#### Revitalization of Rural Communities through Productivity Improvement Initiatives

**Asian Productivity Organization (APO) Workshop** 

Jakarta, Indonesia

### Land Consolidation Activity in Japan

-- The Policy and Strategy for the Future --

Presentation 4

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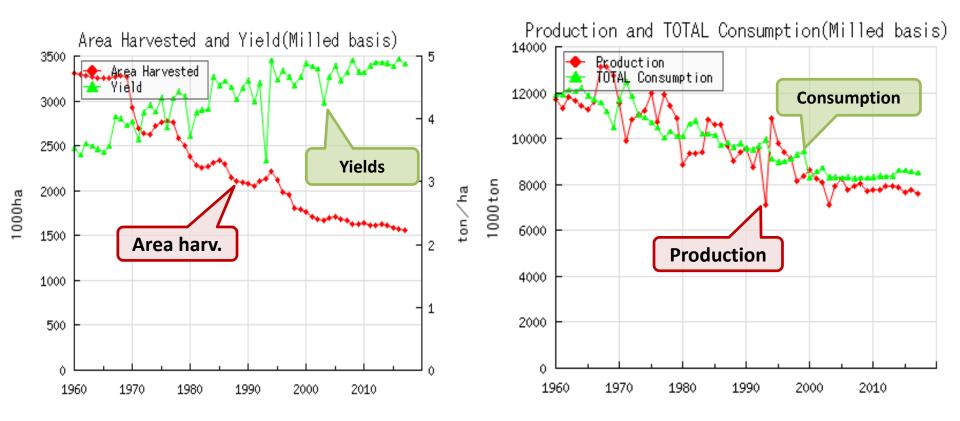
http://worldfood.apionet.or.jp

August 21, 2017

#### - Today's Key Points -

- Overview of Japan's agriculture and small-scale, high-cost, and aging farming
- Farm organizations
- Production costs by size
- Increasing number of ag. Corporations and structural changes
- Subsidies to sustain rice prices
- Natajima Ag. Corp. in Yamaguchi Pref.
- Challenges and perspectives of the rural community toward the future

#### Rice production and consumption in Japan

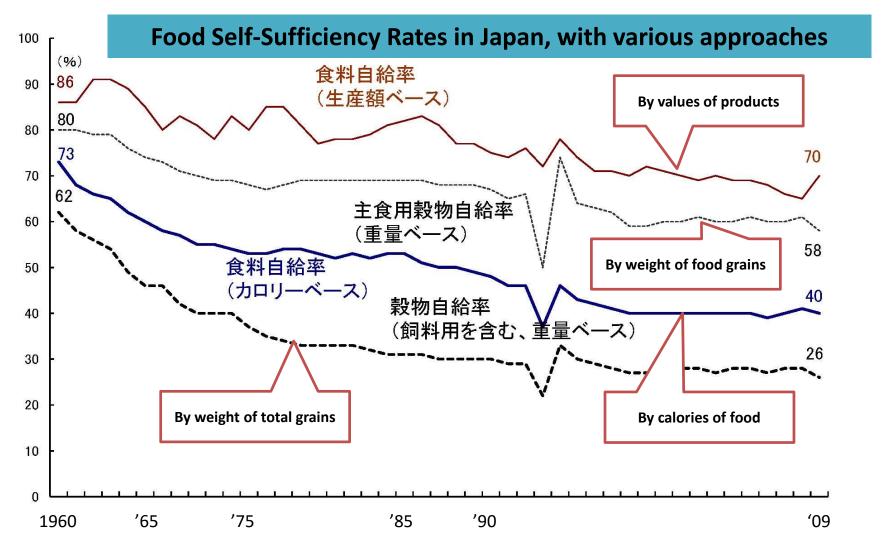


#### In Japan the compulsory rice diversion program started in 1970.

Sources: 伊東正一: 世界の食料統計、http://worldfood.apionet.or.jp/graph/index.html

元データ: USDA: <u>PS&D Online</u>, August 2017;

USBC: International Data Base, August 2006.



出典:農林水産省「食料需給表」

### 5 Food Self-sufficiency rates in major countries (1993~2009)(Calory-base estimates)

	1993 <b>平成</b> 5	1994 6	1995 7	1996 8	1997 9	1998 10	1999 11	2000 12	2001 13	2002 14	2003 15	2004 16	2005 17	2006 18	2007 19	2008 20	2009 21
アメリカ U.S.	122	132	129	126	131	131	127	125	122	119	128	122	123	120	124	_	_
カナダ Canada	154	167	163	159	157	158	184	161	142	120	145	160	173	185	168	_	-
ドイツ Germa.	92	88	88	90	95	96	101	96	99	91	84	94	85	77	80	_	_
スペイン Spain	93	86	73	99	97	93	84	96	94	90	89	90	73	81	82	_	_
フランス France	133	131	131	139	138	140	137	132	121	130	122	135	129	121	111	_	-
イタリア Italy	77	78	77	75	76	77	77	73	69	71	62	73	70	61	63	_	_
オランダ Holland	78	70	72	70	71	70	67	70	67	67	58	67	62	78	75	-	_
スウェーデン Sweden	87	75	79	86	85	93	79	89	85	87	84	88	81	79	78	_	-
イギリス Great Br.	73	74	76	79	76	77	78	74	61	74	70	69	69	69	65	-	_
スイス Switzer.	_	-	_	60	54	56	54	59	54	56	53	58	57	53	54	55	-
オーストラリア Aussi	263	217	261	273	261	281	310	280	265	230	237	238	245	172	173	_	-
韓 国 Korea	-	-	51	50	54	54	49	51	49	50	46	47	45	45	44	49	_
日 本 Japan	37	46	43	42	41	40	40	40	40	40	40	40	40	39	40	41	40
(参考)	(参考)																
ノルウェー Norway	_	54	53	51	53	53	48	50	52	47	53	56	55	54	52	52	_
台 湾 Taiwan	40	39	38	37	37	37	36	36	35	36	34	32	31	32	31	33	32

(資料)農林水産省「食料需給表」、FAO"Food Balance Sheets"等を基に農林水産省で試算した(アルコール類は含まない)。

スイスについてはスイス農業庁「農業年次報告書」、韓国については韓国農村経済研究院「食品需給表」、

ノルウェーについてはノルウェー農業経済研究所公表資料、台湾については台湾行政院「糧食供需年報」による。

ノルウェーについては、輸入飼料と輸出を考慮していないため、台湾については、輸入飼料を考慮していないため、

単純には比較できないが、参考として記載。

- (注)1. 日本は年度。それ以外は暦年。ノルウェーについて、2008年は暫定値。
  - 2. 供給熱量総合食料自給率は、総供給熱量に占める国産供給熱量の割合である。畜産物については、輸入飼料を考慮している。
  - 3. ドイツについては、統合前の東西ドイツを合わせた形で遡及している。
  - 4. 日本及び上記諸外国以外は、データが不足しているため試算していない。
  - 5. FAO"Food Balance Sheets"のデータは、過去に遡って修正されることがある。

# Causes of ag, failure in Japan Farms Ag, coops

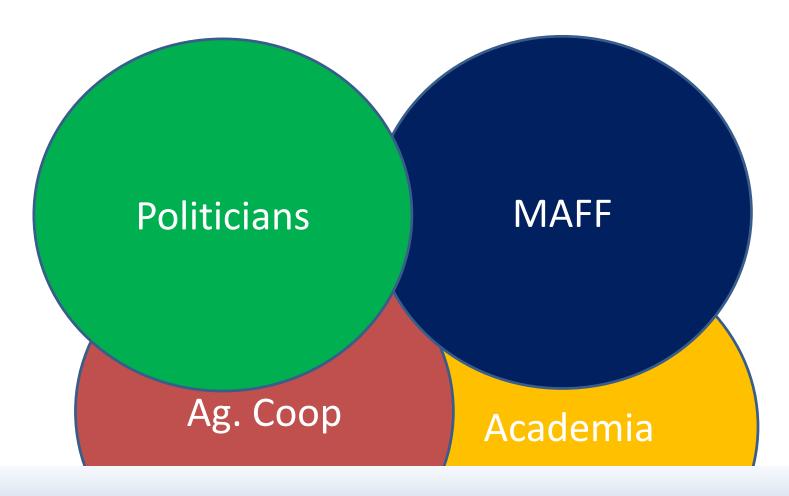
Small/many farms retained

Production Costly/Inefficient More part-time farmers Politically strong, More profits with more members

Grow by insurance, banking, services for non-ag, people, Retain high prices for inputs,

Keeping high prices,
Unable to export,
More imports but limited,
Less ag, income,
Depending on subsidies, ...

### "Agricultural Quadrangle Force" (AQF)



**Small farmers beneficial to AQF** 

Source: Yamashita, 2016

## Implications from the history of rice diversion prog. in Japan…

- Inefficiency in rice production remained,
  - Having kept small farms,
  - Not well mechanized by them due to high costs,
  - Implies more labor costs, which can be a vicious-circle,
  - Even in 2014, machinery and labor costs account for 15% and 31%, respectively,
- Compulsory program make the whole national ag, inefficient,
  - The entire national agriculture becomes unindulged to advance agriculture,
  - End up with being more costly
- Political strength tends to seek more subsidies and become less efficient.
  - Producer side may work on political arena more than on agricultural efficiency, delaying cost performance,

## Rice production and consumption during the last 5 decades…

- Per capita rice consumption still declining by 1% a year,
- Rice area harvested still declining, accordingly,
- Government initiated semi-compulsory diversion program still going on, although the rice farmers are free to grow rice under the 1995 Food Law,
- The rice diversion to be ended in 2018.
- No rice diversion starting in 2019,

Summaries of rice diversion	programs,	1960s a	nd 2015
	1960s		2015
Rice consumption, P/C, kg	126		66
Rice areas, million ha	3.3		1.6

Source: USDA: PSD Online, November 2015. Note: Rice consumption in milled basis.

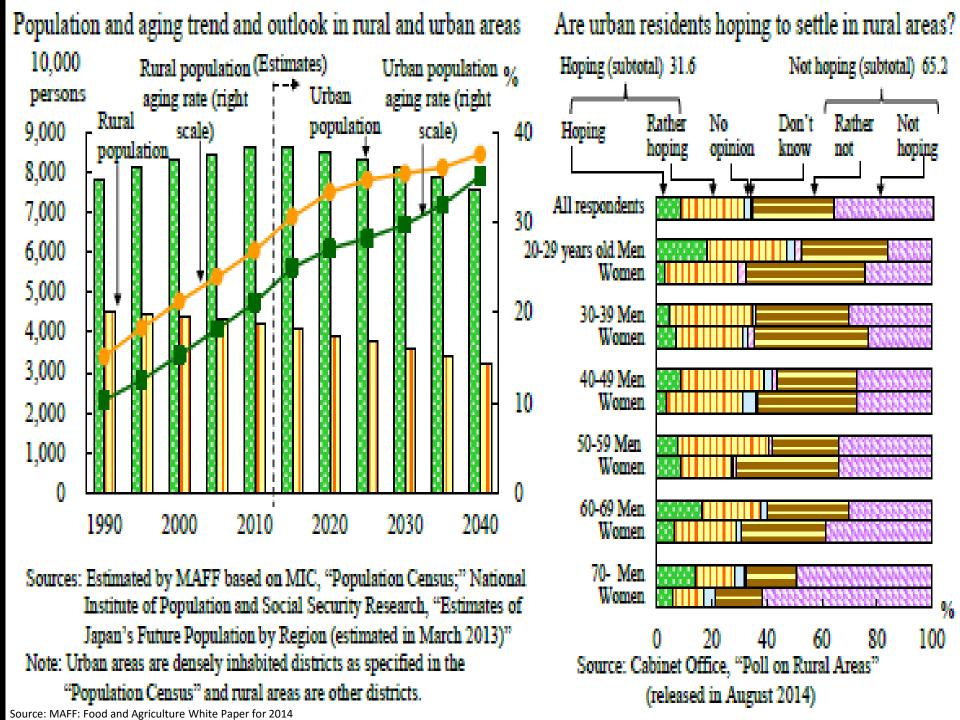
Table 8. Costs of Japanese rice production and government procurement price, 1960-1988.

			Costs/ha						Costs/ton				Pro-	Ratio	
Year	Purchase materials		Hired labor	Own	By- products	Sub-	Inte- rest	Rent	Total	Sub-	Total	(000)	Deflated by YI <sup>2</sup>		of pro-
	materials	neau	labor	IADUI	products	total	1621			total	Total	yen)¹	\$/ton	price	price:cost
								(US\$)	<del></del>						
1960	217	30	31	216	-61	432	24	35	492	97	110	177	453	193	1.75
1965	318	32	49	384	-60	723	35	51	809	162	182	292	559	301	1.66
1970	582	33	76	563	-55	1,199	81	213	1,493	246	307	534	724	385	1.26
1973	1,045	41	79	873	-89	1,949	118	407	2,474	381	484	672	917	632	1.31
1974	1,250	43	. 84	1,029	-104	2,303	137	523	2,963	458	589	866	907	777	1.32
1975	1,460	50	69	1,147	-105	2,620	155	671	3,446	500	657	1,022	906	875	1.33
1976	1,681	73	61	1,535	-147	3,203	185	727	4,115	660	848	1,220	1,068	932	1.10
1977	2,049	82	5 <del>9</del>	1,721	-164	3,747	224	832	4,803	731	937	1,290	1,215	1,070	1.14
1978	2,911	114	66	2,310	-223	5,179	313	1,238	6,730	971	1,262	1,416	1,410	1,367	1.08
1979	3,015	110	64	2,279	-213	5,255	317	1,217	6,789	1,018	1,315	1,488	1,416	1,314	1.00
1980	3,224	113	53	2,271	-230	5,430	327	1,212	6,970	1,110	1,425	1,580	1,425	1,299	0.91
1981	3,533	129	51	2,446	-282	5,878	341	1,307	7,527	1,203	1,540	1,660		1,342	0.87
1982	3,229	106	44	2,121	-213	5,288	298	1,232	6,818	1,068	1,377	1,698	1,277	1,201	0.87
1983	3,502	115	46	2,323	-258	5,728	318	1,304	7,350	1,174	1,506	1,746	1,371	1,282	0.85
1984	3,572	112	42	2,241	-268	5,699	318	1,309	7,326	1,048	1,347	1,740	1,199	1,310	0.97
1985	3,626	107	42	2,236	-241	5,769	321	1,317	7,407	1,094	1,405	1,767	1,225	1,305	0.93
1986	5,222	140	61	3,053	-293	8,181	478	1,885	10,545	1,515	1,953	1,777	1,693	1,847	0.95
1987	6,109	158	66	3,491	-330	9,495	568	2,197	12,259	1,805	2,329	1,773	2,004	2,023	0.87
1988	6,802	168	73	3,911	-342	10,611	656	2,432	13,700	2,052	2,650	1,756	2,279	2,178	0.82

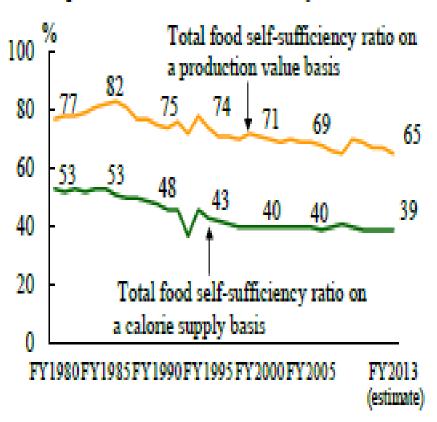
<sup>&</sup>lt;sup>1</sup> Total cost per ton in thousand yen for comparison with dollar cost. <sup>2</sup> YI = CPI deflator, see Appendix Table A.

Source: MAFF Food Agency, 1990.

Source: Wailes, Ito and Cramer (1991): Japan's Rice Market: Policies and Prospects for Trade Liberalization, Arkansas Ag. Exp. Stn., RS 319.

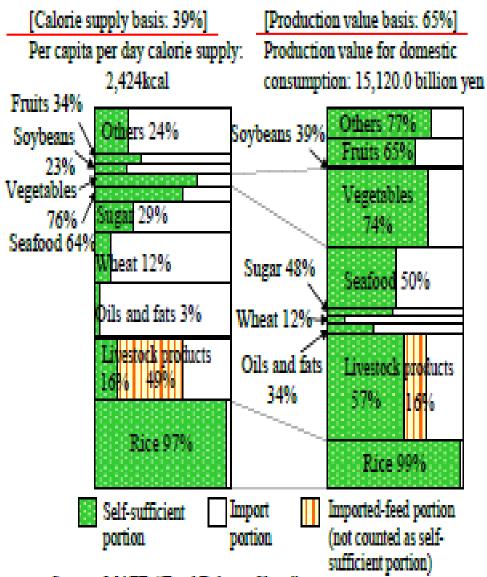


Japan's total food self-sufficiency ratio trends

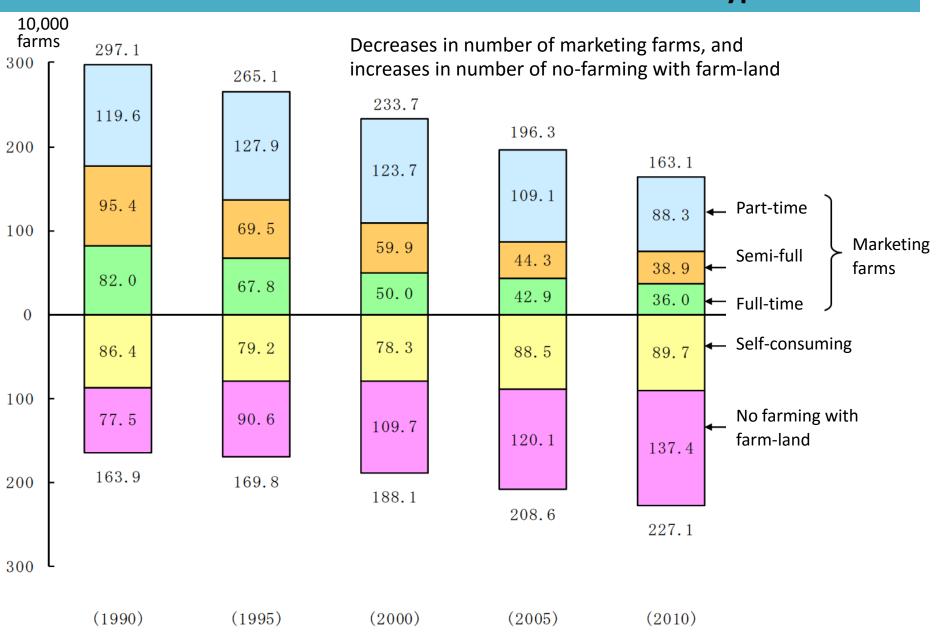


Source: MAFF, "Food Balance Sheet"

Total food self-sufficiency ratio on calorie supply and production value basis (FY 2013)



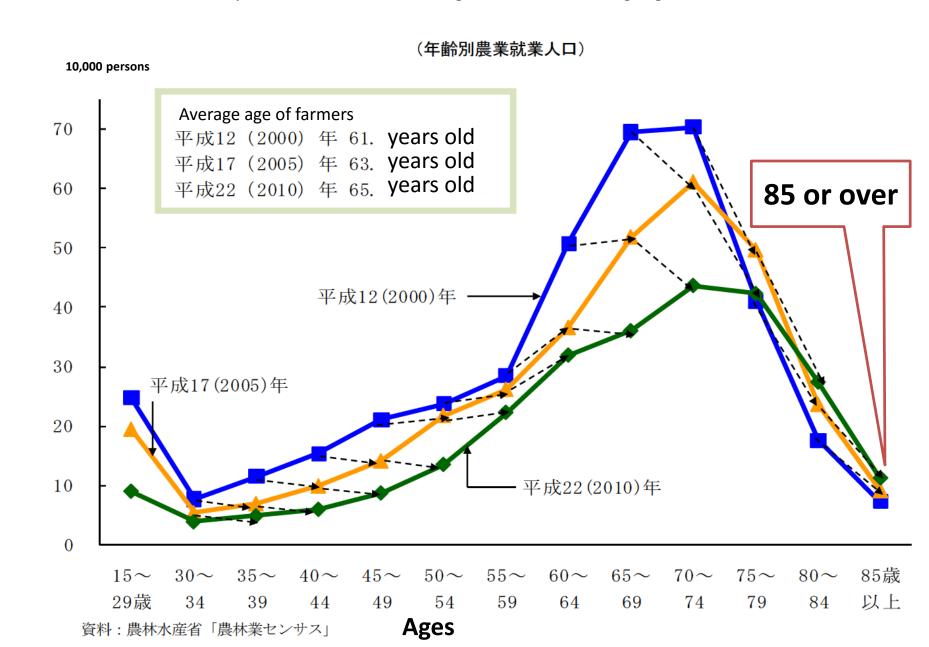
#### **Evolution of number of farms with different types**



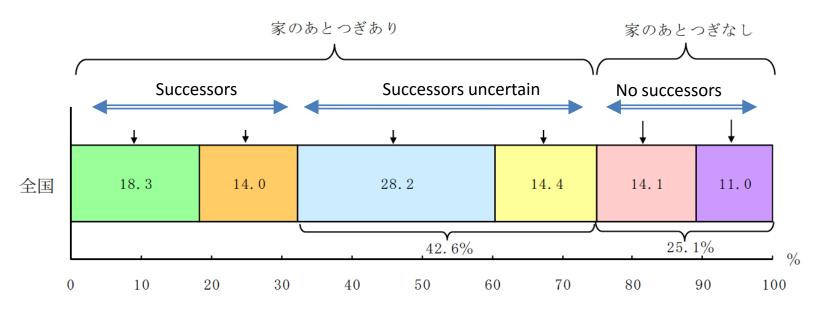
資料:農林水産省「農林業センサス」

#### Evolution of number of family members at different age groups, '00-'10

The number of farms decreased by a third to 2.61 million during a decade. The average age increased from 61.1 to 65.8.



#### **Successors in the farms**



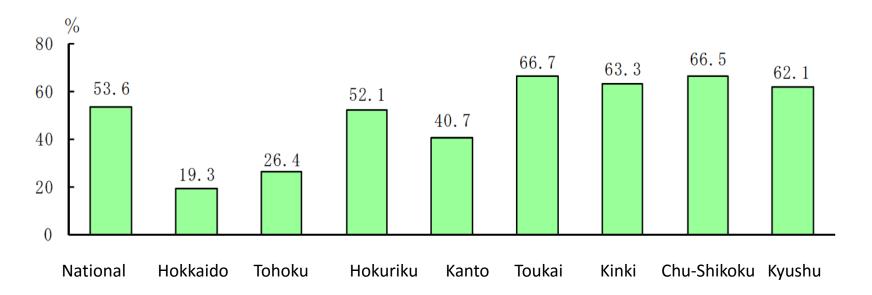
資料:農林水産省「今後の農地利用に関する緊急アンケート調査」(平成23(2011)年2月9~14日調査)

注: 今後農地の出し手となることが見込まれる農家(世帯主が65歳以上70歳未満で水田経営面積が2ha未満の販売農家)1,479戸を対象に実施

#### Rice farms without operators younger than 65 years old, %

#### ○ 農業を主とする 65 歳未満の農業者のいない水田集落等の割合

販売農家や主業農家が減少するなかで、農業を主とする 65 歳未満の農業者がいない水田集落が全国で過 半数。作物別には、水稲が他に比べ高く、次いで果樹、野菜、肉用牛。



資料:農林水産省「2010年農林業センサス」(組替集計)

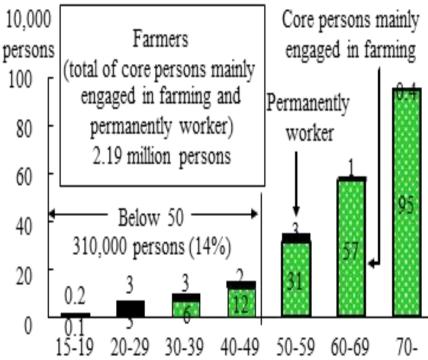
注:「農業を主とする65歳未満の農業者のいない水田集落」は、稲作1位経営の主業農家がいない水田集落

## Ag operators over 65 years old: 16% in 1960

65% now.

**MAFF** 

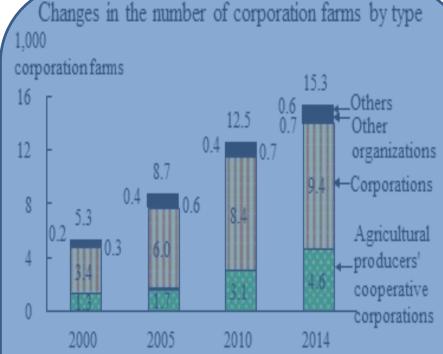
#### Farmers by age group (2010)



Sources: Prepared based on MAFF, "Census of Agriculture and Forestry," and MIC, "Population Census" (data were aggregated by MAFF based on survey slips)

Notes: 1) "Core persons mainly engaged in farming" are those whose mainstay jobs are farming among a population mainly engaged in farming (household members mainly engaged in selfemployed farming).

"Permanently worker" are those employed mainly for farming for a period of seven or more months under employment agreements.



Sources: MAFF, "Census of Agriculture and Forestry," "Survey on Movement of Agricultural Structure"

Notes: 1) Corporation farms are agricultural holdings other than farm households for sales purposes, excluding household corporations.

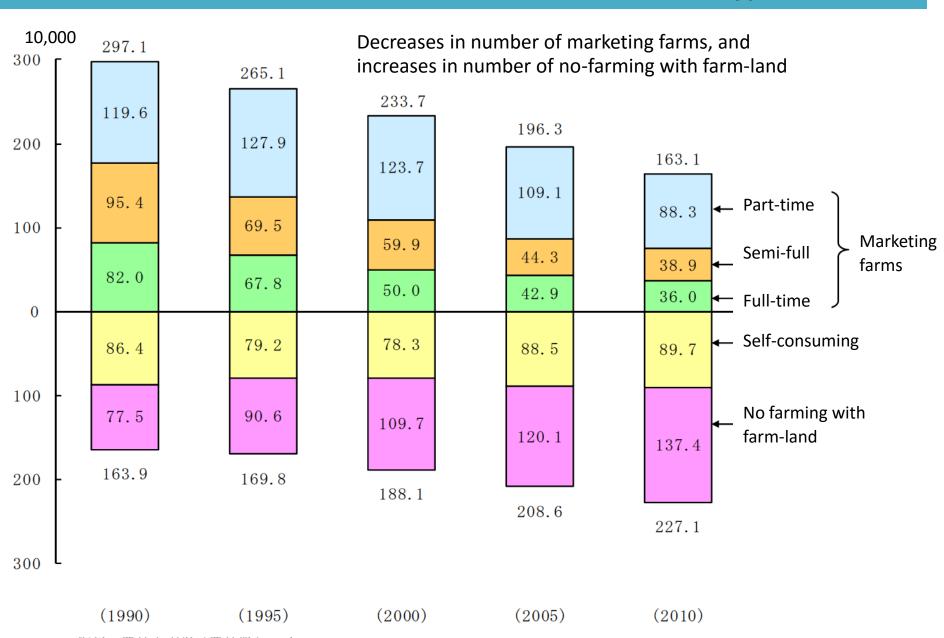
Corporation grass farms are covered for 2014.

Corporations are stock corporations, ordinary and limited partnerships, and limited liability companies under the Companies Act, and mutual companies under the Insurance Business Act. Corporations in and before 2005 include limited private companies.

4) "Other organizations" include agricultural cooperatives, agricultural mutual relief associations, agriculture-related organizations and forest

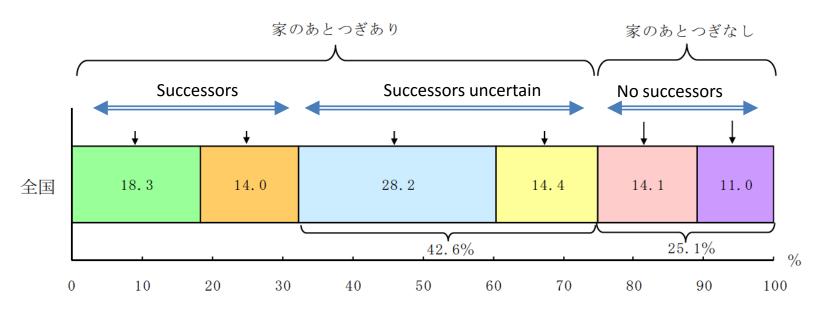
owners' cooperative associations.

#### **Evolution of number of farms with different types**



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#### Successors in the farms in Japan



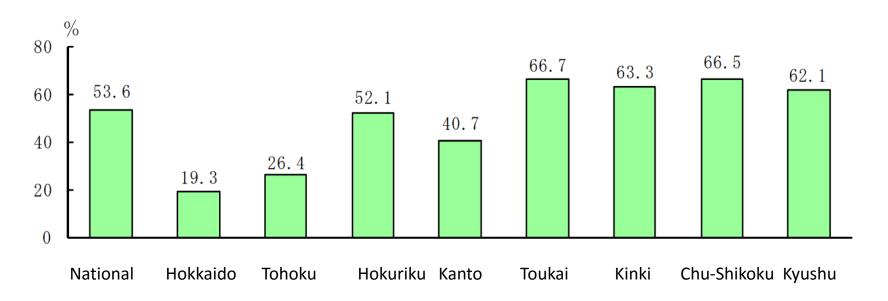
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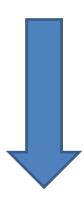
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# Reasons for the failure of rice farms in Japan…

- Ag-Coop sought to keep small and many farms,
  - For the stronger political power
  - For the greater buying power of inputs,
     Agricultural inputs: machines, fertilizer, chemicals, etc.
- Politicians and Ag-Coop collaborate for political arenas,
  - More agricultural representatives,
  - Strong political power,
- Production of rice, the major agricultural products, getting smaller and smaller along with the domestic consumption,
  - High output prices tend to keep the input prices high rending to high production costs:
  - No intentions for exports of their own products,

## The young people hate the old fashioned rural style.

To succeed his/her own family farm may not be likely.



New life-style wanted by the young kids!!

## Setting up ag. corporations can be a Key for young people.

An ag, job like an white-color, 8 am - 5 pm daily work, off on Saturdays and Sundays…

Yong people are happy to work for ag. corporations...

## Young people do not want too much responsibility...

They want freedom as well as job.



Young people eventually grow to be:

- hard workers in the future!!
- owners with great responsibilities!!

- ① Based on the implementation of the Pilot Income Support Direct Payment Program in FY2010, we formally implemented the Income Support Direct Payment Program for Farmers from FY2011.
- ② The number of participants under the program in FY2011 increased by 55,000 from the number under the pilot program in the previous year to 1,218,000.

(Number of participants under the Income Support Direct Payment Program for Farmers by farm category)

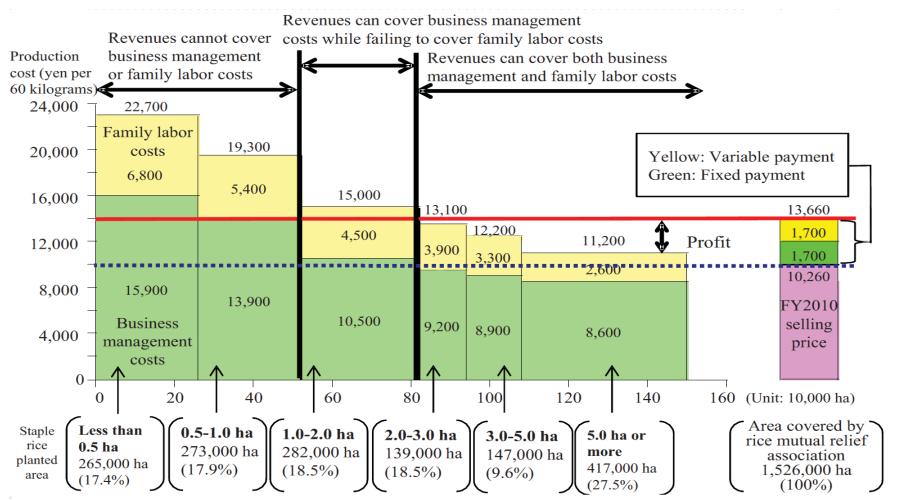
	Number of	Farm category					
	participants	Independent	Incorporated	Community-based farm cooperatives			
		farms	farms				
FY2011	1,218,237	1,203,367	7,254	7,616			
FY2010	1,163,090	1,149,505	6,187	7,398			
Change vs. previous year (growth rate)	55,147(4.7%)	53,862(4.7%)	1,067(17.2%)	218(2.9%)			

Source: MAFF

http://www.maff.go.jp/j/wpaper/w\_maff/h23/pdf/e\_all.pdf

4 The implementation of the Income Support Direct Payment Program for Farmers has made some contributions to improving farming business performance, promoting the adjustment of rice supply and expanding production of rice for new uses.

(Rice farmer's business conditions by planted area group)

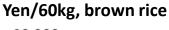


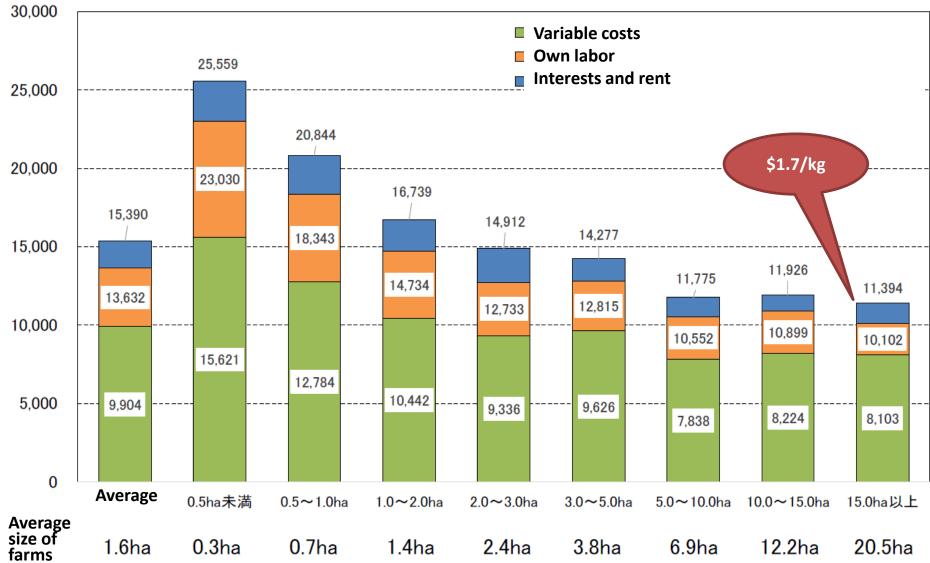
Source: MAFF

Note: Business management costs cover material procurement, interest payment, land rent and employment costs for rice production.

http://www.maff.go.jp/j/wpaper/w\_maff/h23/pdf/e\_all.pdf

#### Declining production costs of rice as size increasing, 2015, Japan





出典:平成27年産米の生産費

Source: MAFF, 2017

## Requirements to get ag, subsidies in Japan…

- Only certified farmers (corporations) may get subsidies,
  - Set up decent farm management plan
  - Well-organized farm corporations,
    - Set up a byelaw
    - Set up a representative, members, general assembly
    - Set up one bank-account for sales and purchasing by the corporation

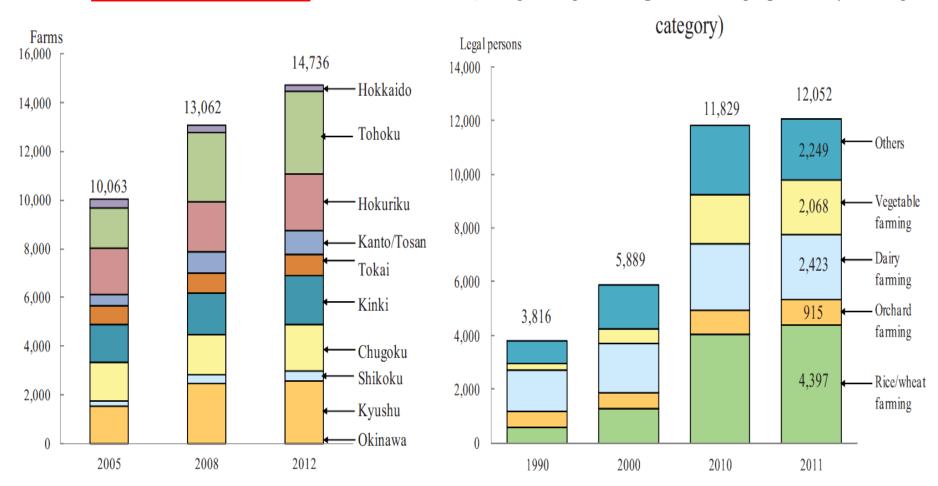
#### Farmers have to be qualified....

- Originally designed for the minimum size:
  - 4ha for individual farmers, or
  - 20 ha for group-farming to get subsidies
  - This clause was relaxed then deleted since 2015

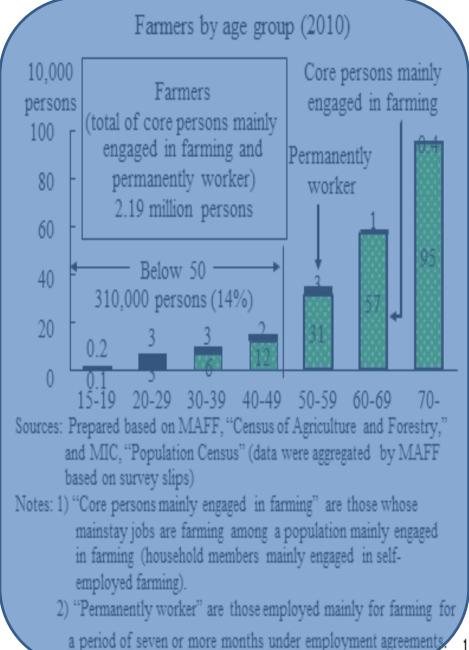
- ② The number of community-based farm cooperatives has increased year by year, standing at 15,000 as of February 2012.
- 3 The number of agriculture production legal persons has also increased year by year, standing at 12,000 in 2011.

(Changes in community-based farm cooperatives by farming region)

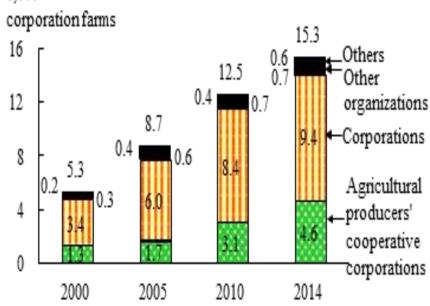
(Changes in agriculture production legal persons by farming



Source: MAFF, "Survey on Community-Based Farm Cooperatives" Source: MAFF <a href="http://www.maff.go.jp/j/wpaper/w">http://www.maff.go.jp/j/wpaper/w</a> maff/h23/pdf/e all.pdf



Changes in the number of corporation farms by type 1,000



Sources: MAFF, "Census of Agriculture and Forestry," "Survey on Movement of Agricultural Structure"

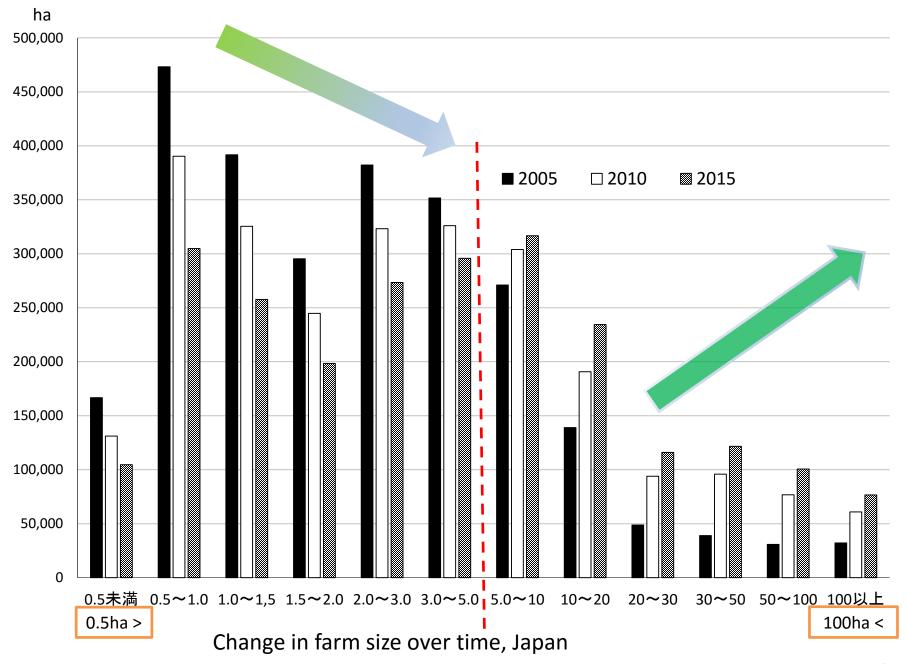
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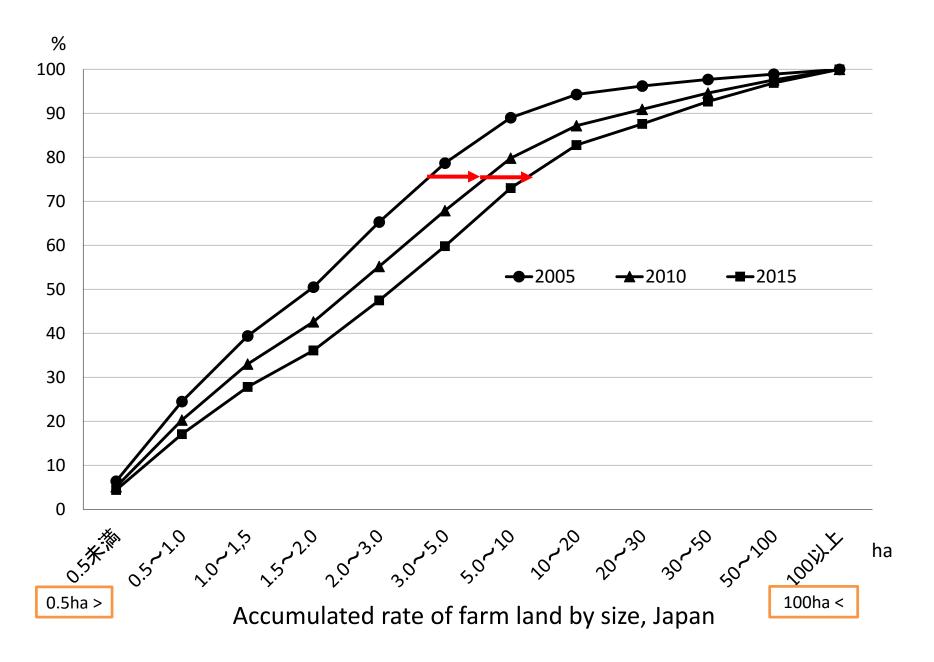
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owners' cooperative associations.





#### Changes in number of new farmers in Japan, 2006-10

(Persons)

	2006	2007	2008	2009	2010
New self-employed farmers	72,350	64,420	49,640	57,400	44,800
39-year-old or younger persons	10,310	9,640	8,320	9,310	7,660
New employed farmers	6,510	7,290	8,400	7,570	8,040
39-year-old or younger persons	3,730	4,140	5,530	5,100	4,850
New participants in farming	2,180	1,750	1,960	1,850 (1,680)	1,730
39-year-old or younger persons	700	560	580	620 (580)	640
Total new farmers	81,030	73,460	60,000	66,820	54,570
39-year-old or younger persons	14,740	14,340	14,430	15,030	13,150

Source: MAFF, "Survey on Newcomers in agriculture"

http://www.maff.go.jp/j/wpaper/w\_maff/h23/pdf/e\_all.pdf

## Rice Diversion programs to be ended in 2018, but how? ...

 High subsidies on non-tablerice production: rice for process, feeding, and wholecrop-silage,

Continuous subsidies needed,

· When are the subsidies finished?

#### Current rice diversion program in Japan … 1

• Wheat 6,890 yen/60kg (\$1,044/MT)

110 yen /USD

Barley (2 rows)
 5,460 yen/50kg (\$993/мт)

Barley (6 rows) 5,690 yen/50kg (\$1,035/MT)

Barley (naked)
 8,190 yen/60kg (\$1,241/MT)

Soybeans
 9,040 yen/60kg (\$1,370/MT)

Sugar beet<sup>1</sup> 7,180 yen/MT (metric ton) (\$65/MT)

Potato (starch)<sup>2</sup> 11,610 yen/MT (\$106/мт)

Buckwheat 16,840 yen/45kg (\$3,402/мт)

Rape-seeds
 9,920 yen/60kg (\$1,503/мт)

<sup>1</sup>Note: The standard sugar level is 16.3 degrees.

<sup>&</sup>lt;sup>2</sup>Note: The standard contents of starch is 19.5%.

#### Current rice diversion program in Japan …2

For the farmers who grow crops on the paddy fields instead of rice for food, more payments are provided as follows:

•	Wheat,	SO	beans,	and	feed	crops
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depending on yields.

110 yen /USD

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<sup>&</sup>lt;sup>1</sup>Note: The whole rice plants process for silage for feeding purpose.

<sup>&</sup>lt;sup>2</sup>Note: The harvested rice crop determined to be used for feeding or rice-flour.

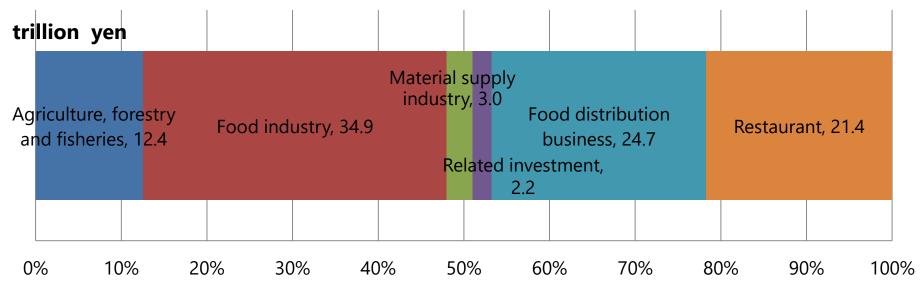
## Challenges to keep the farms and corporations in the community...

#### Financially not easy,

- Despite of subsidies, many corps cannot get the end meet,
- Need to reorganize the corps with the neighboring corp.s,

### Overview of the Food Industry in Japan including the Food Services:

(1) Domestic production for agriculture and food industries in 2013



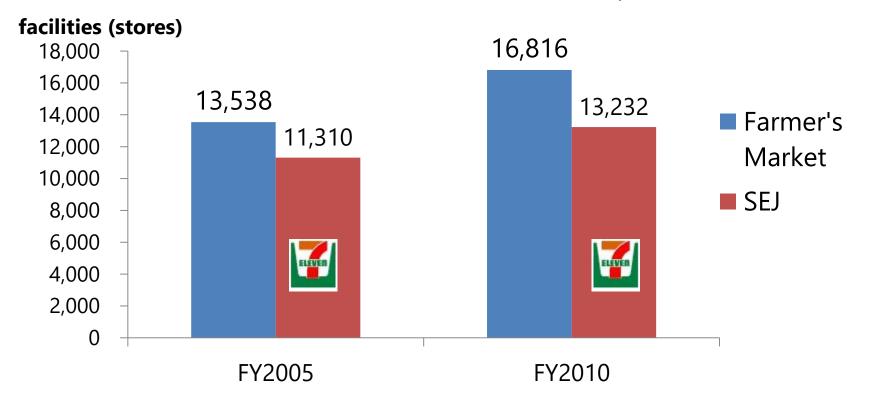
Source: Ministry of Agriculture, Forestry and Fisheries' economic statistics on agriculture and food industries

The Japan's agriculture and food industries were worth 98.6 trillion yen. The food, the food distribution and the restaurant industries account for 80% of the total production.

Source: Saito and Ito (2016)

#### **Expansion of Farmers' Markets in Japan**

(1) Numbers of farmers' markets and Seven-Eleven Japan convenience stores



Source: Report on Results of 2010 World Census of Agriculture and Forestry In Japan, SEJ's IR date

There currently are more farmers' markets than stores of Seven-Eleven Japan Co., Ltd. ,the largest convenience store chain operator in Japan.

Source: Saito and Ito (2016)

#### (2) Examples of farmers' markets









Source: Saito and Ito (2016)

#### 法人化の目的(構想) Purpose of the Corp, Natajima Ag. Corp.

- ◆地域の兼業化・高齢化による労力不足への対応 To cope with lack of labor for ag. (aging, non-ag)
- →個別経営の機械化による過剰投資の解消 To avoid over investment on machinery
- ◆耕作放棄地解消による地域の農業生産の維持 To minimize the abandoned ag. land To enhance ag. production

#### 法人経営の理念

- 米の国際価格に対応するための低コスト生産 Rice: low production costs to globalization
- 2 消費者に軸足をおいた「売れるものづくり」の推進 Products for consumer preference
- 3 6次産業化の推進による経営の多角化 Multi-management with the 6<sup>th</sup> Ag. Industry
- 4 地域(集落)との関わりの中での共存共栄 Harmony with the community
- 5 担い手育成のための雇用体制の整備 Employment of young people

#### 法人経営の状況 Contents of the Ag. Corp., Natajima

◆農地集積面積・・・77ha(H27年3月) Consolidation of land: 77 ha in Mar. 2015

※この内、特定農業法人(H10年5月認定)としての集積面積:30ha(向山上集落)

◆経営規模 Size of farm

水稲(Rice)58ha、麦(Wheat)42ha、大豆(Soybn)10ha、 米粉製粉(年間約50t)、餅加工(餅米5t) Rice flour: 50 MT/year, Rice cake: 5 MT/yr.

#### 法人の活動内容① ~低コスト生産~ For low cost production



山農協同組合(事業協同組合)に よる田植作業の外部委託化 Custom work

乾田不耕起直播の導 入 No-till

Source: Natajima Ag. Corp., Yamaguchi Pref. (2017)

#### 法人の活動内容② ~低コスト生産~ For low cost production



農業経営基盤強化準備金の活用による るライスセンターの建設 Use of subsidies

資材費低減(鶏糞利用) Use of chicken manure



#### 法人の活動内容④ ~売れるものづくり~ For low cost production



プライベートブランド米「ゆめ いしん」(商標登録) Own brand: <u>Yumeishin</u>



インターネット販売を実施 Sales online

#### 法人の活動内容⑤ ~売れるものづくり~

For low cost production

山農協同組合(山口県農業法人事業協同組合)の設立〜農産物検査の実施 Rice quality inspection business





#### 法人の活動内容⑥ ~6次産業化~ For 6<sup>th</sup> Ag. Industry



米粉製粉プラントの建設による山口 県全域の学校給食への米粉の供給 Provide food for school-lunch ゆめいしんブランドでのもち 加工・販売, new products



#### 法人の活動内容⑦~地域との共存共栄~

For harmony with community



地域からの雇用(社員・臨時雇用) Employ local people.

地域イベントにおける餅まきの様子 Community fun time

他の集落・法人等への情報提供 (視察受入) Exchange information with other corporations.

#### 経営上の課題 Current problems to be solved

◇経営受託を行っている農地が分散 Pieces of land still scattered.

◇経営受託面積の拡大に伴い水路・水管理が 困難となっている。Getting difficult for water management for the large scale.

◇6月期の労働ピークの作業分散 Management of labor in June, the intensive season

◇作業オペレーターの確保 Obtaining enough operators

◇経営受託農地の集約化

Solution: Land consolidation for efficiency

#### 今後の展開方向 Toward future

#### ◇水稲経営面積の目標 (Target of rice)・・・100ha

・地域と調和を図りながら、経営受託の面積拡大・集約化を推進する。

#### ◇米生産コストの目標(Prod. cost of rice)・・・・・・・・ 9, 000円/俵 (USD 1,400/MT, milled rice)

・国際価格に対応できる低コスト生産を実現するとともに、消費者の求める安全性、食味の向上にも取り組む。

## ◇6次産業化の推進と担い手の育成 Further promote the 6th Ag. Industry and more employment

・6次産業化を推進し、若者が社員として働ける環境づくりの推進。週休2日制の導入と一般企業並みの賃金 確保。

# Challenges for the rural community development in Japan ...

- Must become more efficient:
  - Must reduce the number of farmers,
  - Must hire efficient operators,
  - More technology oriented,
     Maybe less income for the member farmers.
- Need promote more industries to hire local farmers, laborors:
  - The 6<sup>th</sup> Industry (the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> industries in agriculture)
    - Direct sales from farmers to consumers,
      - Using On-Line sales,
      - Local farm-shops,
    - More processed (value-added) food to be developed locally,
    - More infrastructure to be improved in the rural areas,
    - More off-farm jobs to be developed,
    - And more…

