

Title	Agricultural Impact of the Nuclear Accidents in Fukushima: The Case of Ibaraki Prefecture
Author(s)	WATANABE, Anna
Citation	DISASTER, INFRASTRUCTURE AND SOCIETY: Learning from the 2011 Earthquake in Japan = 災害・基盤・社会 東日本大震災から考える(1): 291-298
Issue Date	2011-12
Type	Journal Article
Text Version	publisher
URL	http://hdl.handle.net/10086/22106
Right	Copyright (c) 2011 Study Group on Infrastructure and Society All rights reserved

Agricultural Impact of the Nuclear Accidents in Fukushima: The Case of Ibaraki Prefecture

Anna WATANABE

PREFACE

The Fukushima nuclear accident caused damage to many groups of people in the area. One of the most victimized groups is of farmers. Few things were known about the effects of the nuclear accident in Fukushima shortly after it occurred. It was later revealed that the location of the accident was a decisive factor in its effect, and that in a long run, whether inhabitants and workers were accidentally in the neighborhood of Fukushima was decisive for the extent of the damages they suffered. It is extremely important that the nuclear plant is surrounded by agricultural regions.

Yet, despite the critical nature of spatial issues, few surveys are conducted about the issues that residents, especially farmers, confront post-accident in their daily lives. Currently, we are aware that the prefectures next to Fukushima (Ibaraki, Gunma, Tochigi, etc.) have higher levels of radiation than the others. The same applies to farm products. The problem is that agriculture is fundamentally such placed that it faces the most harmful impacts in case of such accidents. Farming is bound to land, which is immobile, and farmers earn an income from the harvest, which comes from the land. Farmers, therefore depend on the health of natural resources—the land and its harvest—for survival.

On the other hand, consumers are constantly informed about products for which shipping has been canceled. The restraint on shipping indirectly affects the choice of districts from which consumers

purchase the products, and consequently the agricultural products that can be sold. Overall, consumers are mostly concerned with information about products from “problematic” prefectures.

However, using calculated radioactivity rates to view the whole dynamic of the agricultural effects of the disaster do not show the types of problems the whole society faces in regard to its food source. For example, these rates do not reflect the changes in financial and social structures before and after the accident. Rates are nothing more than a numerical value, and do not tell what type of “trends” society is facing. In other words, calculations are unhelpful in looking into more delicate issues.

Rather than using radioactivity calculations, we once should look at the “people” living in those prefectures. In doing so, we might understand how the government influences them and how farmers are responding to the government’s actions in this crisis. This type of investigation is meaningful in terms of finding out what kind of tendency Japan has. This report primarily focuses on farmers, who have to deal with “*Fu-hyo* (風評)” (suspicion about farm products/misinformation). To assess this problem, interviews were conducted with three different farmers. In this essay, we capture the viewpoint of the inhabitants in the Ibaraki Prefecture.

RESEARCH METHOD

Purpose of this Research

This research is based on finding out the changes

in sales of agricultural products, and accordingly, the change in agricultural societies. It focuses on residents' behavior after the Fukushima nuclear accident in a specific area. While direct radiation to a human body is a major effect of this accident, the nuclear accident also caused enormous damage to farmers in the surrounding areas. Therefore, this research focuses on farm land.

By analyzing farmers' standpoints, it can be learned what indeed "Fu-hyo" means to farmers themselves. This section also discusses the reaction of the area's residents to the accident, which is independent from official statements or mass media.

Location and Object



Photo 1 A Scene from the inside of a farmer's direct sale store

Note: Photograph by author.

This research focuses on the Ibaraki Prefecture because this prefecture has invested a large amount of time and land to farm products over the past several years. Pushing agriculture has been the prefecture's official strategy to showcase its individuality and attract tourists. As a result, Ibaraki has tightly bound itself to agriculture.

Second, as is well known, after the accident, Ibaraki was affected by radioactivity more than any other prefectures, except Fukushima. Moreover, the prefecture was harmfully troubled by "Fu-hyo." This problem is yet unresolved, enabling us to follow the reaction with a chronicle-based perspective.

Different economic sectors are engaged in agriculture. In the last decade, the diversity of agriculture-related organizations has widened. This requires that our investigation first be narrowed down. Since there has been a boom in selling products face-to-face in Ibaraki, there has been introduced the style called "Choku-bai-jo (直売所)" (direct sale stores) at a large scale. These stores work toward the prefecture's goal of emphasizing its agricultural activities by pushing the regional identity outside the prefecture as well as inviting visitors.

There are chiefly three types of direct sale stores: those managed by Japan Agricultural Cooperatives (JA)¹, those combined with an agricultural school, and those managed by private companies. People involved with these stores are mainly farmers, sellers, and consumers. Therefore, this research tries to cover the standpoints of farmers and sellers by conducting interviews². Two of the three types of markets were investigated, and individuals who were involved with them were asked several prepared questions. The research was conducted from May 23 to August 8, 2011.

IBARAKI PREFECTURE: ITS BACKGROUND AND DAMAGE

Importance of Agriculture

Ibaraki, particularly the central part of the prefecture, is famous for its agricultural productivity. It is the prefecture with the highest production in Japan of fruits such as melon, root crops like lotus roots, and blades like potherb mustard, chingen-sai (pak-choi) and mitsuba (honestwort). Moreover, Ibaraki grows the second highest production amount of rice in the country (Ibaraki Prefecture Administration of Agriculture, Forestry, and Fisheries 2011). The total value of the production of agricultural products in Ibaraki is 417 billion yen.

From a social standpoint, it is easy to see how important agriculture is for the prefecture. Overall, in the prefecture, 18.1 percent of households are farming households³, and 17.1 percent of all workers are employed in agriculture. These numbers are higher than the average for other prefectures in Japan.

Ibaraki has a “systemization” agricultural economy that is based on a 200 years-old-history⁴ of the practice. Until after World War II, they developed a communal feature, with settlers and residents working together in the fields. In the 1980s, however, management changed to a more functional, commercial style (Kitazaki 1999: 62). According to the local administration, the prefecture worked to strengthen its agricultural system and advertize this special aspect of the area to the other cities. There are 71,000 agricultural management entities⁵ in Ibaraki, which is about twice as many as the national average



Photo 2 The inside of the author's house, located in Mito City of Ibaraki Prefecture, just after the earthquake
Note: Photograph by author.

for other prefectures.

The Prefecture's systemization enables spreading new types of farm products and the lifestyle of buying products solely from local stores. The increasing number of direct sale stores in this area is proof of this. About 50 direct sales stores are established in only the central part of Ibaraki.

Damages of the Disaster in Ibaraki Prefecture

On March 14, at 11:00 AM there was a hydrogen explosion at the Fukushima-1 Nuclear Power Plant. On the next day at 8:00 AM, the highest level of radiation was reached in Ibaraki Prefecture: 1.504 micro-Sievert/hour. After this peak, it decreased steadily, but it has later stagnated at around 0.1 micro-Sievert/hour. Incidentally, the normal range in Ibaraki Prefecture is between 0.036 and 0.056 micro-Sievert/hour (Ministry of Education, Culture, Sports, Science and Technology 2011)⁶. From this, it can be seen that the level hasn't yet settled to its normal. The next phase that the prefecture had to face was radiation in their crops. A radiation well above standard was detected in spinach on March 19. As a result, shipments for Kakina (a type of canola) and spinach were restricted. Additionally, a high level of radiation was detected in raw milk and seafood such as sand lance. Since March 29, to avoid shipment problems, there has appeared advice about “how” and “when” to plant crops in the prefecture.

“Fu-hyo”

Even when products were not restricted by the government, that is, a product's shipment is allowed after its inspection, consumers preferred to buy products from other prefectures. This new turn caused farmers to be in a bad position in Ibaraki. The sales of farm products in Ibaraki are estimated to decline by 20 percent in the next year (The Ibaraki Simbun,

September 10, 2011). Therefore, the so-called “*Fu-hyo*” has now embodied.

As is well-known, the Tokyo Electric Power Company (Tepco) has some plans to guarantee farmers compensation for the losses caused by “*Fu-hyo*.” The price of compensation, however, has yet to be established. Tepco and the government’s laxity on the matter of “*Fu-hyo*” make the problem more serious. What is more, this disadvantage to farmers is not a problem that can be solved with money.

As mentioned previously, for people living in Ibaraki, and particularly for farmers “*Fu-hyo*” is not simply a postponement or decrease in income. Agriculture is not just one of many industries to these people but rather has a much deeper meaning for them in terms of their livelihoods. Thus, this is a serious, long-term problem. To discuss this matter using a reliable source, it is important to listen to the opinions of farmers themselves.

THE ACTUAL SITUATION FOR FARMERS

Three interviews with farmers were conducted. The first was with a shopkeeper of a direct sale store managed by the JA. The second was with a shopkeeper of a store attached to an agricultural school and the third with a farmer who supplies products to a direct sale store. All interviews were conducted in the central part of the Ibaraki Prefecture.

A Farmer’s Direct Sale Store of the JA: Interview with a Shopkeeper (Conducted May 23, 2011)

This store is normally open every day. Products from inside the city are given priority for sale over items from inside the prefecture. Last priority is given to domestic products in general.

After March 11, this store reopened on March 13.

However, sometimes it had to be closed because of the rolling blackouts.

Being asked about cooperation after March 11, the respondent informed that since the area is within the jurisdiction of the JA, in conjunction with three other cities, the members of the JA worked together and conducted a sales campaign to encourage consumers to purchase products from Ibaraki Prefecture. The regional administration partially supported this action.

Regarding recent worries, the respondent answered: “We are concerned about “*Fu-hyo*” much more than about the nuclear power plant itself.” In the interviewee’s opinion, the difference in the levels of fear about radiation poisoning in Fukushima between Tokyo and Ibaraki is incredibly large. Residents of Ibaraki are not as agitated as those of the capital city. Yet, people continue to receive information from the capital, and so, even in the prefecture they are increasingly inclined to believe the news. The respondent is convinced that the prefecture has been enjoying much of the benefits of the nuclear power plants, and therefore, the residents in general might not feel that they are completely victims.

Finally, regarding about any positive events after the shock of March 11, the interviewee answered: “It is the broad base of regular customers’ support.” That is, the JA owes maintaining their “normality” to its regular customers. According to the respondent, the staff is filled with gratitude. However, the JA was promoting domestic demand; therefore it will become a problem for them in the future when if people begin to prefer imported products. Besides, the JA did much for educating the population about food. The respondent concluded: “Thus, we will work with the customers and will wipe out the “*Fu-hyo*” by using our power of ‘agriculture.’”

A Farmer’s Direct Sale Store Next to an

Agricultural School: Interview with a Shopkeeper

This store is open daily except Sundays and holidays. It promotes products that agricultural students grow and things that its graduates supply.

After March 11, the store reopened on March 15. However, there were constantly items that fell under restriction. The store couldn't sell the products and eventually closed early for several weeks. This problem has been fixed, and the store can once again sustain its normal open hours.

Being asked about cooperation after March 11, the respondent answered that nothing special was noticeable. What lies ahead would be determined by the executive department of the school.

To the question about recent worries, the respondent answered, "*Fu-hyo*." In the shopkeeper's eyes, even the number of regular customers has decreased. Customers from far away have dramatically decreased, but root products, processed food, and the previous year's harvests remain good sellers. From the respondent's standpoint, sales of blades are hopeless.

Finally, about any positive happenings after the March 11 shock, the shop keeper said, "Nothing markedly positive has occurred."

A Farmer Supplying Products to a Direct Sale Store

In this interview held on May 23, a farmer was asked about the image of direct sales store nowadays. He answered, "It has been disappointing because of '*Fu-hyo*'." Furthermore, in regard to the "*Fu-hyo*," the respondent explained that the milk sold at ordinary stores is generally a blend of what is produced by many farmers. This means that when radiation is found on one farm, the other farms cannot ship their milk as well. There was a time when people dumped a huge amount of "useless" milk even in

the respondent's field because there were such large quantities of milk that the milk center alone was unable to deal with it.

As an aside, it has been a custom for the store to offer some assistants to harvest potherb mustard and green tea blades over the years. Even this year, they are growing wildly outside the store, but with no regular inspection for each individual farm, they cannot ship them.

Regarding recent worries, the respondent answered that all crops that they are planning to grow from now on are the ones that have high labor costs. In regard to rice, the respondent emphasizes that it is too much for them to handle when the product's shipment is interrupted while they are growing them. The respondent said, "Be whatever, there is nothing left but growing them at the present. After all, what we can do is to pretend that it's 'as usual'."

Finally, on that day there was a question about farmers' complaints to the town authorities. The cause turned out to be "the mergers of towns." Namely, the community centers have automatically been relocated far away. In the farmer's opinion, the difficulties caused by the accident on March 11 were promoted by these mergers.

Some additional questions were posed to the farmer a few months later, on August 8, to determine the types of social or mental transitions occurring among farmers. To begin with, the farmer told about the changes since May, "There are much less '*Fu-hyo*' than before." Green tea was once prohibited but is now allowed to be sold again. The main concern, however, is still rice crops. Rice will be checked for its cesium level only during the harvest. This means that the crop's fate is uncertain until it is fully grown. Moreover, a new tendency has emerged among customers to buy rice harvested in the previous years. Further, they purchase brown rice from previous years because they can store it for some time. In

addition, some preference for buying imported rice is also apparent.

Since Ibaraki had previously experienced another nuclear accident in 1999, called the Tokaimura nuclear accident, some lessons were likely that could have been applied to the Fukushima nuclear accident. However, the farmer answered that no “*Fu-kyo*” occurred after the Tokaimura nuclear accident, and that the scales of the two accidents were very different. Therefore, as the farmer said, there was nothing to apply from the lessons learned from the past accident. The respondent continued, “It was a completely new transition for us this time. We neither could avoid anything nor could we take any measures against the Fukushima nuclear accident.” Finally, about the inspection as of August 8, the farmer replied that there had been no special inspections any more. In March, indeed, there seemed to have been some checks on raw milk.

CONSIDERATIONS

The fact that all researchers in Japan are focused primarily on the events of March 11 means that it is virtually impossible for us to remain objective about the day. Therefore, it is difficult to state something concrete about the results of the day’s events. Nevertheless, it is important to find out in which direction this country is going to turn.

Lack of concern from the outside

First, lack of concern from the outside is a situation that Ibaraki is currently confronting. In spite of the heavy destruction caused by the earthquake⁷ and the tsunami, which partly washed some villages away, only 17 people were killed in the area. On the surface, this seems extremely positive. Yet, this fact has, ironically, led Ibaraki into a miserable condition. Because it was not ranked among the genuinely

stricken areas, the focus from the outside to name it as “contaminated by Fukushima” has been much less, and the prefecture has received little sympathy from the outside.

This means that the people in Ibaraki are forced to recover by themselves. To avoid depression, a few farmers note that it is easier to follow the official discourse “Cheer up” or “We can recover it.” The media and government are claiming that things will get better over time. By accepting this story, farmers become accustomed to the situation and finally become indifferent to the real facts. In reality, farmers have to help themselves in this way. A lack of external concern, ironically, brought farmers to engage in such stubbornness and disbelief in the reality of the bad situation.

Emerging Gaps of Resilience

Second, a great gap of resilience is occurring among farmers and farmers’ direct sale stores. From our research, it seems relatively easier for a store to recover from the situation when registered with an organization. In terms of such accidents like the Fukushima nuclear accident, the store and organization worked together to overcome the crisis. In contrast, the accident was a big shock for independent direct sale stores because there was no



Photo 3 Emblems for cheering up made after the Earthquake: “Ganbaro Nippon (Cheer up Japan)” on the left, “Ganbappe! Ibaraki (Cheer up Ibaraki, written in an Ibaraki dialect of Japanese)” on the right
Note: Photograph by author.

cooperation or support and because their original principle of not stressing profits made them sink into extreme distress. These stores are especially perplexed because the biological planting they maintained no longer give them a merit.

According to this pattern, it is clear that the risk of a nuclear disaster is larger for the private farmers. Yet, what is important is that Ibaraki has invested so much into its agriculture that it has an even larger risk. In this case, the aspect of the prefecture focusing on one specific industry is a tragedy. To some extent, therefore, Ibaraki has been already holding a risk.

No effective measure by governments

Third, from the farmer's viewpoint, no effective measures seem to have been provided by formal organizations such as the government or regional administrations. Amending the image of the health of the near-lying agriculture is ultimately left to the farmers. The government is engaging in propaganda saying, "Let's consume products from Tohoku/Ibaraki" or "Cheer up Tohoku/Ibaraki!" This is, however, evading any guarantee to both farmers and consumers that agricultural products are stable, safe, or secure to ingest. Thus, what the authorities are doing is threatening consumers that farmers cannot survive without consumer support. On the other hand, the authority has delayed conducting a valid inspection system.

The government and administration are, thus, trying to fix this problem by using campaigns and hoping for a "prescription." As Beck states, "staring into the abyss of dangers becomes integrated into normality" (Beck 1995: 52). What the government is trying to build up is a lightened or blasé attitude about risk.

The national politics "have spent little time worrying about the possible consequence" (Harvey 2001: 32) and have allowed this accident to occur

in Fukushima. The government's actions after the Fukushima nuclear accident ensured no alternative safe life for victims. Rather, it was brazen enough to hand over the responsibility for improving the market to the farmers and consumers.

People working with organizations such as agricultural associations are inclined to boost their morale and fight the "*Fu-hyo*" on their own. Yet, before systemizing this mood in earnest, we have to ensure that we are not unconsciously implicated in a specific structure.

Notes

1 JA is an association that aims to offer consumers safe farm products. It is organized for agricultural management and supports farmers by sharing common farming tools and by organizing to sell farm products jointly. Members of JA can enter into a business. See National Federation of Agricultural Cooperative Associations (2011).

2 An interview with consumers was not proper in this case because, considering the current situation, the researcher might have negatively affected consumers by questioning them.

3 Data of 2010. Refer to Kanto Regional Agricultural Administration Office (2011).

4 The relationship with "agriculture" began in earnest during the Meiji era when the immigrants from Kaga moved to the Ibaraki and introduced Ibaraki people to the art of farming. They established the style of compound cropping (Kato 2002: 121). During World War II, farmers of Ibaraki were sent to Manchu (China) in order to teach their cultivation methods to people of that region. The soldiers returning from Manchu started growing sweet potatoes for the residents on a large scale and thus protected themselves from starving. This tells us why Ibaraki Prefecture is known with the high-quality sweet potatoes even nowadays.

5 Data of 2010. Refer to Kanto Regional Agricultural Administration Office (2011).

6 For more information, see also the article by 47NEWS (Press Net Japan Co.,Ltd), April 16, 2011 (<http://www.47news.jp/47topics/e/205305.php>).

7 On March 11, the earthquake in Ibaraki registered approximately around six on the Japanese seismic scale. An estimated one sixth of the 1 million 36 thousand housings (Ibaraki Pref. Statistics Division 2011, Data of 2008) in Ibaraki Pref., were affected. Around two thousand eight

hundred housings were completely destroyed, 20 thousand were partially destructed, and 160 thousand were partially got damaged (Ibaraki Prefectural Government 2011).

References

- Beck, Ulrich, 1995, *Ecological politics in an age of risk*, Cambridge, U.K.: Polity Press.
- Harvey, David, 2001, *Spaces of capital: towards a critical geography*, New York: Routledge.
- Ibaraki Prefectural Government, 2011, "Information related to the Great East Japan Earthquake 2011," Retrieved December 13, 2011 (<http://www.pref.ibaraki.jp/20110311eq/index4.html>). (=茨城県, 2011, 「平成23年東日本大震災関連情報」, 2011年12月13日取得.)
- Ibaraki Pref. Administration of Agriculture, Forestry and Fisheries, 2011, "Agricultural products of Ibaraki," Retrieved December 13, 2011 (<http://www.pref.ibaraki.jp/nourin/noseisaku/5sonota/21sanshutugaku.pdf>). (=茨城県農林水産部, 2011, 「食の王国いばらきの農産物」, 2011年12月13日取得.)
- Ibaraki Pref. Statistics Division, 2011, "The result of a housing and land survey 2008 (outline)," Retrieved December 13, 2011 (<http://www.pref.ibaraki.jp/tokei/betu/zyutaku/zyutochi20/index.html>). (=茨城県企画部統計課, 2011, 「平成20年住宅・土地統計調査結果(確報)の概要」, 2011年12月13日取得.)
- Kanto Regional Agricultural Administration Office, 2011, "Summary Statistics about the agriculture of Ibaraki Pref.," Retrieved December 13, 2011 (http://www.maff.go.jp/kanto/to_jyo/pdf/08_2308_syuyou.pdf). (=関東農政局, 2011, 「茨城県の農業等主要データ」, 2011年12月13日取得.)
- Kato, Yasuhiko, 1997, *Kokorozashi wo hikitsuide (Follow in footsteps)*, Tokyo: Noson Hochi Shimbunsha. (=加藤弥進彦, 1997, 『志を引き継いで』農村報知新聞社.
- Kato, Yasuhiko, 2002, *Agriculture and cultivation of human's ability*, Uchiharamachi, Ibaraki Pref.: Nihon Nogyo Jissen Gakuen 'Agriculture and cultivation of human's ability' publication society. (=加藤弥進彦, 2002, 『人づくりと農業——平成維新への提言』日本農業実践学園「人づくりと農業」刊行会.)
- Kitazaki, Konosuke, 1999, "The Changes of Post-World War II Reclaimed Land and the Role of Agricultural Leader in Nishi-Shirakawa-Kogen, Fukushima Prefecture," *Annals of the Association of Economic Geographers*, 45(3): 47-65. (=北崎幸之助, 1999, 「福島県西白河高原における戦後開拓地の変容と開拓指導者の果たした役割」『経済地理学年報』45(3): 47-65.)
- Ministry of Education, Culture, Sports, Science and Technology, 2011, Website of Ministry of Education, Culture, Sports, Science and Technology, Retrieved December 13, 2011 (http://www.mext.go.jp/a_menu/saigaijohou/syousai/1304739.htm). (=文部科学省, 2011, 文部科学省ウェブページ, 2011年12月13日取得.)
- National Federation of Agricultural Cooperative Associations, 2011, Website of National Federation of Agricultural Cooperative Associations, Retrieved December 13, 2011 (<http://www.zennoh.or.jp/about/index.html>). (=全国農業協同組合連合会, 2011, 全国農業協同組合連合会ウェブページ, 2011年12月13日取得.)