

**Expert Conference on Development of Island's
Sustainable Societies**

Creating a Sato-Umi in Onna Village

**- Coral reef preservation and
regional economic revitalization -**

Onna Village Fisheries Cooperative

Date: June 29, 2014

**Place: Okinawa Institute of Science and Technology
Graduate University (OIST)**

Overview of the region

Onna Village is a village with a population of approximately 10,000 people located on the west coast of northern Okinawa Island.

- It has a coastline approximately 46km long. It is a leading domestic resort region.
- The area of the coral reef area is approximately 3,000 hectares.
- It is 1 village and 1 fisheries association, possessing 1 fishing right.



Overview of the fisheries

• Onna Village Fisheries Cooperative Association

Items in red were developed by Onna Village

No. of association members: 266

Seaweed cultivation and coastal fisheries are thriving.

1976 First harvest of **Monostroma nitidum (asa)** (test period of 7 years)

1977 Successful **bamboo sticks cultivation of hon-mozuku** (test period of 4 years)

1986 Handling of **ito-mozuku** re-started

1994 Successful **land-based cultivation of sea grapes** (test period of 6 years)

1998 Commencement of **bamboo sticks cultivation of coral** (independent project of the fisheries association)

2007 Application for **registration of the Onna mozuku variety** (tests for 14 years)



Mozuku

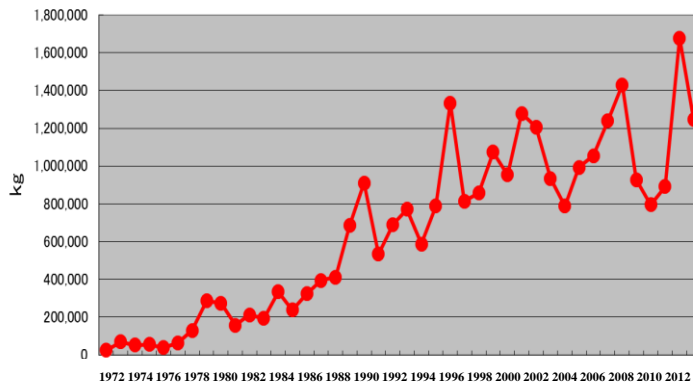


Asa



Sea grapes

Volume Handled by the Onna Village Fisheries Cooperative Association



Fiscal year



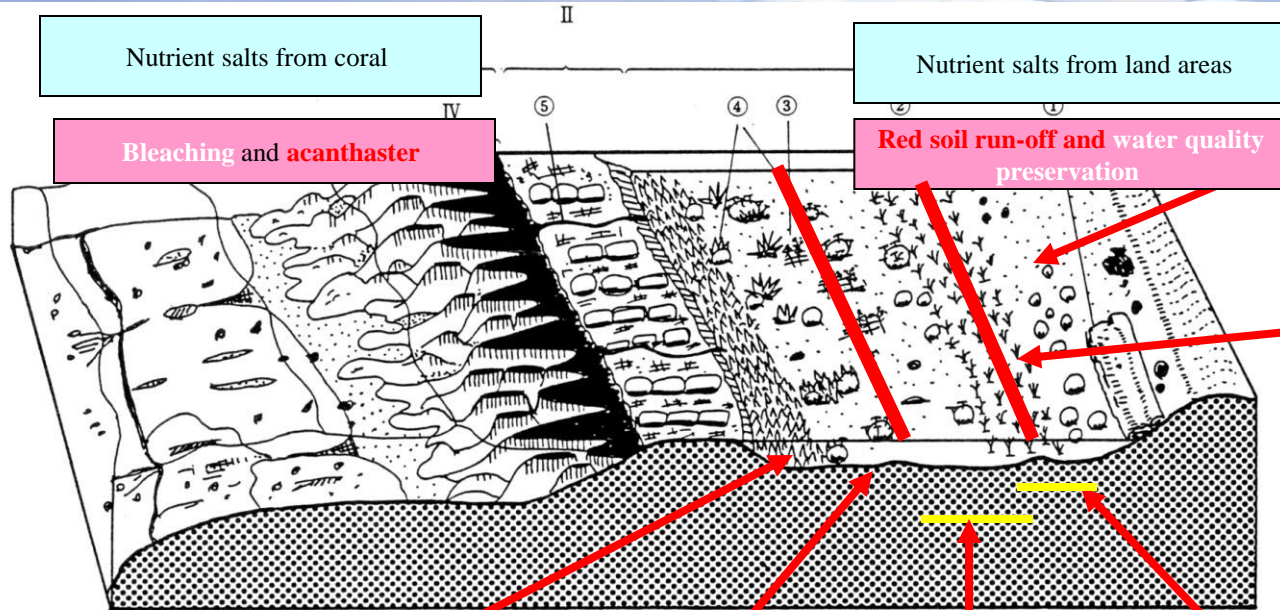
Seri market

Sea grapes cultivation

2011 Festival of Agriculture, Forestry and Fisheries Emperor's Cup winner



Creating a Sato-umi (Fisheries activities are also a part of the ecosystem)



(From Shioemitsu Shokita, 1988, *Aquaculture in the Coral Reef Area*)

Figure 9. Topography of Coral Reefs – Diagram of a Typical Fringing Reef

I. Shallow channel; II. Reef flat; III. Reef slope; IV. Green groove – green leg system;
 (i) Plate reef flat (beach rocks); (ii) Seaweed zone; (iv) Reef-building corals; (v) Water channels



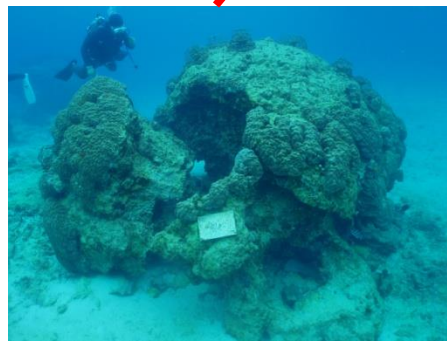
Mudflat: Asa farm



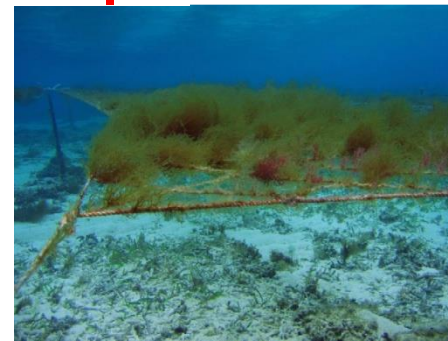
Eelgrass bed



Coral farm



Giant clam cultivation



Mozuku farm



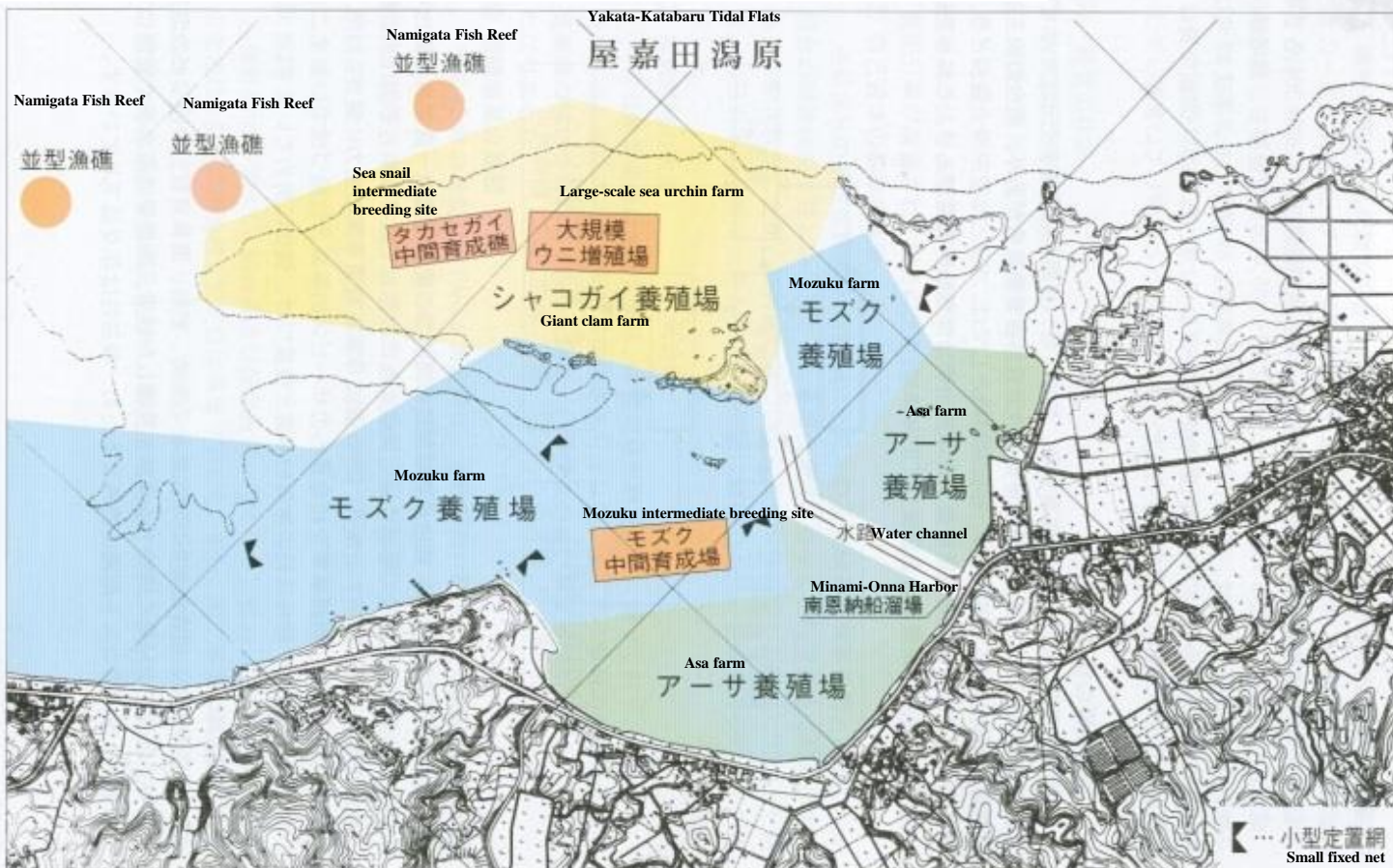
Mozuku seedbed

Mudflats and seaweed use the place

1976: Successful asa cultivation, 1977: Successful mozuku cultivation
1978: Damage to asa and mozuku due to red-soil run-off

Onna Village Coastal Fishing Grounds Diagram (Fisheries Promotion and Preservation Zone)

1989



Preservation of the sea = advanced use as a fishing ground

Red-soil run-off prevention measures

Onna Village Red-soil Run-off Prevention Council

Participants: Village, ward, Fisheries Cooperative Association, ordering parties, people involved in the construction

Target: Pollution source control for large-scale construction

Activities: **Prior consultation on disaster prevention measures**

Confirmation of disaster prevention facilities

Main construction

Check the operational status of the disaster prevention facilities

Called by recruiting members

Budget: None, costs borne by participating members

1990 Good example private sector: facility criteria
470t/1000m²

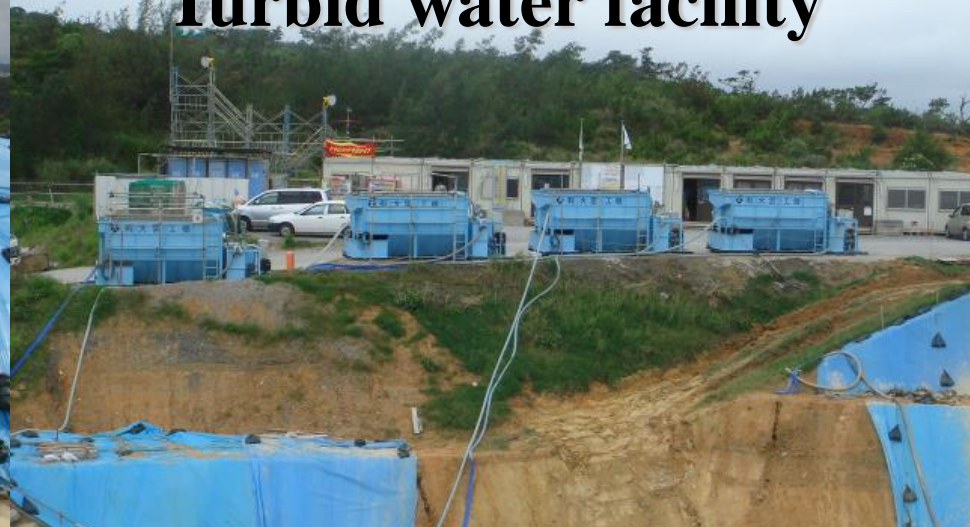
Site of construction of the Okinawa Graduate University in 2011

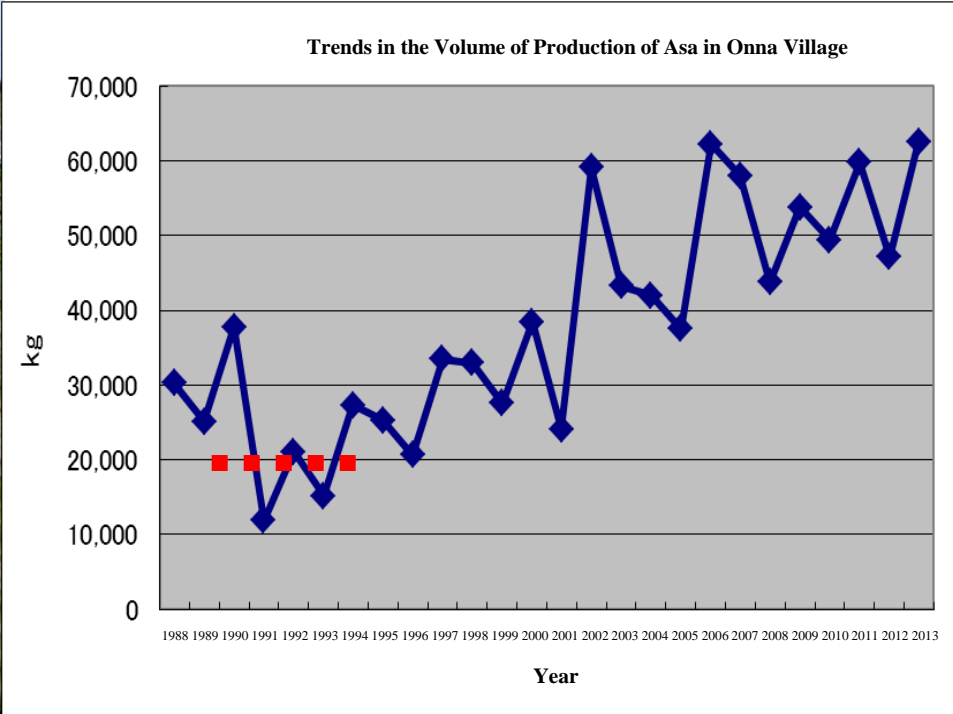
Pollution source control



Good example: Graduate University 200ppm
→ 25ppm or less

Turbid water facility





Activities to “Nurture the coral reef seas”

We develop seed coral using "coral cultivation and planting.”

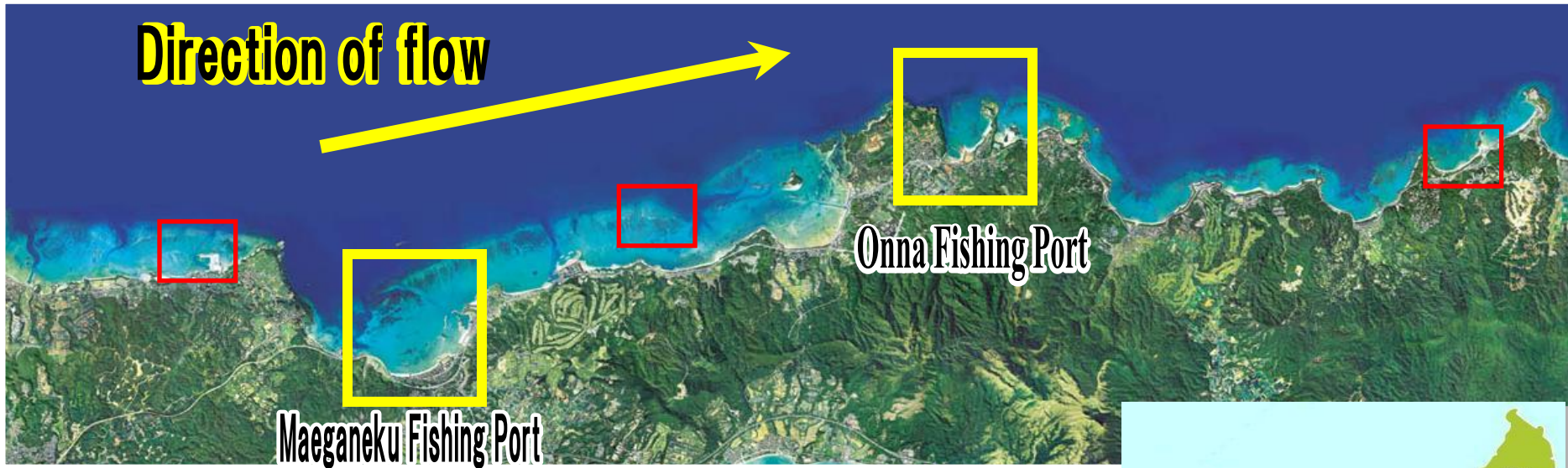
Cultivation commenced in 1998



We assist the natural restoration of the coral which occurs when the seed coral spawns.

Coral cultivation and planting locations

Direction of flow



□ indicates places in which cultivation and planting are being carried out

As of 2013, approximately 6,000 are being cultivated in Onna and approximately 8,000 in Maeganeku. In the future, we plan to cultivate 30,000.

□ indicates places in which only planting is being carried out

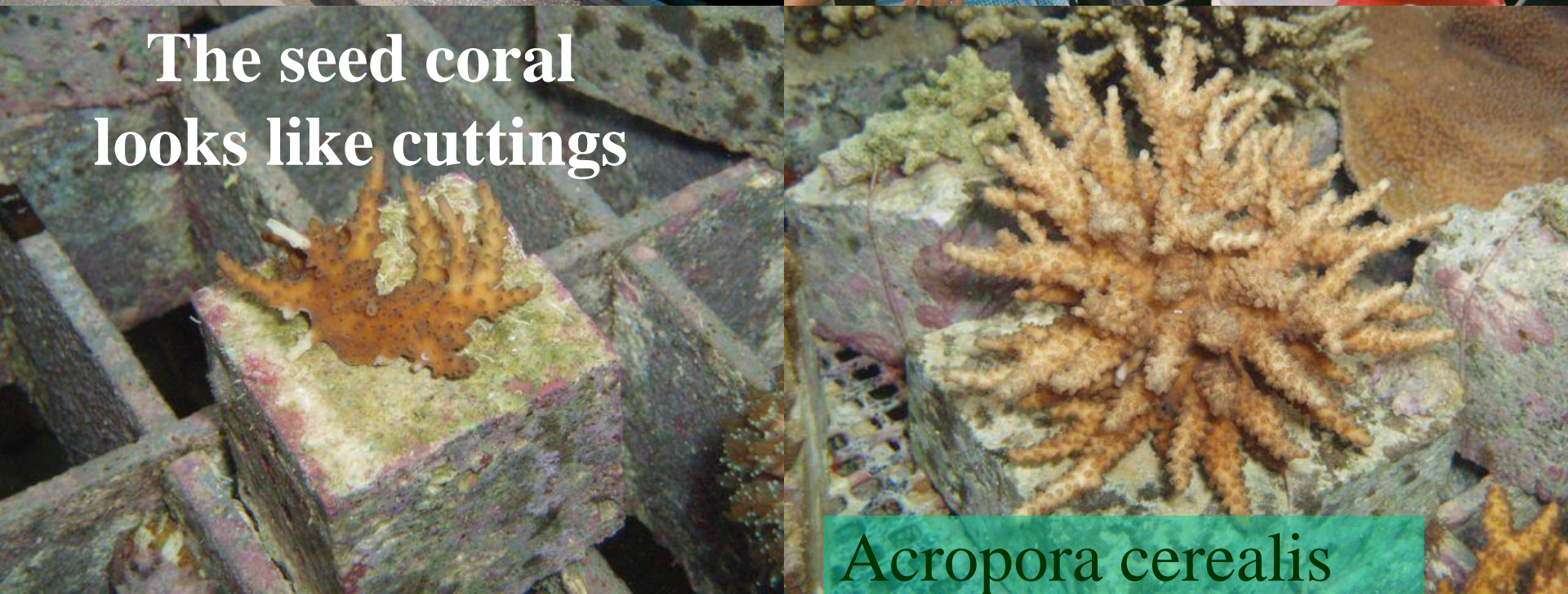


Growing seed coral

Exchanges in the production region



The seed coral
looks like cuttings



Acropora cerealis

Group-planting cultivation of corals



Defining the territory



Placing the pegs: 13 pegs



Placing the corals
in the pegs



September 5, 2011

High survival rate and healthy growth.



In front of Onna Fishing Port, March 2012



May 30, 2013 spawning



Collaborations with school education



Team Chura Sango Collaborations with tourism



Coral planted in 2009

Team Chura Sango



Water Channel I Rock (Photo: May 10, 2012)

Collaborations with consumers

Establishment of the Onna Village Churaumi Fresh Produce Council

Produce delicious mozuku

Nurture a bountiful sea

Onna Village
(region)

Onna Village Fisheries Cooperative Association
(Producer)



for coral protection

Igeta Takeuchi Co., Ltd.
(Manufacturer)



Use the products

Consumers' cooperative
(Members of the cooperative)

Deliver safe and high-quality products



Onna Village Churaumi Fresh Produce Council signing ceremony and inaugural meeting



Signing ceremony of the Agreement for Support and Cooperation for the Coral Reef Restoration Project



Palsystem Union November 2009

Co-op CS Net April 2010

“Co-op no Mori: Council for Building the Sato-umi of Onna Village” signing ceremony and inaugural meeting

Coral Restoration and Mozuku Fund signing ceremony



KYOTO-COOP
January 2013

TOKAI CO-OP July 2013

Approximately 250 corals



Osaka PalCoop
April 2013

サンゴ再生もずく基金覚書取り交わし式

Exchange of memorandum on coral restoration and Mozuku Fund



Going out to the production region





Onna Village Fisheries Cooperative Association
Sato-umi Building Coral Reef Restoration Project

Mozuku Fund

Mozuku Fund: If you purchase any of the eligible products, part of your payment will go to the Sato-umi Building Coral Reef Restoration Project.

pal-system
おしゃべりジャーナル
2013年11月2日

みんなで育てたサンゴの森からの、うれしいニュース!
海を育むもずくの産地でサンゴが産卵しました!

沖繩の美しい海を守るため、2009年に設立された「恩納村美ら海(ちゅうらみ)産業協議会」はその活動の一環として、恩納村の海にサンゴの植付けを行っています。今年5月、恩納村から「ついにサンゴが産卵!」という知らせが届きました。

もずくを食べてサンゴの森を応援しよう!

もずくを食べる
産卵の森を育てよう
サンゴの植え付け

植え付けから3年、ついに産卵!

海水温の上昇によりサンゴが枯れてしまう白化現象により有限して海を守るため、「恩納村美ら海(ちゅうらみ)産業協議会」のサンゴの森づくりプロジェクトにより植え付けたサンゴが、2013年5月30日満潮になった午後10時過ぎ、初めて産卵しました。満月の夜に、海中にサンゴが卵を生み出していく姿は、幻想的に美しくいったというようです。その卵は潮流に乗り、沖縄沿岸から近海に広がっていきます。みんなで育てたサンゴの森が、また新しいいのちと豊かな海を育んでゆくことでしょう。今年の夏も白化現象が見られたものの、幸い、その後気温などで温度が低下したため回復に向かっています。2014年にも、また恩納村との産地交流ツアーが開催予定。ぜひみなさんもお参加くださいね!

サンゴの産卵の様子。表面の小さな突起から、小さな卵が飛び出します。

サンゴの産卵は、夜間の数十分間。

生鮮より
沖縄産新鮮なもずく
産地直営
(おまかせパック)のみ

産卵の海の中、みなさんといっしょに植えたサンゴがいつか産卵したとき、本当に感動的ですね。そのときの夏の暑さで白化したサンゴも、なんと生き残って来そうです。みなさんのもずくががんばります。私たちががんばります。ぜひ恩納村のサンゴともぜひに会いに来てください。

サンゴの産卵おめでとう! ありがとうキャンペーン もずくを食べて「琉球ガラス」を当てよう!

対象品 産地直営の早採れもずく 50g×6
対象品 産地直営の早採れもずく 100g×6
対象品 産地直営の早採れもずく 150g×6
対象品 産地直営の早採れもずく 200g×6
対象品 産地直営の早採れもずく 250g×6
対象品 産地直営の早採れもずく 300g×6
対象品 産地直営の早採れもずく 350g×6
対象品 産地直営の早採れもずく 400g×6
対象品 産地直営の早採れもずく 450g×6
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対象品 産地直営の早採れもずく 950g×6
対象品 産地直営の早採れもずく 1000g×6

Co-op CS Net Coral Reef Restoration Project



Look for this symbol

Palsystem Union Churaumi Fresh Produce

商品についてのお問い合わせ
0570-011-099

配達・利用についてのお問い合わせ
0120-868-014

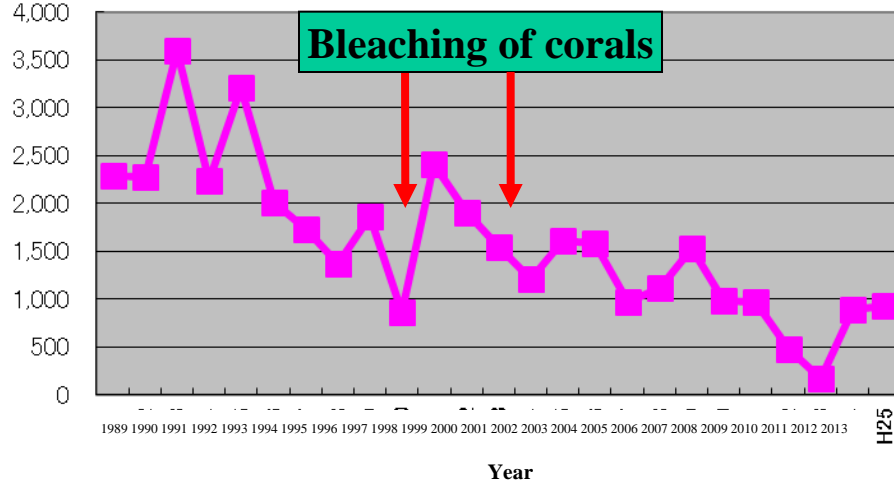
その他のお問い合わせ
0120-700-750

TOKAI CO-OP Building a coral forest

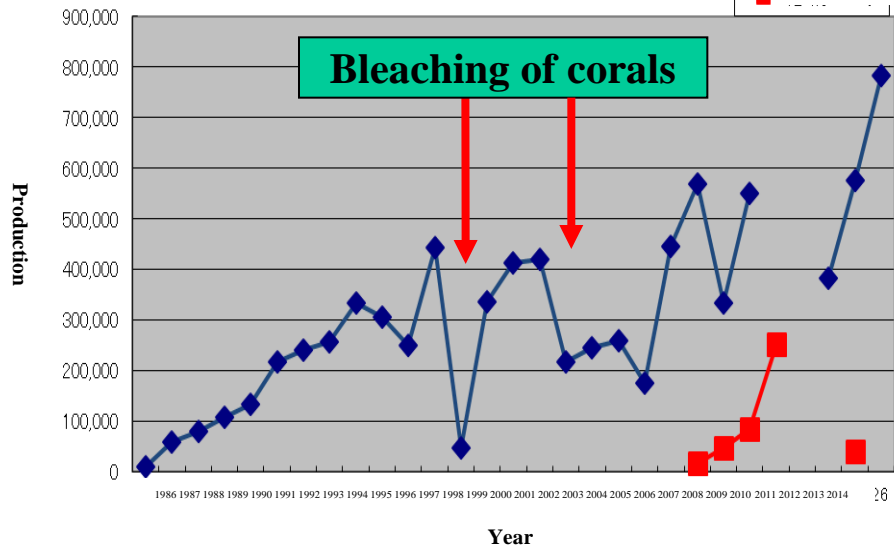
Approximately 5,930,000 households are members of the consumers' cooperatives

Trends in ito-mozuku production

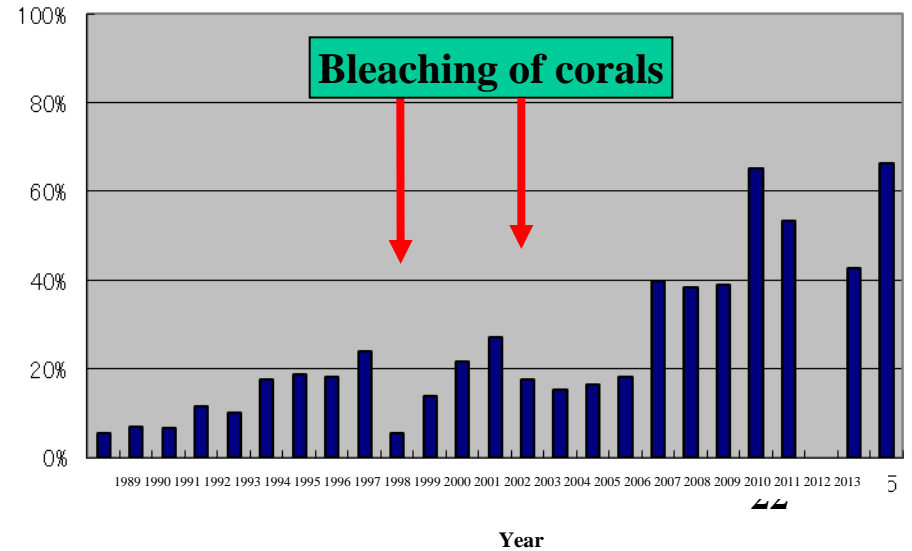
Production: tons Trends in Mozuku Production (Okinawa Prefecture)



Trends in Ito-mozuku Production



Percentage of Ito-mozuku Produced in Onna Village





**Breeding of large seed corals using
breeding shelves**

This image shows a diver underwater working with a long metal shelf filled with numerous small coral seedlings. The shelf is positioned horizontally, and the diver is seen from the side, reaching towards the corals. The water is clear and blue, with some fish visible in the background.



**Coral Reef Preservation and Restoration Project by
Okinawa Prefecture**

This image is a composite showing a close-up of a coral reef on the left and a diver working with a shelf of coral seedlings on the right. A semi-transparent text box is overlaid in the center.

**Onna Village Sea Area Coral Community Restoration Demonstration Project
from 2013**

Restore approx 90,000 corals in 3ha through planting by 2016



**Development of
stick-type foundations**

This image shows a close-up of a hand holding a stick-type foundation, which is a dark, cylindrical structure with a cluster of purple coral polyps growing from it. The background is a light-colored surface.

I intend to work hard to further develop the “Activities to nurture the coral reef seas.”

Thank you for listening.

September 17, 2010 photo: Maeganeku transplanted coral

