

E-agriculture Solutions Forum 2018



W A G R I

# **Agricultural Data Collaboration Platform**

**- Japanese Big Data Platform for Agriculture**

Nov.17<sup>th</sup> 2018

Agricultural Data Collaboration Platform  
Consortium, Vice President,

Hiroshi Uehara

(Professor, Keio University)

# Big data becomes common word

Big data demonstrates successful applications in several industries



## Play record

Acquiring Knowledge to overcome superior game players



## Medical paper

Acquiring Knowledge to automatic diagnoses

# Expectations for Agricultural Big Data in Japan (background)

Rapid declining farmers' population



1. Rapid expansion of deserted cultivated lands
2. Loss of experience and implicit knowledge

Area of deserted cultivated lands amounts well over **1%** of land area of Japan

# We need Integrated Agricultural Data Platform!

Prime minister's statement on the Future Investment Strategy 2017 for realizing society 5.0.

## Decision at Cabinet meeting

(summery)

“We should establish agricultural data platform '**Agricultural Data Collaboration Platform**' within this year(2017).”





# Agricultural Data Collaboration Platform

WA + AGRI

WA = Harmony in Japanese  
AGRI = Agriculture

Project has been started since 2017

Chairman : Atsushi Shinjo  
(Professor, Keio University)

- Founder of this project

- Vice President : Hiroshi Uehara  
(Professor, Keio University)
- Joined by approx. 10 companies



# Who use this?

## ~ Prime Minister's Another statement

"We should implement data services for fields of agriculture based on the platform, together with private corporations, etc."

Agricultural Data  
Collaboration  
Platform

Farmers

**B2B2C**

### Key Players

Agricultural Service  
Providers(private  
corporations)

The largest big data  
consortium has been  
established

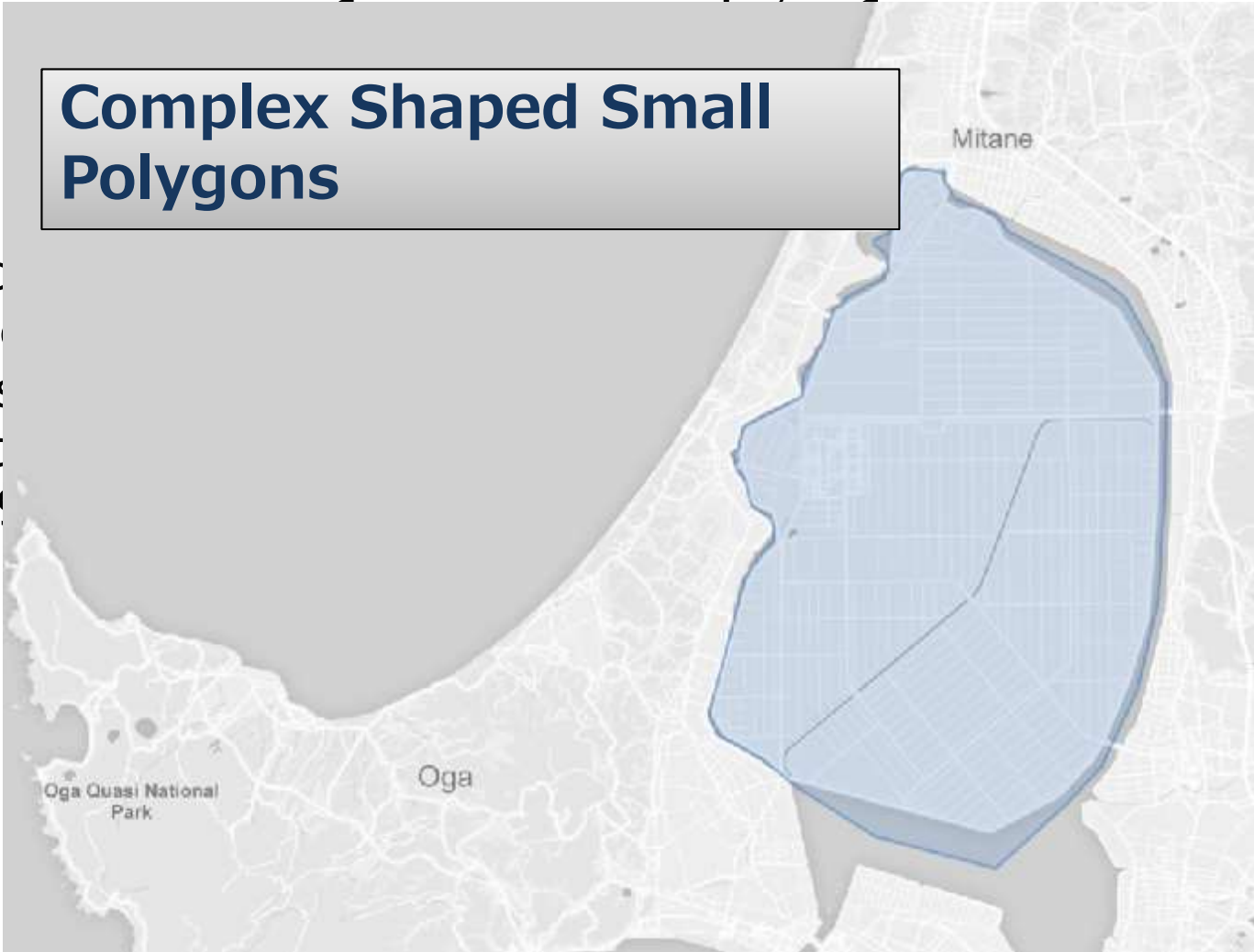
**250**

companies has been joined

# How big is agricultural data ?

example : Soil Classification

**Complex Shaped Small Polygons**



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'SoilLarg  
'Polygons  
'Longitud  
39.9494  
{'Latitud  
{'Latitud  
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F2',  
3,  
  
416596},  
3313014},  
3703512},  
059738

# Approx. 25 kinds of data are now implemented

■ Maser data

■ Polygon data

■ Prediction models

Contents

Providers

Master of Fertilizer

Food and Agricultural  
Materials Inspection Center

Master of Agrochemicals

Food and Agricultural  
Materials Inspection Center

Aerial Photographic Map

NTT GEOSPACE  
CORPORATION

Farm Land Polygons

**Massive Complex Polygons enables  
Precise expression of Cultivation  
Environments**

Agricultural Water Channels

Forestry and Fisheries

Micro Climate ( 1 km mesh grid)

HALEX CORPORATION

Micro Climate ( 1 km mesh grid)

Life Business Weather Inc.

Prediction of Growth Stage of Crops

Vision Tech inc.

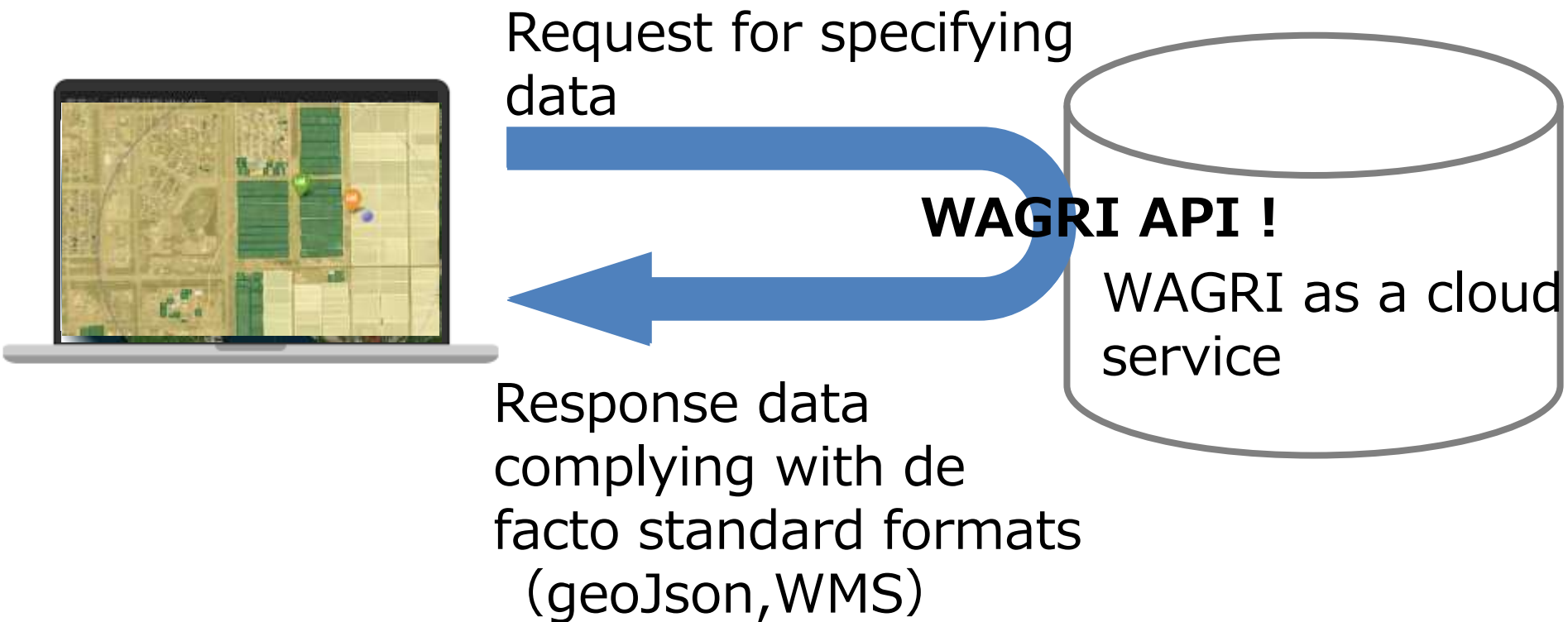
Soil Classification

National Agriculture and  
Food Research Organization



# Simple Data Retrieval

WAGRI provides with approx. **120** APIs(Application Programming Interface)

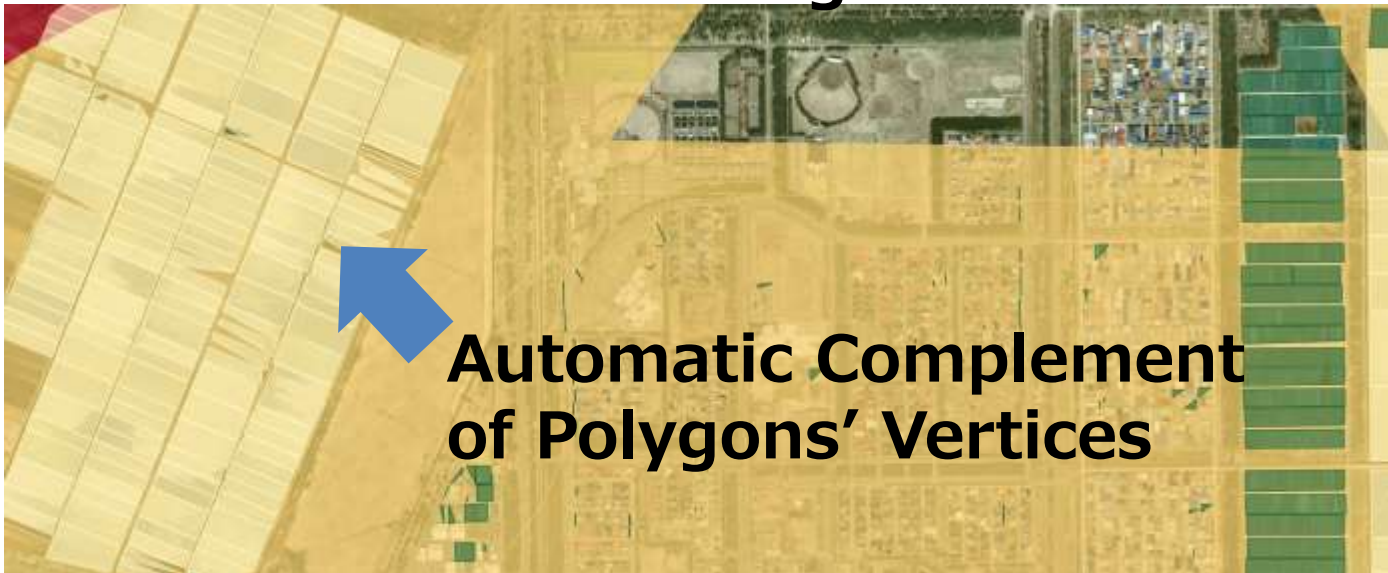


# Drawing Performance on Browsers

Zooming out



Zooming in



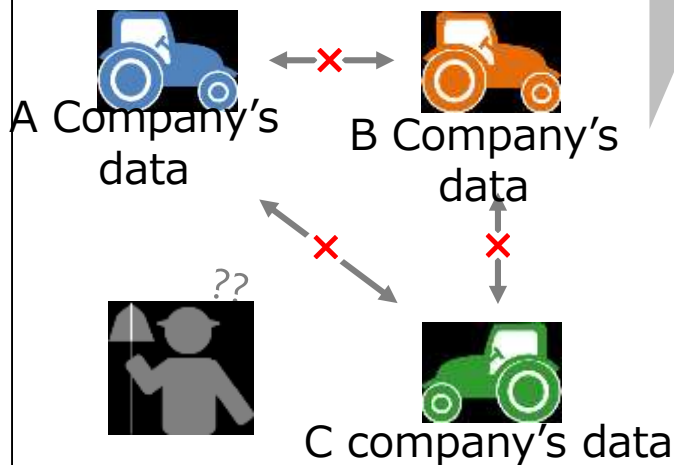
Automatic Complement  
of Polygons' Vertices

# Overcoming Barriers of Data Privileges

Empirical field trials undergo realizing private **data sharing** among multiple agri corporations

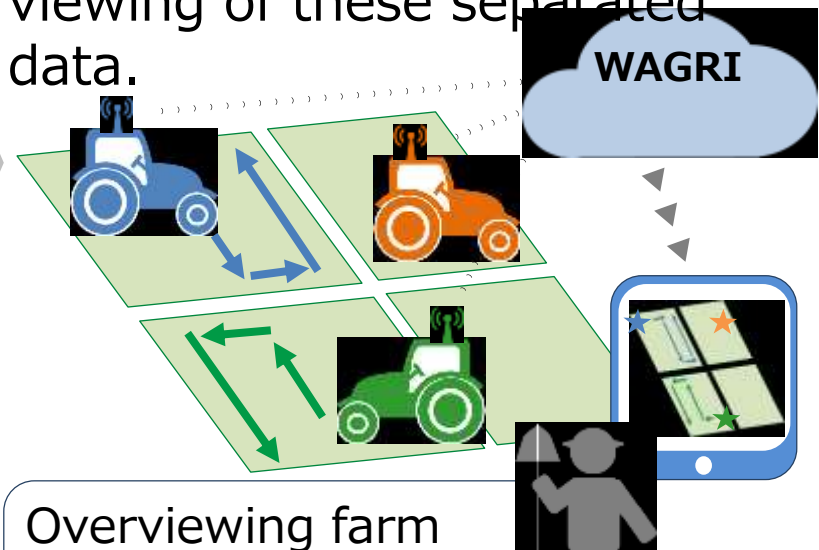
## 【Current issues】

Agri machinery companies hold their users' data exclusively with each other



## 【Purpose of the Trial】

WGRI enables integrated viewing of these separated data.



Overviewing farm lands' conditions as a whole

# An Example of the Data Sharing Trial



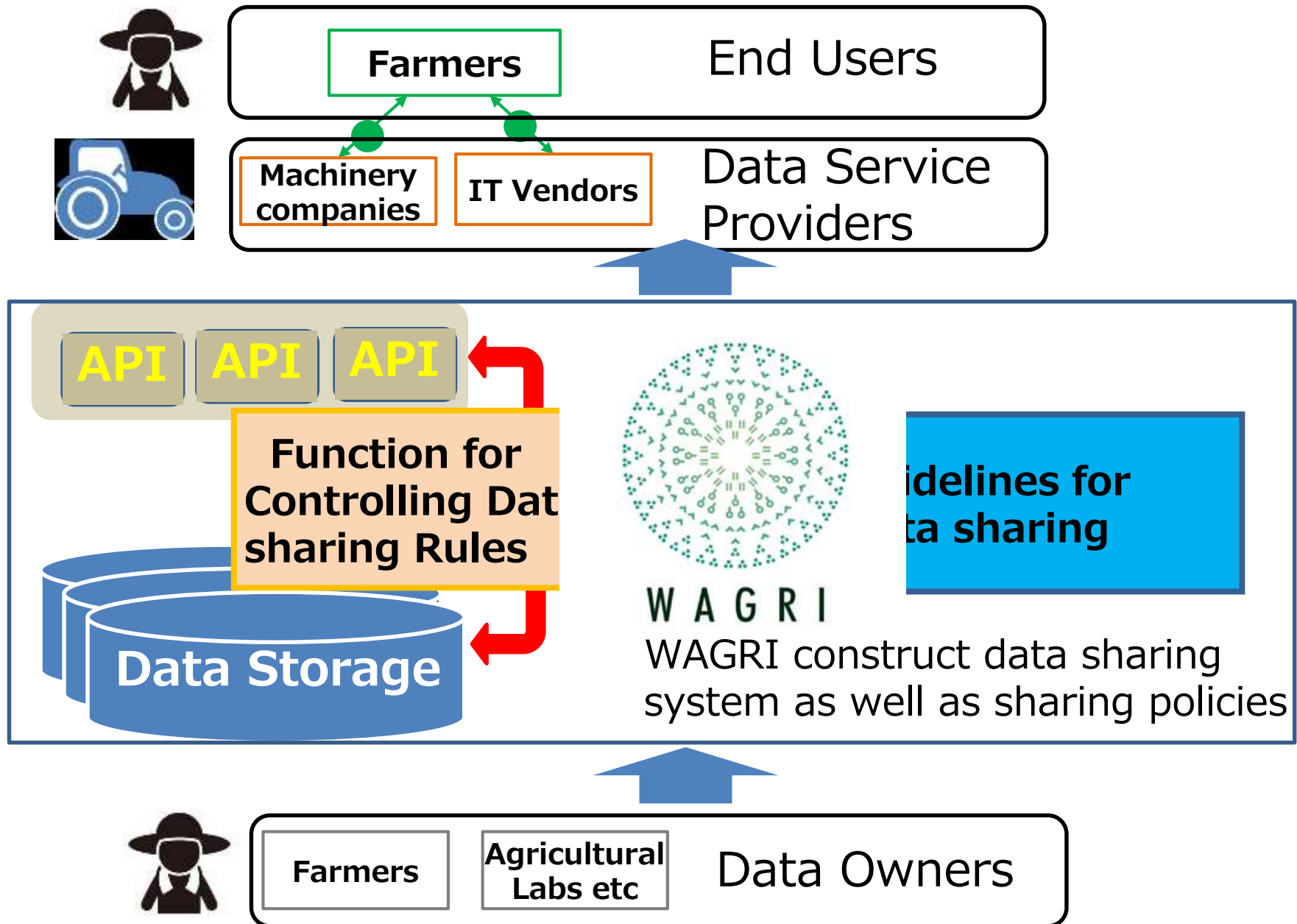
The interface displays a map with a green tractor icon and a red rectangular area. A blue arrow points from the tractor icon to a data popup window. The popup window contains the following information:

- オーナー: HNJ0011
- 機種: TJV783
- 号機: 48
- 開始日時: 2018-03-07 14:05:40
- 終了日時: 2018-03-07 15:34:40
- 補足情報:

Below the map is a video player showing a blue tractor with a red implement working in a field. The video has a timestamp of 00:00:36 and a video ID of 20180307\_140612.

Copyrights: NEC Solution Innovators, Ltd.

# WAGRI enables Rules of Data Sharing





W A G R I

# Thank you

**WAGRI contributes not only to constructing big data platform but also to policy making for agricultural data sharing**

WAGRI is one of Next-Generation Agriculture Project under Cross-Ministerial Strategic Innovation Promotion Programs conducted by Cabinet Office, and is administered by National Agriculture and Food Research Organization.