

Behaviors and Strategies of Japanese Rice Producers under Globalization

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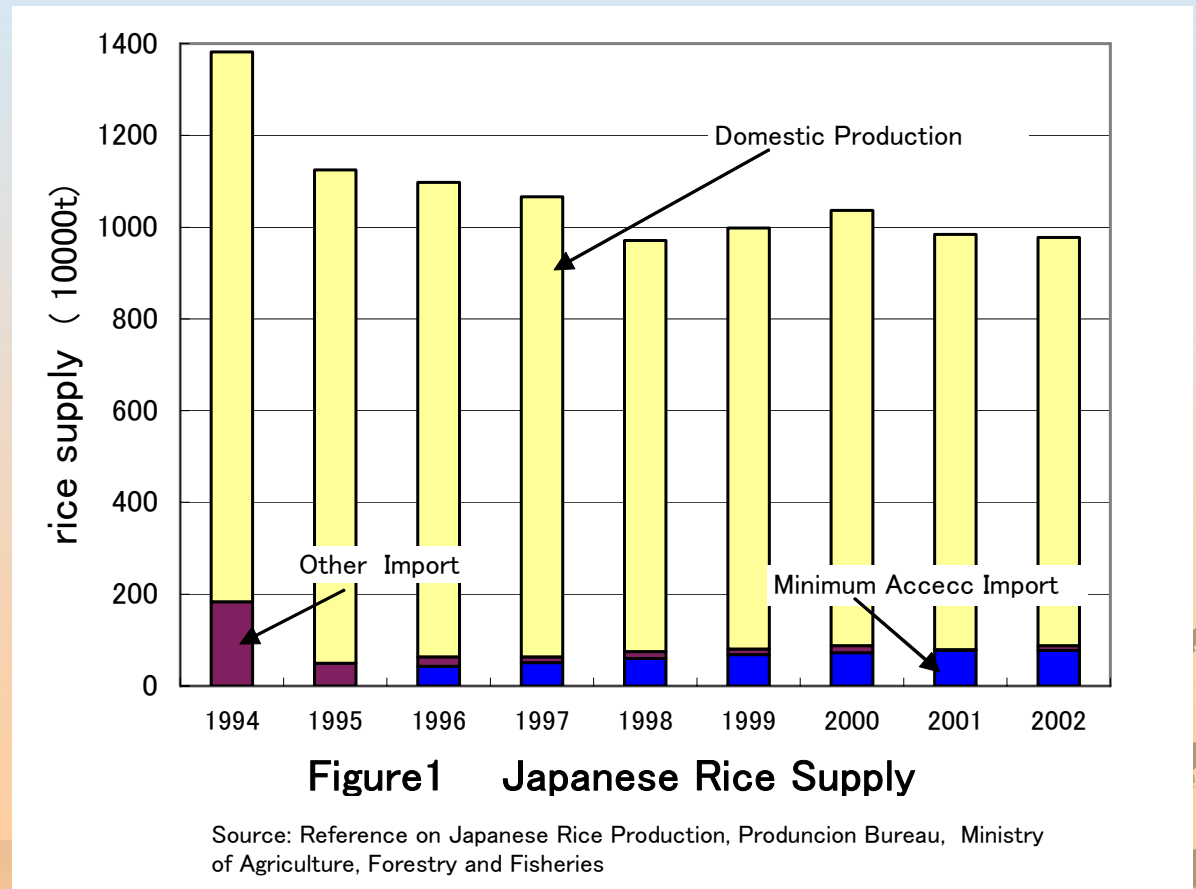
Rice supply and demand in Japan



Japanese Rice supply

In 2002,

- 8.876 million tons of domestic production
- 0.88 million tons of Import Rice
 - Include 0.77 million tons of Minimum Access Imported Rice



Cultivated Area and Per Yield

- ❁ Cultivated area was 1.688 million ha in 2002, and it is decreasing
- ❁ Average rice yield was almost constantly 5.27 ton/ha in past 9 years

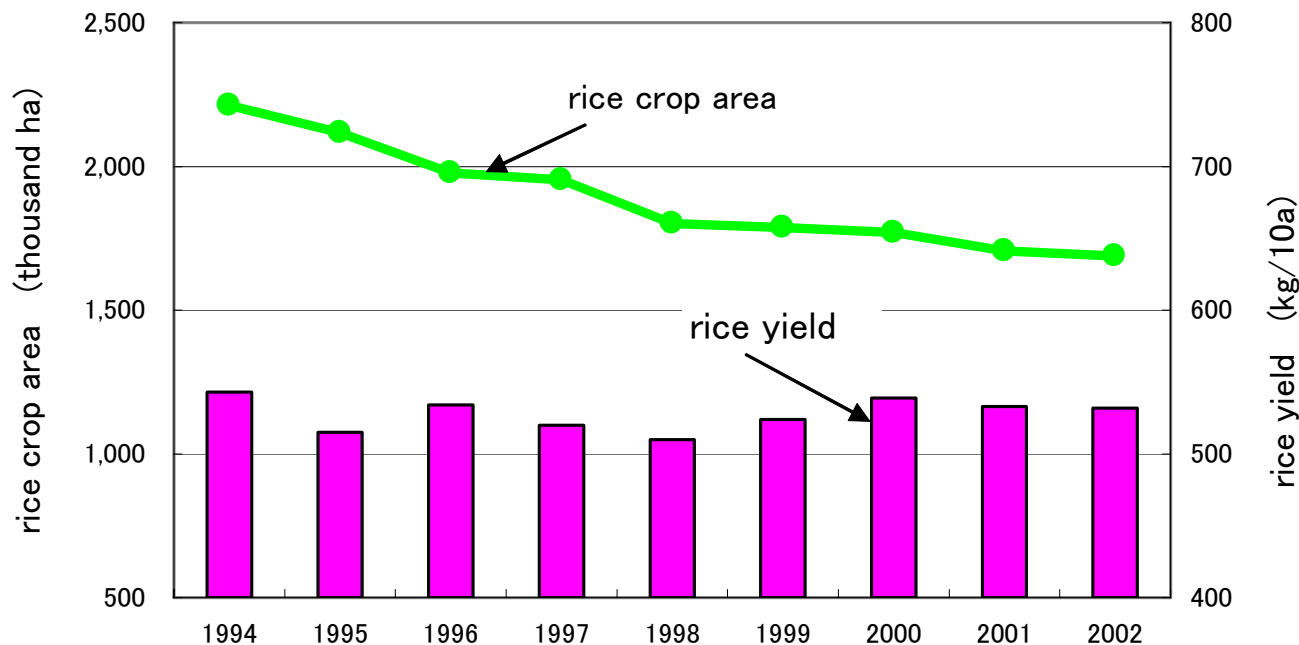


Figure2 Trend of Rice Crop Area and Rice Yield

Source: Reference on Japanese Rice Production, Production Bureau, Ministry of Agriculture, Forestry and Fisheries

Demand and Price

- ❁ Domestic demand for rice decreased from 10.26 million tons (1992) to 8.95 million tons (2002)
- ❁ In that period, producers' price of rice fell corresponding to the decrease in demand

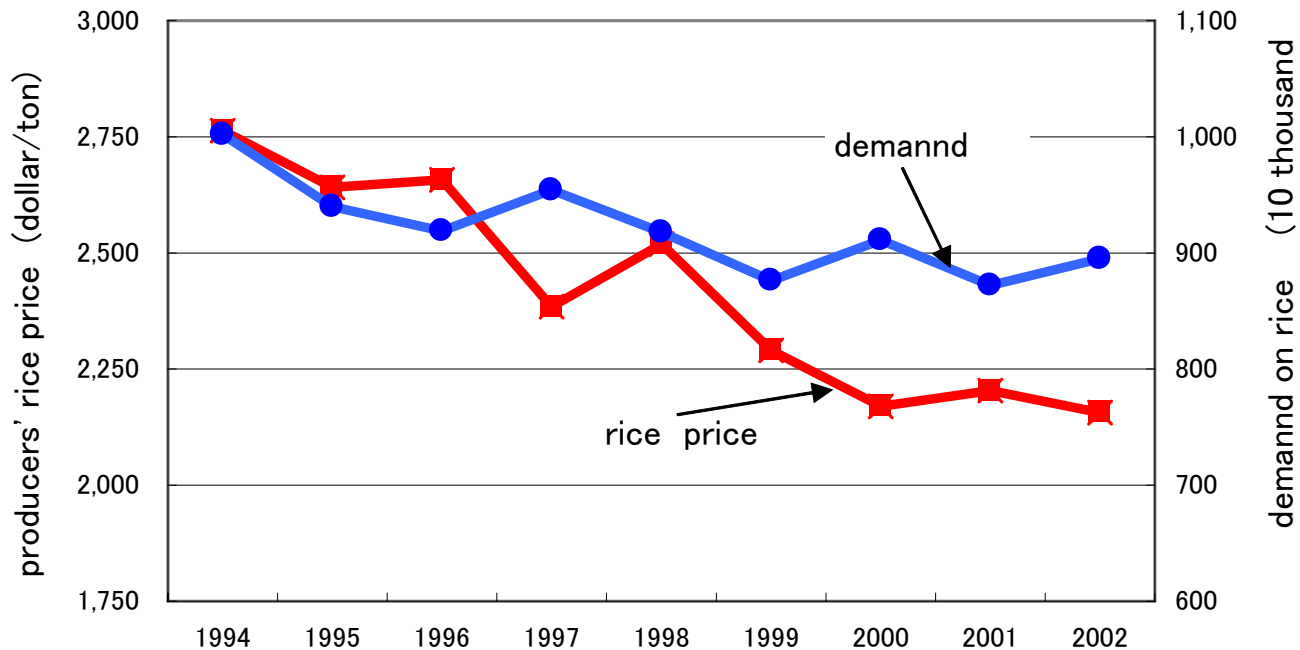


Figure 3 Trend of Rice Demand and Price

Source: Reference on Japanese Rice Production, Production Bureau, Ministry of Agriculture, Forestry and Fisheries

Rice Supply Adjustment

- ❁ Decreasing of demand necessitates the reinforcement of rice supply adjustment
- ❁ The set-aside area of rice production reached 39% of paddy fields

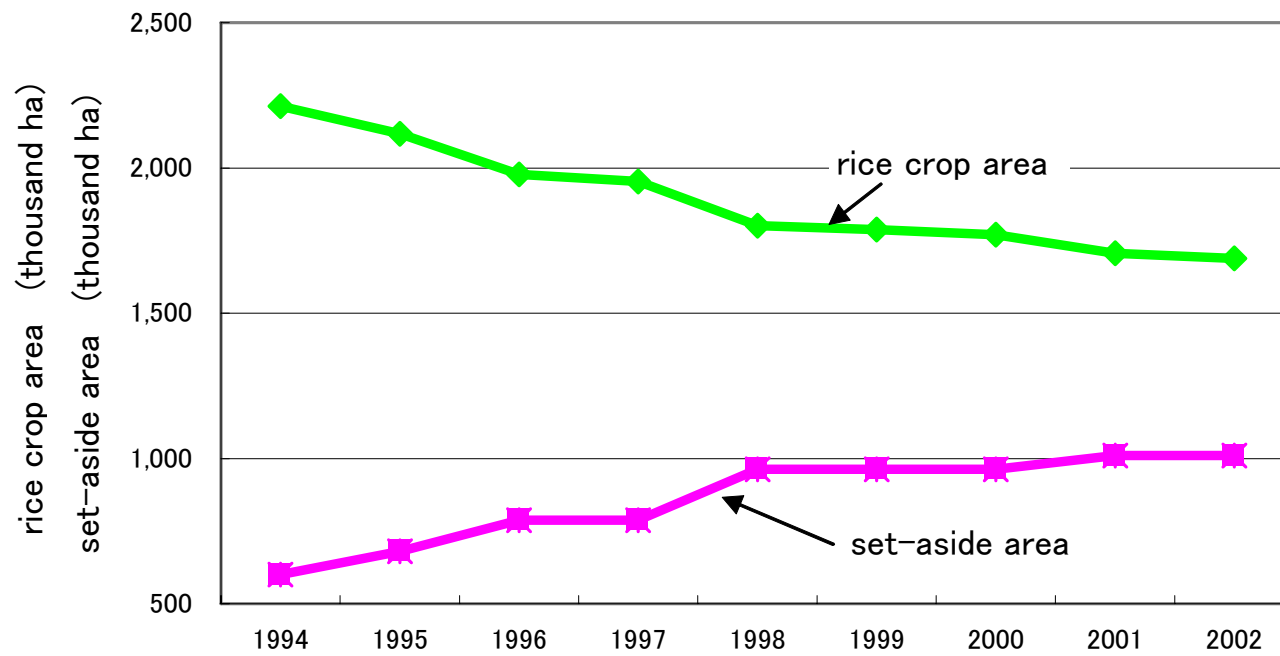
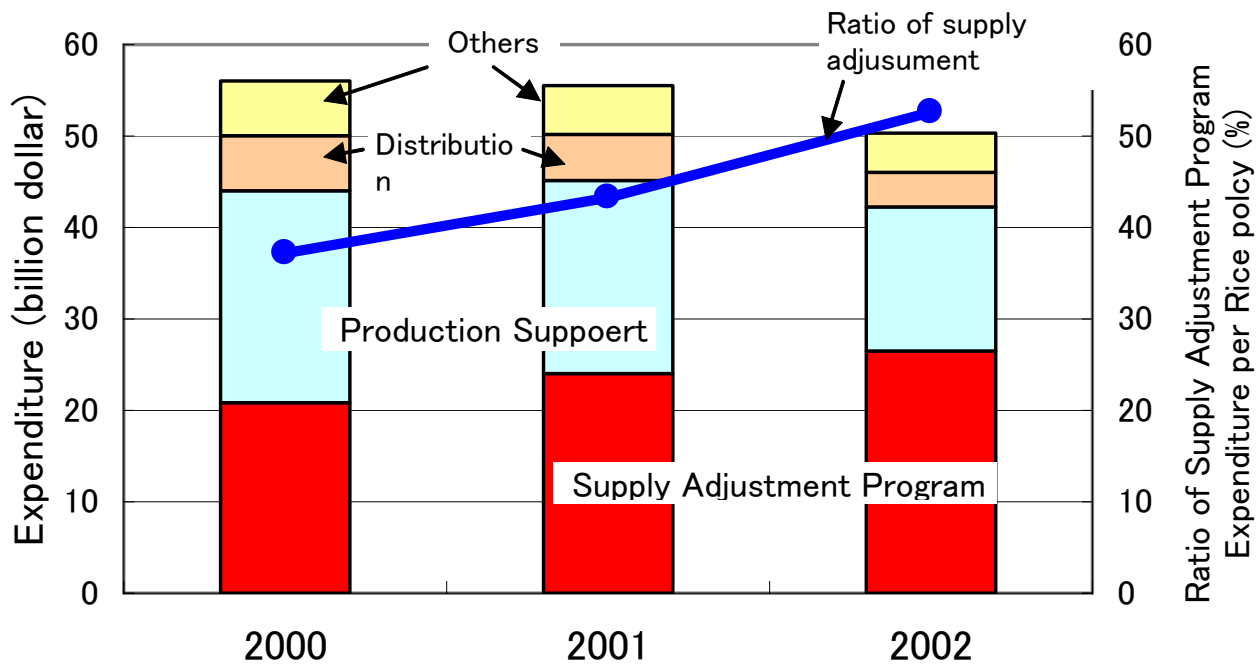


Figure 4 Trend of Rice Crop Area and Production Set-aside Area

Source: Reference on Japanese Rice Production, Production Bureau, Ministry of Agriculture, Forestry and Fisheries

Government Expenditure

- ❁ The government expended \$2.467 billion for rice supply adjustment program in 2002
- ❁ It occupied a half of financial expenditure related to rice policy
- ❁ Cut down of these expenditures become an urgent issue



Figur5 Government Expenditure for Rice Policy

Source: Ministry of Agriculture, Forestry and Fisheries

Prospect of Structural Reform

- ❁ In 1999, the government designed structural change in arable farming
 - 80 thousand farms cultivating 14 ha each sharing 60% of paddy fields by 2010

Table1 Government Prospect for Desired Agricultural Structure on Paddy Field Farming

	Farms who have core persons(full time worker umeder 65 year old) mainly engaged in own farming		Desired Farm Management Body (Efficient and Stable Family Farm)		
	1999		2010		
	Number of Farm	Farm size	Number of Farm	Farm size	Share of Farm-land
Country	97,000	4.6ha	about 80thousand	about 14ha	about 60%
Hokkaido	13,000	10.2ha	about 10thousand	about 21ha	about 90%
Prefecture	84,000	3.7ha	about 60thousand	about 12ha	about 60%

Source: Ministry of Agriculture, Forestry and Fisheries, The Prospect of agricultural Structure

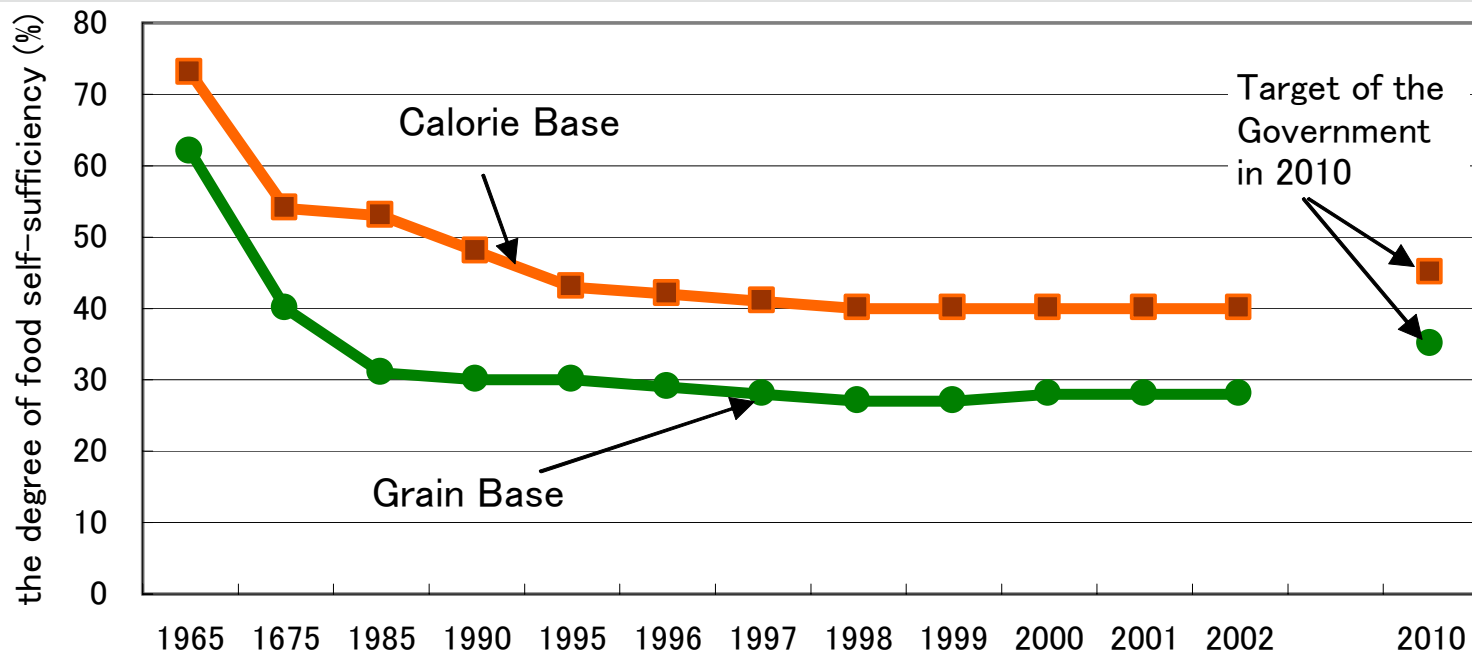
Three main issues in Japanese rice production

- ❁ Market-oriented rice production is required
- ❁ Conversion from rice to other crops on paddy fields
- ❁ Reform of production structure by fostering large scale farmers



Food self-sufficiency

- ❁ Japanese food self-sufficiency rate is only 40%
- ❁ The government targeted 45%, nevertheless, it seems difficult to keep the level
- ❁ It is also important to increase food self-sufficiency in Japan



Figur6 Trend of the Degree of Food self-sufficiency

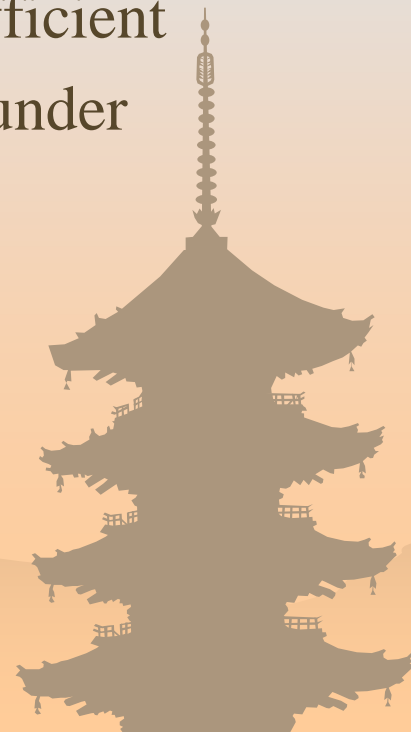
Source: Food self-sufficiency table, Ministry of Agriculture, Forestry and Fisheries

Japanese “Rice Policy Reform”



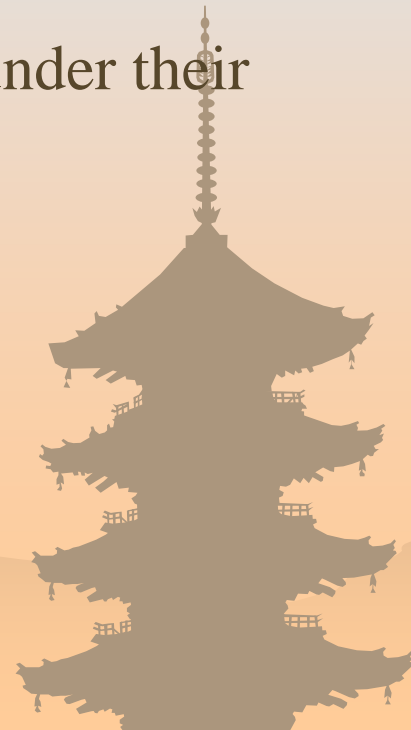
Rice Policy Reform

- ❁ The government launched a “Rice Policy Reform” from April, 2004
- ❁ remarkable change from the existing rice supply adjustment program
 - abolished the set-aside program to achieve efficient land resource allocation for rice production under market mechanism by 2010
 - foster the large scale farms



Object

- ❁ Discusses the reactions and strategies of Japanese rice producers
- ❁ Structure of Japanese rice farming is highly dependent on farmers' responses
- ❁ It is essential to understand the farmer's strategies under their specific socio-economic context



View Points

- ❁ What is the major farming types of rice producers
- ❁ Their socio-economic characteristics and rice producers' behaviors
- ❁ Future perspectives of Japanese rice production and the necessary conditions for agricultural structure change



Major farming types of rice producer and there behaviors



Various types of Japanese rice producers

- ❁ part-time family farms
- ❁ large-scale family farms
- ❁ agricultural corporate firms
- ❁ group farming organizations based on rural communities
- ❁ farm contractors
- ❁ rural agricultural public corporations
- ❁ agricultural cooperatives



Major rice producers Types

- ❁ part-time family farms
- ❁ group farming organizations based on rural communities
- ❁ large-scale family farms
- ❁ agricultural corporate firms



Part-time family farms and there behaviors

- ❁ They are major rice producers in Japan
- ❁ Work on rice production during days off
- ❁ Earn main income from non-agricultural jobs
- ❁ The first priority of part-time family farm is to maintain the paddy field

- ❁ Not so consider the profit from rice production
- ❁ they might increase rice crop areas corresponding to the abolishment of the set-aside program
- ❁ even if the rice prices fall, some of them will continue rice production



- ❁ The number of part-time family farm is gradually decreasing
- ❁ Aging of farmers is progressing, and young generations hesitate to join the rice crop works

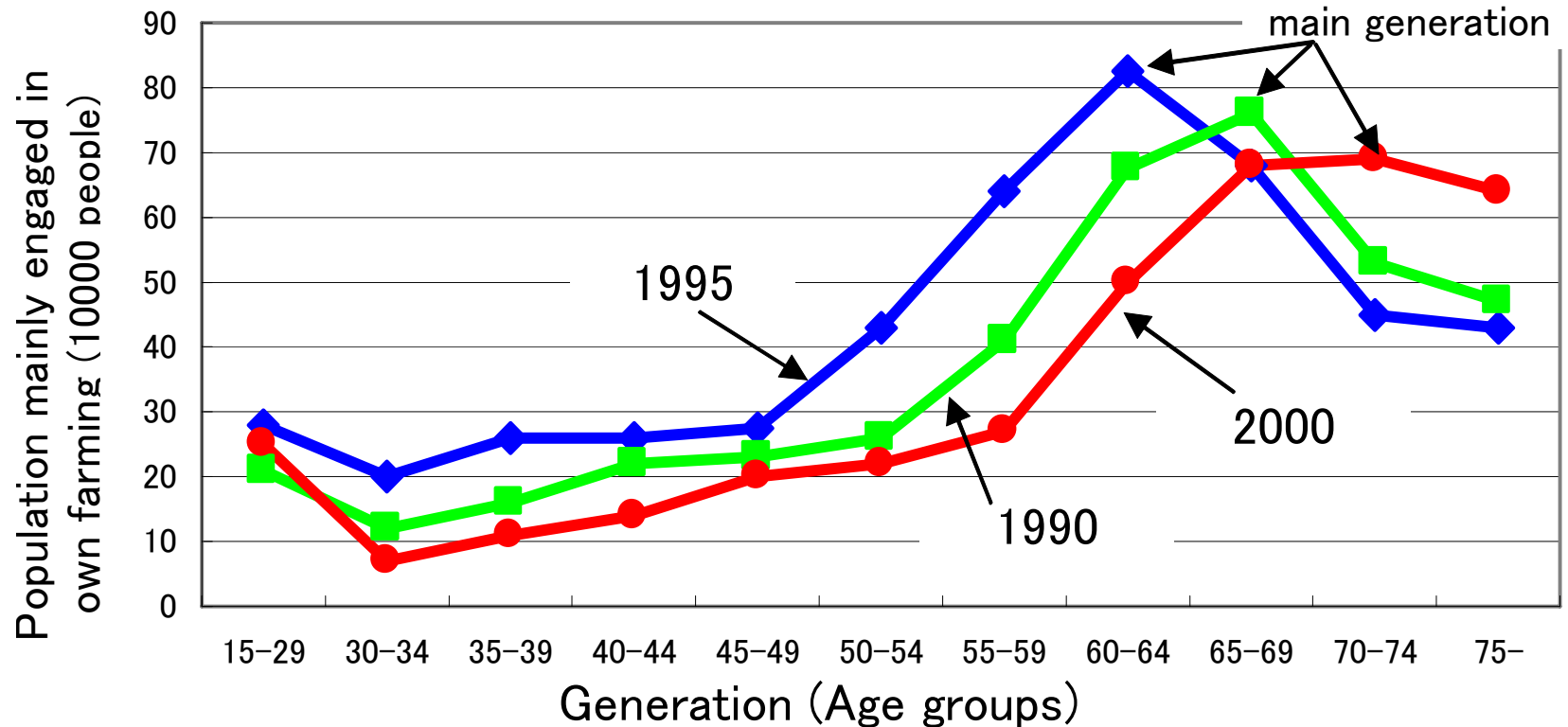
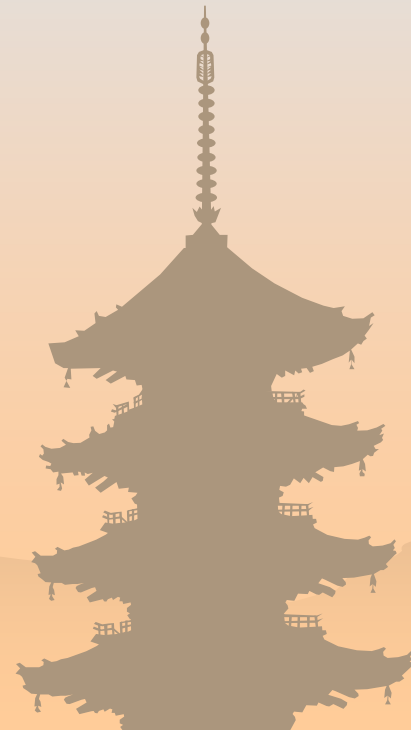


Figure7 Trend of the Population mainly engaged in own farming on each generation

Source: Agricultural census, Statistics Bureau, Ministry of Agriculture, Forestry and Fisheries

Common features of group farming

- ❁ Collective ownership of machinery and facilities
- ❁ Joint works on rice cultivation
- ❁ Regional adjustment of land use



Purpose of group farming

- ❁ Reduction of production costs and maintain paddy fields
- ❁ Rice production costs of group farming organizations are often fewer than the average costs of their prefecture

Table2 Rice production cost of guroup farming organization (dollar/ton)

item of expenditure	group farming organization	average cost of their prefecture
Seeds and seedlings	198	39
Fertilizers	568	220
Agricultural chemicals	181	154
Lighting,heating and power	33	62
Other materials	7	49
Irrigation	30	32
Rents and fees	236	85
Depreciation,buldings and land improuvemunt	91	90
Depreciation,farm machines	318	936
Labor	418	1,156
Total costs	2,079	2,822
Yield per ha (ton)	5.47	5.42

Source: Akihiro Takahashi(1990).Part-time Farmer's Group in Hilly Region of Chugok District.Japanese Journal of Farm Management 28(2)

Number of group farming organizations

- ❁ Only 9,961 in 2000
 - 7.4% of the total number of agricultural commune

Table3 Number of the Group Farming Organization

	Total number of Agricultural Commune	Number of the Group Farming Organization	Ratio of Group Farming Organization(%)
Country	135,163	9,961	7.4
Hokkaido	6,637	647	9.7
Tohoku	16,982	990	5.8
Hokuriku	10,696	2,006	18.8
Kanto/tozan	25,149	289	1.1
Tokai	12,007	1,022	8.5
Kinki	11,347	1,939	17.1
Chugoku	18,589	1,703	9.2
Shikoku	10,406	134	1.3
Kyusyu	22,622	1,232	5.4

Source: Statistics and information Department, Ministry of Agriculture, Forestry and Fisheries

Large-scale family farms and agricultural corporate firms

- ❁ They interested in increasing farm size
- ❁ They also pursue diversifying their business vertically and/or horizontally
- ❁ Both types are expected as leading rice producers in Japan



Large-scale family farms

- ❁ Mainly managed and carried out by family labor
- ❁ Farm-land are 10 to 20 ha
- ❁ Labors are two or three family members
- ❁ cultivate rice, wheat, soybean, and feed crops



Agricultural corporate firms

- ❁ employ non-family members and assign them some management work
- ❁ Farm-land are 50 to 100ha
- ❁ investment in machinery and facilities are three to five times as much as those of family farms



Strategies

- ❁ Large-scale family farms
 - expansion of rice, wheat, soybean crop area
 - purposes of this strategy are reduce the production costs and increase farm income
- ❁ Agricultural corporate firms
 - pursuing both diversified agribusiness and expansion of farm size
 - managing to keep the enough work for full-time employees



A Case of Strategy on Large scale family farm — Expansion of Farm Size —

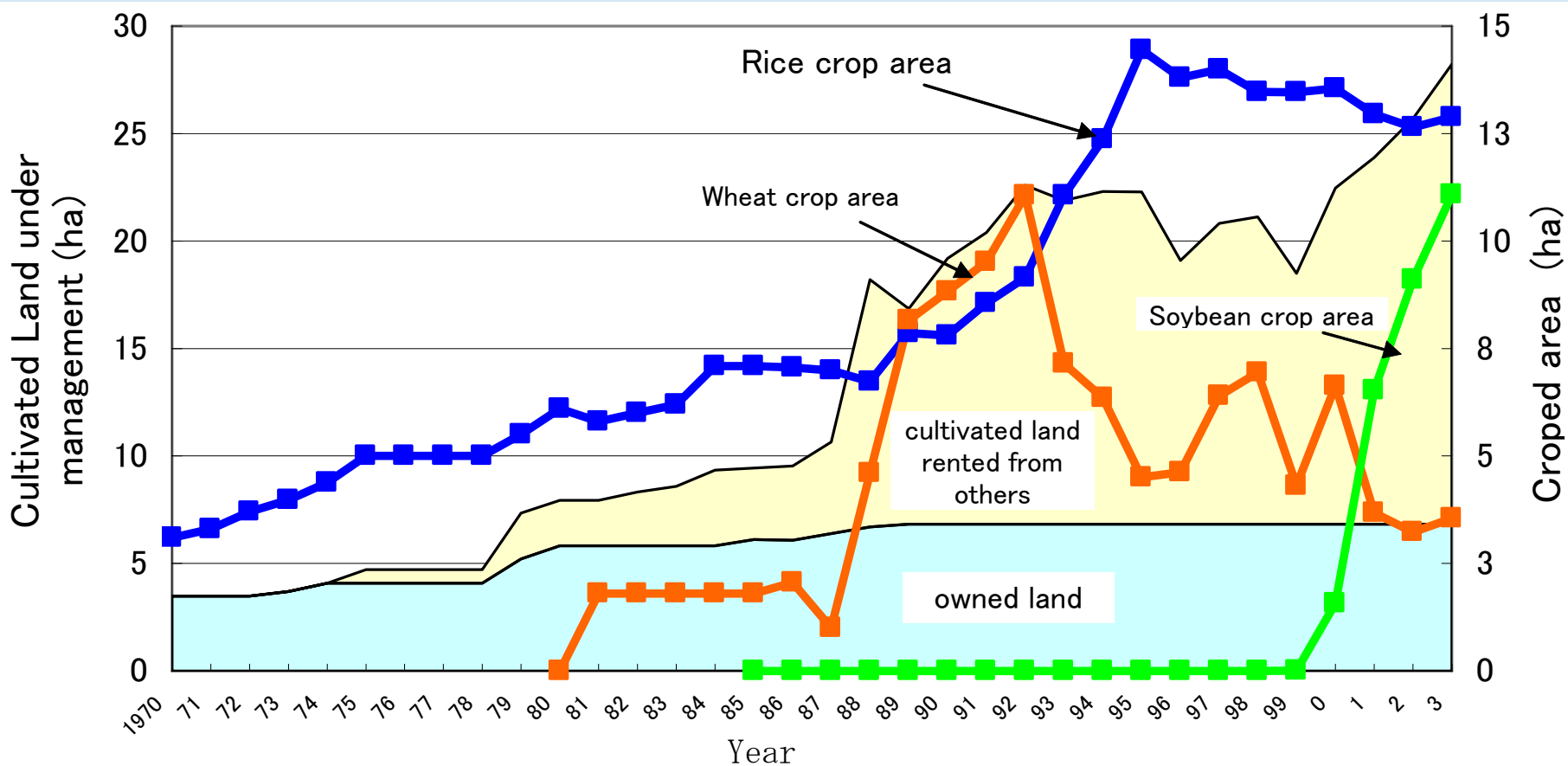


Figure 8 Expansion of Farm Size on Large scale family farm

source: farming survey from a large scale family farm in Iwate Prefecture. The labor of this farm is 2 persons.

Marketing

- ❁ Both are equally reinforcing marketing
- ❁ Sell polished rice directly to consumers or retail stores



Farmer directly sell his polished rice for consumer in the department store



- ❁ Production of organic rice and/or chemically produced rice (smaller amount of fertilizer and agricultural chemicals)



Organic rice production by riding weeding machine.
This farmer also use bio-agricultural chemicals.



Consumers' attention

- ❁ Consumers pay attention to food safety as much as labeling (production areas, varieties), taste, price level

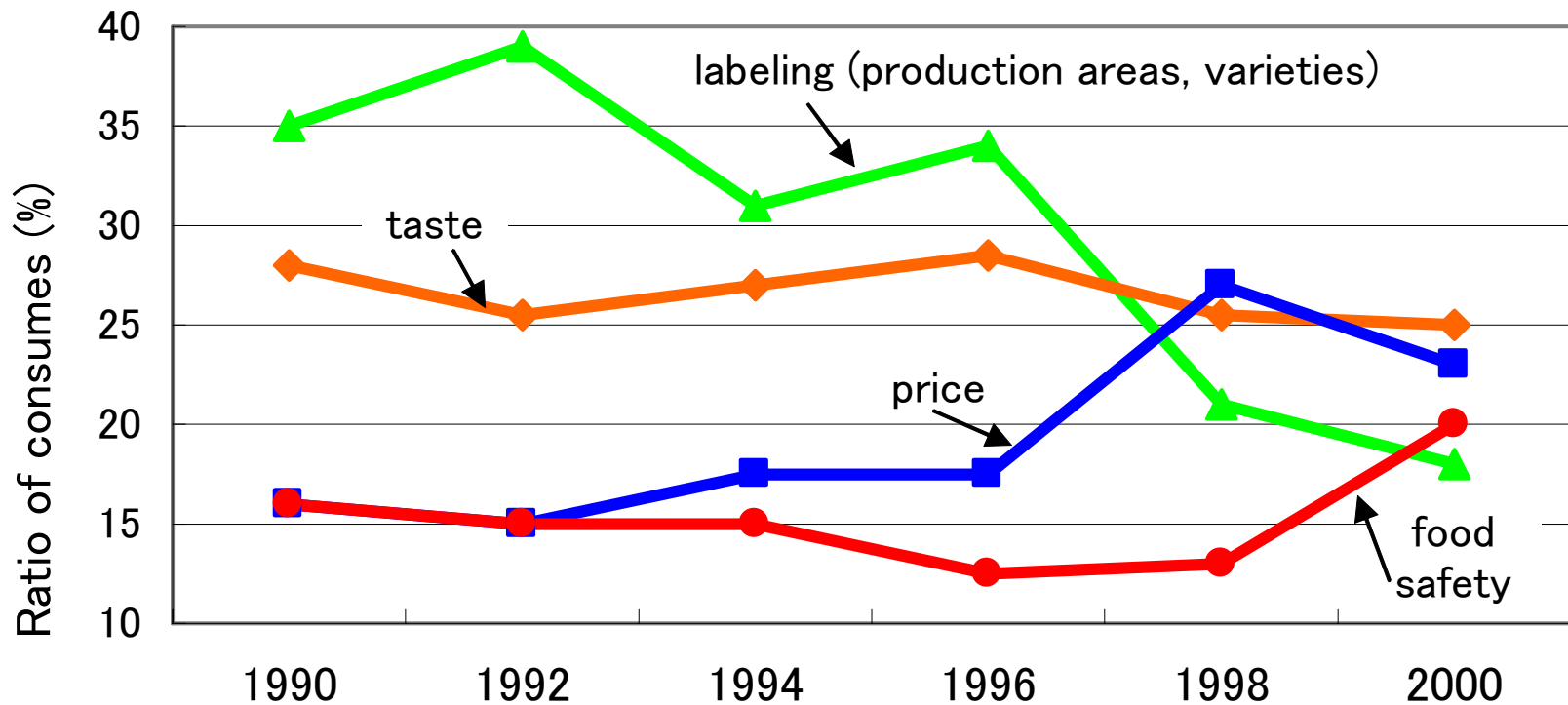


Figure9 Consumer's choice criteria on purchase of rice

Source: Consumer monitor questionnaire survey by the Metropolis of

note: figure show the ratio of consumer who pay attention to the rice commodity items

- ❁ Introducing a traceability system for their product
- ❁ They invite their customers (consumers, retailers) to their farms for interpersonal contact



Farmers and consumers' communication events



The future of Japanese rice production



Discussion Points

In order to resolve the previously mentioned issues
—decrease in rice demand, conversion from rice to other
crops, structural change—

- ❁ It is important to foster the large-scale family farms and agricultural corporate firms by supporting their strategies
- ❁ How much and how fast those viable producers dominate the production
- ❁ But the “Rice Policy Reform” might lead to increase in supply, resulting in falling prices
- ❁ Core farmers will be most damaged by falling prices



Table 4 Rice Income Compensation by Rice Policy Reform

Rice price(dollar/kg)	Rice income(Price × Yield)(not participate set-aside program)	Compensated Rice income (dollar/ha)	Amount of Income Compensation (dollar/ha)	Reference:Rice price(thousand yen/60kg)
2.73	13,991	13,396	0	18
2.58	13,214	12,619	0	17
2.42	12,436	12,147	0	16
2.27	11,659	11,758	99	15
2.12	10,882	11,661	780	14
1.97	10,105	10,884	780	13
1.82	9,327	10,107	780	12
1.67	8,550	9,330	780	11
1.52	7,773	8,552	780	10
Case of Rice price is 2.12dollar/kg(14thousand yen/60kg)	Rice crop area	Total amount of Income Compensation (dollar/farm)	Compensated Total Rice Income (thousand daller/farm)	Share of Income Compensaton per Total Farm Income (%)
	3ha	2,339	26	9
	5ha	3,898	43	9
	10ha	7,796	86	9
	15ha	11,695	128	9

Note:A case of Ibaraki prefecture. Rice Yield is 5.13 Ton per ha

- the “Rice Policy Reform” has prepared for compensation of rice income in the case of falling prices
- But the amount which farmers receive is limited to less than 10% of the current rice incomes

Effects of falling Prices

- Even on 20ha farms, if rice prices decline under \$2.7, It is difficult to obtain a comparable income with non-agricultural workers
- Smaller-sized farm (15ha, 10ha), they could not get enough income on each prices

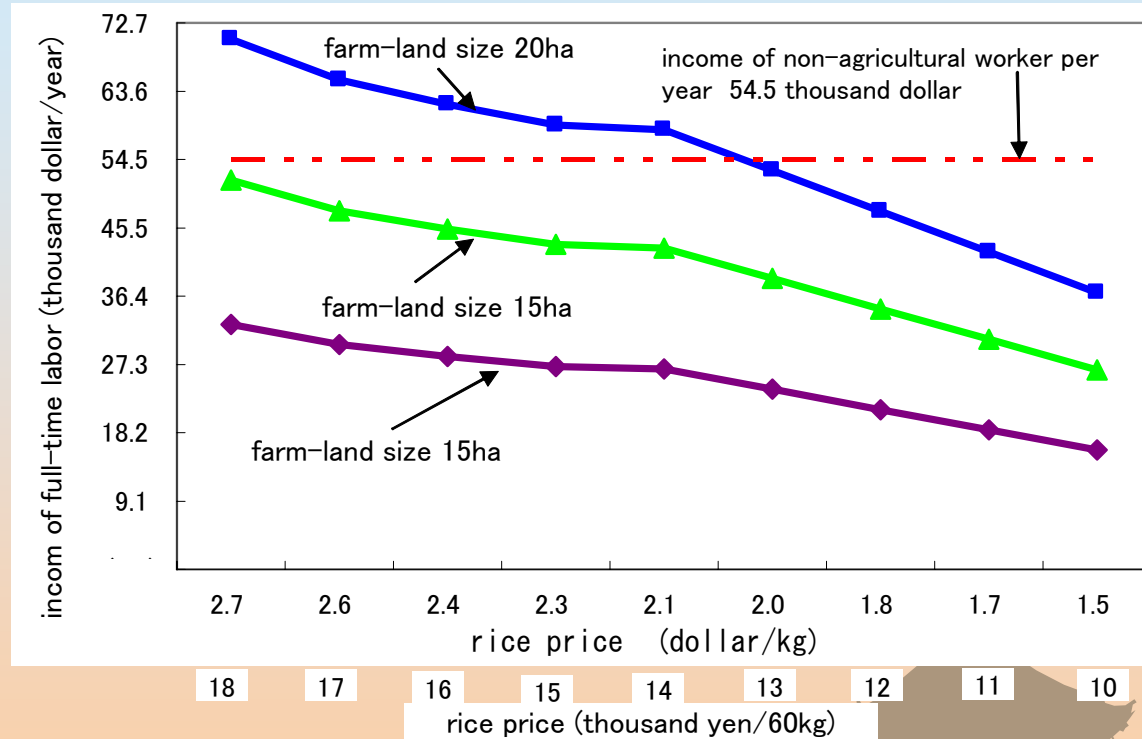


Figure 10 Effects of Falling Prices

Note: the numerals of this figure were calculated by using linear programming methods. Farm model is as follows: two family labors. Crops are rice, wheat, and soybean. Farmer receives subsidize from the government for the wheat or soybean crop on paddy f

if the government abolish the financial support for farmers that participate in the set-aside program, the farm incomes decline shapely due to falling prices

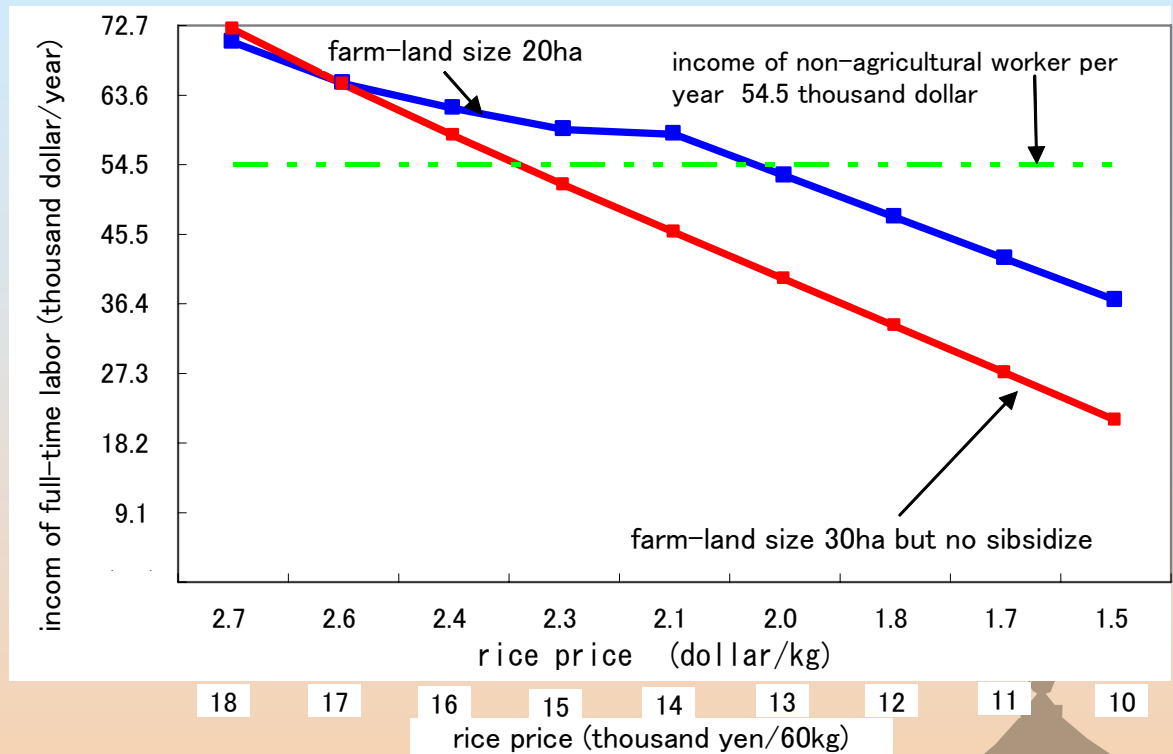


Figure 11 Effects of Falling Prices

Note: the numerals of this figure were calculated by using linear programming methods. Farm model is as follows: two family labors. Crops are rice, wheat, and soybean. Farmer receives subsidize from the government for the wheat or soybean crop on paddy f

Conclusions

—from the view points of policy adoption—

- ❁ It is important to accelerate the accumulation of farm land for farmers which pursue expansion of farm size
- ❁ The government needs to prepare the effective direct income compensation policy for core farmers immediately

