

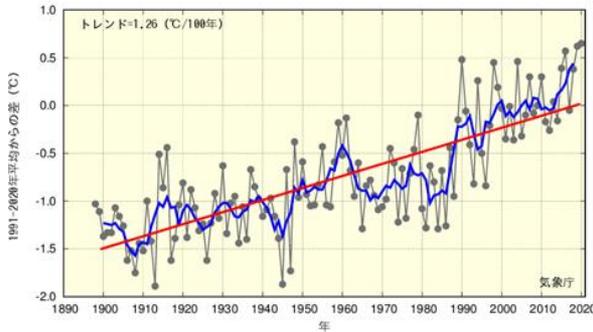


Farmers Driven Climate Change Agenda

Introduction of Case Study
“Environmental Conservation Rice”
by Agricultural Cooperative in Japan

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Japan
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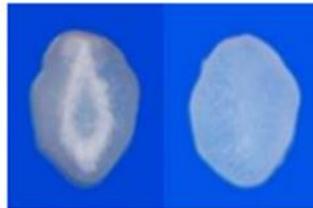
Japan average annual temperature deviation



Flooded Paddy Field



Degraded Rice Grains by High Temperature



Left: White immature grain
Right: Normal grain

- Average temperature in Japan has risen about 1.2°C in recent 100 years.
- With rising temperatures, the number of “sweltering hot nights” (when the temperature doesn’t fall below 25°C) and “extremely hot days” (35 °C or higher) has increased.
- On the contrary, the number of “freezing days” (below 0 °C) has decreased.
- The number of days with heavy rainfall (more than 100mm/day), is increasing. Global warming is considered one of the factors of this trend.
- Since 1990s, high temperatures tend to appear frequently, and extreme high temperatures often persist during the summer.
- It has affected rice yield and the appearance and quality of the rice, such as “white immature grains,” by which farmers’ income has severely damaged.



JA Miyagi-Tome contributes to reduction of greenhouse gas emissions

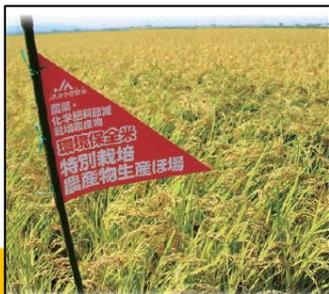
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Location in Japan



- JA Miyagi-Tome is an agricultural cooperative in Miyagi prefecture located in the Tohoku (North East) region of Japan, which is one of the major rice production area.
- For 20 years since 2003, the JA has been producing “Environmental Conservation Rice,” whose production process is characterized by reducing the use of chemical fertilizers/pesticides and substituting them with organic fertilizers.
- As a result of reduction of the use of chemical fertilizers and pesticides, the JA contributes to reducing the emission of CO₂, which is the byproduct of the production process of those agricultural materials.
- The JA has also been making effort to contribute to curbing global warming, by reducing the emission of methane gas from rice fields through practicing mid-summer drainage.

The Paddy Field of Environmental Conservation Rice



Mid-summer drainage practice contributes to reduce methane





Reduction of chemical fertilizers and greenhouse gas through integrated farming system of arable/livestock cooperation



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Producing a famous brand of beef
“Sendai beef”



Organic Fertilizers Production Center



- JA Miyagi-Tome is one of the largest cattle production areas in Japan. The straws of environmental conservation rice is fed to calves.
- The JA produces organic fertilizers from manure of those cattle at its “Organic Fertilizers Production Center” and encourage the farmers to use them in agricultural production including cattle feed.

*There are 7 production centers whose production capacity is about 60,000 tons/yr in total (the largest in Miyagi prefecture)

- This integrated farming system of rice farming/livestock cooperation, which is referred as “Circular agriculture,” is widely practiced throughout the region.
- This effort has remarkably contributed to the reduction of chemical fertilizers, as well as increasing the amount of carbon that can be captured and stored in the soil*. *Reported by MAFF Japan
- Consequently, it contributes to controlling greenhouse gases, while chemical fertilizers doesn't.



Sustainable approach to gain recognition from local residents, consumers, and buyers.

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- It is essential for the sustainable production of “Environmental Conservation Rice” to be highly evaluated and selected out of the other brands of rice by buyers and consumers including local residents.
- The JA provides local schools with food and agriculture education along with supplying “Environmental Conservation Rice” for their lunches over the years.
- As it is now, about 90 % of elementary and junior high schools in Miyagi prefecture use “Environmental Conservation Rice” in their lunches.
- At the same time, the JA works with consumer’s Co-ops and rice wholesalers to expand sales channels to ensure sustainability of the movement, based on the philosophy as follows;
 - *“The efforts to preserve the environment is meant to be understood by consumers. Cooperating with consumers creates continuity of the movement.”*
- Through those efforts, the JA’s “Environmental Conservation Rice” has gained broad support among consumers and become one of the most sustainable (long-lasting) movement of its kind.



“Environmental Conservation Rice”
Is Used in School Lunches



Thank you



Miyatome-san



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