

Improved cottonii (*Kappaphycus alvarezii*) seaweed variety transferred to Kiribati and Fiji

The red seaweed, *Kappaphycus alvarezii* (cottonii), has been ranked by SPC as one of the highest priority commodities for aquaculture in the Pacific Islands region under the 2007 SPC Aquaculture Plan. Cottonii farming has been strongly promoted in the Pacific Islands region because it: 1) requires low levels of technology and investment; 2) does not require high-tech post-harvest processing within the country; 3) is normally compatible with traditional fishing and other subsistence uses of the inshore environment; and 4) is a potential source of income and employment in rural areas with few other income-generating opportunities.

Cottonii seaweed farming has become a significant income-generating activity in certain coastal communities of Fiji, Kiribati, Papua New Guinea and Solomon Islands. In 2013, total cottonii seaweed production from the Pacific was 3,090 tonnes in dry weight. Kiribati and Solomon Islands were the main producing countries at 1,700 t and 670 t, respectively (Fig. 1).

Currently, the mainstay of cottonii seaweed produced in the Pacific Islands region belongs to the *tambalang* variety, but because of its thick structure (thalli), it can take up to three to five days to sun-dry, which can be problematic in areas with high average rainfall. Furthermore, the *tambalang* variety is not very productive when using off-bottom systems (seaweed seedlings cultured in shallow areas, 30–40 cm above the sea bottom), due to the high presence of sediments, nutrients and decreased water clarity. Moreover, this variety is not well adapted to fluctuations in salinity, temperature and pH, which can be high in certain coastal areas of the Pacific Islands region.

For all these reasons, it was decided to assess possible cottonii varieties that were better suited to the local context and water conditions of the Pacific's main producing countries.

In recent years, SPC's Aquaculture Section has developed a strong relationship with the National Seaweed

Centre of Indonesia (Lombok). In 2013, Indonesian experts, in collaboration with SPC aquaculture officers, assessed the context and characteristics of the major producing countries and areas, as well as main limitations and constraints for production expansion and improvement in the Pacific Islands region. After this initial assessment, it was decided to introduce a new cottonii variety, called *maumere* (which has been the focus of a strict selective programme for more than 15 years in Lombok), into Kiribati and Fiji. Both countries officially requested SPC's technical assistance with the promotion and improvement of their seaweed sectors.

The new variety was introduced to both countries in March 2014. In both countries, strict quarantine measures and protocols were implemented before the seedlings were released to farming locations. Initial trials have been conducted at Kadavu Island in Fiji, and Abaiang Atoll in Kiribati, with very promising results in terms of adaptation, growth and survival. It is expected that initial propagation activities will end soon so that the improved seedlings can be disseminated to farmers and communities for initial trials (in order to compare growth and survival differences between the old *tambalang* variety and the new *maumere* variety).

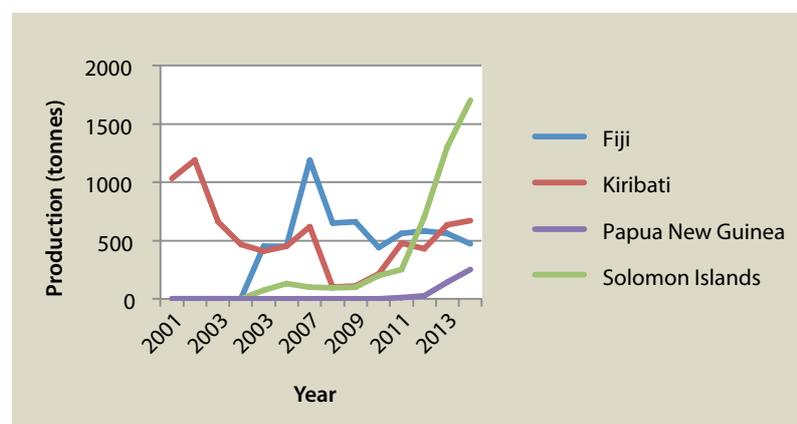


Figure 1: Pacific Islands cottonii seaweed production (source: FAO fishstatplus 2013).

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