



広島大学  
大学院生物圏科学研究科

**Graduate School of Biosphere Science  
HIROSHIMA UNIVERSITY**

*Kazuhiko Koike, professor*



## 2050: A third more mouths to feed

Food production will have to increase by 70 percent - FAO convenes high-level expert forum



Using water more efficiently will be key to produce more food.



12-13 October 2009

### Related links

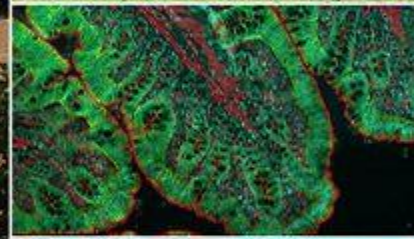
- [Global agriculture towards 2050 \(discussion paper\)](#)
- [More background information](#)
- [High-Level Expert Forum: How to Feed the World in 2050](#)
- [Media accreditation](#)
- [World Summit on Food Security](#)

***By 2050, need 70% more food and 11% more water, while with efforts to reducing environmental deterioration and combating with climate change.***



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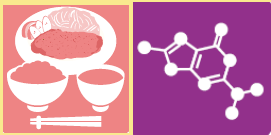



## ***Our education and research aims***

- 1. To create and develop sustainable biological production activities in harmony with nature*
- 2. To develop technologies for harnessing bio-resources and their functions, and applying them to human lives*
- 3. To develop technologies for forecasting, controlling, and evaluating recirculation in the biosphere*

**What We Can Do to Help Resolve Food and Environmental Challenges**

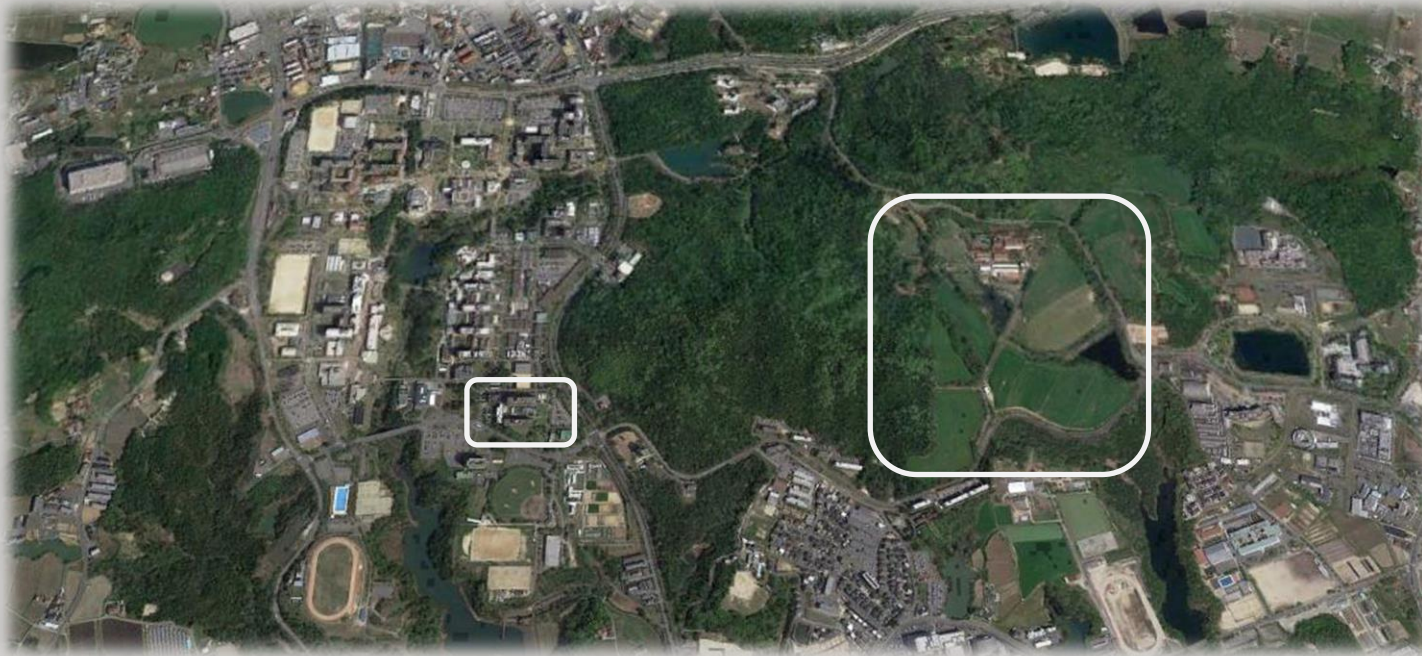
# Graduate School of Biosphere Science HIROSHIMA UNIVERSITY

<b>Departments</b>	<b>Divisions</b>	<b>Subjects</b>
<b>Bioresource Science</b>  	<i>Animal Science</i>	<i>Animal breeding and reproduction</i>
	<i>Aquatic Biology</i>	<i>Fisheries and biochemistry</i>
	<i>Food and Resource Economics</i>	<i>Agricultural marketing</i>
	<i>Field Science in Setouchi Areas</i>	<i>Terrestrial and aquatic field science</i>
<b>Biofunctional Science and Technology</b>  	<i>Molecular and Applied Biosciences</i>	<i>Biochemistry and molecular biology</i>
	<i>Food Science and Biofunctions</i>	<i>Food engineering and food nutrition</i>
<b>Environmental Dynamics and Management</b>  	<i>Modelling and Management of Environmental Dynamics</i>	<i>Land-atmosphere-ocean interaction, ecosystem</i>
	<i>Assessment of Environmental Dynamics</i>	<i>Plant science and environmental management</i>

*Covering a total food production system,  
from bio-resource production,  
through processing,  
until distribution  
and consumption*



# ***Our facilities***



***Ship base***



***Main buildings***



***Animal farm***



***Marine station***

# ***Our facilities***



***Main buildings***



***Class-room lectures***



***Practice (e.g. food engineering)***



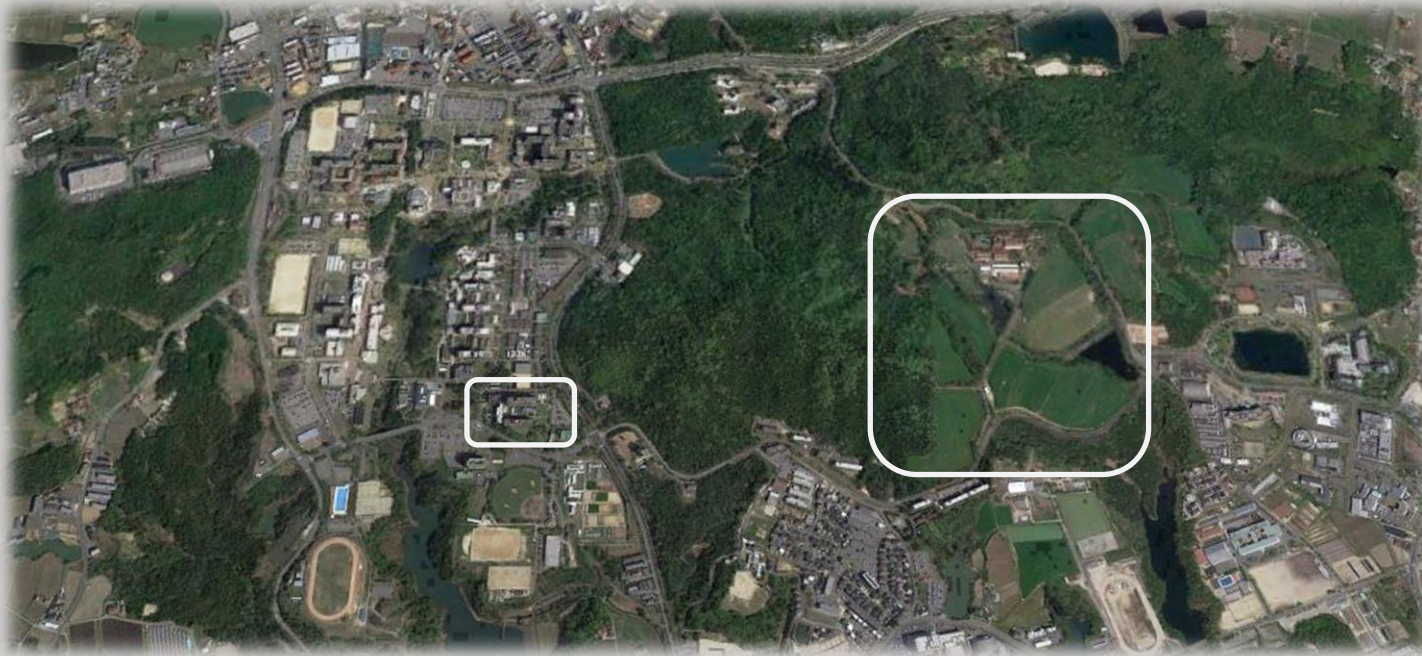
***Experimental equipments***



***Chicken breeding facility***



# ***Our facilities***



***Ship base***



***Main buildings***

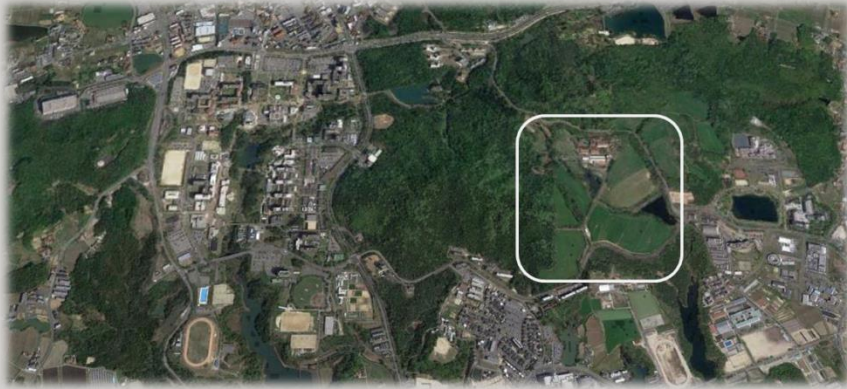


***Animal farm***



***Marine station***

# ***Our facilities***



***Animal farm***



***Practice (e.g. livestock breeding)***

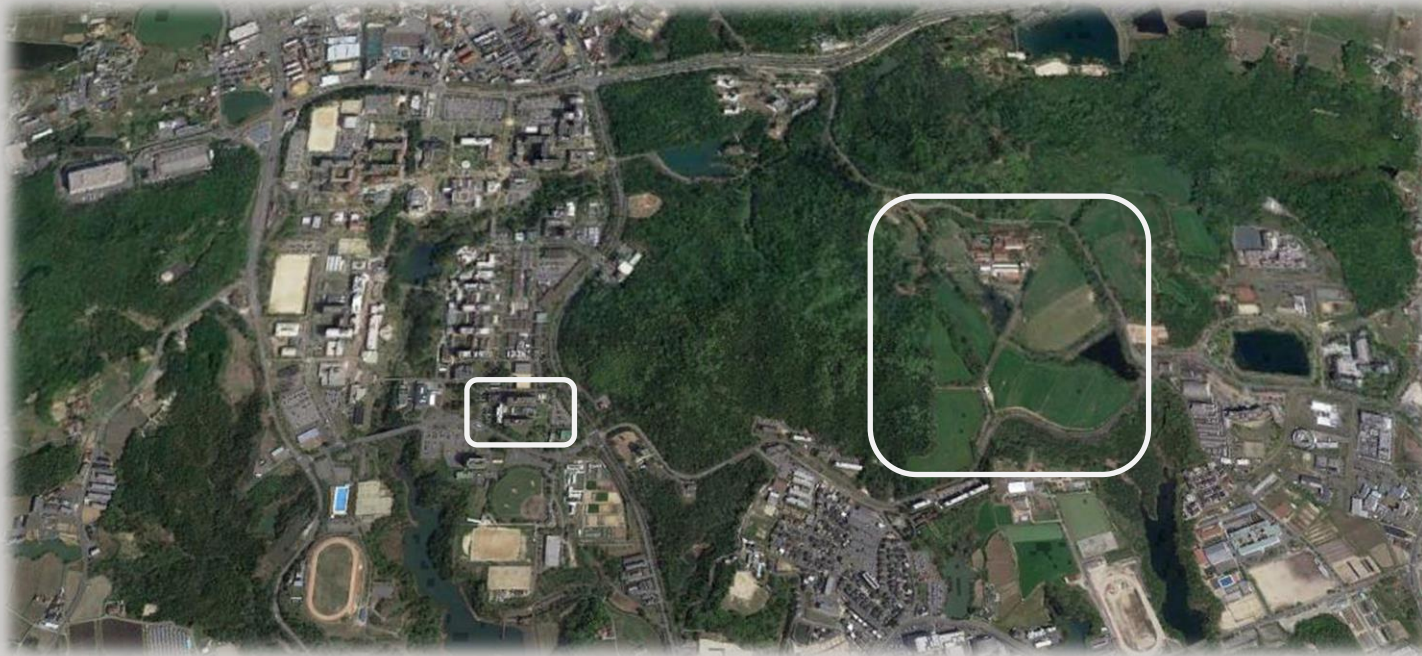


***Milk production***



***Companion animal study***

# ***Our facilities***



***Ship base***



***Main buildings***



***Animal farm***



***Marine station***

# ***Our facilities***



***Ship base***

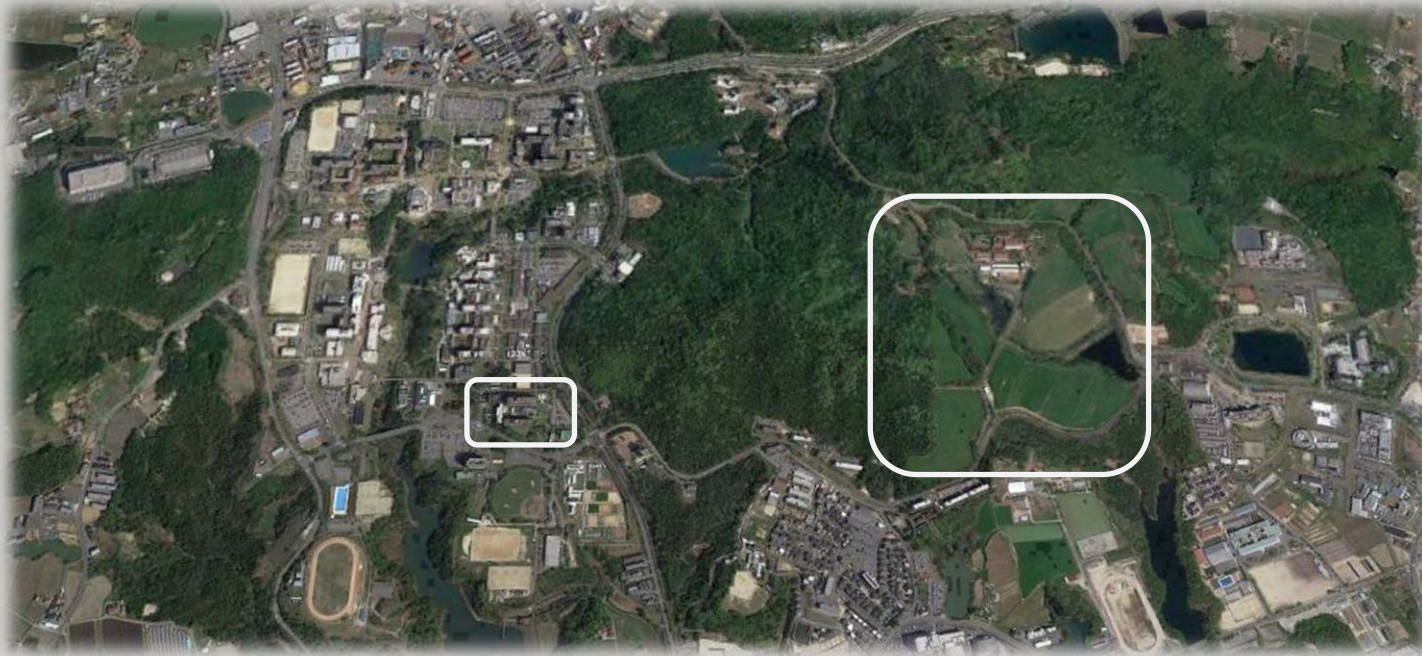


***Practice of ocean survey***



***Electric driven, research vessel Toyoshio-Maru (256 GT)***

# ***Our facilities***



***Ship base***



***Main buildings***



***Animal farm***



***Marine station***

# ***Our facilities***



***Marine station***



***Practice and research building***



***Speed boat (Calanus Maru)***



***Practice of coastal marine biology***

# ***Introductory video***

*For more specific research interests---*

The Google logo, consisting of the word "Google" in its characteristic multi-colored font (blue, red, yellow, green, red, blue).

Hiroshima university biosphere science interview



# For more specific research interests---

home.hiroshima-u.ac.jp/gsbstop/interview/en/index.html

検索

Firefox を使いこなそう 最新ニュース ジョルテ file:///C:/Users/Ka... file:///C:/Users/Ka... file:///C:/Users/Ka...

## Graduate School of Biosphere Science Interview with Professors



HIROSHIMA UNIVERSITY

Japanese

Interview with Professors [HOME]

Faculty of Applied Biological Science

Graduate School of Biosphere Science

Last Updated : 2017.8.4



[Hidetoshi Saito / Aquatic Ecology](#)



[Hiroyuki Horiuchi / Immunobiology](#)

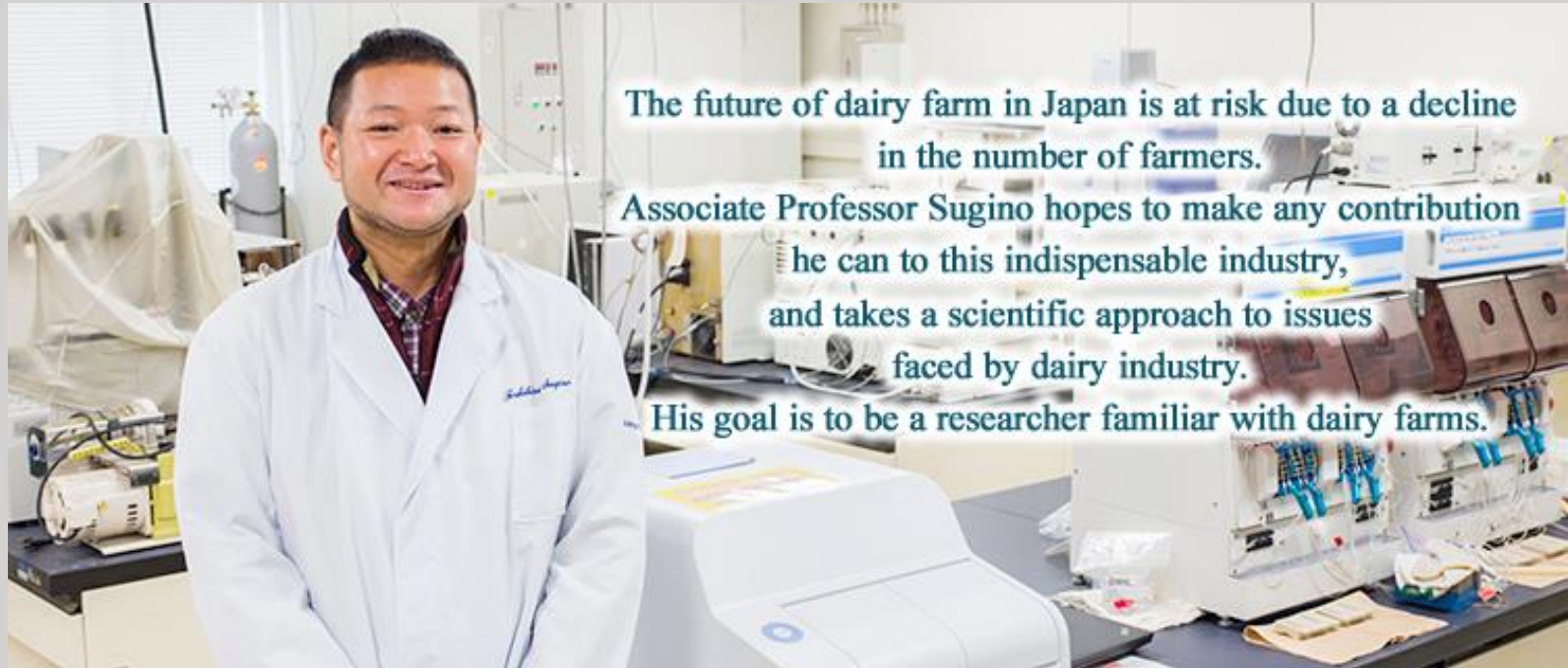


[Kazuhiko Takeda / Environmental Chemistry and Environmental Analytical Chemistry Laboratory](#)



[Masahide Nishibori / Animal Breeding and Genetics Laboratory](#)

***For more specific research interests---***



The future of dairy farm in Japan is at risk due to a decline in the number of farmers.

Associate Professor Sugino hopes to make any contribution he can to this indispensable industry, and takes a scientific approach to issues faced by dairy industry.

His goal is to be a researcher familiar with dairy farms.

*For more specific research interests---*



Hiroshima Prefecture boasts the highest catch of black sea bream in Japan.

Although this fish was once in danger of decline, its population increased dramatically as a result of a stock enhancement project.

Now the black sea bream is over-propagated and regarded as a harmful fish.

Here is a researcher who has been fascinated by the black sea bream and striving to find out all about this fish.

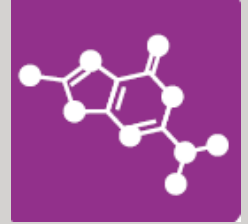


*For more specific research interests---*



**With advanced processing and freezing technologies, today we can enjoy a wide variety of foods every day. There is no stopping the progress of food product technologies, which limitlessly expand our enjoyment of food. An insatiable spirit of inquiry further expands our eating habits.**

*For more specific research interests---*

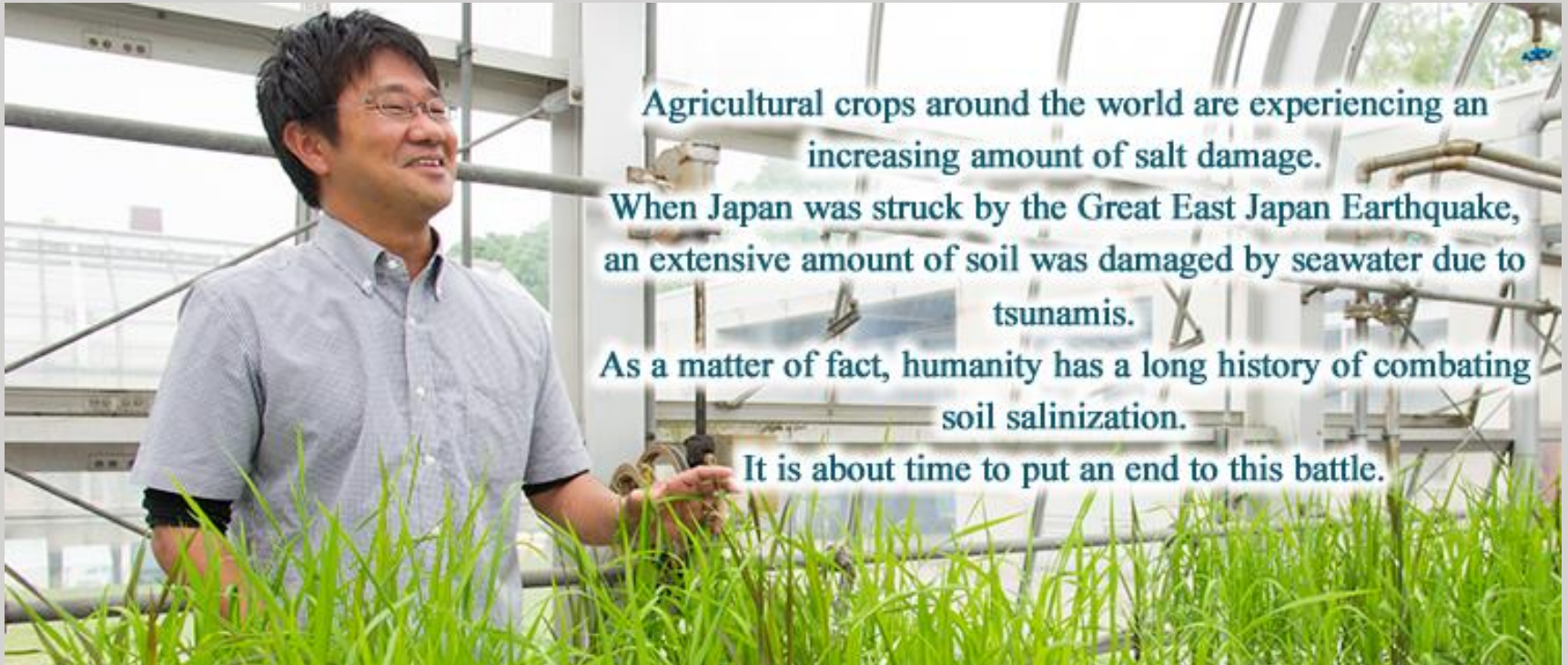


Influenza, which has repeatedly spread in these years, allergic reactions with an increasing patient population, and many other issues are deeply related to the immune system.

Through research into the chicken immune system, Professor Horiuchi explores new technologies that can be broadly leveraged in human life.



*For more specific research interests---*



Agricultural crops around the world are experiencing an increasing amount of salt damage.

When Japan was struck by the Great East Japan Earthquake, an extensive amount of soil was damaged by seawater due to tsunamis.

As a matter of fact, humanity has a long history of combating soil salinization.

It is about time to put an end to this battle.

*For more specific research interests---*



Recently, substantial changes are occurring in the seas around the world.

What is going on, and why?

Professor Koike visits the sites of changes himself, and studies the extensive marine environmental changes taking place from a viewpoint of microorganisms, hoping to maintain the fertility of the seas for humankind.

***Not only study but student's life***



***Why not study with us!***  
***At the Graduate School of Biosphere Science***