



# **Recent NIES's activity related to climate change adaptation**

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3rd International Climate Change Adaptation Platform Meeting  
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# Policy on Climate Change Adaptation in Japan

## ◆ Paris Agreement

**Climate Change  
Adaptation Act  
(Dec 1, 2018)**

**1<sup>st</sup> Statutory NAP  
(Nov. 2018)**

1<sup>st</sup> National Climate  
Change Impact  
Assessment  
(2013-2015)

National Plan for  
Adaptation to the  
Impacts of Climate  
Change  
(Nov. 2015)

1<sup>st</sup> Follow-up  
report (2017)

2<sup>nd</sup> Follow-up  
report (2018)

2013

2014

2015

2016

2017

2018

2019



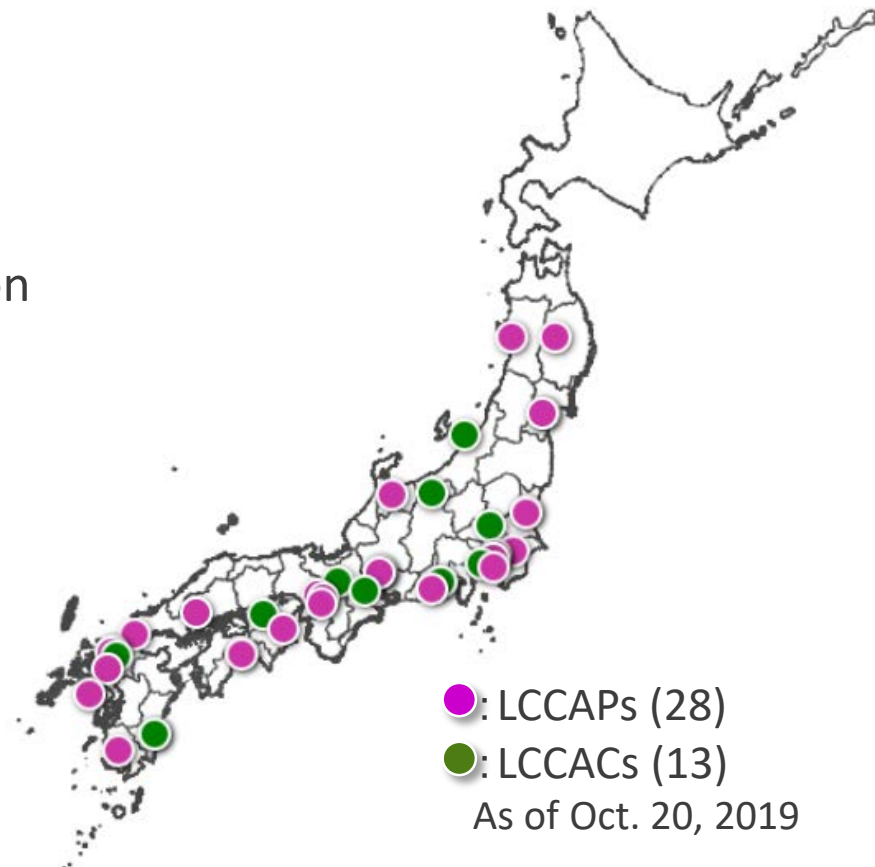
August 2016



Established in December 2018

# Climate Change Adaptation Act

- Local Climate Change Adaptation Plans (Article 12)
  - Prefectures and municipalities shall, either independently or in coordination with each other, endeavor to formulate a [local climate change adaptation plan \(LCCAP\)](#).
- Local Climate Change Adaptation Centers (Article 13)
  - Prefectures and municipalities shall, either independently or in coordination with each other, endeavor to establish systems that will function as centers (referred to as "[Local Climate Change Adaptation Centers \(LCCAC\)](#)").

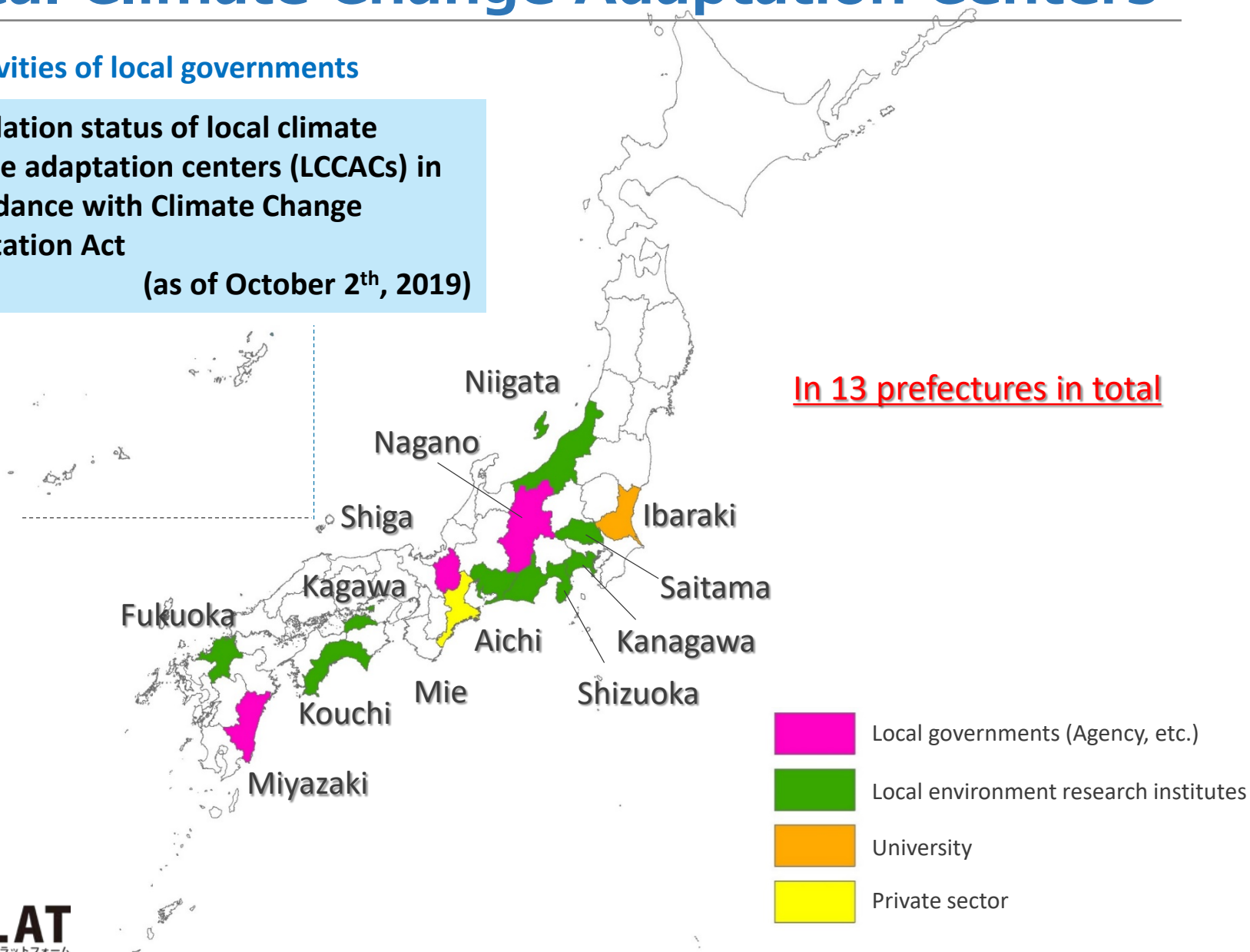


# Local Climate Change Adaptation Centers

## ■ Activities of local governments

Installation status of local climate change adaptation centers (LCCACs) in accordance with Climate Change Adaptation Act

(as of October 2<sup>th</sup>, 2019)



# Climate Change Adaptation Act

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- Development of domestic adaptation information infrastructure (Article 11)
  - Appoint NIES as the **core of information infrastructure for adaptation**
  - NIES shall:
    - **collect, organize, analyze and provide information** related to climate change impacts and adaptation; and
    - **provide technical advice and support** to local governments, local climate change adaptation centers and other institutions
  - NIES will:
    - **cooperate with other research institutions**; and
    - **foster public participation** in collecting information about climate change impacts

# Center for Climate Change Adaptation

## “Bridge between National and Local Adaptation Policies”

### National level

- Lead research projects with relevant institutes
- Collect and provide data and information
- Contribute to National Impact Assessment & NAP

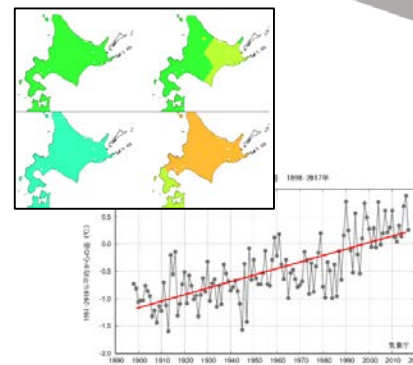
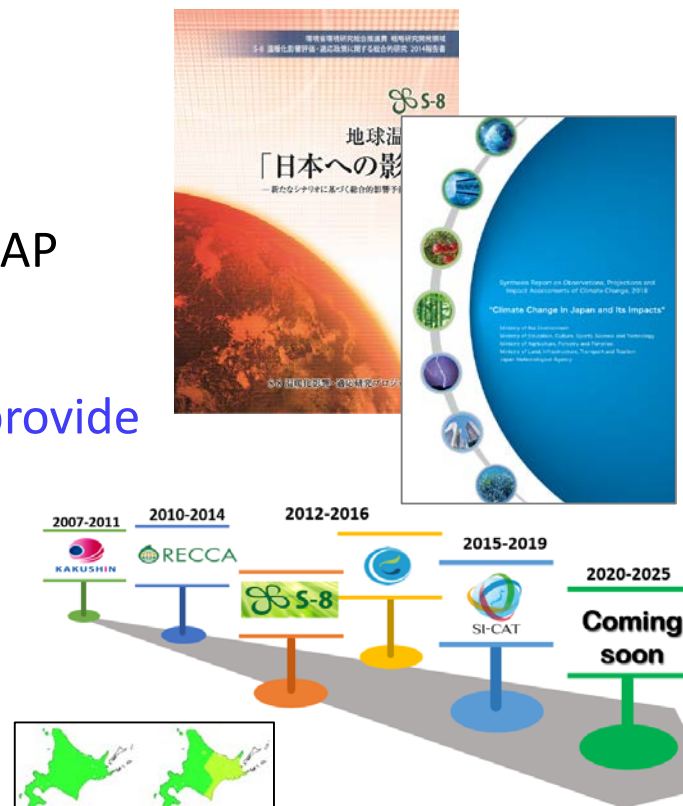


### Accumulate and provide

- data
- information
- knowledge
- experience etc.

### Local level

- Provide information via A-PLAT
- Support in developing LAPs
- Work with LCCACs







## A-PLAT

**A-PLAT** (Climate Change **A**daptation Information **Plat**form) , launched in 2016, is the "**One-stop**" online resource for adaptation to climate-change impacts in Japan.

- Support action of local governments, private sector, and citizen
- Collect and provide climate risk information and best practices;
- Develop tools for local adaptation plans.
- Operated by NIES in collaboration with MoEJ and relevant ministries



information  
 気候変動適応計画(2019)を地域気候変動適応計画に位置付けました。(2019/2/25)  
 千歳市の気候変動適応計画(2019)を地域気候変動適応計画に位置付けました。(2019/2/20)  
 「適応に関する情報」に千歳市の気候変動適応計画のリーフレットの情報を追加しました。(2019/2/20)  
 京都府と、京都府が協賛した「京都府気候変動適応計画の策定に関する研究会」を設立しました。(2019/2/19)



気候変動適応とは？



政府の取組



地方公共団体の適応



事業者の適応

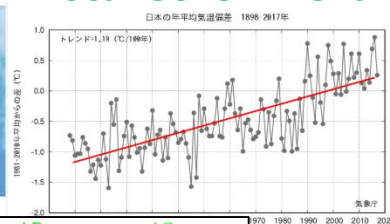


全国・都道府県情報

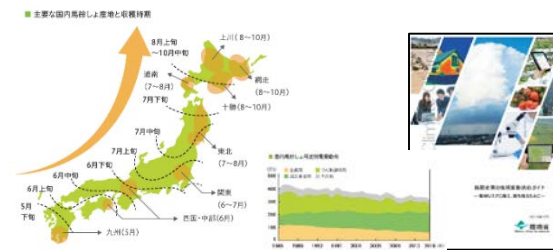


個人の適応

## Local Government



## Private sector



Citizen

Source: A-PLAT

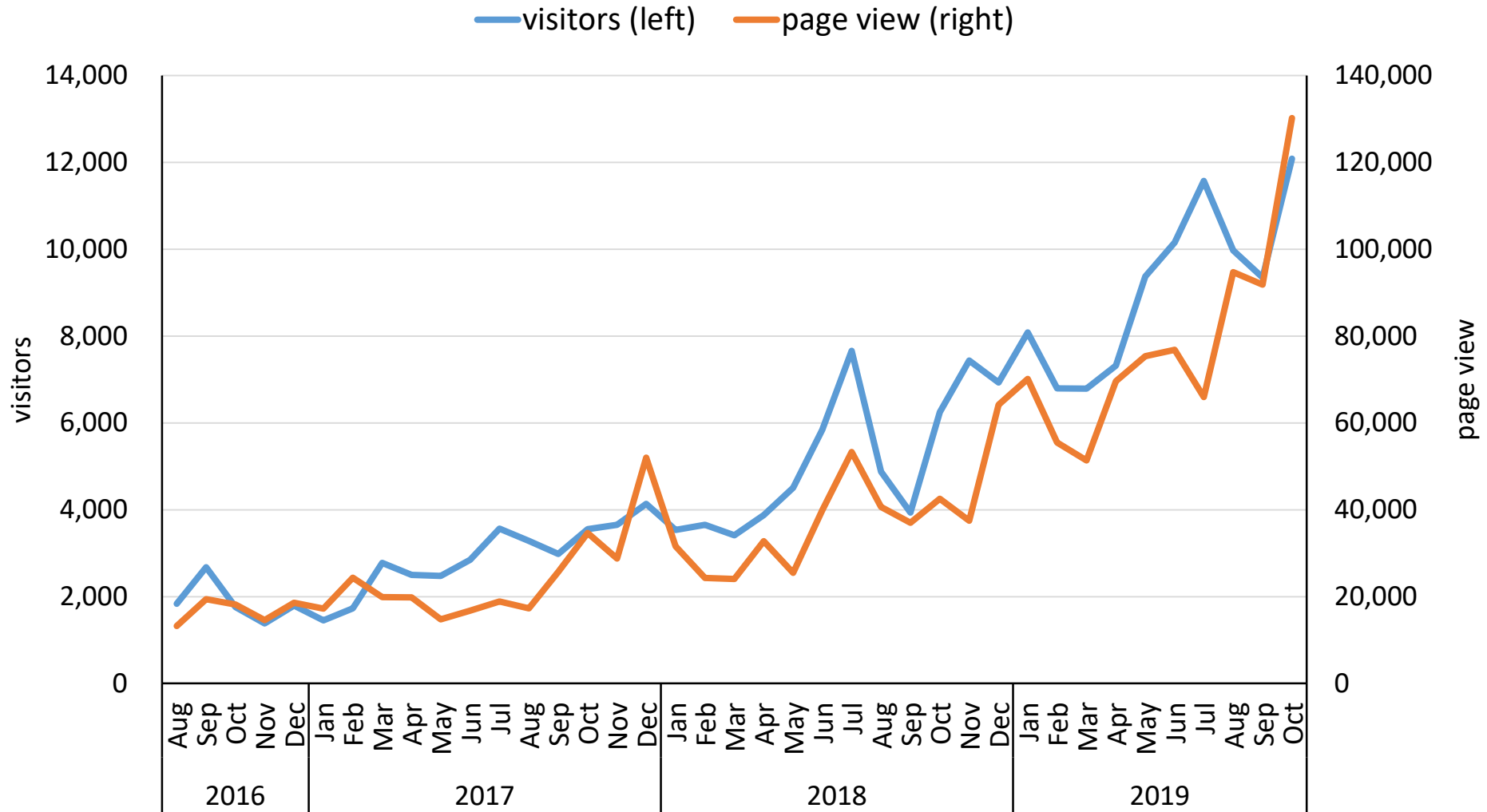


# Features of A-PLAT

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- One-stop platform
  - Provide all (or at least as many as we can) information related to climate change impacts and adaptation
    - Support activities of the national government, local governments, private sector, and citizens
    - Scientific data, regulations and guidelines, capacity building opportunities, etc.
- User-friendliness
  - Latest scientific information for non-scientists
    - GIS-based database
  - Categories based on the audience
    - Local governments: Guidelines on regional adaptation plans, good practices, interview, capacity development opportunities, support from CCCA
    - Private sector: Guidelines, documents, good practices
    - Citizens: Basic information on climate change adaptation, adaptation measures

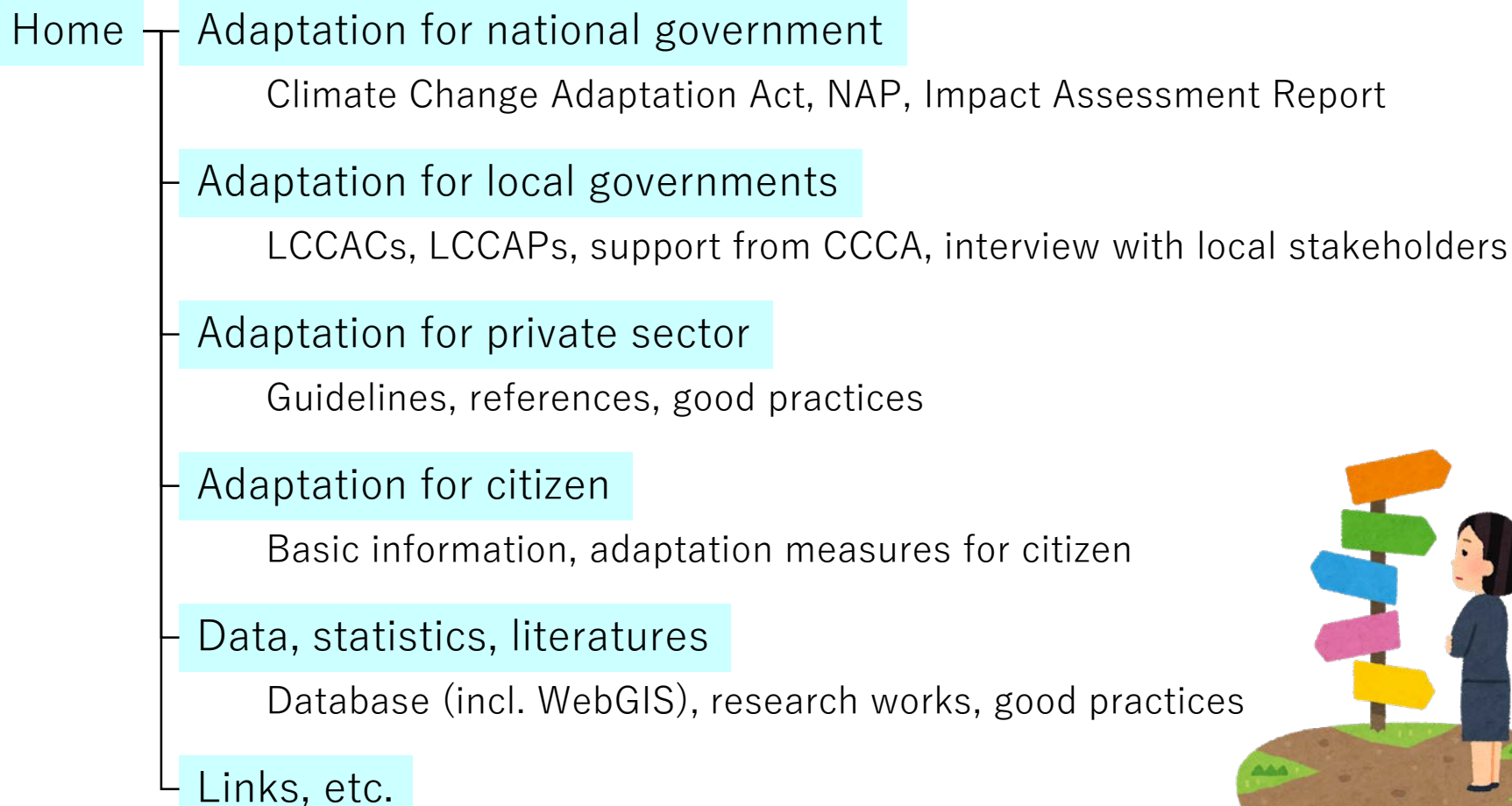
# Monthly access to A-PLAT



198k visitors and 1.6M page views as of October 2019

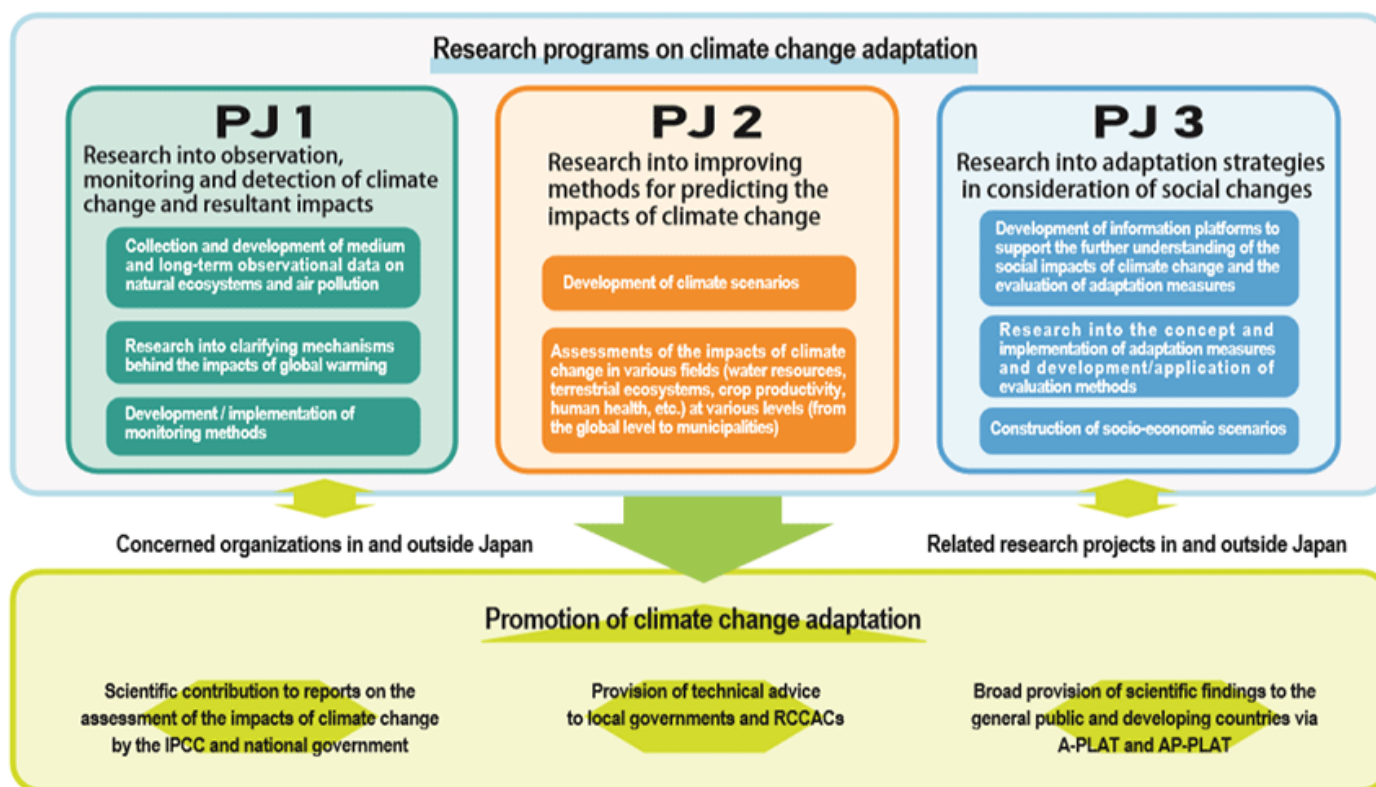
# Renovating A-PLAT

To improve accessibility of the contents in A-PLAT, which has been expanded one after another, we are currently reorganizing the A-PLAT website.



# Climate Change Adaptation Research Program

- In-house research program on climate change impacts and adaptation
  - Project 1: Observation, monitoring and detection of climate change and its impacts
  - Project 2: Improving methods for projecting impacts of climate change
  - Project 3: Adaptation strategies considering social changes
- Outcomes of this research program will be provided in A-PLAT and AP-PLAT to support decision making in climate change adaptation



# Collaboration with research projects, etc.



TOUGOU

Integrated Research Program  
for Advancing Climate Models



Outcomes of research projects



Climate observation data (AMeDAS)

**A-PLAT** CLIMATE CHANGE  
ADAPTATION  
INFORMATION  
気候変動適応情報プラットフォーム PLATFORM



Providing latest data and scientific knowledge through WebGIS system

## A-PLAT: next step

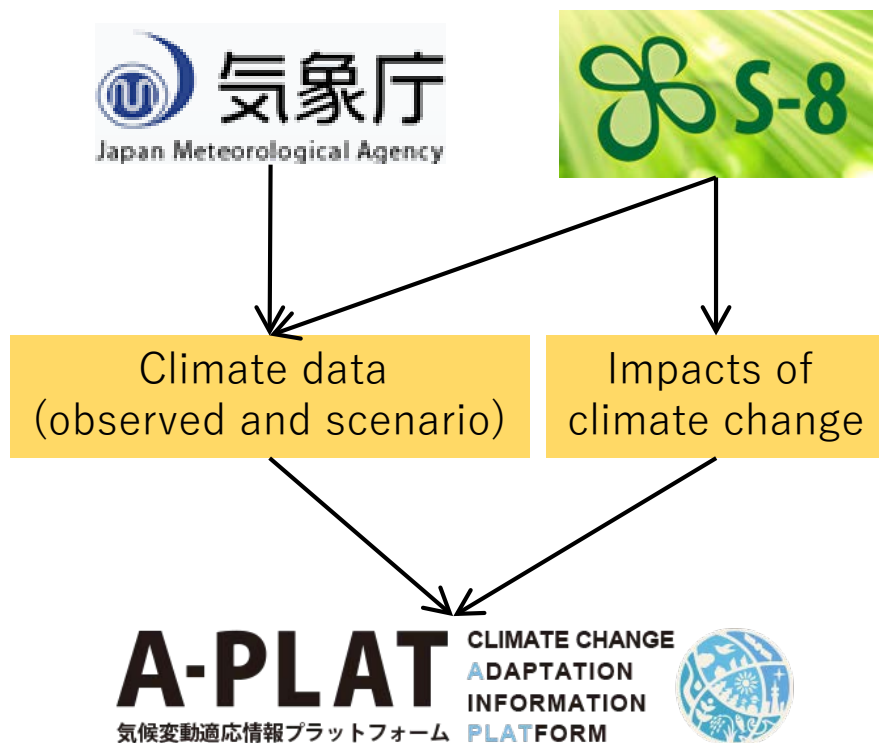
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- Renovate English site following the renovation of Japanese site
- Collect and provide outcome of research projects completing in FY2019 (March 2020)
  - Social Implementation Program on Climate Change Adaptation Technology (SI-CAT, MEXT)
  - Regional Climate Change Adaptation Consortium project (MOEJ)
- Upgrading database system to enhance linkage among the dataset
  - Climate observation and climate scenario
  - Climate scenario and its impacts
  - Climate impacts and adaptation measures



# A-PLAT: next step

## Current system



### Currently available climate data

- Average temperature
  - Annual precipitation
  - Hot days (e.g.  $> 30^{\circ}\text{C}$ ,  $35^{\circ}\text{C}$ )
  - Days exceeding 100 mm/day of rain
  - Maximum daily precipitation
- etc.

### Currently available impacts

- Rice yield
- Chlorophyll a concentration
- Potential habitat of some trees
- Landslide risk
- Sand beach retreat
- Potential habitat of mosquitos
- Heat stress

# A-PLAT: next step

Next step (FY2020-FY2024)



Climate data  
(observed and scenario)

Impacts of  
climate change

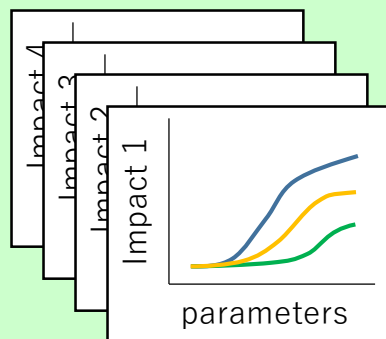
A-PLAT server  
(integrated analysis)



**A-PLAT** CLIMATE CHANGE  
ADAPTATION  
INFORMATION  
PLATFORM  
気候変動適応情報プラットフォーム

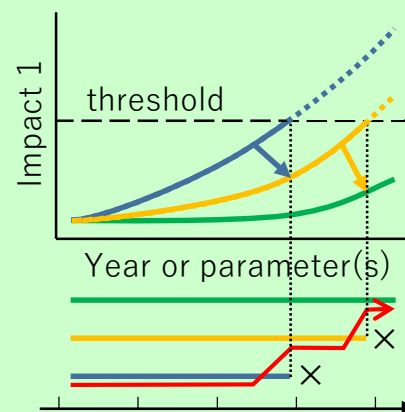


## Climate change impact emulator



- Machine learning (e.g. ANN, RF)
- New climate scenarios (e.g. IPCC AR6, AR7)

## Adaptation pathways analysis



- Prioritization of adaptation measures
- Synergies, tradeoffs

# The A-PLAT/AP-PLAT Web team

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## Members

Yoshifumi Masago, Masataka Hiroyasu, Mari Imaji, Hanae Maie,  
Kaoru Kishida, Yumi Oyama

## Roles of the Web team

- Organize and maintain the A-PLAT and AP-PLAT websites
- Provide scientific information related to climate change (observed data and climate scenarios) and its impacts through WebGIS system



# Adaptation for citizen



learn



take action

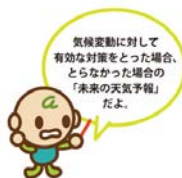


participate



What is climate change adaptation?

「2100年未来の天気予報」(新编版)



(2019.7.9)

Weather forecasts in 2100



How to prevent dengue fever



Wildlife observation



# Adaptation for citizen

learn



「2100年未来の天気予報」(新)

きこうはんどう えいさよう てきおう  
気候変動の影響への適応  
-未来のために今はじめよう！-



Click! ▶



(2019.7.9)

e-learning materials



picture scroll



その答えのひとつが、気候変動の影響への「適応」です。

「適応」とは、気候変動の影響を減らすこと、あるいは、人々の生活のあり方を減らすことなどです。

例 1 食を守るための「適応」

気温の上昇や強い日照によって、お米やリンゴ、ミカンなどの農産物が品質低下という影響が現れています。お米であれば高温に強い品種に変えたり、強い時期から作付け時期を調整したり、リンゴやミカンであれば日ばけで強い品種に守るなどが影響への対策「適応」といえます。



例 2 気象災害から暮らしを守るための「適応」

大雨による河川や下水道の氾濫、それにより生じる浸水被害を防ぐためのインフラ整備や、いざという時に安全に避難するための養成訓練体制の強化をすることも被害を減らすための「適応」といえます。



例 3 健康を守るための「適応」

気温の上昇により、熱中症で倒れる人の数が増えたり、病気を媒介する蚊の北上などの影響が出ています。水分補給をこまめにしたり、エアコンを適切に使用することによって熱中症を予防したり、虫刺されに気を付けるなど、一人ひとりが自分の健康を守るために行動することも「適応」なのです。



取り組みは既に始まっている！  
「適応策」はすぐ近くにもある！

実は、「適応」は身の回りでも既に取られています。行政（国や地方自治体）が行うものもあれば、企業や個人が行えるものもあります。みなさん知らない間に「適応」を行っているかもしれませんね。



他にもまだまだ沢山の「適応」があります。これから新しく生まれる「適応」もきっとあります。

※この中で掲載されている情報は、最新の情報を提供するため、一部変更や追加が行われる場合があります。ご了承ください。

※本プラットフォームの運営は、気候変動適応センター（気適セン）が行っています。

※お問い合わせ先：気候変動適応センター（気適セン）  
〒100-0001 東京都千代田区千代田1-1-1 気候変動適応センター（気適セン）  
TEL: 03-6261-1111 FAX: 03-6261-1112 E: info@climate-adaptation.jp  
※本プラットフォームの運営は、気候変動適応センター（気適セン）が行っています。

leaflets

# Adaptation for citizen

take action



Heat stress (MOE)

## 暮らしに役立つ情報

国の政策・施策・取組の中から、私たちの暮らしに身近な情報や役に立つ情報をまとめました。

記事の二次利用についてはこちら

「デング熱」にご注意を！

予防策は「蚊に刺されない」  
「蚊を発生させない」



平成26年（2014年）夏、例の報告がありました。デングの報告がなかった。デング、など、あらためて確認

※ 2016年発生地域が  
海外での感染に注意し



How to prevent dengue fever  
(Public Relations Office)

国土交通省

防災教育ポータル



Disaster prevention education portal (MLIT)





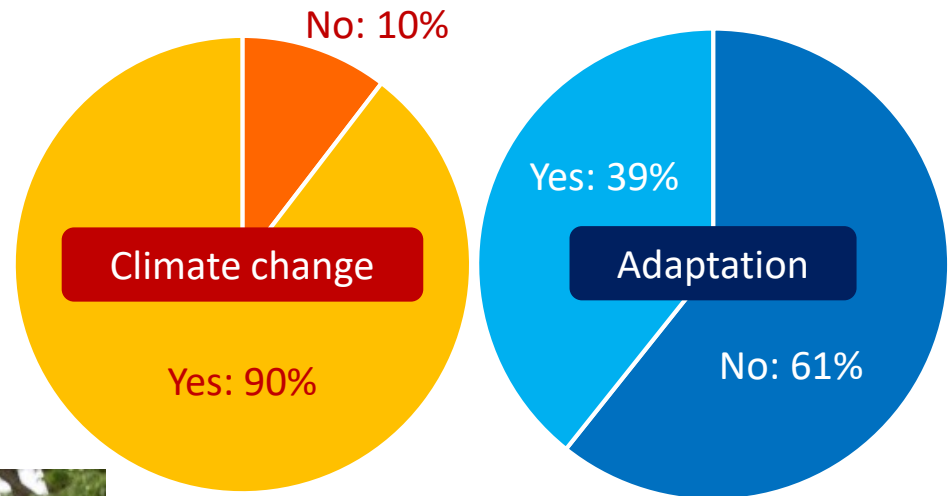
# Adaptation for citizen

participate



Questionnaire about climate change and adaptation at public events

Q: Have you heard about ...



Q: Have you noticed changes in...



# Adaptation for citizen: next step

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- Continue awareness-raising activities in public events
- Update “ABC of adaptation”
- Provide information and learning tools for young generation



The diagram illustrates the institutional framework for climate change adaptation in the Philippines, showing the flow of technical support and information sharing between national and regional levels.

**National Level:**

- National Government:** Represented by a building icon at the top.
- National Institute for Environmental Studies (NIES):** A central blue box containing:
  - cCcaA:** Center for Climate Change Adaptation (with a globe icon).
  - A-PLAT:** Adaptation Planning and Learning Action Team (with a globe icon).
- National research institutes:** Represented by a document icon on the left.
- Universities:** Represented by a graduation cap icon on the left.

**Regional Level (highlighted in a yellow box):**

- Local governments:** Represented by a building icon at the top.
- Local Climate Change Adaptation Centers (LCCACs):** A central green box containing a building icon.
- Universities:** Represented by a graduation cap icon on the right.
- Research institutes:** Represented by a document icon on the right.

**Interactions:**

- Technical support:** Indicated by pink arrows pointing from NIES to Local governments and from NIES to LCCACs.
- Information sharing:** Indicated by a pink arrow pointing from LCCACs back to NIES.
- Cooperation with research institutions:** Indicated by a dashed yellow line connecting National research institutes and Universities to NIES.
- Cooperation with regional institutions:** Indicated by a dashed yellow line connecting Universities and Research institutes to LCCACs.

**Beneficiaries:**

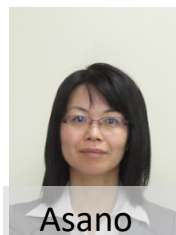
- Citizens:** Represented by orange human icons at the bottom of both levels.
- Private sector:** Represented by blue factory/building icons at the bottom of both levels.

# Local government support team

Attend various meeting  
to collect information



Contact point



Visit LCCAC



Develop support tools



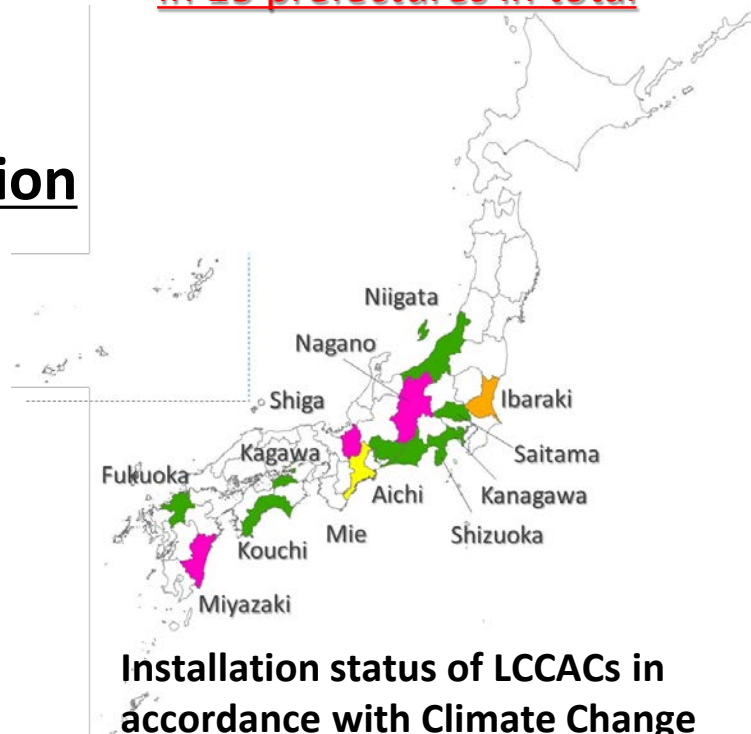
E KONZAL

# CCCA's collaboration project with LCCAC

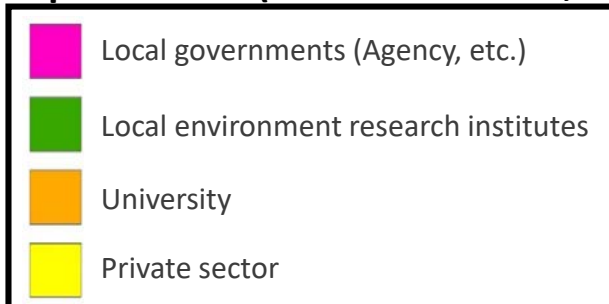
## Visit the all Local Climate Change Adaptation Center after their installation

- To know their activities and system
- To find their problem and needs

In 13 prefectures in total



Installation status of LCCACs in accordance with Climate Change Adaptation Act (as of October 2<sup>th</sup>, 2019)





# CCCA's collaboration project with LCCAC

## List of “Homework” from LCCAC

No.1 : Training on general knowledge about climate change  
 No.2 : Training to support local government for plan formulation, etc.  
 No.3 : Provision of a place to share information between regional adaptation centers and local governments  
 No.4 : Introducing human resources

No.7 : Research system that regional adaptation center can participate in  
 No.8 : Application support for Environment Research and Technology Development Fund of the Ministry  
 No.9 : Introduction of research institutes that can collaborate locally


No.10 : Giving examples of work expected from the regional adaptation center  
 No.11 : Consultation when collecting information and creating materials  
 No.12 : Provision of expertise and information required for research and study  
 No.13 : Training focused on data processing, etc.  
 No.14 : Clarification of precautions for business promotion  
 No.15 : Sharing case studies of other regional adaptation centers  
 No.16 : Strengthen cooperation between other regional adaptation centers and government  
 No.17 : Support for collaboration between departments  
 No.18 : Strengthen network between regional adaptation centers  
 No.19 : Accumulation of know-how


No.24 : Provision of information transmission and actions on adaptation-related by Ministries  
 No.31 : Provision of impact prediction data  
 No.32 : Provision of weather and impact observation data  
 No.33 : Provision of economic evaluation and damage amount information  
 No.34 : Collection and provision of impact information at the prefectural and local levels  
 No.35 : Support for collecting impact information  
 No.36 : Provision of questionnaire examples and formats

No.37 : Support for digitization of analog data for citizen participatory collecting information  
 No.38 : Support for labor saving of species identification work in species distribution research by citizen participatory collecting information  
 No.39 : Creating a mechanism for citizen participatory collecting information using mobile phone, etc.  
 No.40 : Creating a mechanism for sharing the data between regional adaptation centers  
 No.41 : Support for establishment of webpage  
 No.42 : Provision of a pamphlet format for the regional climate change adaptation center  
 No.43 : Support for regional climate change adaptation plan formulation  
 No.44 : Organizing past weather data

No.45 : Development of materials and tools for general knowledge on climate change  
 No.46 : Provision of explanatory materials for each stakeholder  
 No.47 : Provision of photos and illustrations on climate change impact  
 No.48 : Provision of tools and examples that can be used in educational scenes  
 No.49 : Online distribution of training, etc.

 :A. Dissemination program

 :B. Research & study

 :C. LCCAC's activities

 :D. Scientific knowledge

 :E. Developing tool

 :F. Developing document

# CCCA's collaboration project with LCCAC

## A) Dissemination program

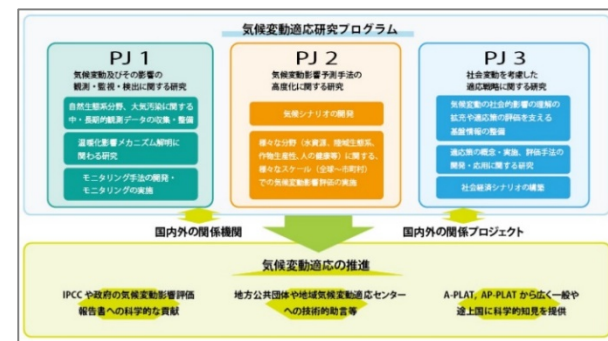
- Hold workshops for the general public on climate change (No.1)
- Hold workshops specializing in adaptation plan formulation (No.2)
- Provide opportunities to share information through opinion exchange meetings, etc. (No. 3)



Local government officers Workshop  
(Nov. 22 2019)

## B) Research & study

- Arrange system of research that regional adaptation center can participate in (No.7)
- Advice on the application for external research funds (No.8)
- Introduce research institutions and researchers that LCCAC can cooperate with (No.9)



Climate change adaptation research program  
(<http://ccca.nies.go.jp/ja/program/index.html>)

Blue: already started  
Black: in preparation

Vol. 1 Tokushima Prefecture	Vol. 4 Saitama Prefecture
Vol. 2 Hyogo Prefecture	Vol. 5 Nagasaki Prefecture
Vol. 3 Yokohama City	Vol. 6 Nagano Prefecture

- Vol. 1 Naruto wakame
- Vol. 2 Yamada Nishiki
- Vol. 3 Suji Aonori
- Vol. 4 1000-year Coral
- Vol. 5 Hyogo Prefecture Fishing Ground Environment  
Observation System
- Vol. 6 Phoenix Mutual Aid
- Vol. 7 Production of wakame seedlings by fishermen

## Vol. 8 Trial of protected sea turtle nesting areas

## Vol. 9 City planning to counter urban flooding

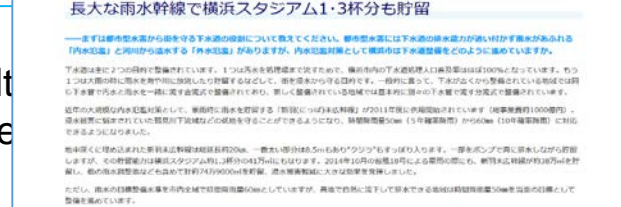
## Vol. 10 Fractal shade and reflective solar film

## Vol. 11 Applying scientific findings to prefectural measures!

Vol. 12 Temperature increase, harming fish food sources vs algacult

Vol. 13 20 years of meteorological observation. Monitoring connects

Vol. 1 Shiga Prefecture    Vol. 2 Ibaraki Prefecture



## D) Scientific knowdge (No. 34)

Latest information from  
each local government  
Website

### Hokkaido prefecture's Website

新着情報 告知 募集 催し 入札 助成制度 その他

**募集** 2019年08月23日  
[第6回北海道食育推進優良活動表彰候補者を募集中です!!](#)  
【農政部 食品政策課】

**告知** 2019年08月23日  
[【告示】測量法に関する「諸手続」に係る通知](#) 【建設部 総務課】

**募集** 2019年08月23日  
[令和元年度\(2019年度\)「新商品トライアル制度」認定企業を募集します](#) 【経済部 地域経済局中小企業課】

...

### Okinawa prefecture's Website

注目情報 新着情報

8月23日 [「県営住宅標準設計BIMモデル委託業務」に係る企画提案の募集について](#) **New**

8月23日 [毎月第3水曜日は、「手話推進の日」](#) **New**

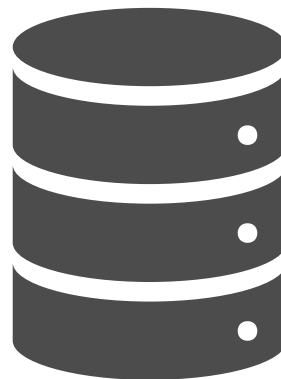
8月23日 [高齢者等見守りネットワークの構築](#) **New**

8月23日 [農用地利用配分計画](#) **New**

8月23日 [平成31年度赤土等流出防止交流集会開催のご案内](#) **New**

⇒ 新着情報一覧 RSS → 報道提供資料

Construct  
database



Develop  
Web application



# D) Scientific knowdge (No. 34)

気候変動

分野別影響 & 適応

地域別

検索ワード

表示期間

Climate Change

Agriculture, Forestry, Fishery Water Ecosystem

Natural hazard Health Economy Lifestyles of citizens

Nationwide Hokkaido & Tohoku Kanto Chubu

Kinki Chugoku & Shikoku Kyusyu & Okinawa

Keyword Search

Search by region

Search by any word

Search Period

2019 / 07 / 23 2019 / 08 / 23

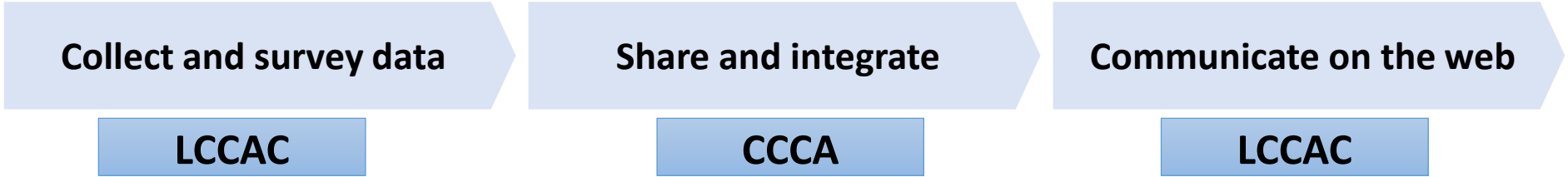
24件見つかりました。Result of searching (Regarding to climate change, nationwide, Period : July 23rd ~ August 23rd) → **23 information was found**

掲載日	自治体名	タイトル	リンク
2019-08-22	埼玉県	埼玉県在宅緩和ケア推進検討委員会	<a href="http://www.pref.saitama.lg.jp/a0703/zaitaku/zaitakukannwakeaiinkai.html">http://www.pref.saitama.lg.jp/a0703/zaitaku/zaitakukannwakeaiinkai.html</a>
2019-08-21	静岡県	くらし・環境部長トーク「ふじのくに地球環境史ミュージアムの「気候変動適応」展示の見学に行ってきました！」	<a href="http://www.pref.shizuoka.jp/kenmin/b_talk/h31/20190821tekioutenji.html">http://www.pref.shizuoka.jp/kenmin/b_talk/h31/20190821tekioutenji.html</a>
2019-08-19	神奈川県	神奈川県民間企業向け気候変動適応セミナー（横浜会場）※申込みは終了しました	<a href="http://www.pref.kanagawa.jp/docs/ap4/evt/20190826adapt-seminar.html">http://www.pref.kanagawa.jp/docs/ap4/evt/20190826adapt-seminar.html</a>
2019-08-19	熊本県	優良事業者表彰（事業者のくまエコ温暖化対策賞）	<a href="http://www.pref.kumamoto.jp/kiji_20668.html?type=top">http://www.pref.kumamoto.jp/kiji_20668.html?type=top</a>
2019-08-16	神奈川県	事業活動温暖化対策計画書制度	<a href="http://www.pref.kanagawa.jp/docs/ap4/cnt/f6674/index.html">http://www.pref.kanagawa.jp/docs/ap4/cnt/f6674/index.html</a>
2019-08-16	神奈川県	事業活動温暖化対策計画書制度一様式ダウンロード	<a href="http://www.pref.kanagawa.jp/docs/ap4/cnt/f6674/p20364.html">http://www.pref.kanagawa.jp/docs/ap4/cnt/f6674/p20364.html</a>
2019-08-16	神奈川県	事業活動温暖化対策計画書制度一記載の手引き	<a href="http://www.pref.kanagawa.jp/docs/ap4/cnt/f6674/p20365.html">http://www.pref.kanagawa.jp/docs/ap4/cnt/f6674/p20365.html</a>
2019-08-15	神奈川県	地球温暖化防止活動推進員のページ	<a href="http://www.pref.kanagawa.jp/docs/ap4/cnt/f430288/index.html">http://www.pref.kanagawa.jp/docs/ap4/cnt/f430288/index.html</a>
2019-08-15	神奈川県	神奈川県地球温暖化防止活動推進員の活動紹介	<a href="http://www.pref.kanagawa.jp/docs/ap4/cnt/f430288/p1169155.html">http://www.pref.kanagawa.jp/docs/ap4/cnt/f430288/p1169155.html</a>
2019-08-15	神奈川県	神奈川県の緩和ケア研修会について	<a href="http://www.pref.kanagawa.jp/docs/nf5/ganntaisaku/kyousei/kanwacare-kenshukai.html">http://www.pref.kanagawa.jp/docs/nf5/ganntaisaku/kyousei/kanwacare-kenshukai.html</a>

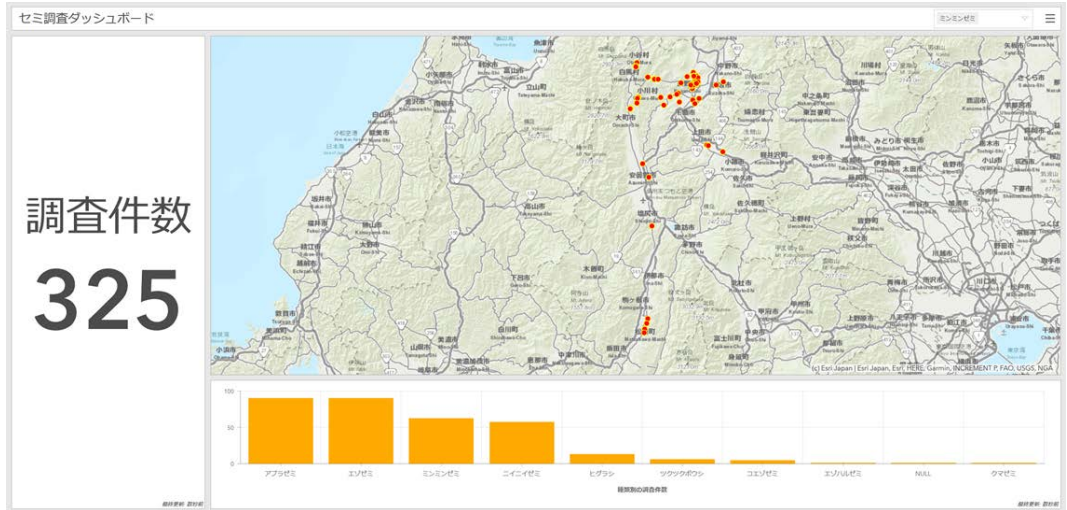


# E) Developing tool (No. 39)

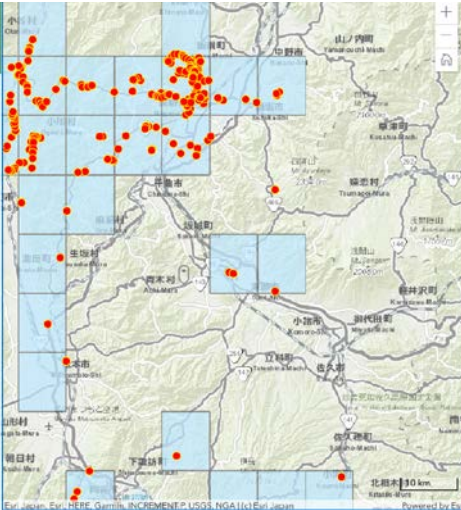
## Data sharing through web-based GIS



Examine cicada distribution



Analyze the cicada distribution



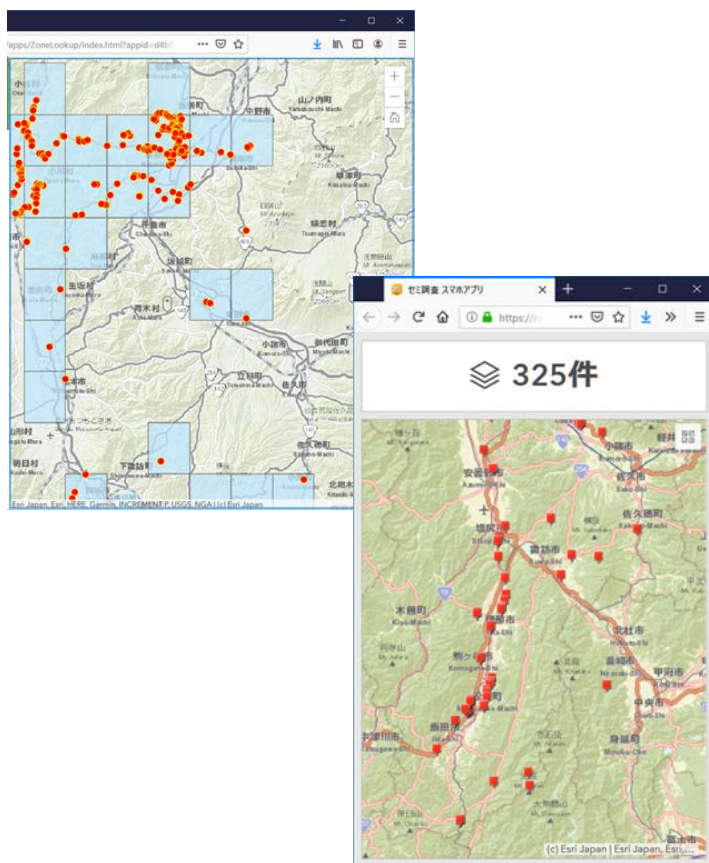
Provide the information of cicada distribution

Application example of ArcGIS Online in citizen participatory monitoring (Nagano prefecture)



## E) Developing tool (No. 31, 32)

### From LCCAC to CCCA

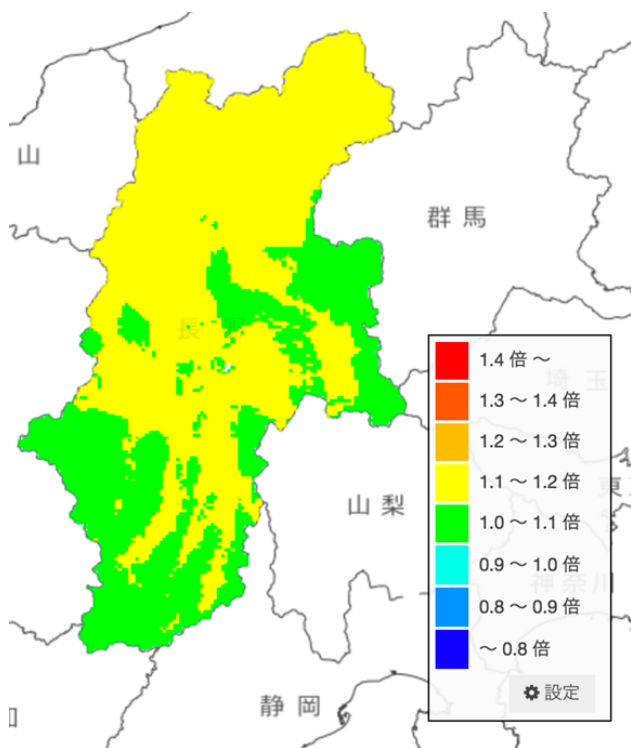


**CCCA will survey and integrate climate change impacts by region**



## E) Developing tool (No. 31, 32)

### From CCCA to LCCAC



Estimation of  
future precipitation  
per a year  
according to each RCP

出典：環境省 気候変動適応情報プラットフォームポータルサイト (<http://a-plat.nies.go.jp/webgis/nagano/index.html>) 平成29年5月2日に利用  
気候モデル：MIROC5、シナリオ：RCP8.5、対象期間：21世紀末（2080年～2100年）、基準期間：1981～2000年

From the website of a LCCAC (Local Climate Change Adaptation Center in Shinshu)

**Research findings of national projects are disseminated to  
local residents through LCCAC**

# F) Developing document (No. 46)

## Making presentation materials (for various stakeholder)

### 1. 気候変動の主な要因

気候は常に一定のものではなく、火山噴火などの**自然の影響**と温室効果ガスの排出などの**人間活動による影響**により変化している。

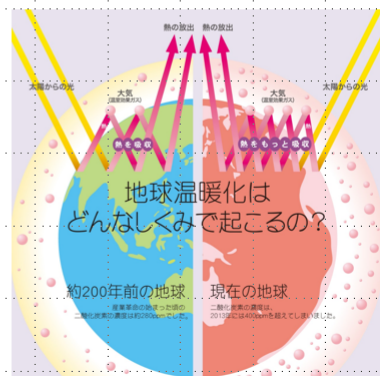
20世紀半ば以降に観測された気候変動は、人間活動による**温室効果ガスの排出**が主な要因である可能性が高いことが示されている。

#### 一地球温暖化の仕組み

二酸化炭素やメタン、フロンなどの温室効果ガスが地表面からの熱を一旦吸収

熱の一部を地表面に向けて放出

地表面はより高い温度となり、地球温暖化が引き起こされている



出典：温室効果ガスインベントリオフィス 全国地球温暖化防止活動推進センターウェブサイト (<https://www.jccca.org/>)

3

### 5.気候変動への対策

気候変動には「**緩和**」と「**適応**」の2つの対策が必要です

## 緩和とは？ 適応とは？



人間社会や自然の生態系が危機に陥らないためには、実効性の高い温室効果ガス排出削減の取組を行っていく必要があります。温室効果ガスの排出抑制に向けた努力が必要です。

緩和を実施しても気候変動の影響が避けられない場合、その影響に対処し、被害を回避・軽減していくことが適応です。

24

Ex. Explanation of climate change causes

Ex. Explanation of mitigation and adaptation

## 自治体支援



地域の適応推進を強化することを目的に、支援メニューを整理して随時更新していきます。

### 地域の適応

- ▶ 地域気候変動適応センター
- ▶ 地域気候変動適応計画
- ▶ 気候変動の観測・予測データ  
(全国都道府県情報)
- ▶ インタビュー
- ▶ 適応策データベース
- ▶ 地域コンソーシアム事業
- ▶ 気候変動適応計画
- ▶ 気候変動適応計画

### 関連リンク

- ▶ 気候変動適応計画

# All these tools will be provided from A-PLAT

01

### 影響の予測等の科学的知見の整理

テキストが入ります。テキストが入ります。テキストが入ります。テキストが入ります。

▶ 詳しく見る



### 地域適応計画・適応策の支援

テキストが入ります。テキストが入ります。テキストが入ります。テキストが入ります。

▶ 詳しく見る

02

# Forthcoming challenges

---

- How to follow up each LCCACs
  - We have kept in touch with some LCCAC after first visitation, but not all (especially inactive centers)
- Check whether our “Homework” is useful or...
  - We are doing “Homework” from LCCAC and we have to check whether our homework is useful for LCCAC and local government.  
ex. We collecting good practice to support in strengthening collaborating between departments.



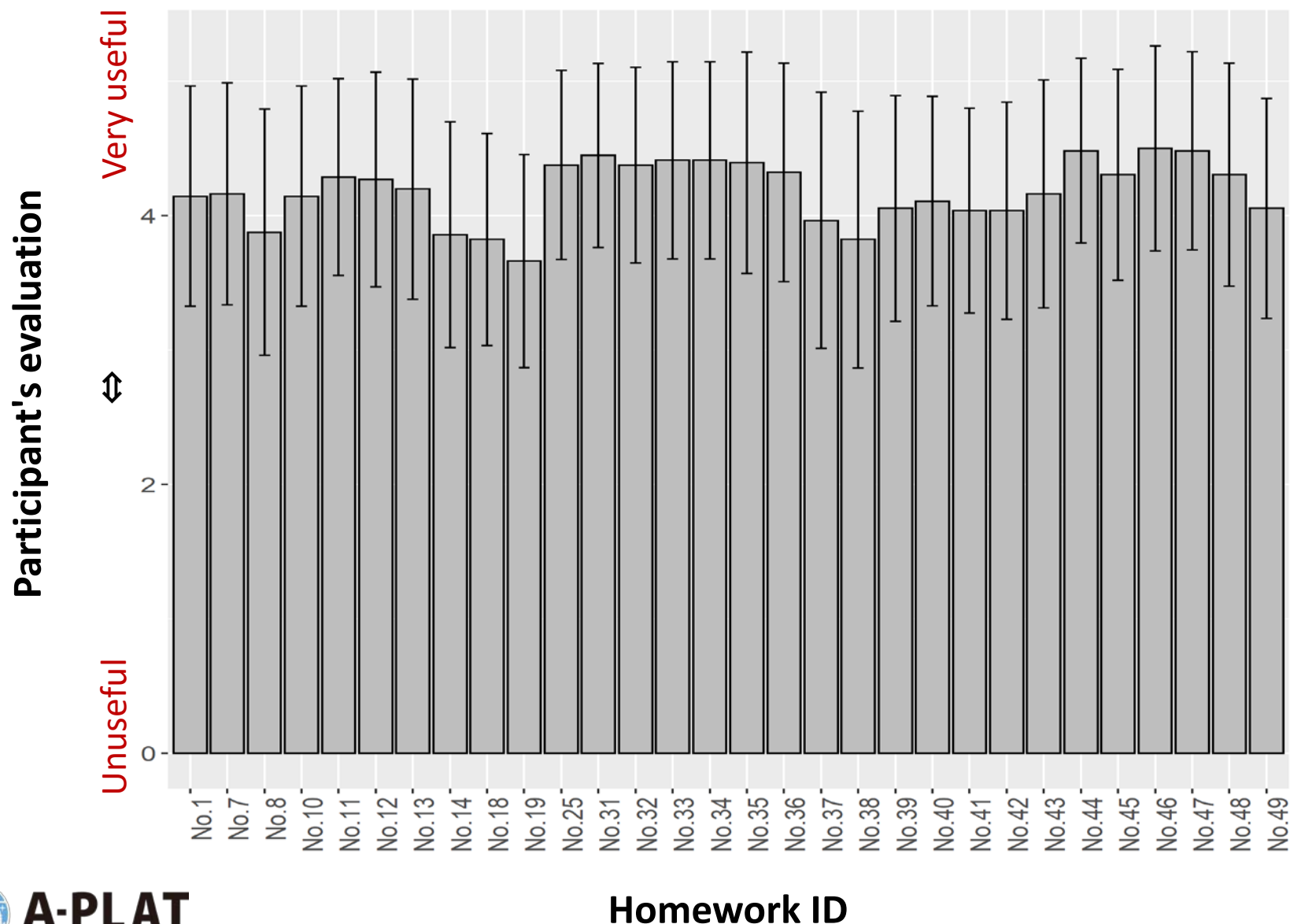
# Forthcoming challenges

支援メニューの内容	5段階評価
気候変動に関する基礎的な知識を習得可能な講座や研修会を開催	1 2 3 4 5
気候変動適応計画策定マニュアル（環境省作成）を用いた研修会を開催	1 2 3 4 5
情報共有するための場とし、年に一回程度全国の自治体関係者が一堂に会する意見交換会を開催	1 2 3 4 5
各分野の専門家（大学の先生や研究所の研究員等）や各種人材（自治体主催シンポジウムへの登壇者）の紹介	1 2 3 4 5
気候変動及び適応に関する基本的な内容を学ぶための資料（e-learningなど）をA-PLAT上に公開	1 2 3 4 5
過去に開催したイベントで使用了資料をA-PLAT上に公開	1 2 3 4 5
国環研と地域気候変動適応センター等との研究交流を促進し、環境研究の発展及び気候変動適応法第11条に定める地域への技術的援助を図るために行う気候変動適応に関する地域気候変動適応センター等との共同研究	1 2 3 4 5
地域気候変動適応センターが環境省環境研究総合推進費等へ申請を検討する際、研究プロジェクトの企画や申請書作成などへの助言	1 2 3 4 5
気候変動影響や適応関連の研究者や研究機関を紹介	1 2 3 4 5
地域適応センターの期待される業務内容を整理し、A-PLAT上に公開	1 2 3 4 5
気候変動影響や適応に関するFAQを作成し、A-PLAT上に公開。また、個別の疑問、質問にも対応	1 2 3 4 5
調査や研究に必要な専門的な知見や情報に特化した勉強会の開催	1 2 3 4 5
地域適応センターの業務に特化したGISのマニュアルを提供、A-PLAT上に公開。	1 2 3 4 5
地域適応センターが業務を実施する上で注意すべき、法律や倫理規定を整理し、A-PLAT上に公開	1 2 3 4 5
各地域適応センターの活動内容等についてインタビュー形式で、A-PLAT上に公開。	1 2 3 4 5
他機関との連携についてステータインタビュー形式で、A-PLAT上に公開。また、スクホルダー連携のガイドブックなどを整理し、A-PLATで公開。	1 2 3 4 5
部局間連携の優良事例についてステータインタビュー形式で、A-PLAT上に公開	1 2 3 4 5
他地域適応センターとの情報共有の場として掲示板やメーリングリスト作成等を検討中	1 2 3 4 5
アドバイザー（異動したOB/OG）登録制度を検討中	1 2 3 4 5

- Survey on usefulness of our “Homework” at opinion exchange meetings (Nov. 22).
- Participants evaluated on a scale of one (**Unuseless**) to five (**Very useful**) .



# Result of the evaluation



## Result of the evaluation

---

- **No. 19** (Accumulation of know-how) has lowest score on the survey.  
→ We need to improve the menu.
- **No. 38** (Support for labor saving of species identification work in species distribution research by citizen participatory collecting information) has highest standard deviation.  
→ It suggests that the usefulness varies among participants (local government?).

# Adaptation Business

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## ● Objective

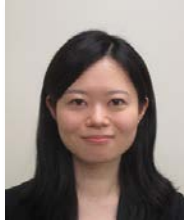
- To distribute information on climate change impact and adaptation to private sector.

## ● Members

- Kazutaka Oka (vision, contents)



- Haruka Shinohara (contents)



- Fuyuki Harada (contents)

- Hiroyasu Tanaka (contents)



- Takahiro Oyama (contents)



- Jun Sunagawa (contents)



# Adaptation Business

## ● Contents

### 1. Adaptation activities by private sector



17 Cases(domestic)  
+15 Cases(overseas)



50 Cases





# CLIMATE CHANGE ADAPTATION PLATFORM

# Adaptation Business

## ● Contents

### 2. Adaptation guide for private sector

#### ■ Climate Change Adaptation Guide for Private Companies



民間企業の気候変動適応ガイド  
- 気候リスクに備え、勝ち残るために -

民間企業向け適応ガイド-気候リスクに備え、勝ち残るために- NEW



TCFDを活用した経営戦略立案のススメ  
- 気候関連リスク・機会を織り込むシナリオ分析実践ガイド -

本編 PDF(約3MB)

参考資料編 PDF(約3MB) NEW

環境省地球温暖化対策課  
2019年3月

\* prepared by ministry of the environment, Japan

#### ■ Promotion of management strategy planning using TCFD

### 3. References/documents

#### ■ Domestic materials



適応取組に関する参考資料

事業者の適応の取り組みに関して、様々な機関が公表しているレポートを以下で紹介します。

【府省庁が作成したレポート】

文庫名称	発行年	発行者
TCFDを活用した経営戦略立案のススメ-気候関連リスク・機会を織り込むシナリオ分析実践ガイド-	2019	環境省

環境省がTCFD（気候関連財務情報開示タスクフォース）を活用して気候関連リスク・機会を経営戦略に織り込むシナリオ分析に関する実践ガイドを作成しました。2018年度の「TCFDに沿った気候リスク・機会のシナリオ分析支援事業」における実践事例を取りまとめられています。

気候関連財務情報開示に関するガイダンス（TCFD提言に沿った情報開示を行うに当たっての事業会社の取組が表れる「適応」情報開示に関するガイダンス（TCFDガイダンス）（開示）（開示ページ）

#### 【研究機関が作成した資料】

文庫名称  
緑の気候基金（GCF）の近年の動向に関する資料（Green Climate Fund: GCF）の（UNFCCC）の下、途上国における気候変動を供給するために、2010年に設立された緑の気候基金（GCF）の取組が表れる「適応」情報開示に関するガイダンス（TCFDガイダンス）（開示）（開示ページ）



気候変動や適応ビジネスに関する海外の資料

気候変動や適応ビジネスに関する海外の資料です。日本の事業者の取組に有意義と考えられるものを翻訳した資料です。  
※これらの文庫は平成29年度環境省委託事業で翻訳したものであり、参考のために用意されたものです。英文と日本語との間に違いがある場合は、英語の原文が優先します。

文庫名称	発行年	発行者
気候変動におけるビジネスチャンス(仮訳) (2018年8月27日改訂)	2015年	UK Environment Agency / ACCLIMATISE
事業継続マネジメントシステムを用いた気候変動への適応(仮訳) (2018年8月27日改訂)	2014年	UK Environment Agency / BSI Group
サプライチェーンの気候変動リスクの評価と管理(仮訳) (2018年8月27日改訂)	2013年	UK Environment Agency / ACCLIMATISE
気候変動への適応：主要部門の気候変動適応に向けた支援 適応報告指令の政府報告書	2012年	Department for Environment Food & Rural Affairs
ビジネスにおける気候変動影響と適応 (2018年8月1日公開)	2010年	UK Climate Impacts Programme
気候変動への適応：主要部門の気候変動適応に向けた支援 適応取組への適応ガイダンス2009	2009年	Department for Environment Food & Rural Affairs

#### ■ Overseas materials

# Adaptation Business

## ● Workshops for private sector

### The 1<sup>st</sup> workshop (2/8/2018)

#### Theme:

- ① Climate risk management: "What things are important in promoting climate risk management?"
- ② Adaptation business: "What things are important in promoting adaptation business in Japan and overseas?"

**Participants:** 200



### The 2<sup>nd</sup> workshop (2/8/2019)

#### Theme:

- ① Latest trends in adaptation activities by private sector
- ② Cases and issues of utilizing climate risk information
- ③ Cases and issues of TCFD scenario analysis

**Participants:** 150



# Adaptation Business

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## ● Prospects for future development

⌘ in bold: new/additional contents

### 1. Enrichment of contents for A-PLAT

#### ➤ Adaptation cases by private sector

- ✓ Climate risk management, adaptation business, **disclosure (e.g., TCFD)**
- ✓ **Collaboration cases between local authorities and private sector**

#### ➤ Sector-specific description page

- ✓ Sectors such as construction industry, manufacturing industry, ...

#### ➤ Interviews / exchange opinions with private sector

#### ➤ Improvement of showing impact assessment results

- ✓ To assume such as incorporating TCFD scenario analysis

#### ➤ Brochure

- ✓ For dissemination purpose

# Adaptation Business

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## ● Prospects for future development

✂ in bold: new/additional contents

### 2. Information analysis

#### ➤ Questionnaire to private sector

- Dr. John Gardner, CISRO conducted questionnaire to Industry

“Adaptation benchmarking survey initial report 2010”

#### ➤ Survey on definition of “adaptation business”

### 3. Event

#### ➤ Symposium

#### ➤ Opinion exchange / training with private sector

# Adaptation Business

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## ● Problems and challenges faced

### ➤ Useful information for private sector

- ✓ How can we grasp the needs from private sector to further develop A-PLAT ?
- ✓ What is the best way to communicate with private sector ?
- ✓ How can we provide useful scientific information to private sector (by incorporating TCFD or SDGs) ?

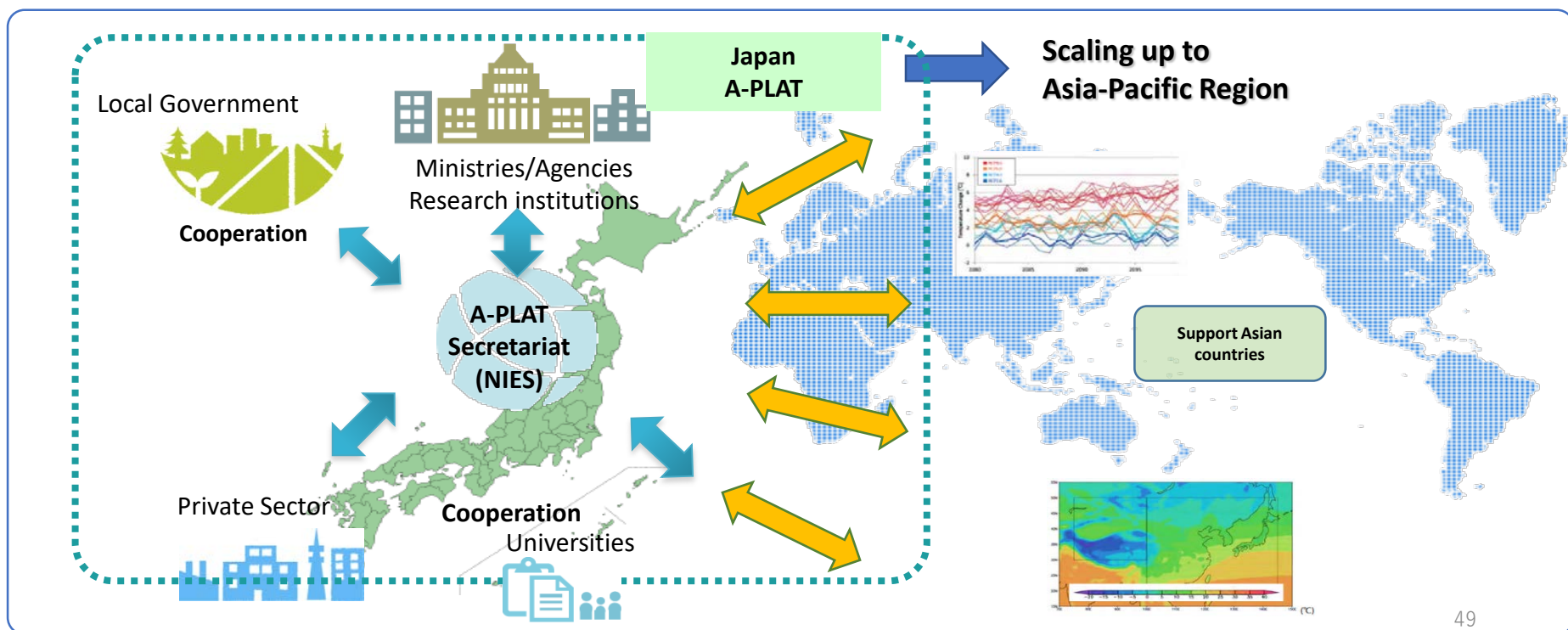
### ➤ Business strategy management

- ✓ How does company incorporate adaptation with business strategy ?



# AP-PLAT

- **Asia Pacific Adaptation Information Platform (AP-PLAT)** was launched in June 2019, to share **climate risk information** by providing advanced scientific climate risk information.
- Japan will take a lead in the following activities under the Platform:
  - ① **Develop dataset on projection of climate change impacts in the region through bilateral & intensive studies**
  - ② **Develop supporting toolkits** for officials and stakeholders engaged in adaptation planning
  - ③ **Build capacity** on climate change **impact assessment/adaptation planning**



# AP-PLAT

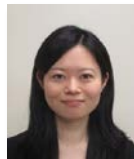
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## ● Policy of the development

- Provision of basic and wide variety of information on climate change impacts and adaptation for Asia Pacific countries
  - ✓ Aim to become an opportunity to consider specific adaptation measures
- Provision of climate and impact information to understand easily with Web-GIS
- All stakeholders including national, local governments, private sectors, and individuals

## ● Members

- Kazutaka Oka (vision, contents, publicity)
- Yoshifumi Masago (publicity)
- Haruka Shinohara (contents)
- Fuyuki Harada (contents)



- Masataka Hiroyasu (WEB)
- Hanae Maie (WEB)
- Kaori Kishida (WEB)



# CLIMATE CHANGE ADAPTATION PLATFORM

## AP-PLAT





## ■ Climate Impact Viewer

### ● MOEJ S-10 projects

#### 1. Climate

- ① Temperature
- ② Precipitation

#### 2. Water Resources

- ① Falkenmark Index

#### 3. Vegetation

- ① Net Primary Production
- ② Vegetation carbon
- ③ Soil Carbon pool
- ④ Net Biome Production
- ⑤ Soil erosion
- ⑥ Fire

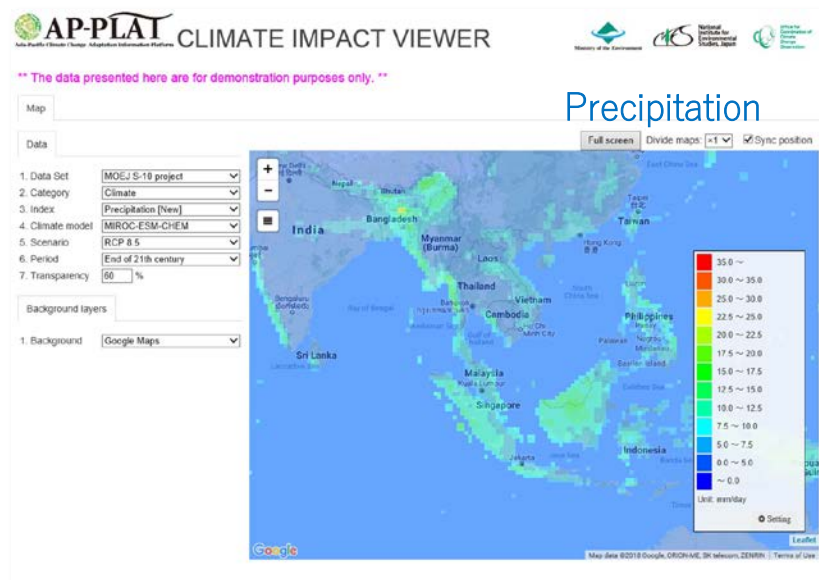
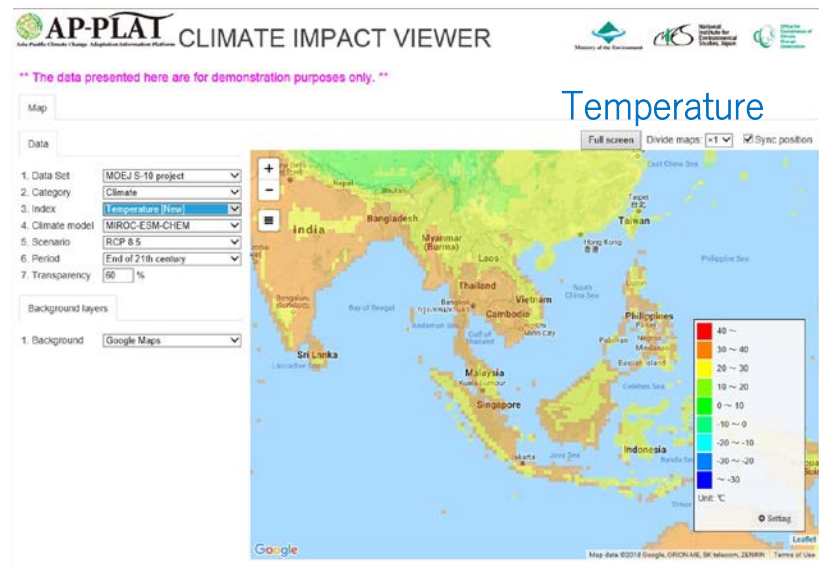
#### 4. Health

- ① Heat stress

### ● ADB RCCAP

#### 1. Climate

- ① Temperature
- ② Precipitation

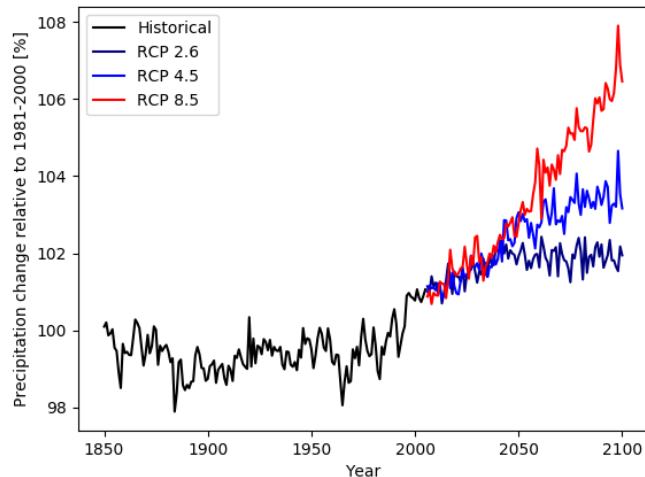




## ■ Climate Time Series Viewer

### Climate Time Series Viewer

**Group:** ALL  
**Region:** GLOBAL  
**Value:** Precipitation (pr)  
**Model:** MPI-ESM-MR



### Description

#### Group:

Please select the group to filter the list of items in "Region" combo box.

#### Region:

Please select the region you want to display the data for.

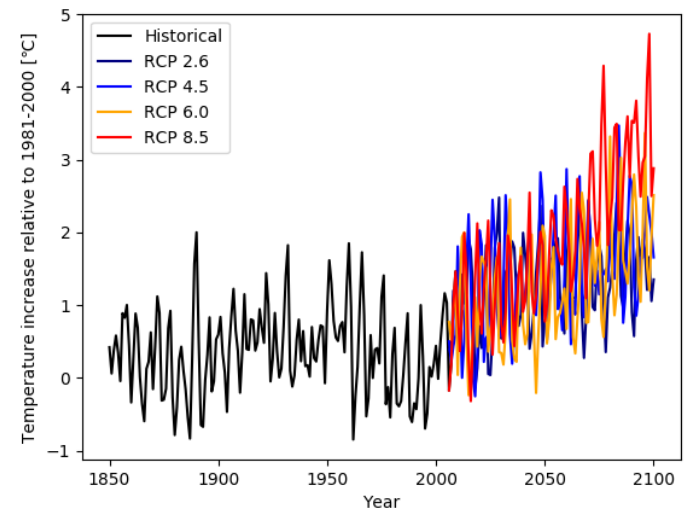
#### Value:

Please select the variable you want to display the data for.

#### Model:

Please select the climate model you want to display the data for.

**Group:** Asia  
**Region:** Thailand  
**Value:** Daily mean temperature (tas)  
**Model:** MIROC5

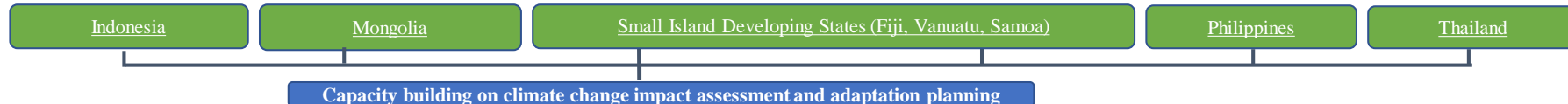






## Bilateral Cooperation on climate change impact assessment and adaptation measures by MOEJ

- ① Under the bilateral cooperation, support adaptation-related planning and policy development by developing scientific projection of climate change impacts assessment  
Host countries : Indonesia, Mongolia and small island states in Pacific are being planned  
Implementation structure : To establish a consortium by research institutions and consultants for each country
- ② Capacity building on climate change impact assessment and adaptation planning for developing countries  
Implementation structure : Asia Pacific Climate Change Adaptation Network (APAN), Asian Institute of Technology (AIT), and others.



### Indonesia



Climate Change Impact Assessment for Local Adaptation Planning in the Republic of Indonesia



[Read more](#)



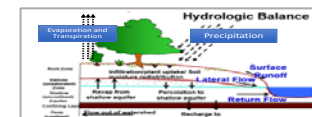
### Mongolia



Early warning system for massive livestock mortality



[Read more](#)



Risk assessment and potential adaptation measures for water resources in Ulaanbaatar, Mongolia

[Read more](#)

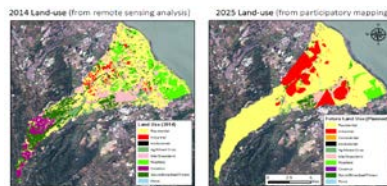
### Philippines



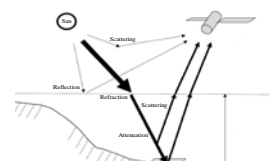
A participatory approach for enhancing climate-resilient watershed planning within local governments



[Read more](#)



### Fiji



Climate change impact assessment on storm surge and storm waves in Pacific island countries with satellite-based remote sensing technology




[Read more](#)



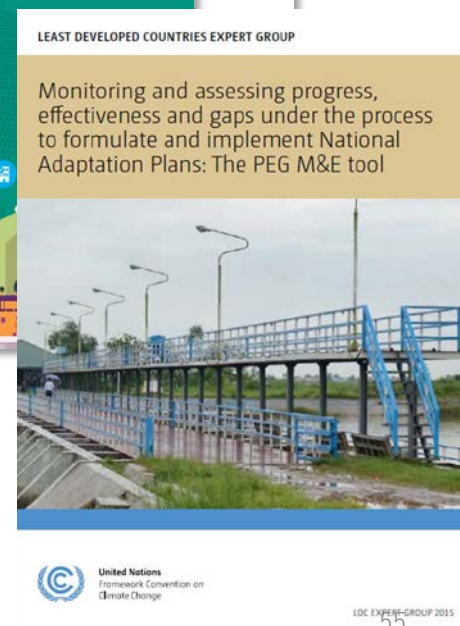
## ■ Adaptation plans (NAPs/NDCs)



 Climate Change & Adaptation   Plans & Implementations   Tools & Guidelines   Financial Information   Adaptation Business				
Country	NDC ?	NAP ?	NAPA ?	TNA ?
 Afghanistan	<a href="http://www4.unfccc.int/ndcregi/stry/PublishedDocuments/Afghanistan%20First/INDC_AFG_20150927_FINAL.pdf">http://www4.unfccc.int/ndcregi/stry/PublishedDocuments/Afghanistan%20First/INDC_AFG_20150927_FINAL.pdf</a>		National Capacity Needs Self-Assessment for Global Environmental Management (NCNSA) and National Adaptation Programme of Action for Climate Change (NAPA)	
 Australia	<a href="http://www4.unfccc.int/ndcregi/stry/PublishedDocuments/Australia%20First/Australia%20Intended%20Nationally%20Determined%20Contribution%20to%20a%20new%20Climate%20Change%20Agreement%20-%20August%202015.pdf">http://www4.unfccc.int/ndcregi/stry/PublishedDocuments/Australia%20First/Australia%20Intended%20Nationally%20Determined%20Contribution%20to%20a%20new%20Climate%20Change%20Agreement%20-%20August%202015.pdf</a>			
 Bangladesh	<a href="http://www4.unfccc.int/ndcregi/stry/PublishedDocuments/Bangladesh%20First/INDC_2015_of_Bangladesh.pdf">http://www4.unfccc.int/ndcregi/stry/PublishedDocuments/Bangladesh%20First/INDC_2015_of_Bangladesh.pdf</a>		National Adaptation Programme of Action	<a href="http://unfccc.int/rtclear/misc/_StaticFiles/gnwoerk_static/TNR_CRE/e9067c6e0b97459989b2196f12155ad5/5583180f345e40c79bd3005fd18850c0.pdf">http://unfccc.int/rtclear/misc/_StaticFiles/gnwoerk_static/TNR_CRE/e9067c6e0b97459989b2196f12155ad5/5583180f345e40c79bd3005fd18850c0.pdf</a> <a href="http://unfccc.int/rtclear/misc/_StaticFiles/gnwoerk_static/TNR_CRE/e9067c6e0b97459989b2196f12155ad5/02c9524226a149dca1ba407f7442532.pdf">http://unfccc.int/rtclear/misc/_StaticFiles/gnwoerk_static/TNR_CRE/e9067c6e0b97459989b2196f12155ad5/02c9524226a149dca1ba407f7442532.pdf</a>

## ■ Guidelines

National Adaptation Plans	
Issue	
2012	<a href="#">THE NATIONAL ADAPTATION PLAN PROCESS</a>
2012	<a href="#">Technical guidelines for the national adaptation plan process</a>
National Adaptation Programmes of Action	
Issue	
2011	<a href="#">Best Practices and lessons learned in addressing adaptation in the least developed countries through the national adaptation programme of action process, volume 1</a>
2012	<a href="#">Best practices and lessons learned in addressing adaptation in the least developed countries, volume 2</a>
2015	<a href="#">Best practices and lessons learned in addressing adaptation in least developed countries, volume 3</a>
2015	<a href="#">Information paper on how the process to formulate and implement national adaptation plans can be supported in least developed countries</a>
2015	<a href="#">Regional survey in addressing adaptation through the national adaptation programmes of action and the process to formulate and implement national adaptation plans in the least developed countries</a>
2015	<a href="#">Strengthening gender considerations in adaptation planning and implementation in the least developed countries</a>
2015	<a href="#">Monitoring and assessing progress, effectiveness and gaps under the process to formulate and implement National Adaptation Plans: The PEG M&amp;E tool</a>



# CLIMATE CHANGE ADAPTATION PLATFORM

## AP-PLAT



## Financial Information

### Overview of Main Climate Funds to support Developing Countries

There are various types of funding and technical support schemes for developing countries to address climate change adaptation issues. This section introduces these schemes focusing on the following 5 schemes under the UNFCCC as well as the World Bank.

Financial Mechanism	Technology Mechanism
<ul style="list-style-type: none"> <li>Global Environment Facility (GEF)</li> <li>Adaptation Fund (AF)</li> <li>Green Climate Fund (GCF)</li> <li>Climate Investment Fund (CIF)</li> </ul>	<ul style="list-style-type: none"> <li>Climate Technology Centre and Network (CTCN)</li> </ul>



#### Summary on GCF

- Overview of the Green Climate Fund (GCF)
- Strategic Prioritized Areas
- Portfolio of GCF Projects
- Six Investment Criteria
- Access Modalities for GCF
- Funding Proposal Approval Process
- National Designated Authority (NDA)

### Overview of the Green Climate Fund (GCF)

- Fund to support mitigation and adaptation measures against climate change
- Aims to achieve a paradigm shift
- Established at the COP16 to the UNFCCC, with its permanent headquarters located at Songdo, Republic of Korea
- Board meetings are held at least twice a year (normally three times)
- Started project approvals from 2015; As of March 2018, 76 projects have been approved and total of 3.7 billion USD has been committed
- Accredited Entities (AE) play the central role in project implementation.

Project + Programmes: <https://www.greenclimate.fund/what-we-do/projects-programmes>  
 Portfolio Dashboard: <https://www.greenclimate.fund/what-we-do/portfolio-dashboard>

## Disclosures and SDGs

### Disclosures and SDGs

#### Corporate Information Disclosure on Climate Change

There is increasing demand for corporate information disclosure on climate change by investors and other stakeholders and several international disclosure frameworks on it have been developed. Among them, this section introduces two disclosure frameworks as CDP (former the Carbon Disclosure Project) and the task Force on Climate-related Financial Disclosures (TCFD).

The Sustainable Development Goals (SDGs) are international development goals adopted by the UN. The private sector is expected to play a significant role in achieving the SDGs. The SDGs are also introduced in this section.

- CDP (formerly Carbon Disclosure Project)
- Task Force on Climate-related Financial Disclosures (TCFD)
- Sustainable Development Goals (SDGs)



### Task Force on Climate-related Financial Disclosures (TCFD)

#### Summary

In December 2015, the Financial Stability Board (FSB) launched the industry-led Task Force on Climate-related Financial Disclosures (TCFD) to develop recommendations on climate-related financial disclosures after the G20 Finance Ministers and Central Bank Governors asked FSB to review how the financial sector can take account of climate.

In June 2017, TCFD published the final report, the practical guidance climate-related scenario analysis, which forms climate-related

In September 2018, 513 organizations expressed their support supporters.)

#### Climate-related financial disclosure framework

The final report explains climate-related risk, opportunities and consistent climate-related financial disclosure framework for other stakeholders, providing 4 recommendations and 11 recommendations.



### Sustainable Development Goals (SDGs)

#### Summary

Sustainable Development Goals (SDGs) are the international development goals listed in the 2030 agenda, which was adopted by the UN Sustainable Development Summit held in September 2015 as the successor of Millennium Development Goals (MDGs).

SDGs consist of 17 goals and 169 targets in order to eradicate poverty and realize a sustainable world. The goal 13 Climate Action (Take urgent action to combat climate change and its impacts) is the main goal which includes "adaptation to climate change". The details of such goals and targets are [here](https://www.un.org/sustainabledevelopment/sustainable-development-goals/) (<https://www.un.org/sustainabledevelopment/sustainable-development-goals/>).

SDGs are applicable not only to developing countries but also to developed countries, which emphasize the roles of all stakeholders including private companies.

Sustainable Development Goals between 2016 and 2030



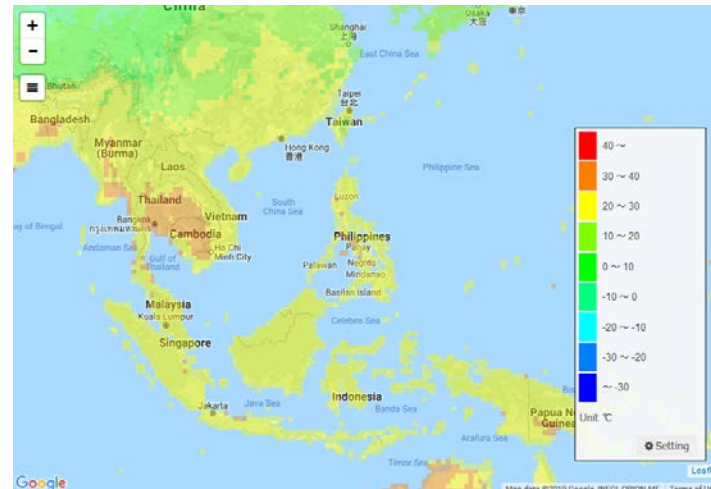
# AP-PLAT

## ● Prospects for future development

### 1. Scientific information

- ✓ To store new data (such as CMIP6) to “Climate Impact Viewer” and “Climate Time Series Viewer”.
- ✓ To store high resolution GCM data calculated from CMIP6 (via statistical downscaling).
- ✓ To link to websites about climate observations, and possibly upload them on “Climate Impact Viewer”.

Project Name	Contents
① Ministry of Environment, Bilateral project	Indonesia (agriculture, health, etc.) , Mongolia (zodo, etc.) Philippine (flood, etc.) , Pacific island country (sea level rise)
② Ministry of Environment, S-10	agriculture (main crop yield, etc.)
③ Ministry of Environment, S-14	health (direct costs due to lost working hours, starvation risk population, etc.), agriculture (main crop yield, etc.), industry (electricity production, etc.)
④ NIES, Adaptation PG	water-supply (surface water) , air pollution, etc.
⑤ IPCC, Climate data (CMIP6) for the 6 <sup>th</sup> report	temperature, precipitation



# AP-PLAT

## ● Prospects for future development

### 2. Plans and implementation

- ✓ To analyze NDC (e.g., to show vulnerable sectors in each countries)
- ✓ To store “good practice cases” prepared by such as IGES, APN.

### 3. Brush up of design

	Agriculture	Food	ine and/or Coastal zone
Cambodia	●		●
Fiji	●		●
India	●		●
Indonesia	●	●	●
Lao	●		
Malaysia		●	●
Thailand	●	●	●
Samoa	●		●
Micronesia			
Nauru	●	●	●
Myanmar	●		●
Niue	●	●	
Singapore		●	●
Solomon Island	●	●	●
Tonga	●		
Tuvalu			
Vanuatu	●	●	
Vietnam		●	
合計	13	9	11



# AP-PLAT

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- **Problems and challenges faced**

- **Resolution of data**

- ✓ AP-PLAT will be a portal which provides fundamental information for Asia-Pacific countries and not focus on any countries.
- ✓ Thus, resolution of information will not be enough for individual country to prepare adaptation plan. How can we fill the gap ?

- **Collaboration with Asia-Pacific countries**

- ✓ What collaborations with Asia-Pacific countries will be ideal for AP-PLAT ?

- **Scientific information**

- ✓ What is the best way to show scientific information ?