



Japan's ODA for NHMSs in Southeast Asia

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Japan International Cooperation Agency

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1 Brief Explanation of JICA's Cooperation

JICA's Cooperation by ODA

Japan Official Development Assistance is broadly divided into Bilateral aid, in which assistance is given directly to developing countries, and Multilateral aid, which is provided through international organizations. Bilateral aid consists of Concessional Loans (ODA loans, etc.) and Grants (Grant Aid and Technical Cooperation).



*This excludes Grant Aid which the Ministry of Foreign Affairs will continue to directly implement for the necessity of diplomatic policy.

- Dispatch of Experts
- Acceptance of Training in Japan
- Provision of Equipment
- Technical Cooperation Project (TCP)*

*TCP: combination of the "Dispatch of Experts," "Acceptance of Training Participants" and/or "Provision of Equipment"

Grant Aid Project

Weather Radar established through
JICA's Cooperation, **Laos**



Weather Radar established through
JICA's Cooperation, **Bangladesh**



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JICA Assistance Approach on Disaster Risk Reduction and Management

The Hyogo Framework for Action (HFA) 2005-2015

Building the resilience of nations and communities to disasters

Three Strategic Goals:

The integration of disaster risk reduction into sustainable development policies and planning

Development and strengthening of institutions, mechanism and capacities to build resilience to hazards

The systematic incorporation of risk reduction approaches into the implementation of emergency preparedness, response and recovery

Priorities for Action:

HFA1

**Make
Disaster
Risk
Reduction a
Priority**

HFA2

**Know the
Risks and
Take
Action**

HFA3

**Build
Understanding
and
Awareness**

HFA4

**Reduce
Risk
Factors**

HFA5

**Be Prepared
and Ready
to Act**



JICA Assistance Approach on Disaster Risk Reduction and Management

The Hyogo Framework for Action (HFA) 2005-2015:
Building the Resilience of Nations and Communities to Disaster (3 Strategic Goals and 5 Priority Actions)



The JICA Guideline for DRRM sets out the following objectives:

- Contributing to the improvement of **human security** as well as **socio-economic development**
- Contributing to **sustainable development** in developing countries
- Contributing to the promotion of international cooperation in the field of DRR as an advanced nation of disaster management



JICA Assistance Approach on Disaster Risk Reduction and Management

JICA's assistance in DRR covers 1) **construction of structural measures & installation of equipment** and 2) **capacity development & formulation of development plan**

Construction of Structural Measures and Installation of Equipment

- Installation of Meteorological Observation Equipment (Radars, AWS, etc.)
- Construction of Disaster Risk Reduction Measures, etc.



Grant Aid

or

ODA Loan

Capacity Dev. / Human Resources Dev. And Development Plan Formulation

- Training in Japan
- Dispatching Experts
- Master Plan (Road Map for DRM) Formulation, etc.



Tech.
Cooperation

2 JICA's Cooperation for NHMS

JICA's Assistant Approach

- Assistance for improvement of Meteorological Services to enhance the capacity for **Disaster Risk Reduction** as well as **Climate Change Adaptation**
- Project formulation by JICA in accordance with **WMO's strategy or priority issues**
- Training of experts in the national meteorological services in **collaboration with Japan Meteorological Agency (JMA)**

Modernization of Equipment

- Automatic Weather Stations
- Doppler Radars
- Satellite Observations

Grant Aid

or

ODA Loan

Capacity Building / Human Resources Development

- Operation and Maintenance of Instruments / Equipment
- Improvement of Forecasting Capacity

Tech.
Assistance



Typical Cooperation for NHMS by JICA

1. Improvement of Observations (Supply of Equipment)
 - (1) Surface Observation (From manual to AWS)
 - (2) Rader Observation (Installation of Doppler Rader System)
 - (3) Upper Air Observation (Installation of Wind Profiler etc.)
 - (4) Satellite Observation (MTSAT Satellite Ground Reception System)
2. Improvement of Communication System (GTS connection)
3. Capacity Development
 - (1) Observation
 - (2) Operation and Maintenance
 - (3) Forecast (short term ~ one week)
 - (4) Dissemination of reliable early warning etc.



Recent Features of NMHS Cooperation by JICA

1. Increasing requests in Meteorological and Hydrological Services
 - Basic Information on Climate change
2. Comprehensive approach
 - “Improvement of NMHS is the precondition of DRR”
 - MH observation Reliable river information Reliable flood forecast Reliable early warning
3. Country of interest – From Asia, pacific to Africa
 - Philippine, Vietnam, Lao, Bangladesh, Pakistan, Sri Lanka, Fiji, Samoa and Mauritius etc.

3 Projects

The Meteorological and Hydrological Services Improvement Project in Lao P.D.R.



- Effective utilization of meteorological radar
- Collection and processing of meteorological and hydrological data
- Analysis of meteorological and hydrological data
- Information sharing to related organizations

Project for Development of Human Capacity on Operation of Weather Analysis and Forecasting In the People's Republic of Bangladesh

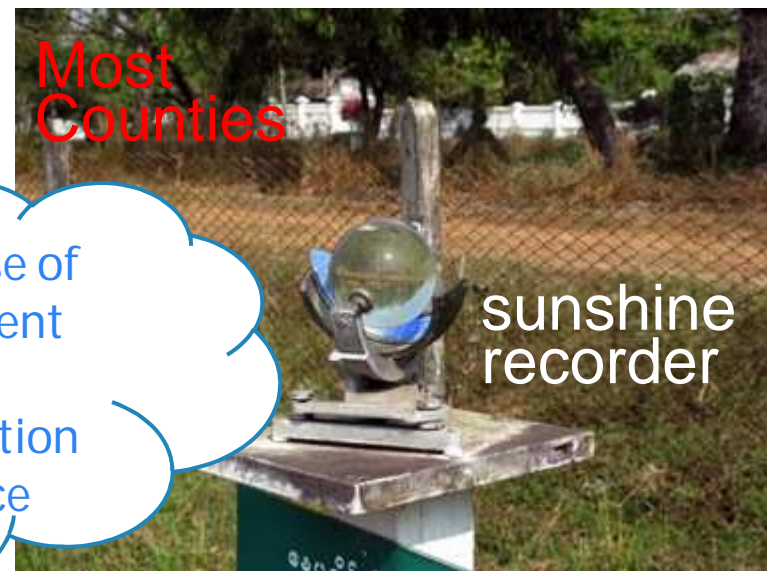


- (1) Improved capacity of observation & forecasting
- (2) Quantitative rainfall estimation of Radar
- (3) Trend analysis of climate change
- (4) 1-3 days weather forecasting by NWP on trial
- (5) Promotion of understanding of weather information among the stakeholders
- (6) Proper/efficient operation and maintenance of Radar

Equipment of TCP

Meteorological
Observation
(Manual Operation)

Philippines
wind vane &
anemometer



Maximizing the use of
available instrument
through
appropriate operation
and maintenance

Equipment of TCP



Meteorological
Observation
(AWS)



Equipment of TCP



Meteorological
Observation
(Upper Air Observation)





Cambodia

Meteorological
Observation
(GTS/MSS)

Improvement for
sending and receiving
national meteorological
data through GTS

Case of Introduction of GTS/MSS through WMO/VCP



Bangladesh

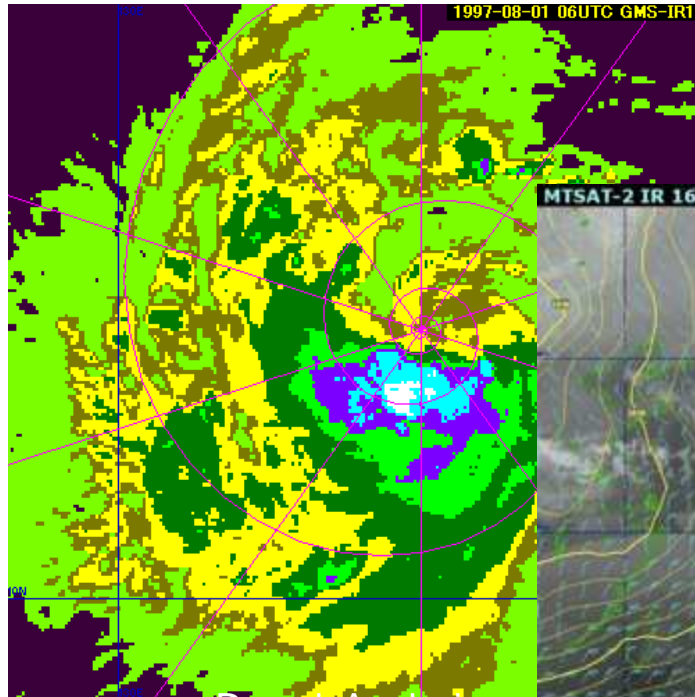


Mongolia

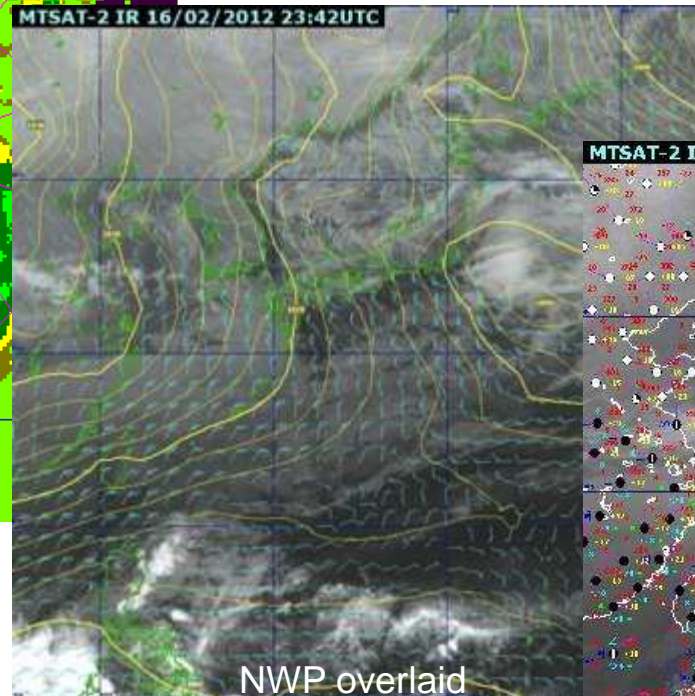


Philippines

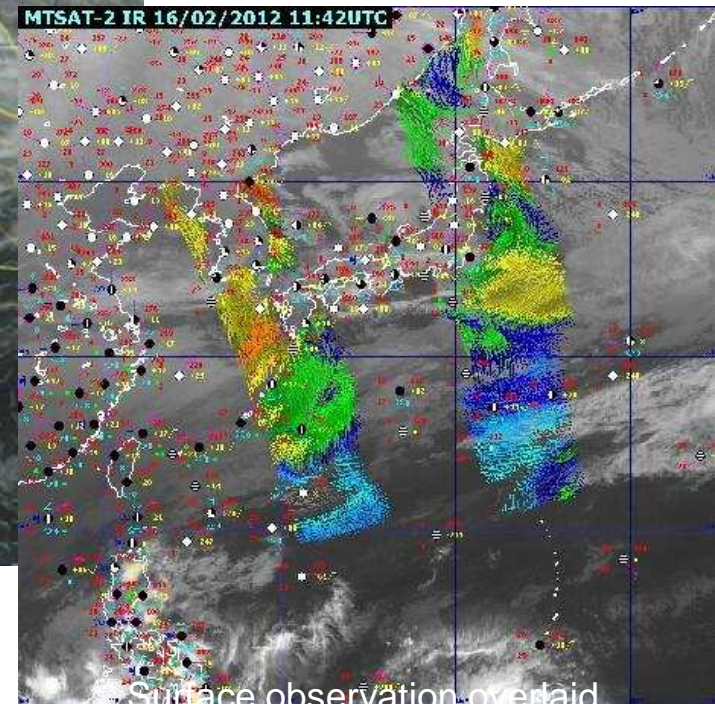
Major Assistance Tools



A step of Dvorak Method



*NWP overlaid
Analysis of Synoptic scale*



*Plotting of Synop data, Ship report
and ASCAT*

Training on Use of
SATAID (Satellite
Animation and
Interactive Diagnosis)

(2) Grant Aid

Financial assistance extended without an obligation for repayment

Approx. 5 mil. to 20 mil. USD

(Example)

- Construction of meteorological radar
- Installation of AWS
- Improvement of telecommunication system

Grant Aid is often followed by Technical Cooperation to promote effective utilization of facilities and equipment

Meteorological Radar established through JICA's Cooperation, **Laos**



Meteorological Radar

Meteorological Radar established through JICA's Cooperation, **Bangladesh**



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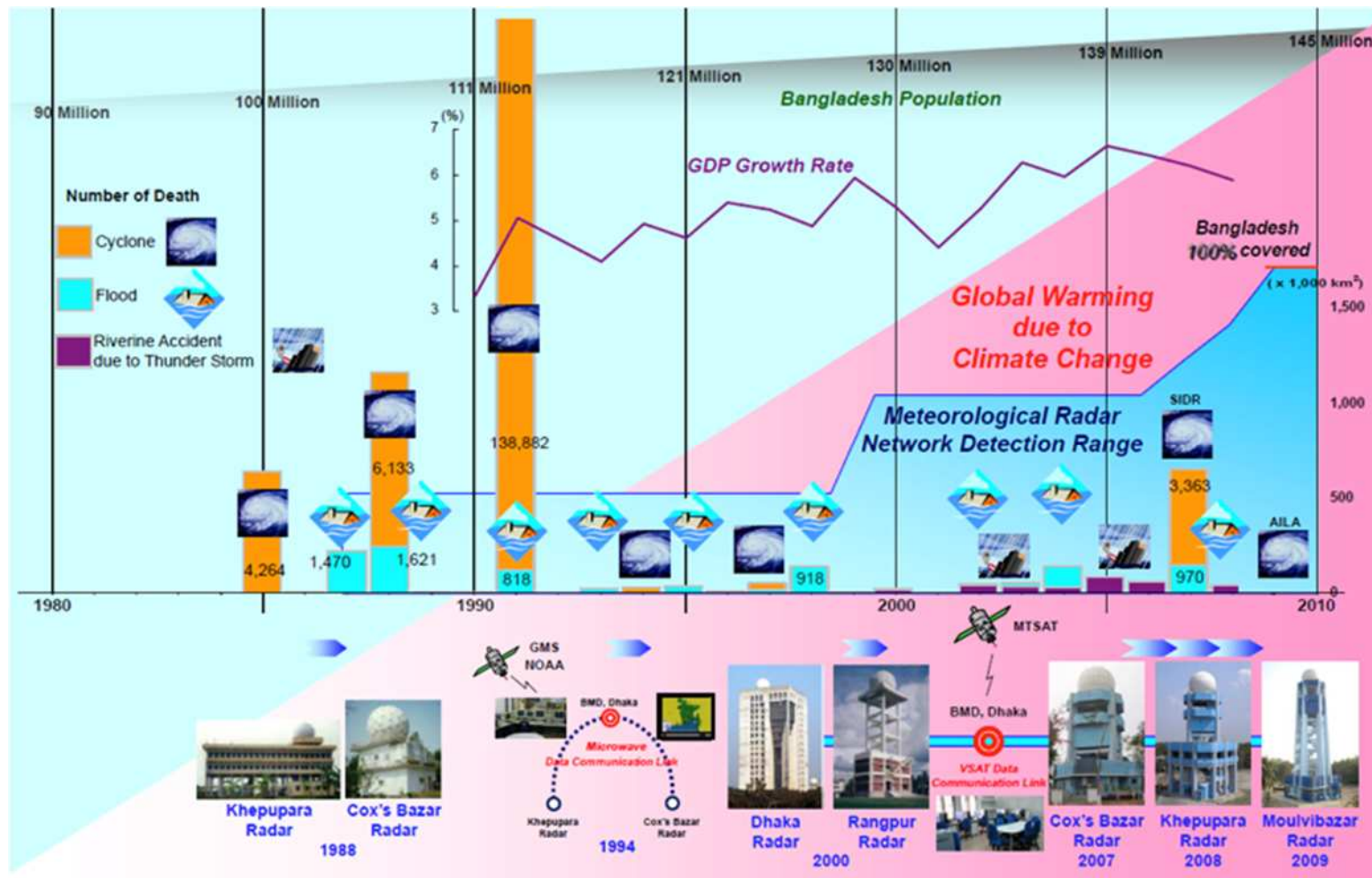
Meteorological Radar established
through JICA's Cooperation, Philippines



Meteorological Radar

Combination of TCP and Grant Aid

Assist the **improvement of early forecasting/warning system** and the **establishment of evacuation system**.





ODA Loans

Concessionary loans

Tens to hundreds mil. USD

Interest rate: 0.01 – 1.70 %

Repayment period: 15 – 40 years

Concessional terms for environment and climate change related projects

(Example)

- Construction of communication network

- Procurement of observation equipment and data processing system

- Development policy lending

Philippines





On-going and Forth-coming Project

Country Name	Project Name	Type of Cooperation	Period
Bangladesh	Development of Human Capacity on Operation of Weather Analysis and Forecasting	Technical Cooperation Project	2009 ~ 2013
Fiji	Project for Improvement of Equipment for Disaster Risk Management	Grant Aid Project	2013 ~ 2014
Fiji	Project for Strengthening the Capability of Weather Forecasting and Warning in the South Pacific	Technical Cooperation Project	Proposed for 2013
Laos	Establishment of Meteorological and Hydrological System	Grant Aid Project	2013 ~ (tentative)
Myanmar	Establishment of Disastrous Weather Monitoring System(New Project)	Grant Aid Project	2013 ~ 2017
Myanmar	Establishment of End to End Early Warning System for Natural Disaster	Technical Cooperation Project	2013 ~ 2017
Pakistan	Establishment of Specialized Medium Range Weather Forecast Center and Strengthening of Early Warning and Dissemination Network	Grant Aid Project	2013 ~ (tentative)
Pakistan	Installation of Weather Surveillance Rader at Karachi	Grant Aid Project	Proposed for 2013
Philippines	Project for Improvement of the Meteorological Rader System	Grant Aid Project	2009 ~ 2014
Philippines	Project for Enhancing the Forecasting and Warning Capabilities of PAGASA through Effective Utilization of Weather Data	Technical Cooperation Project	2013 ~ (tentative)
Samoa	Programme for Improving the Weather Forecasting System and Meteorological warning Facilities	Grant Aid Project	2010 ~ 2013
Sri Lanka	Disaster Management Capacity Enhancement Project Adaptable to Climate Change	Technical Cooperation Project	2010 ~ 2013
Sri Lanka	Project for Improving Forecasting Capabilities of the Department of Meteorology to Minimize the Impact of Frequent Weather Hazard	Technical Cooperation Project	Proposed for 2013
Vietnam	Project for Hydro-Meteorological Observation,Forecast and Early Warning System	Technical Cooperation Project	2013 ~ (tentative)
Training in Japan	Reinforcement of Meteorological Services	Acceptance of Trainees	2008 ~