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Seaweed Farming in the Solomon Islands



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Synonyms

[Kelp](#); [Policy](#); [Scum](#); [Small island developing countries](#)

Definitions

Fiscal Policy: the use of government revenue and expenditure to stabilize the economy.

Monetary Policy: is the use of short-term borrowing or monetary base to target inflation rate or interest rate so that price could be controlled.

Transmission Mechanism: refers to the path through which the micro- and macroeconomic stimulus translates into output.

Introduction

Seaweed farming is one of the sustainable industries, not only in the Solomon Islands but in a number of the Pacific Island Countries. There are numerous opportunities for expansion of the seaweed exports from the Pacific Island Countries.

According to the Solomon Island Times (2013), there are many opportunities for value adding of seaweeds from the Solomon Islands. There are two important advantages of value adding seaweeds. First, the price of processed or semi-processed seaweed is higher than that for unprocessed seaweed. If prices are high, seaweed farmers will benefit as their total revenue from seaweed farming will increase. Second, there may be new applications of processed or semi-processed seaweed. As a result of this, there will be new market opportunities, and Solomon Islanders can benefit from these.

There are many advantages of seaweed farming in the Solomon Islands (Solomon Islands Times 2013). First, seaweed farming provides a source of income-generating opportunities for the local farmers. In an era of land tenure issues, seaweed farming can be used as an alternative to land farming. Second, seaweed farming in the Solomon Island requires less capital investment and is more cost-effective than other industries, such as the tuna industry. Third, seaweed has greater storage life. If seaweed is stored properly, farmers can keep dried seaweeds for at least 6 months.

The main aim of this write-up is to examine the socioeconomic potential of seaweed farming in the Solomon Islands by using a policy perspective. There are two reasons for conducting this study. First, to the best of my understanding, none of the existing studies have used a policy perspective to examine the socioeconomic

potential of seaweed farming in the Solomon Islands. Second, this study is particularly important to the academics and policy makers who are interested in enhancing the growth of the seaweed industry.

Overview of Seaweed Farming in the Solomon Islands

Seaweed farming has great potential for small island emerging economies such as the Solomon Islands. The history of seaweed farming in the Solomon Islands dates back to the 1980s. The first seaweed farming trials were conducted in the Solomon Islands by the Overseas Development Agency. Two main areas were targeted for seaweed farming trials. These two areas were Rarumana village and Vona Vona Lagoon (Kronen 2013). Initially, the planting materials for the *Kappaphycus alvarezii* were imported from the Fiji Islands to be used for seaweed farming trials.

Due to fish grazing, seaweed farming trials were not successful at the Vona Vona Lagoon. In the year 2000, the Ministry of Fisheries and Marine Resources collected seeds from the Vona Vona Lagoon, and in the year 2001, seaweed growth trials were conducted in Rarumana village (Kronen 2013). The growth trials conducted in Rarumana village resulted in 600 kg of seaweeds produced in 2002. As a result of this, the Rural Fishing Enterprise Project started seaweed farming in the Solomon Islands (Kronen 2013). By the year 2005, there were 130 (30% of the national seaweed farmers) seaweed farmers in the Rarumana and Shortland Islands and 300 (70%) seaweed farmers in the Wagina and Choiseul Province (Kronen 2013) (see Fig. 1).

The major boom in the seaweed farming in the Solomon Islands occurred by the mid of year 2005 when the Solomon Islands seaweed industry received major development assistance from the European Union to fully commercialize the seaweed industry (Kronen 2013). With the help from this fund, the seaweed farming in the Solomon Islands expanded to Malaita, Ontong Java Atoll, and the Reef Islands (Kronen 2013).

Production of *Kappaphycus alvarezii* in the Solomon Islands

One of the main commercial aquaculture seaweed species in the Pacific Island Countries is *Kappaphycus alvarezii*. This seaweed is farmed in four Pacific Island Countries, namely, Solomon Islands, Kiribati, Fiji, and Papua New Guinea (Gomez 2014). There are two reasons for promoting the *Kappaphycus alvarezii* farming in the Solomon Islands. Firstly, *Kappaphycus alvarezii* farming is less capital intensive; therefore, lower level of capital investment is needed. Secondly, *Kappaphycus alvarezii* farming is similar to the traditional aquaculture farming methods used in the Solomon Islands. As a result of this, less training and development is required for *Kappaphycus alvarezii* farming. The production of *Kappaphycus alvarezii* increased from 75 mt in the year 2004 to 1700 tonnes in the year 2013. Production of *Kappaphycus alvarezii* in the Solomon Islands has increased from 75 mt in the year 2004 to 1700 mt in the year 2013 (see Fig. 2). This significant increase in *Kappaphycus alvarezii* production has been the result of continuous support provided by the Solomon Islands Government and donor agencies.

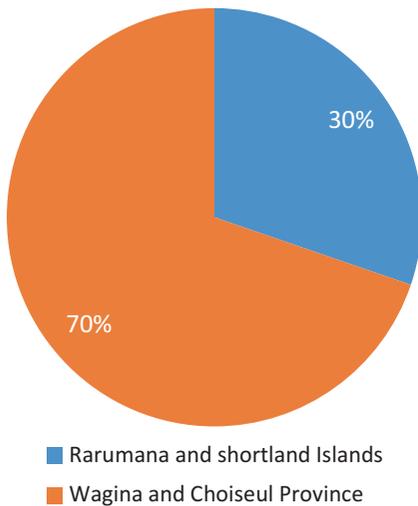
In addition to *Kappaphycus alvarezii*, there are other species of seaweed that are farmed in the Pacific Island Countries. Some of the edible species of seaweed that are farmed in the Pacific Island Countries are *Cladosiphon*, *Caulerpa*, *Codium*, and *Gracilaria* (Gomez 2014). The production of seaweeds in the Solomon Islands increased from 40 mt in the year 2003 to 1792.2 mt in the year 2013. In this decade, the production of seaweeds in the Solomon Islands has increased by 4380.05% (see Fig. 3).

Socioeconomic Benefits of Seaweed Farming in the Solomon Islands

There are many socioeconomic benefits of seaweed farming in the Solomon Islands. Both local and international communities and the Solomon Islands Government have benefitted from seaweed farming. Some of the socioeconomic

benefits of seaweed farming in the Solomon Islands are identified and discussed below (Kronen 2013):

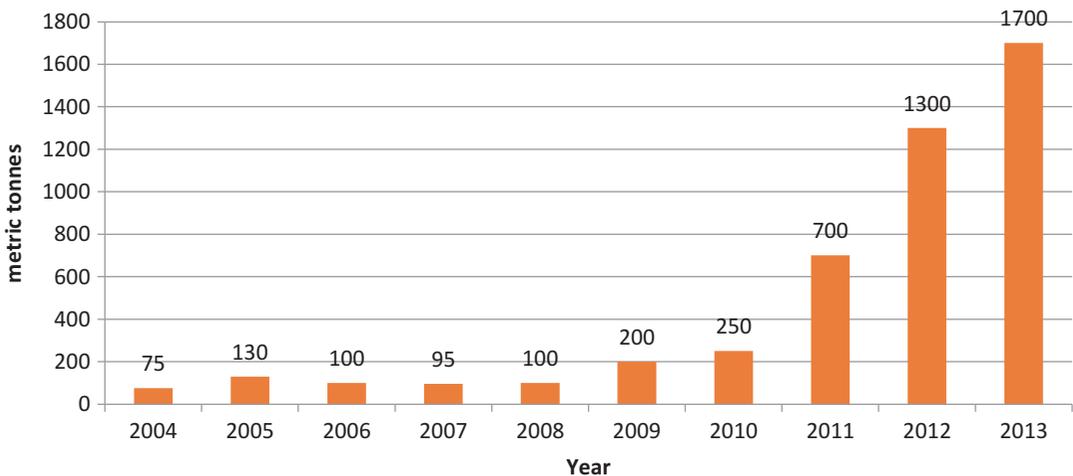
- Seaweed farming provides income to households. The survey conducted by Kronen (2013) found that out of 209 households studied in Wagina Island, Choiseul Province, 42.5% mentioned that seaweed farming is a source



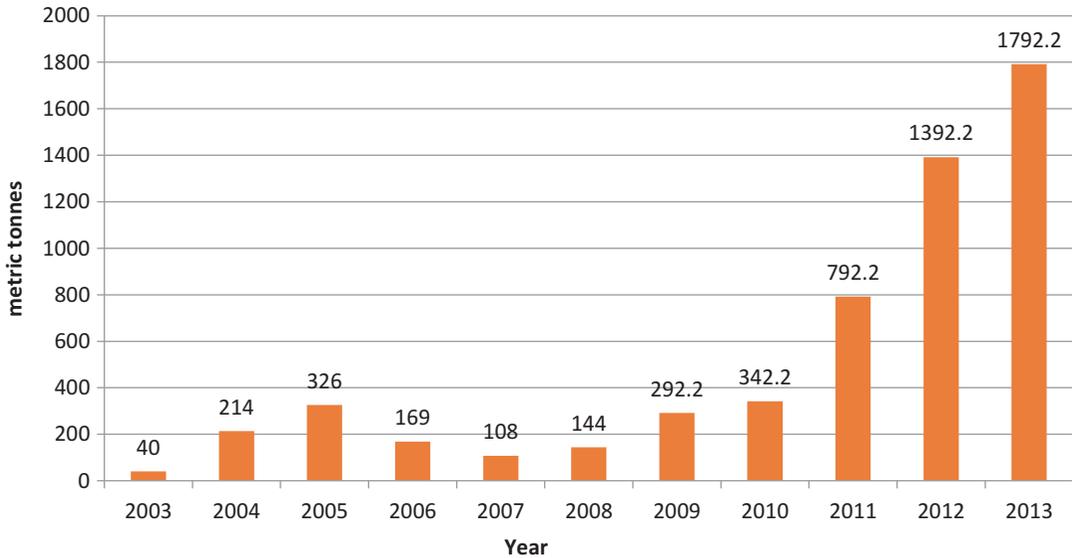
Seaweed Farming in the Solomon Islands, Fig. 1 Percentage of seaweed farmers in the Rarumana, Shortland Islands, Wagina, and Choiseul Province. (Source: Created by the author of this write-up, (2015))

of income for them. The income that they receive from seaweed farming helps in meeting daily household financial expenses.

- Seaweed farming is similar to traditional farming methods. It is one of the sustainable forms of farming in the Pacific Island Countries. In addition to this, seaweed farming is environmentally friendly and economically viable.
- Seaweed farming has provided capacity-building opportunities to locals. Solomon Islanders have been able to sharpen their skills and talents by attending workshops that are organized by the Ministry of Fisheries and Marine Resources.
- Seaweed farming earns foreign exchange earnings and reduces the balance of trade problem that is faced by many Pacific Island Countries. The Pacific Island Countries have been recording high annual imports relative to annual exports. Seaweed farming is a source of government revenue, and this revenue is used to reduce budget deficit problem that is faced by many Pacific Island Countries. The marine resources of the Solomon Islands are the second largest foreign exchange earner (Food and Agriculture Organisation 2005). In the year 2013, there were four seaweed companies exporting seaweeds to France, Vietnam, and China. These four companies were (1) Solomon Seaweed, (2) RK Marine,



Seaweed Farming in the Solomon Islands, Fig. 2 Production of *Kappaphycus alvarezii* in the Solomon Islands. (Source: Created by the author of this write-up (2015) by using information from Gomez 2014)



Seaweed Farming in the Solomon Islands, Fig. 3 Production of seaweeds in the Solomon Islands. (Source: Created by the author of this write-up (2015) by using information from the Ministry of Fisheries and Marine Resources 2009). Note: Data for year 2009–2013 were missing; therefore, the author of this write-up has estimated data for these years

(3) Chen Zhen, and (4) HJJ. Figure 4 shows the seaweed exports from the Solomon Islands by different companies in the year 2012 and 2013.

Figure 4 shows that there are two companies who are the highest exporters of seaweeds. These two companies are the Solomon Seaweed and RK Marine.

Socioeconomic Problems Faced by the Seaweed Industry of the Solomon Islands

There are many socioeconomic problems that have affected the seaweed industry of the Solomon Islands. Some of these problems are identified and discussed below (Kronen 2013)

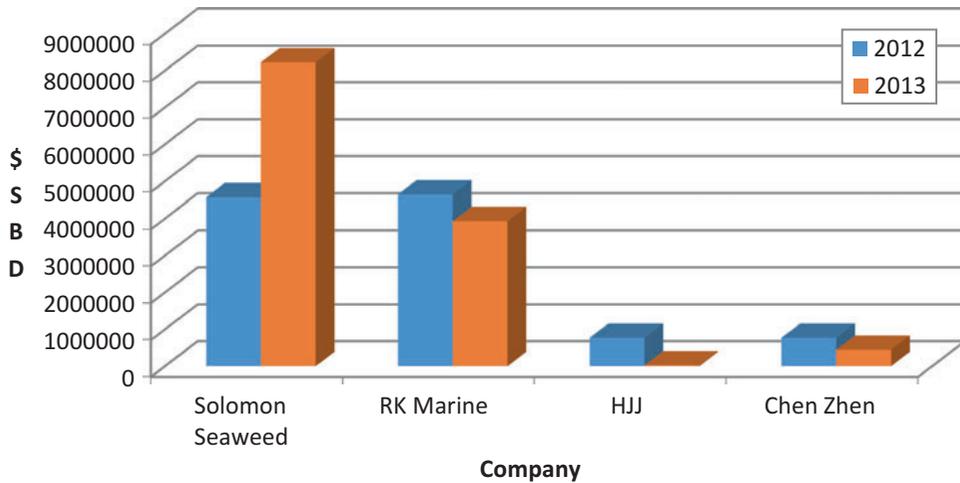
Volatility of Farm Gate Prices

Volatility of farm gate prices has always affected the seaweed industry of the Solomon Islands. This volatility of the farm gate prices is caused by changes in the prices of raw materials used in the production of seaweeds, earthquakes, and other

natural disasters. In the year 2006, the farm gate price of seaweeds dropped from SBD2.00/kg to SBD1.50/kg (Kronen 2013). This decrease in the farm gate price was caused by changes in international fuel prices. The economic intuition behind this phenomenon is that if international fuel prices increase, the price of seaweeds in the international market will increase. If prices increase, demand will fall resulting in the decrease in farm gate prices. Later on in the year 2007, the Solomon Islands experienced a devastating earthquake that reduced seaweed production by 20–30% (Kronen 2013). As a result of this, the prices of seaweed increased in the year 2007 by 106.67%. This increase in the seaweed prices benefitted the local seaweed industry of the Solomon Islands. However, the earthquake in the year 2007 adversely affected the livelihood of local seaweed farmers (Kronen 2013).

Farmers Lack Innovative Skills

Seaweed farmers in the Solomon Islands lack innovative skills to improve the seaweed industry of the Solomon Islands. Some of the areas in which further skill development is required are



Seaweed Farming in the Solomon Islands, Fig. 4 Seaweed exports by different companies in the year 2012 and 2013. (Source: Developed by the author of this write-up by using information from Gomez 2014)

value adding and semi-processing of seaweeds. Currently, there are no value adding and semi-processing of seaweeds done in the Solomon Islands. All phases of the production process are accounted for by the family production units (Kronen 2010). It is essential that the seaweed farmers have an entrepreneurial attitude and think of innovative ways of improving the seaweed farming in the Solomon Islands. By value adding seaweed, numerous export opportunities will arise. Consequently, the seaweed industry of the Solomon Islands can increase their market share by venturing in new export markets.

Poor Data Recording and Processing at the Production Site

Good data keeping and recording is needed to improve the production of seaweed in the Solomon Islands. The seaweed farmers need to collect and record high-quality data on seaweed prices, sales, and international and local demand in order to boost the production of seaweed in the coming period. Operations decisions related to scheduling, planning, and organizing of raw materials and resources have to be made on good-quality data collected from the production sites.

Constraint by Lack of Extension Support

Due to financial constraint, the Government of the Solomon Islands is not able to provide full extension support to all seaweed farms. As a result of this, the seaweed farmers have to look for extension support elsewhere in order to enhance seaweed production (Kronen 2010). Some of the forms of extension support that is needed by seaweed farmers are finding new sites where seaweed farming can be expanded and effectively communicating best seaweed farming methods to the policy makers.

Actions for Future Growth Potential

Seaweed farming can be expanded in many areas in the Solomon Islands. However, due to high cost of boat transportation, this expansion is limited. Seaweed farmers in the Solomon Islands should expand seaweed farming in areas where there is favorable physical and socioeconomic conditions. There is also future potential for semi-processing and processing of seaweeds in the Solomon Islands. Solomon Island seaweed farmers will be able to fetch higher prices if they are able to value add seaweeds before exporting it to the international market (McHugh 2006). Solomon Islands

have been exporting high quality of carrageenan, but there have been some quality problems related to impurities and level of moisture content in the seaweed. If these quality issues can be addressed, the seaweed farmers will be able to increase their revenue by fetching high international prices for seaweed exports (McHugh 2006).

Policy Implications

Fiscal Policy Effectiveness and Non-fiscal Measures

Fiscal policy is the use of government expenditure or taxation to stabilize the economy. Governments may increase expenditure in order to increase the economic growth rate (Mountford and Uhlig 2009). The most effective policy instrument that may help the seaweed industry is fiscal policy and non-fiscal measures. There are two fiscal policy instruments that are used by the policy makers to stimulate the economy. These are taxation and government expenditure. The Government of the Solomon Islands has used fiscal policy in the past to expand the seaweed industry of the Solomon Islands. As a result of this, seaweed production in the Solomon Islands has accelerated. In addition to this, the Government of the Solomon Islands can use non-fiscal measures to enhance the seaweed industry of the Solomon Islands. Some of these non-fiscal measures include:

- Providing entrepreneurial training to seaweed farmers
- International sharing of ideas
- Providing more extension support

Monetary Policy Ineffectiveness

Monetary policy is the use of interest rate and money supply to stabilize the economy (Devereux and Engel 2003). Monetary policy may not be effective to boost the seaweed industry of the Solomon Islands. There are two reasons for this. First, the financial sector of the Solomon Islands is underdeveloped; therefore, the effect of changing short-term interest rate may not stimulate the seaweed industry of the Solomon Islands. Second, many seaweed farmers in the

Solomon Islands rely on international development assistance and government support in order to expand the seaweed industry. Since these farmers are poor and are hardly able to meet the banks requirements for loan approval, they rely heavily on government support and international development assistance to boost the seaweed industry.

Suggestions for Way Forward

The seaweed farming of the Solomon Islands has greater potential than what it has achieved to date. It is clear from the above discussions that the seaweed industry of the Solomon Islands provides numerous benefits to the local communities (Kronen 2013). Albeit the seaweed farming is an important industry in the Solomon Islands, it is still constrained by numerous problems. Quick government intervention is needed in order to fully tap the seaweed industry of the Solomon Islands (Kronen 2013). The seaweed industry of the Solomon Islands can become internationally competitive provided a close review and synthesis of the value chain of the seaweed industry is undertaken. There are many opportunities for further value adding of the raw seaweeds before these are exported to the international markets (Kronen 2013). Value adding can be in the form of drying and semi-processing of seaweeds. The socioeconomic aspects of seaweed farming need to be inculcated in the government strategies so that sustainability of the seaweed farming is maintained. The technical efficiency of the seaweed farms needs to be improved so that output per hectare of farm size also improves (Kronen 2013).

Conclusion

The main aim of this write-up was to examine the socioeconomic potential of seaweed farming in the Solomon Islands. This write-up highlighted that there is greater potential for the seaweed farming in the Solomon Islands. With the help from the government and donor agencies, the

technical efficiency of seaweed farms can be improved. Additionally, a retrospective analysis of the effectiveness of government policies in the Solomon Islands shows that only fiscal policy may be effective in stimulating the growth of the seaweed industry of the Solomon Islands. The effectiveness of monetary policy is dimmed as the financial sector of the Solomon Islands is underdeveloped. For monetary policy to be effective, the financial sector has to be fully developed so that monetary policy transmission mechanism can be efficacious.

Cross-References

- ▶ [Policy Outcomes](#)
- ▶ [Policy Processes](#)
- ▶ [Policy Formulation](#)

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