

# Koriyama City Safe Community Steering Committee

## Disaster Prevention and Environment Safety Task Force



**Reporter: Haruo Kokubun, Chair**  
(Koriyama City Neighborhood Association Federation, Auditor)

### 1 Reasons for creating Disaster Prevention and Environment Safety Task Force

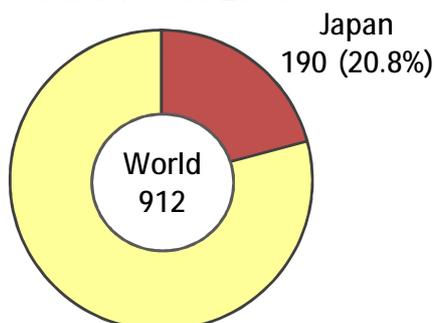
#### Reason 1. Japan is susceptible to disasters

Of all worldwide disasters, the rate of disaster occurrence in Japan is 20.8% for number of earthquakes stronger than magnitude 6, and 7.0% for number of active volcanoes. For a country area that is only 0.25% of the entire world, these are very high numbers.

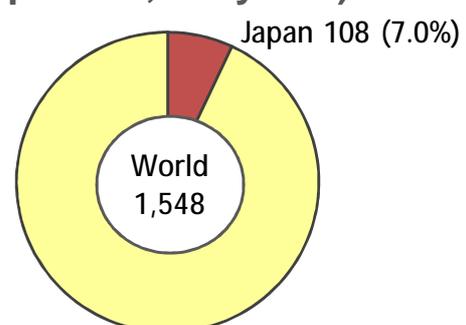
Fig. 1

No. of earthquakes stronger than magnitude 6.0

Total for 1996-2005



No. of active volcanoes (Volcanoes that erupted in past 10,000 years)



Note) Numbers provided by Cabinet Office based on volcano data from Meteorological Agency data for Japan, and Smithsonian Institution National Museum of Natural History for the world.

Excerpt from Cabinet Office official website - Disaster Prevention Information page

## Reason 2. Koriyama City has experienced a large disaster

Situation of damage in Koriyama City from Great East Japan Earthquake (March 11, 2011)

Fig. 2

● Human damage 1 death 2 serious injuries 2 moderate injuries

● Building damage

	Total collapse	Semi-collapse	Partial damage	Others	Total
Public facilities	0	8	61	134	203
Homes	2,294	18,749	32,062	168	53,273
Shops, etc.	278	918	4,333	30	5,559
Total	2,572	19,675	36,456	332	59,035

● Roads, bridges, rivers, agriculture facilities, etc.

Cracks	Land bulging	Land concaving	Others (collapse of river dikes, etc.)	Total
789	160	997	755	2,701

● City water facilities (immediately after earthquake)

Leaks approx. 1,000 places No. of houses with water cut off (Population without water approx. 97,000 people)

● Sewage facilities (immediately after earthquake)

Total distance of damaged pipes approx. 7,050m Damage to manholes, etc. 536 places

For Koriyama City, this was the first extensive earthquake damage since the Meteorological Agency started observing earthquakes.

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## Reason 3. Fukushima No.1 nuclear power plant accident

Fig. 3

Distance between Koriyama City and Fukushima No. 1 nuclear power plant



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# Effect of nuclear power accident on Koriyama City

Citizens had serious concerns immediately after the accident.

- Levels of radiation exceeded normal levels. Children’s outdoor activities had to be restricted, and contaminants had to be removed, etc.
- Many families, especially children, voluntarily evacuated out of the prefecture, and the population dropped.
- Currently, most decontamination has been finished, and the level of radioactive substances has dropped markedly.

**There has been no health damage from radioactive substances at this time.**

## Transition of radiation levels

The levels are higher than the pre-accident normal value (0.04 to 0.06μSv/h), but have dropped greatly.

Fig. 4

Measurement place	March 29, 2011	December 31, 2016	Reduction rate
	Air radiation dose		
Koriyama government office compound	2.59μSv/h	0.10μSv/h	96.1%
Koriyama City Hall	2.57μSv/h	0.17μSv/h	93.4%

Source: Koriyama City Nuclear Plant Disaster Countermeasures (12th edition, December 31, 2016)

**Reason 4. We cannot eliminate disasters. However, we can reduce damage.**

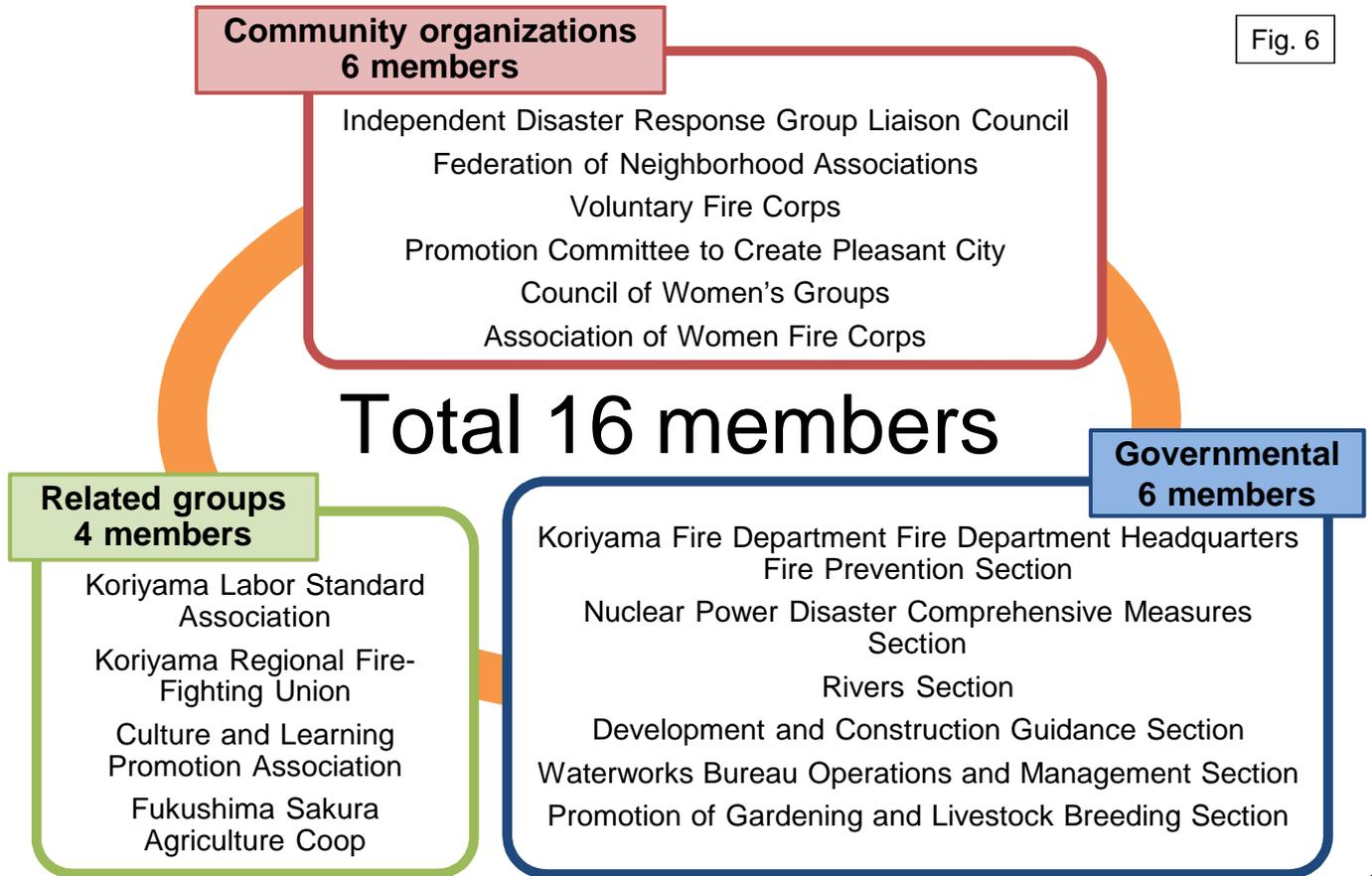
Fig. 5



- Hardware measures (Examples of currently implemented measures)**
- Earthquake proofing of infrastructure
  - Preparation of evacuation centers
  - Preparation of meteorological observation facilities
  - Redundancy of communication and power feed systems
  - Emergency heliport
  - Earthquake proofing of buildings
  - Reinforcement of fire prevention abilities
  - Stocking of resources
  - Installation of earthquake proof water reservoir
  - Flood control by renovating riverbeds, etc.

- Software measures (Examples of currently implemented measures)**
- Disaster prevention plan (Nation, Prefecture, City)
  - Disaster prevention drills (Nation, Prefecture, City)
  - Improvement of emergency recovery technology
  - Plans to continue business, etc.
  - Agreement for mutual support by municipalities
  - Accurate provision of information by media
  - Backup of important data

## 2 Members of Disaster Prevention and Environment Safety Taskforce Committee



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What is disaster prevention?

What is environmental safety?

Definition by Task Force

Fig. 7

### Disaster prevention

Preventing natural disasters and disasters caused by man (man-made disasters)

Natural disaster → Disasters from earthquakes, typhoons, flooding, volcanoes, etc.

Man-made disasters → Fires, workplace accidents, etc.

\* Traffic accidents are covered by separate task force.

### Environmental safety

Understanding a worsening in environment caused by man-made disasters, and implementing measures

Improving the environment in which people are active

Worsening of environment → Scattering of radioactive substances, air pollution, etc.

Active environment → Work environment, housing environment, etc.

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# 3 History of activities

Fig. 8

Session	Details of workshop	
1st	Shared understanding of Safe Communities	
2nd	Study of subjective challenges	
3rd	Study of objective challenges	
4th and 5th	Identification of priority challenges	
6th	Study of directions and targets	
7th to 10th	Study of actual measures	
11th to 26th	Study of measures and evaluation method	Evaluation and analysis

## Scenes of activities

Carrying out studies through workshops.

Organizing opinions and findings from data.

## Disasters in Koriyama City 1

Typhoon damage and water damage 6 disasters in 30 years

Fig. 9

Year of occurrence	Cause of rainfall	No. of deaths	No. of inundated buildings	No. of evacuees
FY1986	Typhoon	2 deaths	3,126 cases	1,119 people
FY1998	Active bai-u front		1,216 cases	5,119 people
FY2002	Typhoon		406 cases	2,067 people
FY2004	Typhoon		12 cases	928 people
FY2010	Developed cumulonimbus clouds		515 cases	2 people
FY2011	Typhoon		1,684 cases	1,763 people

In Koriyama City, there have been six serious disasters caused by typhoons or torrential rains, etc. in the past 30 years.

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## Disasters in Koriyama City 2 Earthquake disasters

Reprint

Situation of damage in Koriyama City from Great East Japan Earthquake (March 11, 2011)

Fig. 10

● Human damage 1 death 2 serious injuries 2 moderate injuries

● Building damage

	Total collapse	Semi-collapse	Partial damage	Others	Total
Public facilities	0	8	61	134	203
Homes	2,294	18,749	32,062	168	53,273
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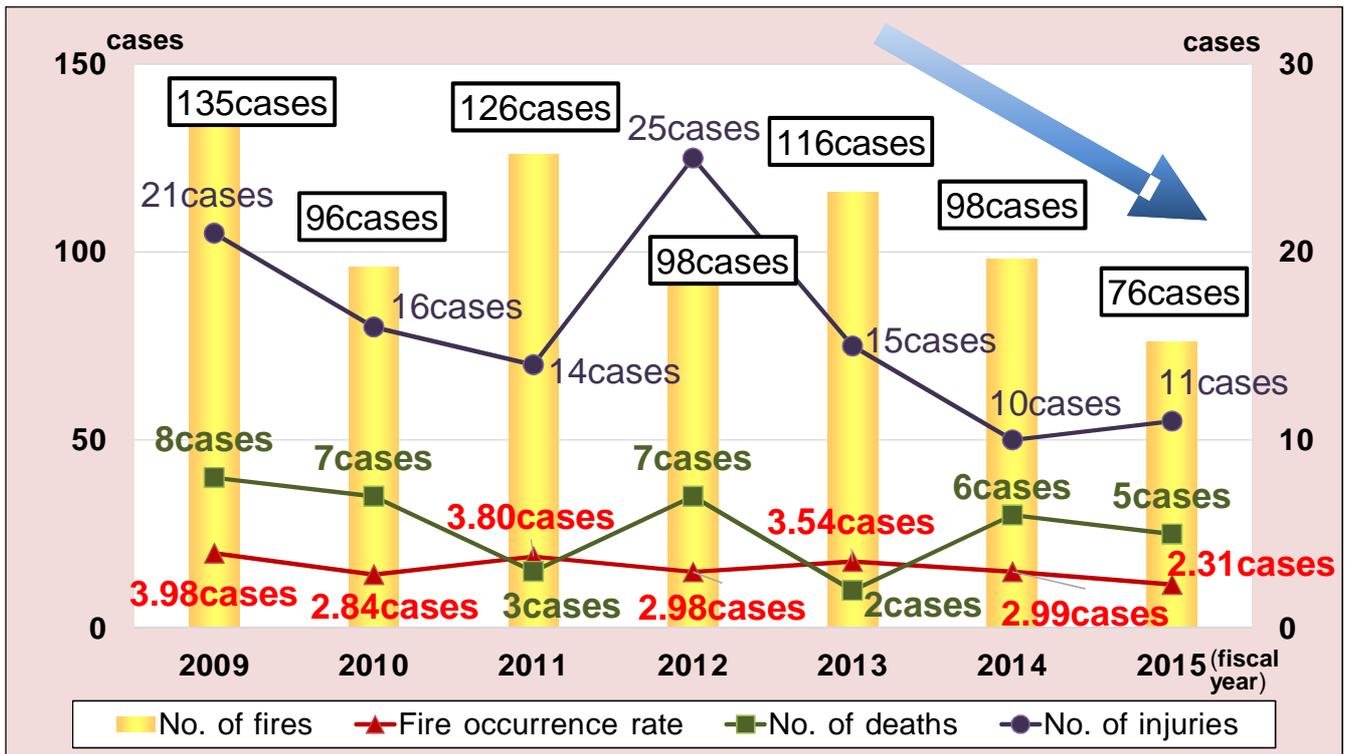
For Koriyama City, this was the first extensive earthquake damage since the Meteorological Agency started observing earthquakes.

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## Disasters in Koriyama City 3 Transition in number of fires

Previously there were about 100 fires a year  
 ⇒ Fires have declined since FY2013

Fig. 11



Fire occurrence rate: No. of fires per 10,000 people

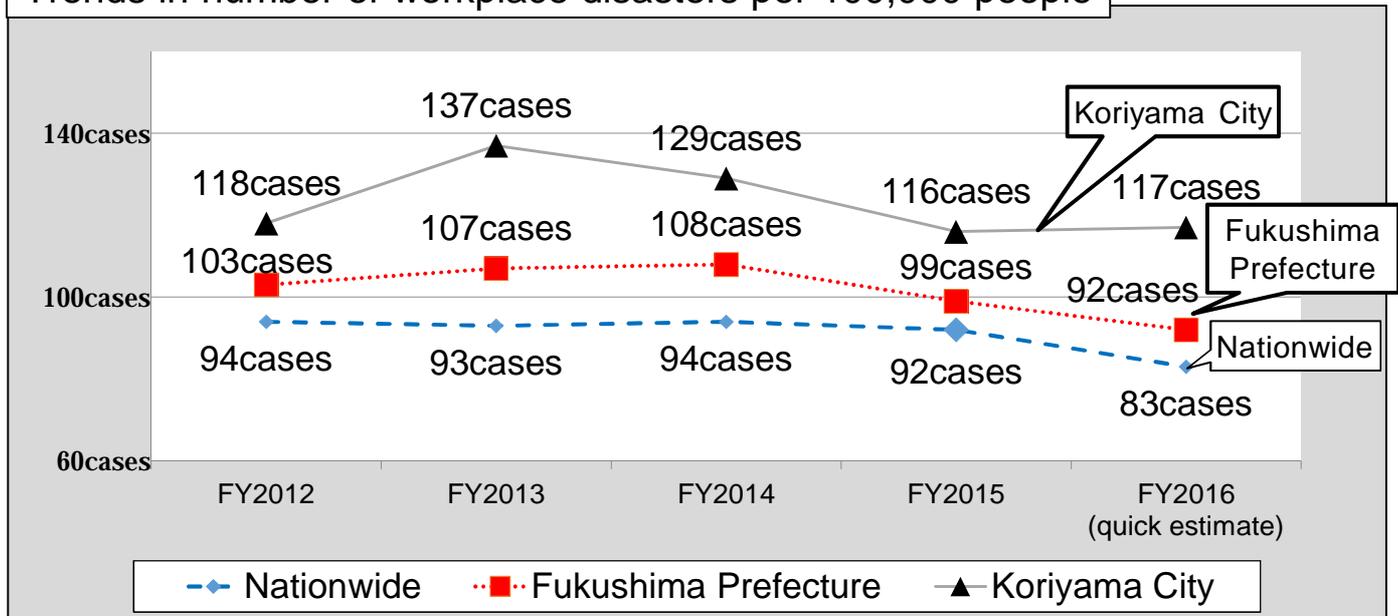
Source: Koriyama Fire Department Annual Report

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## Disasters in Koriyama City 4 Trends in number of workplace disasters

Trends in number of workplace disasters per 100,000 people

Fig. 12



Source: Ministry of Health, Labour and Welfare, Labor Standards Bureau; Fukushima Labor Bureau; Koriyama City Labor Standards Office "Situation of Workplace Accidents FY2012 to 2016"

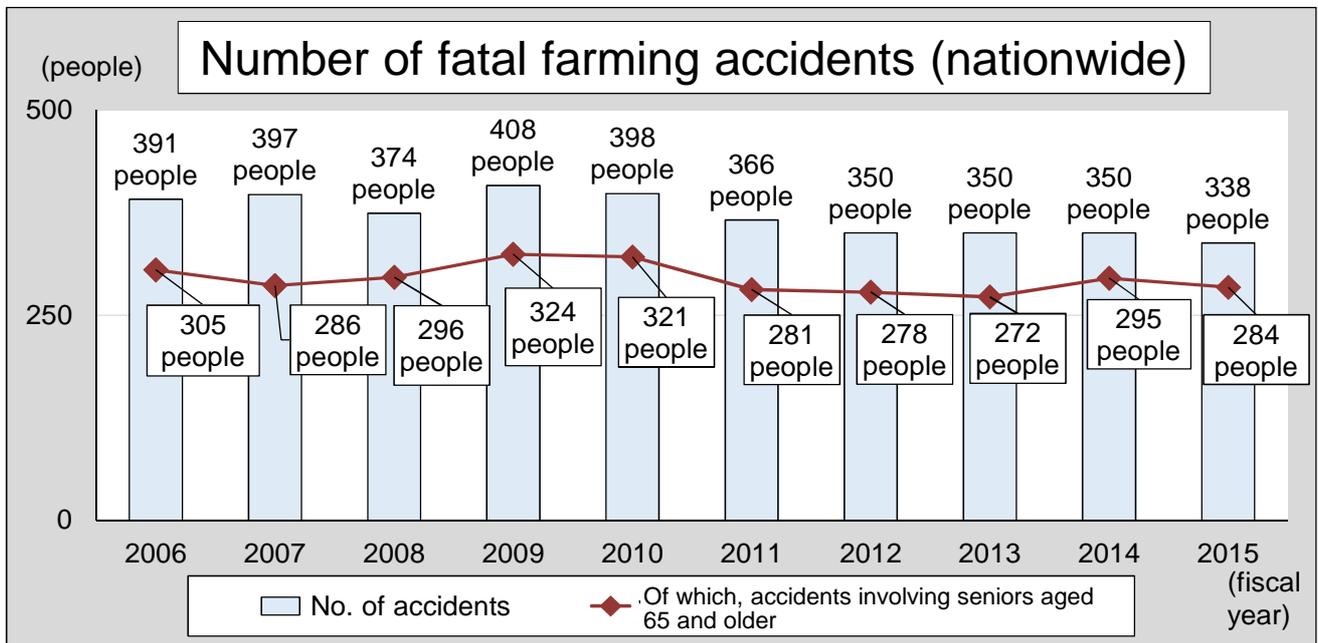
The number of workplace accidents per 100,000 people in Koriyama City continues to exceed nationwide and Fukushima Prefecture levels.

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“Farming” is not included in the industries targeted with the workplace disaster statistics.

Seniors ages 65 and older account for 80% of fatal farming accidents.

Fig. 13



2006 to 2015 Ministry of Agriculture, Forestry and Fisheries survey

## Citizen awareness 1 Concerns about disasters

69.7% of residents have concerns about natural disasters.

65.1% have concerns about health hazards caused by radiation, and

58.3% have concerns about fires.

(n=1,464) Fig. 14

Rank	Type	Ratio*
1	Injury from traffic accident	70.9%
2	Getting caught in natural disasters	69.7%
3	Health hazards due to radiation from nuclear power plant disasters	65.1%
4	Getting caught in fire	58.3%
5	Getting caught in criminal act	55.3%
6	Accident/injury from tumbling or falling, etc. while out	51.4%
7	Accident/injury from tumbling or falling, etc. at home	44.5%
8	Accident/injury at workplace	35.1%
9	Accident/injury during leisure or sports	33.0%
10	Accident/injury at school	26.0%
11	Psychological suffering caused by bullying or abuse	24.7%
12	Injury from violence (including bullying and abuse)	23.7%

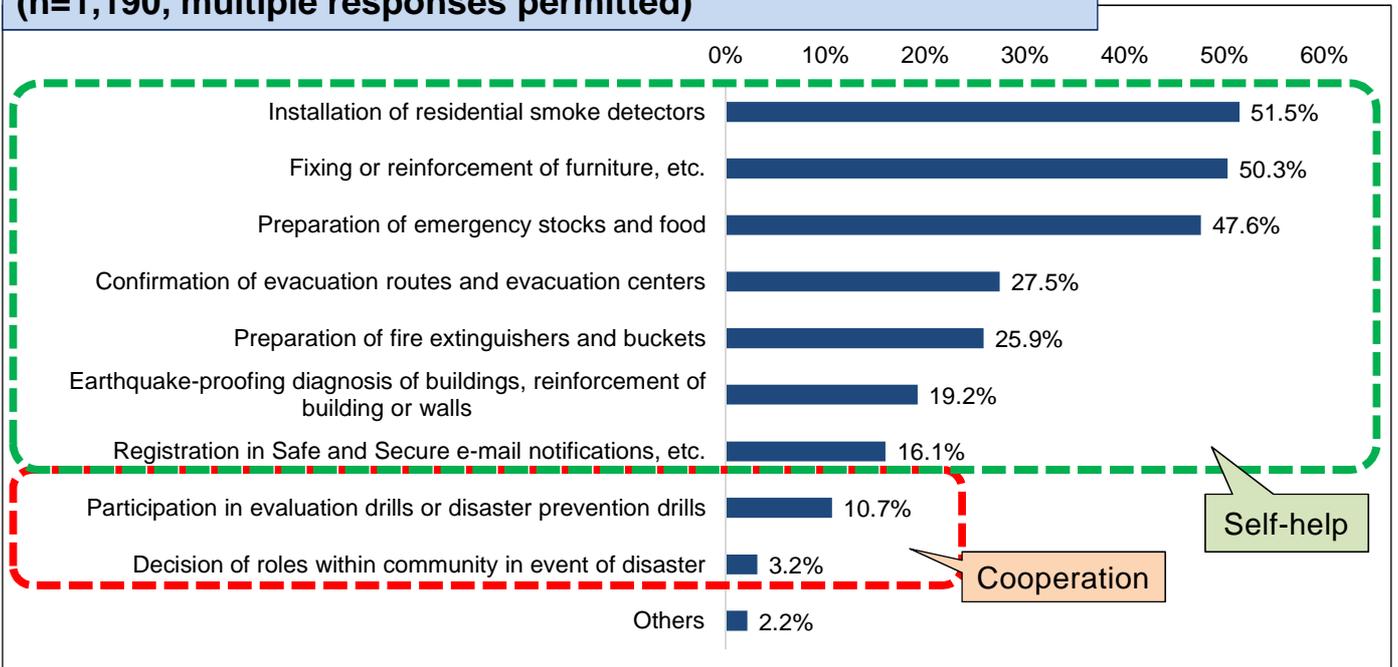
\* Ratio = Very concerned + Concerned

## Citizen awareness 2 Individual preparations for disasters

Some preparations have reached approx. 50%, but issues related to “self help” and “cooperation” are low.

### Disaster prevention measures taken in home by citizens (n=1,190, multiple responses permitted)

Fig. 15



Source: Koriyama City FY2014 Community Diagnosis for Safe Communities, Citizens' Awareness Survey

## Citizen awareness 3 Programs for disaster prevention activities

### Situation of current programs for disaster prevention activities FY2014

n=1,464

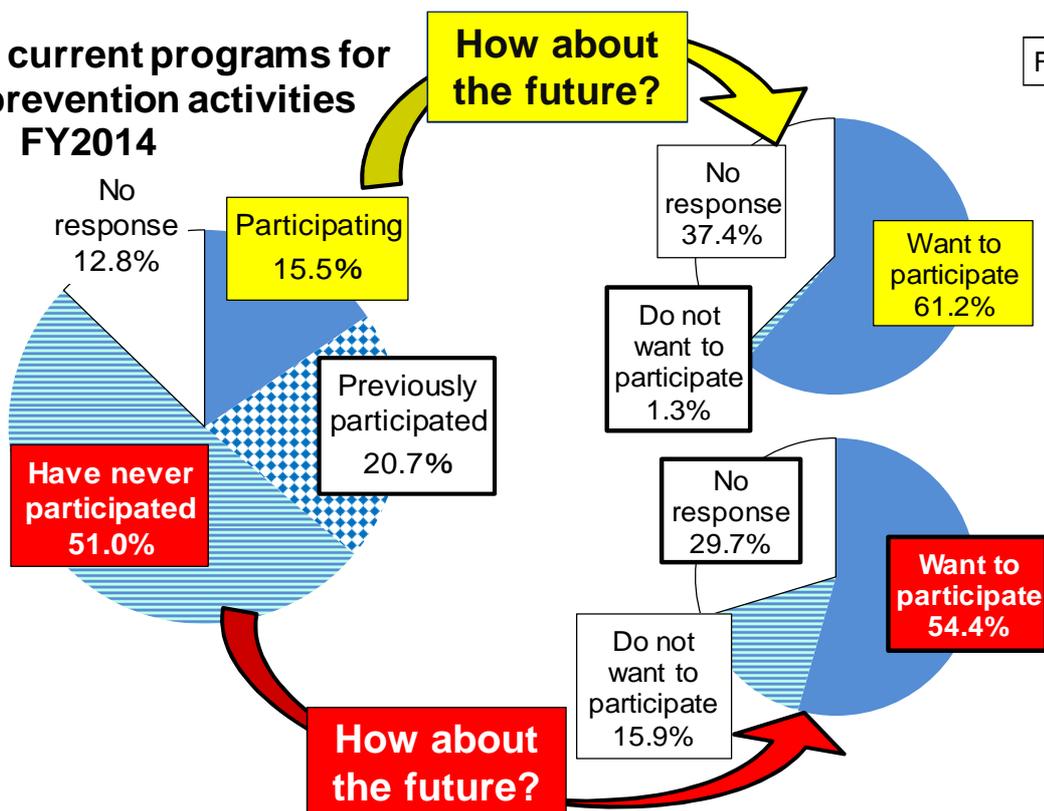


Fig. 16

Source: Koriyama City 2014 Community Diagnosis for Safe Communities, Citizens' Awareness Survey

# Citizen awareness 4 Participation in community

## Neighborhood Association

Neighborhood associations are the municipal organization that is closest to the residents. If a disaster occurs, they play an important role for evacuating and guiding people, etc.

### Example of roles \* Excerpt from Koriyama City Community Disaster Prevention Plan

Example 1 Evacuation and situation of evacuation shall be identified in neighborhood association units

As a rule, identification of evaluation situation or adjustment of contact with evacuees is conducted in neighborhood association units, each neighborhood association chair or a designated person should be the point of contact.

Neighborhood associations functioned effectively during the Great East Japan Earthquake.

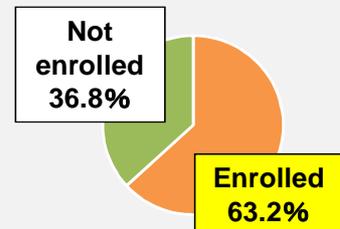


However, the membership rate is ...

Fig. 17

### Situation of neighborhood association membership (as of June 2016)

- ◆ No. of households registered in population register: 139,611 households
- ◆ No. of households with neighborhood association membership: 88,302 households



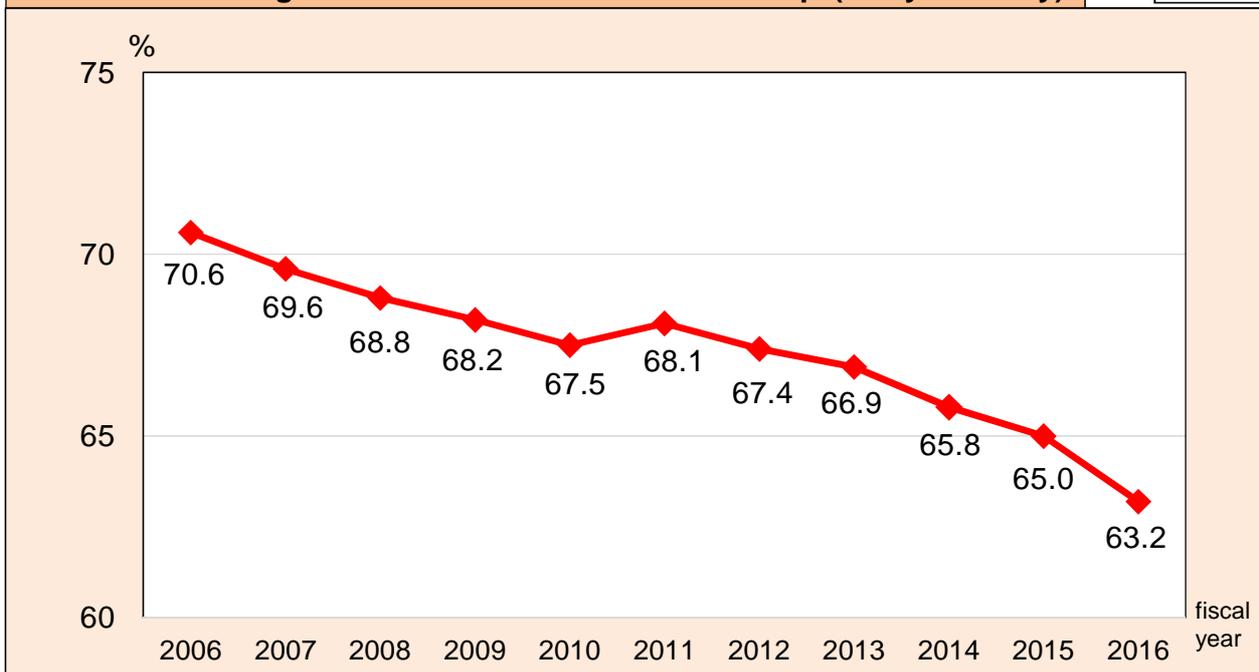
Source: Koriyama City survey

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Membership in neighborhood associations is continuing to decline. There are concerns that exchanges and cooperation within local communities will weaken.

### Transition of neighborhood association membership (Koriyama City)

Fig. 18



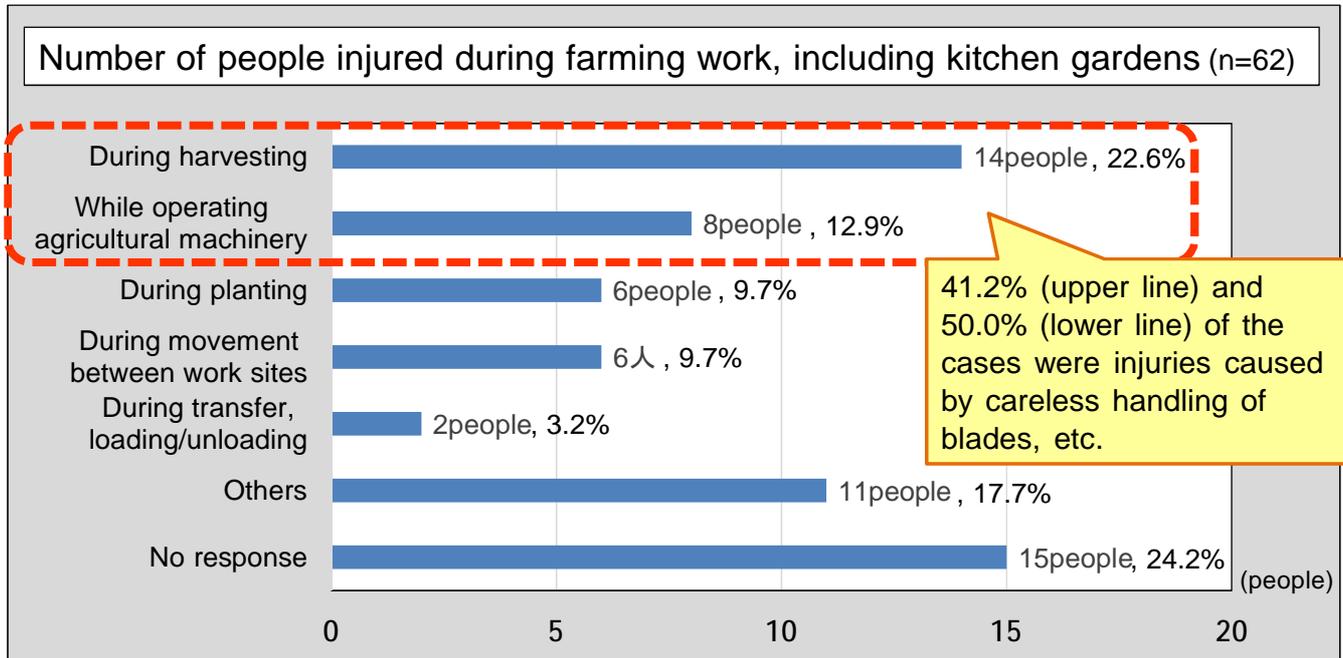
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## Citizen awareness 5 Causes and situation of injuries during farming

Injuries sustained during harvesting or while operating agricultural machinery were highest.

Most of the injuries were the result of careless handling of blades, etc.

Fig. 19



Source: Koriyama City FY2016 Community Diagnosis for Safe Communities, Citizens' Awareness Survey

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## 4 Selection of priority challenges

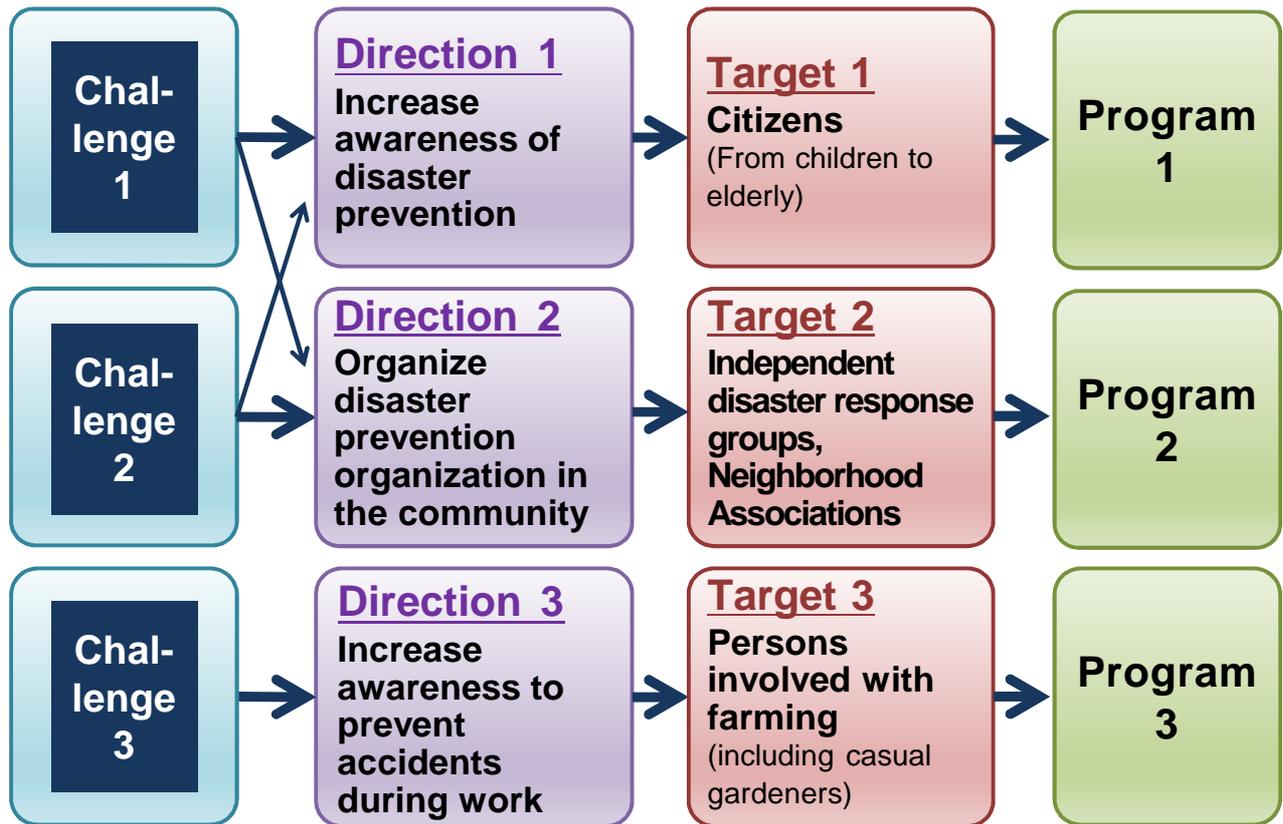
Fig. 20



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## 5 Directions, targets, and programs for challenges

Fig. 21



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## Outline of existing programs for challenges

Fig. 22

Challenge	Category	National level	Municipality level	Community level
1, 2 (common)	Environment improvement	Victim support system Improvement of community disaster prevention ability	Policy to support needy people Support and strengthening of disaster prevention organization	Mimamori-watching of people in need Evacuation guidance and rescue
	Rules/regulations	Preparation of laws, enactment of plans	Enactment of plans and manuals	Enactment of plan
	Education/promotion	Enforcement of drills and seminars	Distribution of disaster prevention information Holding of drills and seminars Creation and distribution of disaster prevention pamphlet	Holding of drills and lectures Safety inspections in the community Promotion of disaster prevention awareness
Challenge	Category	National level	Municipality level	Community level
3	Environment improvement	Opening of consultation services Labor insurance payment policy	Guides to consultation services	Safety and sanitation management
	Rules/regulations	Preparation of laws, enactment of plans	Enactment of manuals	Enactment of manuals
	Education/promotion	Promotion of safety and sanitation Holding of safety seminars	Promotion of safety and sanitation Holding of safety lectures	Employee training Promotion of safety inspections

\* Within jurisdiction of relevant Labor Standards Office

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# Example of existing program 1

**FY2017 Koriyama City Comprehensive Disaster Drills  
August 26 (Sat.), Oyamada Elementary School**



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# Example of existing program 2

**Publication and distribution of disaster prevention pamphlet (Koriyama City)**



Our Home's Disaster Prevention Handbook  
(Japanese version, multi-language version)

Hazard map  
(Flooding, landslide disaster, volcanoes)

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# Programs for challenge 1

Challenge  
1

There are serious concerns about natural disasters, etc., but awareness of disaster prevention is low.  
(Few people are prepared)



**Direction 1**  
Increase awareness of disaster prevention

To achieve this ...

Fig. 23

1. Start with the children (schools) and involve parents and grandparents
2. Confirm preparations in the home, evacuation routes, and notification methods

Main programs

- Promote of preparation of community disaster prevention maps
- Promote disaster prevention classes at public places (schools and community halls, etc.)
- Promote disaster prevention in the community (circular, events, etc.)

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## Promoting preparation of community disaster prevention maps

New!

Fig. 24

～自分のまちを探検しよう!!～  
**地域防災マップの作成**

※平成20年度に市立の小・中学校2校で実施（前年学習の作業）

- ★子どもたちが中心になり自分のまちを探検して、防災や避難に関する調査や発見・学習をします
- ★地域の情報を集めて、自分の住むまちに同じ持ち、防災意識を地域でのコミュニティを高める
- ★町山南防衛、地元の開閉日や自主防災組織などが協力しました

【4年主】マップづくりは楽しかったですか？

楽しかった	54%
あまり楽しかった	42%
どちらでもない	5%
あまり楽しなかった	19%
全く楽しなかった	0%

【4年主】自分の防災意識の変化

まったく増えしていない	32.2%
あまり増えしていない	54%
まあまあ増えている	42.2%
大きく増えている	07.4%
全く増えている	0%

【4年主】防災への関心の変化

まったく関心を持っていない	16.0%
あまり関心を持っていない	11%
まあまあ関心を持っている	48.4%
とても関心を持っている	63.2%
全く関心を持っている	0%

みなさんの学校や地域で「地域防災マップ」をつくってみませんか？

◇お問合せ先： 瀬山市総務防災危機管理課 (0924-216)

種別	会場	電話
公民館を借りる	防災準備室	924-2161
公民館の空き室を借りる	防災準備室	924-2161
公民館の空き室を借りる	河川課	924-2701
公民館の空き室を借りる	河川課	924-2701
公民館の空き室を借りる	上下水道課	922-7644

ぜひご利用ください！  
資料です。

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# Programs for challenge 2



**To achieve this ...**

Fig. 25

<ol style="list-style-type: none"> <li>1. Select pilot districts (Kurume District, Koriyama City)</li> <li>2. Increase exchanges (helping) within the community through disaster prevention activities</li> </ol>	
<b>Main programs</b>	<ul style="list-style-type: none"> <li>• Urge residents to participate in community disaster prevention activities (drills, lectures, etc.)</li> <li>• Conduct disaster prevention awareness survey (in district units)</li> </ul>

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## Citizen participation in disaster prevention activities (FY2017)

[Voluntary disaster prevention lectures] 89 participants

Survey conducted (n=66)

Want to help in community's disaster prevention activities: 72.7%

[City Comprehensive Disaster Prevention Drill] 5,000 participants

Survey conducted (n=53)

Was able to interact with people in the community 35.8%



Almost all people responded "I want to participate in future community disaster prevention activities"!



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# Disaster prevention awareness survey (Kurume District, Koriyama City)

Fig. 26

[Implementation period] March 2017 [No. of targets] 1,915 households  
[No. of collected surveys] 1,281 cases [Collection rate] 66.9%

Survey results

Excerpt

Survey item	Response	Rate
Opportunity to think about disaster prevention	<b>Interested in disaster prevention pamphlet</b>	<b>59.5%</b>
Awareness as a community resident	<b>“Cooperation” is important during a disaster</b>	<b>45.0%</b>
Revitalization of community	<b>“Cooperative relation with neighbors” is most effective</b>	<b>63.9%</b>
	<b>I want to participate in the future</b>	<b>70.9%</b>

We will apply these results to future activities in the future. A survey will be conducted again within a set period (1 to 2 years), to investigate changes in awareness and activities.

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## Programs for challenge 3



**To achieve this ...**

Fig. 27

<b>(1) Promotion at related stores and various opportunities</b> <b>(2) Increase of awareness of safety during farming, and implementation of measures</b>	
<b>Main programs</b>	<ul style="list-style-type: none"> <li>• <b>Promotion of measures to prevent heatstroke during farming</b></li> <li>• <b>Promotion of safety measures for familiar farming equipment</b></li> </ul>

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# Promotion of safety measures for farming

New!

笑顔を未来につなげよう セーフコミュニティこおりやま

## 農作業時の熱中症に注意しましょう!!

熱中症(野外活動中に発症)による年代別救急搬送人員 n=12

今年、8月15日までに熱中症によって市内107名の方が救急搬送されました(そのうち、12名が農作業などの野外活動中に発症)。

特に、**野外での長時間の農作業時**は、こまめな水分補給や暑さを避けるなど、熱中症対策をしっかり行いましょう。

提供: 郡山市地方広域連携協議会

**天気予報と体調の確認**

日頃から天気予報をチェックする。体調不良時は無理をしない。

**こまめな水分補給と休憩**

喉が渇く前に積極的に水分をとる。涼しい場所で適度に休憩する。

**暑さをしのぐ服装 安全な作業環境**

帽子と通気性の良い衣類を着用する。暑いハウスの中は風通しをよくする。

**高齢の方は特に注意!**

高齢の方は、暑さや喉の渇きを感じにくくなっています。周りの人も声をかけてあげましょう。

**体調に異変を生じたら作業中断!**

涼しい場所に避難させる → 衣服を脱がせ、身体を冷やす → 水分を補給する → 自力で水を飲めない、意識がない場合は直ちに救急隊を要請しましょう

郡山市は、けがや事故を防ぐ国際基準の安全・安心に取り組んでいます。郡山市セーフコミュニティ推進協議会 防災・環境安全対策委員会  
お問合せ 郡山市総務部防災危機管理課 TEL 024-924-2161

笑顔を未来につなげよう セーフコミュニティこおりやま

## 事前の点検・確認で農作業事故防止!!

農作業中の死亡事故は、全国で年間350件前後あり、そのうち機械作業に係る事故は60~70%を占めています。「慣れた作業だから」といって、ご自身の技術や知識を過信せず、もしもの事態を想像し、機械や保護具を正しく使いましょう。

農作業中にけがをした割合(状況別) n=82【平成28年市民意識調査】

作付中 24.2%  
農機具取付中 22.2%  
作業後の取付中 17.7%  
収穫中 22.2%  
運搬・積込中 3.2%  
その他 17.7%

身近な農業機械! **刈払機の安全対策**

**けがや事故が多い場面**

- 不安定な姿勢によるもの (滑った、転んだ、側溝などに転落した)
- 周辺環境によるもの (石や空き缶、チップソー飛散で負傷)
- 回転している刃によるもの (刃が回転したまま手足が接触して負傷)

自検・点検 防機巻込!

**けがをしないためには**

- 傾斜面・法面の一部に平坦な小さい段を設置、スパイク靴の着用も有効
- フェースガードまたはゴーグル、安全靴、飛散防止カバーなどを正しく着用
- 草むらに潜む穴や溜樹、切り株、大きな石、空き缶などがなければ**事前点検**
- 刃に絡まった草を取り除くときや刈払機を置くときは必ず**エンジンを停止**

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## Performance indicator

Fig. 28

Challenge	Program	Activity indicator	Performance indicator		
			Short-term	Mid-term	Long-term
1, 2	Promotion of community disaster prevention map preparation program	No. of promotions No. of copies distributed	No. of groups preparing maps		
1	Promotion of disaster prevention studies at public places (Schools and community halls, etc.)	No. of schools	Number of participants in traveling seminars, etc.		
1	Disaster prevention awareness in the community (Circular, events, etc.)	No. of circulars No. of leaflets distributed	Number of traveling seminar participants Number of people who have prepared for disasters		Increase in disaster prevention awareness
2	Promotion of participation in disaster prevention activities (Drills, lectures, etc.)	No. of promotions No. of copies distributed	Number of participants in disaster prevention activities		
2	Survey of Disaster Prevention Awareness (each district)	No. of times	Recognition of importance of cooperation		
3	Promotion of preventing injuries and accidents during farm work, and preventing heatstroke	No. of copies distributed	Recognition of safety Number of people implementing safety measures		No. of emergency transports

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# Past performance (FY2015 to 2017)

Fig. 29

Challenge	Program	Activity evaluation	Performance evaluation		
			Short-term	Mid-term	Long-term
1, 2	Promotion of community disaster prevention map preparation program	4 times Approx. 300 maps	4 schools Total approx. 170 people		<u>Survey scheduled</u>
1	Promotion of disaster prevention studies at public places (Schools and community halls, etc.)	4 times Approx. 300 maps	Total approx. 1,700 people		
1	Disaster prevention awareness in the community (Circular, events, etc.)	1 time Approx. 1,580 maps	No. of visiting seminars: total 1,700 people <u>Citizens' Awareness Survey scheduled</u>		
2	Promotion of participation in disaster prevention activities (Drills, lectures, etc.)	15 times Approx. 600 maps	Drills: total 15,000 people Lectures: approx. 300 people		
2	Survey of Disaster Prevention Awareness (each district)	1 time	Awareness of importance of cooperation: approx. 45% (reprint)		
3	Promotion of preventing injuries and accidents during farm work, and preventing heatstroke	Approx. 1,470 maps	<u>Survey scheduled</u>		
					<u>No. of emergency transports</u>

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## Problem points in each challenge, and how to proceed

Fig. 30

Priority challenge	Problem point	How to proceed
1	Schools have an annual curriculum, so it is very difficult to incorporate the program in this year's classes.	Promote the program to schools at an early stage before next year's curriculum is set.
2	Depending on the district, interest in the situation of disaster prevention activities and interchanges (cooperation) with neighbors varies.	Use examples of advance districts (pilot districts), etc., to spread interest to other districts.
3	It is difficult to improve the awareness of older workers who tend to overexert themselves and to an unspecified number of people with kitchen gardens.	Get opinions from cooperating stores, etc., and study methods and chances to gain the interest of targets.

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Thank you for your attention.

Disaster Prevention and  
Environment Safety Taskforce Committee