

# Possibility Of Deep-Sea Fish

## -The way of preventing food shortage-

### 1. Introduction

The population of the world

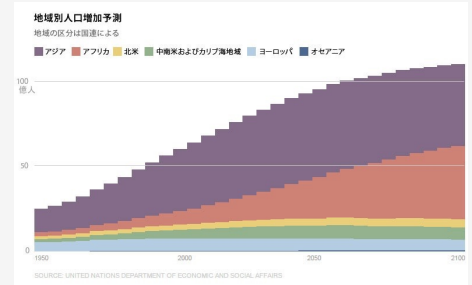
2011→7 billion  
2050→9 billion  
2100→11.2 billion

Animal protein diets will be not enough to sustain the world.  
The United Nations shows to eat bugs is a good way to prevent food shortage

### Eating deep-sea fish

It has many good points besides providing proteins.

Diagram 1 The displacement of the world



NATIONAL GEOGRAPHIC 日本語版, 2100年の世界人口は112億人, 国連予測 <http://natgeo.nikkeibp.co.jp/atcl/news/15/080600214/?SS=imgview&FD=-787263934>

### 2. Methods and Results

I searched for information using Internet, books and fieldwork in Hawaii.

The result is the finding that eating deep-sea fish can prevent food shortage.

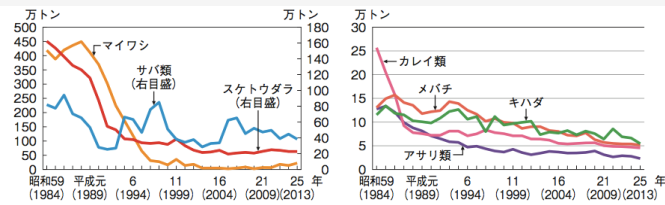
#### Good points

- We can map the deep-sea while harvesting deep-sea fish.
- Some deep-sea fish have substances which can prevent advancing cancer.
- It makes some jobs which are related in the deep-sea fishing.
- We can save marine life which live in the shallows.

#### Bad points

- It costs a lot of money because to dive in the deep-sea requires the use of a lot of machines or tools such as deep-sea fishing submarines and decompression tanks.
- Deep-sea fish have harmful substances for human beings such as wax ester and methyl mercury.
- This method can't be used to countries which don't have access to the sea.
- Substances which can prevent advancing cancer have side effect such as nausea.

Diagram 2 The displacement of fish which live in the shallows



資料：農林水産省「漁業・養殖業生産統計」

農林水産省 <[http://www.jfa.maff.go.jp/e/annual\\_report/2014/pdf/26suisan1-1-1.pdf](http://www.jfa.maff.go.jp/e/annual_report/2014/pdf/26suisan1-1-1.pdf)>

### 3. Solutions

• It costs a lot of money because to dive in the deep-sea have requires the use of a lot of machines or tools such as submarines and decompression tanks.

In the world, there are 16 deep-sea fishing submarines and it cost 12.5 billion YEN per a submarines, if we use them, we can save 200 billion YEN.

• Deep-sea fish have harmful substances for human beings such as wax ester and methyl mercury.

The wax ester can change into bioethanol with using an organism Euglena, so I think it can be quite useful the wax ester of deep-sea fish.

• This method can't use to countries which don't have access to the sea.

In aquariums, they keep deep-sea fish after letting them adjust to the change impressive, so I think it can be bred it. Therefore some countries like Japan can take many deep-sea fish because it has many trenches, so they can export to countries which doesn't have sea.

• Substances which can prevent advancing cancer have side effect such as nausea.

We can treat side effect by using medicine which name is chelating agent.

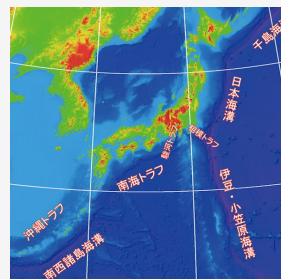


Diagram 3

The map which shoes around Japan

地震用語 <http://www.jishin.go.jp/main/yogo/e.htm>

### 4. Conclusion

The reasons which experts advise us to eat bugs is they have high protein levels so it is an efficient way to supply proteins. However, I think deep-sea fish is better because it has many good points. In the end, we can at least look into possibility of eating deep-sea fish. From now, I would like to search for another way which is ever easier and better than mine.

### Main bibliography

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