources — despite their apparent abundance and accessibility — may be the result of the operation being fundamentally unprofitable or financially unattractive. In Solomon Islands, the private sector has been capable of fishing high-value, non-perishable marine resources almost to commercial extinction. The fact that this has not happened with fresh fish and seafood is not necessarily because the private sector lacks initiative, funds, knowledge or technology, but may also be because there is not very much money to be made. Even where there is commercial potential, the assumption that an aid donor can invest some money in infrastructure, equipment and training and then walk away after a relatively short period leaving behind a going commercial concern, may be over-optimistic.

Marshall Islands: The Japanese-funded fish base at Buoj, Ailinlaplap, was opened in 1994 at a total cost of over USD 2 million. The primary purpose of the facility is to supply fresh reef fish at low cost to residents of Ebeye Island at Kwajalein Atoll, and secondarily, to provide a means of supplementing income for Ailinlaplap residents. Precise data on catch values are available only for 2000–2001. Benefits to Ailinlaplap as a whole seem small, averaging only USD 1.57 per capita annually for 2000–2001, given the considerable infrastructure and operational costs of the fish base. Some of the major difficulties experienced were:

- Maintaining transport to markets increased with the age of the project due to increased maintenance requirements of vessels used.
- Producers' expectations of significantly higher incomes could not be met.
- Access to remote areas by outboard boat was required to produce sufficient quantities for sale

Sources: Preston et al. 1998; Preston 1996; McCoy and Hart 2002.

Box 2. Lessons learned in refrigeration for small-scale fisheries

Over 20 years ago, SPC surveyed small-scale fisheries refrigeration of the region. Many of the practical approaches to improving freezing and ice making remain valid today – and are certainly applicable to fisheries centres. The survey report offers several suggestions that are especially helpful, including:

- **Proper scale:** Characteristically, in planning for the fisheries product throughput of a refrigeration plant in a remote location, optimism results in over-estimates. The larger the capacity of the plant, the greater the financial burden if production is not as large as expected.
- **Compartmentalisation:** This concept involves the use of multiple (preferably identical) freezing units at a site, rather than a smaller number of larger units. Under-utilisation of capacity can be reduced by shutting off units as required. Because the parts are the same, one functional unit can sometimes be made from two or more broken units.
- **Capital expenditures:** Recurrent costs of refrigeration units can be reduced by larger initial capital expenditure. In the case of an aid-funded project, this may be desirable in order to minimise the subsequent cost to a recipient country. The capital costs of, for example, enhanced insulation or a large stock of expendable parts will be repaid by reduced operating costs.

Source: Preston and Vincent 1986.

Arno Fisheries Centre, Marshall Islands

Many fisheries specialists in the region believe that a fundamental problem of fisheries centres (and one that has an impact on operational costs) is "appraisal optimism": over-estimating the throughput of fishery products and under-estimating operational costs. Three individuals with substantial experience with fisheries centres in the region offered their perspective on the situation (their names have been purposefully left off):

- "The aid projects/fisheries departments cooked the figures when they did the economic justifications for the centres."
- "Administrators and/or politicians in the capital who plan or seek funding for the outer island fisheries centres are often former residents of those islands and in many cases their perceptions of fishery resource abundance in those places is often formed by nostalgic recollections of high abundance."
- "The major donor for fisheries centres in the Pacific has a process in which a commitment for a centre is made to a government, and then the feasibility study is carried out, rather than the other way around."

The reality is that the centres' suppliers, mostly subsistence fishers, characteristically produce subsistence quantities of fishery products. Appraisal optimism results in many fisheries centres in the region being too large for the likely production and, therefore, more costly to run than what is required. As explained by an SPC masterfisherman: "Most of the rural fish centres I've come across in the region are too big and unnecessary for their operations. There is a lot of wastage in terms of electricity...Operations and maintenance costs to run these centres are very high, mainly because they are too big for what's required."

The sites chosen for centres are critically important. In general, the more isolated the centre, the higher the operational costs. From a social perspective, remote communities are likely to benefit the most from a functional fisheries centre. On the other hand, a centre with good transport to a not-too-distant urban market is more likely to be viable (or require less of a subsidy). In siting a fisheries centre, viability must be reconciled with welfare objectives.

Another consideration is that a site that has the right conditions with respect to viability also may have the private sector involved in trading fish. Although most governments in the region are committed to private sector development, at the level of the fisheries sector there is still room for disagreement:

- "If the private sector is already successful at doing something in the outer islands the Fisheries Department trying to duplicate the service or products can be very counterproductive." (fish trading company manager)]
- "According to the Acting Principal Fisheries, the centre will also do away with the problem of middlemen." (Fiji Government Online, 15/4/2003)

Another observation is that at least one important donor supporting fishery centres has selectively provided long-term support. In Kiribati, the Japanese built several centres in the 1990s and have continued to do maintenance and replace generators and ice machines

as needed since the beginning to this day (M. Savins, Managing Director, Teikabuti Fishing Co. Ltd., pers. comm., September 2010).

In cases where a government or donor is committed to long-term subsidies for a fisheries centre, overexploitation of inshore fishery resources can be an issue. In extreme cases, centres that were intended to help disadvantaged rural communities resulted in a reduction of food fish for those communities. SPC (2006) reported concerns over fish depletion in the areas near Arno and Likiep fish bases in the Marshall Islands. An ADB report (2005) commented on Fiji's Wainikoro fisheries centre: "the present efforts to counter possible over-exploitation of inshore fishery resources appear to be fairly weak: some plans to eventually encourage offshore fishing, and some attention to establishing a marine protected area. The present managers of the Wainikoro centre indicate that they are unable to even avoid buying fish that contravene fisheries legislation." As stated by an SPC Fisheries Development Officer: "Establishing fishing centres is, in a sense, moving the overfishing problem to fishing areas around the centres."

Applying past experiences

Reflecting on the overall situation, in the outer islands business conditions are typically very difficult, logistics are horrendous, and the people/agencies that operate the fisheries centres rarely have much business experience. On the other hand, the various options for a government to improve the welfare of residents in the outer islands are quite limited — and promoting the fisheries trade through fisheries centres in many cases may be the best opportunity. The appropriate strategy to develop the opportunity obviously depends on local and national conditions, but effectively applying past experience in the planning and operation of centres is likely to improve benefits and reduce required subsidies. Some of the lessons learned with regard to fisheries centres in the region include:

- In the absence of unusually favourable conditions, it is unlikely that the operation of a fisheries centre will be profitable. Provision for a long-term subsidy is required in the planning process and should be reflected in the donor and/or government budget. In general, the more remote the location, the larger the subsidy required.
- In planning for a fisheries centre, it should be made very clear to residents in the recipient community that the centre will require substantial financial support. They should also be made aware that, historically in most Pacific Island countries, the burden of providing that support in the medium to long term has fallen on the communities that receive centres. "Handing the centre over to the island council" may not be as wonderful as it sounds.
- Some features of the planning process and centre design can reduce the level of subsidy required for a fisheries centre. One of the most important is a realistic and objective assessment of the likely fishery product throughput of the centre. Going further, a second opinion on such an assessment could improve the current situation in which many existing centres are simply too large and more costly to operate than necessary.
- Careful attention to the refrigeration aspects of a fisheries centre project could also reduce required subsidies. Box 2 above shows some simple practical measures for reducing cost of producing ice.
- The fact that recurrent costs of operating a fisheries centre can be reduced by larger initial capital expenditure, should be taken into consideration in the planning stage, especially for a centre funded through an aid project.
- Although it is tempting to place a fisheries centre at a location where conditions promise commercial feasibility, this may result in crowding out the private sector. A subsidised fisheries centre in competition with an existing private sector fish trader is likely to be counterproductive in the long term.
- A fisheries management component should be incorporated in all fisheries centres. Centres can promote simple resource conservation measures: he who controls the buying at the centre can exert considerable positive influence over fishing practices in the area.

Buying fish at the Wainikoro Centre, Fiji

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