Bangladesh Weather and Climate Services Regional Project

Towards Efficient Climate Services for the Farming Community of Bangladesh

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Vision

• Use of benevolent (congenial) weather for better productivity of crop and also protect farmers from crop loss due to malevolent (adverse weather/extreme weather)

• Strengthening the economic condition especially to small and marginal farmers in Bangladesh

Mission

• To prepare need based Agromet Advisories initially for district levels and afterwards sequentially for Upazilas and ultimately for Union level using the state of art technology

• Disseminate Agromet Advisory services for the Farming Community of Bangladesh
Communication and Absorption of Advisories and Services, Last-mile Connectivity (Planned)

**BAMIS Flow Chart**

- **BAMIS Portal at DAE Headquarter**
- **Hydrological Information from BWDB**
- **Meteorological Information from BMD**
- **Agricultural Information Services (AIS)**

**DAE Agromet Technical Committee**

- Analysis of Hydrometeorological Information, Translation of Forecast and Generate advisories for the farming community

**Agromet Service Room, 14 Regions**

**Agromet Service Room, 64 Districts**

**KIOSKS, 487 Upazilas**

**Dissemination of advisories to SAAO**

**Dissemination of advisories to Lead Farmers (30000) and Farmers Feedback to DAE Agromet Technical Committee**

- **Agromet Display Board, Automatic Rain Gauges in 4051 Union Parishads**
Preparation of Agromet Advisories

✓ Under this project Agromet Advisory Service bulletins are prepared for 64 districts twice a week and national level Agromet Advisory Service bulletins are prepared once a week.

**These bulletins contain:**

✓ Realised weather and weather forecast district wise.
✓ Information on water level in rivers and forecast for future status of river condition.
✓ Relevant agromet advisories for different standing crops.
✓ Agromet advisories are also issued for livestock, poultry and inland fishes.
✓ In addition to this, special agromet advisory bulletins are also issued under extreme weather conditions.
Data & Tools Used for Preparation of Agromet Advisories
Reception of Observed Weather & Weather Forecast from BMD

50 Conventional Observatory
17 Agromet Stations
Total 67 Observatory from where we may get data online.
As the data points are relatively less, real-time approndite data will be taken in gridded format and with geospatial technology, district-wise products will be generated for Bangladesh.

District-wise Quantitative Medium Range Weather Forecast from WRF Model
<table>
<thead>
<tr>
<th>Crop</th>
<th>Stage</th>
<th>State</th>
<th>Pest &amp; Disease Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boro Paddy</td>
<td>This is the time for preparation of seed</td>
<td>Satisfactory</td>
<td>No pest and disease is reported at this stage of the crop</td>
</tr>
<tr>
<td></td>
<td>bed as well as transplanting and early</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>vegetative to vegetative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheat</td>
<td>Emergence to Vegetative</td>
<td>Satisfactory</td>
<td>No pest and disease is reported at this stage of the crop</td>
</tr>
<tr>
<td>Potato</td>
<td>Tuber to Ripening</td>
<td>Satisfactory</td>
<td>No pest and disease is reported at this stage of the crop</td>
</tr>
<tr>
<td>Chickpea</td>
<td>Vegetative to Early Flowering</td>
<td>Satisfactory</td>
<td>No pest and disease is reported at this stage of the crop</td>
</tr>
<tr>
<td>Lentil</td>
<td>Vegetative to Early Flowering</td>
<td>Satisfactory</td>
<td>No pest and disease is reported at this stage of the crop</td>
</tr>
<tr>
<td>Maize</td>
<td>Emergence to vegetative</td>
<td>Satisfactory</td>
<td>No pest and disease is reported at this stage of the crop</td>
</tr>
</tbody>
</table>
Salient Agromet Advisories

As per the weather forecast received from Bangladesh Meteorological Department, monsoon is less active over Bangladesh & weak over North Bay. Light to moderate rain/thunder showers accompanied by temporary gusty wind is likely to occur at a few places over Rajshahi & Chattogram divisions and at one or two places over Rangpur, Mymensingh, Sylhet, Dhaka, Khulna & Barishal divisions. Thus, there will be substantial reduced in rainfall activities in many districts. The Agromet Advisories for the districts which experiences heavy rainfall during last four days and also expected to get more rainfall during next five days.

Agromet Advisories

Paddy

- Drain out excess water and maintain 5-7 cm water level in the Aus Paddy field.
- To control infestation of leaf blast & leaf spot in Aus rice, spray Carbendazim @2g/litre of water after current spell of heavy rain.
- Monitor other pest & diseases incidences on Aus Paddy.
- Complete the sowing operations of aman paddy as soon as possible. Ensure weed free seed bed.
- Farmers may start the preparation of main land for transplanting.
- At the last stage of land preparation of field for transplanting of Aman paddy, apply per hectare 90 kg TSP, 70 kg MOP, 11 kg Zinc, and 60 kg gypsum after current spell of heavy rain.
- This is the ideal time for transplanting of 25-30 days old nursery in the main field after current spell of heavy rain. Avoid deep planting for better crop establishment and fill up the gaps within a week. Maintain 5-7 cm standing water up to maximum tilling stage. Keep the rice nursery and field bunds free from weeds either by hand weeding or by application of herbicide. Apply recommended herbicide as per recommendation within 1-3 days of transplanting.

Jute:

- Drain out excess rainfall from the field.
- Harvesting and retting of jute may be done preferably at pre-flowering stage (120 days after sowing) to get better quality fibre. At present the water temperature in the retting tanks/nalas may ideal for retting of jute. Early and timely sown capsularis jute may be harvested during this week and kept in the field in standing position for 3-4 days before retting for proper defoliation.
- Prevailing water conditions are favourable for incidences of Hairy Caterpillar & Semilooper in Jute. Monitor the incidences of these pests. If observed, apply Spray Imidochloroprid Chloroclyrin/ Nitro @ 1ml/litre of water for Hairy Caterpillar & Imidochloroprid/Chloroclyrin/ Nitro @ 1ml/litre of water for Semilooper after current spell of heavy rain.
- There may be incidences of stem weevil in jute. To control, apply Dichlorvos @ 3 ml per 4 litre of water or Endosulphan 2 ml per litre of water after current spell of heavy rain.

Vegetables:
District Level AAS Bulletin

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### Agromet Advisory Bulletin for Joypurhat District

**Date:** 23rd June, 2019  
**Agromet Bulletin No. 53**

**Weather Conditions for last four days (19th June to 22nd June, 2019):**

<table>
<thead>
<tr>
<th>Weather Parameters</th>
<th>19.06.19</th>
<th>20.06.19</th>
<th>21.06.19</th>
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<tbody>
<tr>
<td>Rainfall (mm)</td>
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<td>0.0</td>
<td>43.0</td>
<td>43.0</td>
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<tr>
<td>Maximum Temperature (°C)</td>
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<td>35.8</td>
<td>33.8</td>
<td>32.0</td>
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<tr>
<td>Minimum Temperature (°C)</td>
<td>27.4</td>
<td>29.0</td>
<td>28.3</td>
<td>23.0</td>
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<tr>
<td>Relative Humidity (%)</td>
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<td>65-96</td>
<td>70-100</td>
<td>76-97</td>
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<tr>
<td>Wind Speed (km/h)</td>
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<td>2.3</td>
<td>2.1</td>
<td>2.0</td>
</tr>
<tr>
<td>Cloud Amount (Okta)</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Wind Direction</td>
<td>South-South-Westerly</td>
<td>South-South-Westerly</td>
<td>South-South-Westely</td>
<td>South-South-Westely</td>
</tr>
</tbody>
</table>

**Weather forecast as per Bangladesh Meteorological Department for the next 5 days (23rd June to 27th June, 2019):**

<table>
<thead>
<tr>
<th>Weather Parameters</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Temperature (°C)</td>
<td>36.8</td>
</tr>
<tr>
<td>Minimum Temperature (°C)</td>
<td>28.2</td>
</tr>
<tr>
<td>Relative Humidity (%)</td>
<td>57-69.2</td>
</tr>
<tr>
<td>Wind Speed (km/h)</td>
<td>8.6</td>
</tr>
<tr>
<td>Cloud Amount (Okta)</td>
<td>Closely sky</td>
</tr>
<tr>
<td>Wind Direction</td>
<td>South-South-Westerly</td>
</tr>
</tbody>
</table>

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### Status of Monsoon & corresponding rainfall over the district:

- Monsoon is less active over Bangladesh and weak over North Bay. Rainfall activities will be subdued for a brief period. During next five days the district is likely to receive 51.3 mm rainfall. However, the district received 117.8 mm rainfall during last four days.

### Name of the Crop

#### Paddy
- **Aman Paddy**
  - Advise for preparation of seedbed.
  - Seedbed may be well exposed and high land and less chance of submergence due to water. Arrange for floating seedbed in absence of high land.
  - Promising variety BRRI Dhan 33, 49, 51, 52, 39 and 87 may be taken up.
  - Apply 2 kg. khar, 10 gm Urea and 10 gm gypsum per square meter seedbed to get good seedlings.
  - Construct mini pond close to the main field so that rain water may be harvested and the water may be used during the dry condition.
  - **Ayu Paddy**
    - Monitor the pest and disease.

#### Jute
- **Growing stage**
  - Avoid irrigation and drain out excess water, if any.
  - There is a chance of incidences of Harry Caterpillar. Following control measures are advised:
    - Collect the egg mass and destroy
    - Use light traps.
    - Spray Imidacloprid/Chlorovynil Nitro @ 1 ml/litre of water after current spells of rainfall.
  - There is a chance of incidences of Semilooper. Spray Imidacloprid/Chlorovynil Nitro @ 1 ml/litre of water after current spells of rainfall.

#### Brinjal, Pointed Gourd, Cucumber, Bitter gourd, Ridge gourd, Yard long bean & Lady's finger
- **Fruit Setting/ Vegetative**
  - Avoid irrigation and also drain out excess water, if any, from the field.
  - Monitoring is advised for infestation of mites in okra. Larvae and nymph of mite are greenish red while adults are oval reddish brown in colour. Mite feed on the undersurface of leaves and the affected leaves gradually start curling and get wrinkled and crumpled. If infestation is found, spraying of Ethan @ 1.5-2 ml/litre of water is advised after current spells of rainfall.
  - For pointed gourd, cucumber, ridge gourd and bitter gourd periodic hand weeding should be followed. Hand pollination is required.

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### Fishery
- Maintain a good height of embankment around the pond. If possible provide net or bamboo chatiu around the pond to protect from flowing out with flash flood.
- As water has already started to accumulate in the ponds, farmers are advised to go for stocking with fingerlings.
- Contact nearby office of fishery in the upazila office for further advise.

### Livestock
- Prevailing condition are favorable for the incidences of different diseases.
- Vaccination & deworming may be done at regular interval.
- Prevailing climate may cause the for Hemorrhagic Septicemia, Anthrax, Black Quarter Foot & Mouth diseases. Farmers are advised to vaccination of animal.
- Ensure proper cross ventilation to avoid ammonia accumulation.
- Contact office of livestock in upazila office for further advise.

### Poultry
- Keep the chicken in dry place and spray pesticide in frequent intervals.
- Vaccination against Ranthier disease in one week old chicks and against Gamboro disease in two weeks old chicks may be carried out.
- Contact office of livestock in upazila office for further advise.
Crop Weather Calendar of Aman Rice: Barishal Region (Districts: Jhalakati, Patuakhali, Pirajpur, Barguna, Barishal, Bholo) Bangladesh

<table>
<thead>
<tr>
<th>Region: Aman Rice</th>
<th>Duration: 133 days</th>
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<tbody>
<tr>
<td>July</td>
<td>August</td>
</tr>
<tr>
<td>Rainfall (mm)</td>
<td>127.3</td>
</tr>
<tr>
<td>Max. Temp. (°C)</td>
<td>31.0</td>
</tr>
<tr>
<td>Min. Temp. (°C)</td>
<td>26.0</td>
</tr>
<tr>
<td>R.H. (%)</td>
<td>80.6</td>
</tr>
<tr>
<td>Wind (Km/hr)</td>
<td>20.3</td>
</tr>
</tbody>
</table>

ToF (Preliminary) | 175 | 180 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 175 | 175 |

84 Crop Weather Calendars have been prepared for Rice, Wheat & Maize both in English & Bengali. Work is in progress.
Information on pest & disease management

Leaf rust in wheat

<table>
<thead>
<tr>
<th>Infestation stage</th>
<th>Favorable weather</th>
<th>Control measure</th>
<th>Maximum temperature above 33.0 °C, afternoon Relative Humidity less than 71%, Higher Sunshine hours above 7.4 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetative to reproductive</td>
<td>Temperature 15-25°C, rain and highdew</td>
<td>Common name and dose</td>
<td>Conza 5EC/Akonol@ 250 EC</td>
</tr>
<tr>
<td></td>
<td>Control measure</td>
<td>Trade name</td>
<td>Carbofuran@10kg per ha, Brifur 5G/Racforan 5G/Carbotaf 5G/Curater 5G/Forenforan 5G, Cartap 14kg per ha, Care 50 SP/Cartap 50 SP/Cikotap 50 SP/Kadan 50 SP/Forwarat 50 SP, Fipronil@1 ml/litre water, Focus 50 SC/Goelee 50 SC/Regent 50 SC/Nema 50SC/Ensay 50 SC, Diazinon@ 17kg per ha, Razdan 10 G/ Basudin 10G/Diazinon 10 G/Dianon 10 G/Sabion 10 G</td>
</tr>
<tr>
<td></td>
<td>Hexaconazol@1 ml/litre water</td>
<td>Anvil 5 SC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tebuconazol/Carbendazim @ 1 ml/litre water</td>
<td>Conza 5EC/Akonol@ 250 EC</td>
<td></td>
</tr>
</tbody>
</table>

Infestation stage

Seedling to flowering
Agromet Advisories under Extreme Events
Cyclone MAHA and BULBUL

Satellite Picture during landfall of Bulbul over Bangladesh

Storm Surge during landfall
Special Agromet Advisories 4 days before the landfall of Severe Cyclonic Storm Bulbul over Bangladesh Coast:

Date of Issue: 6th November, 2019

(For the District Khulna, Bagerhat, Bhola, Satkhira, Patuakhali, Barishal, Jhalokati, Barguna, Pirojpur, Chandpur, Madaripur, Dhaka, Feni, Madaripur, Chattogram, Noakhali, Cox’s Bazar, Gopalganj & Lakhsmipur)

1. Where early transplanted paddy found 80% maturity, harvest immediately
2. Make a heap of harvested crop in the field and cover it with polythene tightly so that there may not be any damage due to high wind & heavy rainfall
3. Immediately harvest matured vegetables and fruit crops.
4. Clean the irrigation channel so that there should not be any standing water in the crop field.
5. Arrange for elevated bunding around and inside the Aman paddy field so that water current may not affect the standing crops.
6. Avoid application of fertilizer, pesticides, irrigation.
7. Avoid seedbed preparation for boro paddy and sowing of mustard, maize, pulses, potato etc.
8. Keep all the farm produce in safe place.
9. Provide mechanical support like popping of sugarcane crops (tying of three to four plants together), support of horticultural crops particularly banana with three to four bamboos support to fruit plants and stacking of vegetables.
10. Arrange nets around the ponds so that fishes may not come out due to heavy rainfall
11. Livestock & poultry birds should be placed in indoors and safe and dry places.
12. Fishermen are advised not to venture into deep Sea.

Severe Cyclone Bulbul
(07, November, 2019)

SMS Agromet Advisories sent to Farmers and Extension Officials

1. Abstain from application of sowing of seeds, irrigation, fertilisers, insecticides, fungicides due to advance of extreme weather.
2. Immediately harvest fully matured paddy, vegetables and fruit crops.
3. Immediately go to cyclone shelter as cyclone will reach coast today evening or night.

(8:49 AM, 11, November, 2019)

SMS Agromet Advisories sent to Farmers and Extension Officials

Cyclone will cross the coast today evening or night.
Immediately go to the Cyclone Shelter

SMS sent to 7144 Lead Farmers (5948 Male and 1196 Female) of 16 Districts of 3572 Groups. Indirect information to 107160 Farmers with in the group
Dissemination of Alert Messages on Severe Cyclonic Storm Bulbul to the Farmers in Bangladesh through Control Room in DAE
Post Bulbul Agromet Advisories
Date of Issue: 11th November 2019

(For the Districts: Khulna, Bagerhat, Bhoa, Satkhira, Patuakhali, Barishal, Jhalokati, Barguna, Pirojpur, Chandpur, Madaripur, Dhaka, Feni, Madaripur, Chattogram, Noakhali, Cox’s Bazar, Gopalganj & Lakhsmipur)

1. Drain out excess water from the crop fields.
2. After receding of flood water, start again preparation of seedbed for boro paddy and also sowing/planting of mustard, maize, pulses, potato etc.
3. Matured and lodged Aman paddy should be harvested immediately and keep it in dry and safe place.
4. Tie together 5-6 Aman paddy plants which are still not in harvesting stage.
5. Apply Potash fertilizer in Aman paddy fields affected by flood and high wind.
6. After receding of flood water, start again sowing of seeds of vegetables.
7. Livestock & poultry birds should be kept in dry and safe place.
8. Stir the pond water with bamboo as there may be deficiency of oxygen in pond water already mixed with mud.
Dissemination of Agromet Advisories
Total Page views 50642 (up to 7 November 2019)
Top 2 Manu Button viewed

Views

/bulletin/nation/

/bulletin/district/
## Devices used

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Linked with DAE Website
Weather Information along with Agromet Advisories under favourable and unfavorable weather conditions will be displayed shortly.
Agromet Kiosk
All the concerned officers in 487 Upazila Offices will connect to receive the weather forecast, agromet advisories through the Agromet Kiosk
- Database for 30,000 lead farmers have been completed.
- Establishment of linkages and dissemination of weather and Agromet advisories to 30,000 lead farmers.
- Requesting all the lead farmers to disseminate the information to their group of farmers under their jurisdiction

<table>
<thead>
<tr>
<th>District</th>
<th>Upazila</th>
<th>Sl. No</th>
<th>Union</th>
<th>Name of Project</th>
<th>Name of Group/School/Club/Organization</th>
<th>Representative 1</th>
<th>Representative 2</th>
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<tbody>
<tr>
<td>Bogra</td>
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<td>7</td>
<td></td>
<td>Bogarchar CIG Male (Rice) Co-operative Society</td>
<td>Md. Mortuj Ali</td>
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<td>Male</td>
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<td>Bogra</td>
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<td>Murarpara CIG Male (Rice) Co-operative Society</td>
<td>Md. Hafijur Rahman</td>
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<td>Md. Fajjur Rahman</td>
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<td>Bhittpara</td>
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<td>Panatopara CIG Male (Rice) Co-operative Society</td>
<td>Md. Luftur Rahman</td>
<td>1856263433</td>
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<td>Bhittpara</td>
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<td>Md. Abul Hasem</td>
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<td>Char Kamalbari CIG Male (Rice) Co-operative Society</td>
<td>Md. Sulaiman Khan</td>
<td>1855789615</td>
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<td>Md. Bulbul Akonda</td>
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<td>North Dhatuanda CIG Male (Rice) Co-operative Society</td>
<td>Abu Khaler Uton</td>
<td>1740956676</td>
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<td>Surjynagor Murakusha CIG Male (Rice) Co-operative Society</td>
<td>Forid Ahmad</td>
<td>1793898253</td>
<td>Ab. Mazid</td>
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<td>Md. Fejul Haque (Khuka)</td>
<td>176464635</td>
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<td>Shahidul Haque</td>
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<td>Hamidur Rahman</td>
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<td>Nilakshiya North Para Nilakshiya West Para CIG Male (Rice) Co-operative Society</td>
<td>Galeh Ahmad</td>
<td>1761950246</td>
<td>Md. Idri Ali</td>
<td>Male</td>
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<td>Menurchar</td>
<td>Natpara</td>
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<td>Mererchar CIG Male (Mustard) Co-operative Society</td>
<td>Samirul Haque</td>
<td>1786301111</td>
<td>Sattar Mondolle</td>
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<tr>
<td>Menurchar</td>
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<td>Bhati Kilkhiara CIG Male (Coming) Co-operative Society</td>
<td>Md. Josijul Haque</td>
<td>1921383784</td>
<td>Md. Abul Male</td>
<td>Male</td>
</tr>
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BAMIS IN MOBILE APPS
Briefing of Project to general audience of Bangladesh by Bangladesh Betar (Bangladesh Radio)
Proposed Dissemination of Agro-meteorological Advisories to Farming Communities and Feedback from Farmers through Mobile App
Mobile App consists of

- **Message gateway**
- To Disseminate advisories from DAE to farmers and field level officers
Mobile App consists of Service Delivery Platform (SDP)

- To Get feedback from farmers
Mobile App consists of

Mobile App for Field level officer to
- Upload report on real-time weather and climate extremes events reporting services from field
- Upload report on training, awareness, camping, event monitoring and documentation services etc.
- Upload feedback services
- Provide general information
- Get weather forecast
Mobile App consists of

Mobile App for farmers to
* Disseminate text message and get feedback from farmers
* Disseminate audio message and get feedback from farmers
* Provide general notification and get feedback from farmers
* Provide harsh climate event information and get feedback from farmers
* Provide crop management information and get feedback from farmers
* Provide weather forecast
Mobile App consists of

Social networking modules

- To integrate with social networking sites like Facebook, Flickr, Twitter, LinkedIn, YouTube and others.
Mobile App Architecture
Other Achievement and Plans under this Project
Risk Mapping for Climate Vulnerability of 487 upazilas in Bangladesh
Agrometeorological data analysis and future scenario development of 487 upazilas of Bangladesh
Field Experiments for Crop Growth Simulation Study

Visit to observe the sensitivity of weather on maize and potato in Rangpur District

Field Experiments to characterize agro-climate of Jute in RARS, Jamalpur, BJRI to assess the production potentials/risks
Automation of Advisory Generation

IMD Weather System

6 days Observed weather
5-day Moderated Weather forecast

Automated Agromet Advisory Generation System

Process input data
Find matching crop and weather data

Identify crop & location specific requirements

Agro-climatic and Edaphic Zone data
Satellite based Soil Moisture and Insolation data
Parametrized Crop Calendar Details

Feedback

GOM/AFMU/KVK Scouts
GOM/AFMU/KVK

Agro Advisory

Key Crop Growth Stage / Sowing Date

WOTR / IMD

IMD/SAU/AFMU + WOTR

WOTR
Proposing for Soil Moisture Network in Bangladesh
High Resolution Soil Moisture Measurement across Bangladesh

RELIABLE, ACCURATE, & ACTIONABLE:
Accurate measurements throughout the root zone including moisture content, salinity, nutrients and soil temperature.

District Level Coarse Soil Moisture

Upazila Level Derived Soil Moisture

Core Ideas
- Satellites, particularly at band frequency, can globally map near-surface soil moisture.
- Near-surface moisture is extended to the root zone using models and data assimilation.
- Validation uses core monitoring sites, monitoring networks, field campaigns, and multi-satellite comparisons.
Generate S2S forecast in “text” format at IRI every Thursday and send to IMD and RIMES for their feedbacks/comments.

IMD sends the final “text message” to State Auriculate University SAU’s for translation to local language.

Translated “text message” from 2 SAU’s send translated “text message” to RIMES.

RIMES send the translated text to Nongovernment Organizations (NGOs) based at targeted district.

Finally, NGO sends text to farmers.
Opening of Agrometeorology Division in Agricultural Universities in Bangladesh

Bangladesh Agricultural University-[BAU] Mymensingh

Bangabandhu Sheikh Mujib University (BSMRAU), Gazipur
Establishment of Community Centers at District Levels
Work in Progress to further Strengthen the Agromet Advisory Service in Bangladesh

➢ Generation of climate forecast with sufficient lead time to generate agromet advisories.
➢ Preparation of more actionable and demand-driven Agromet advisories for different sectors (livestock, poultry & fishery) of agriculture.
➢ Use of Seamless weather forecast to be generated by the NMHS.
➢ Incorporation of Improved forecasts into appropriate decision support tools.
➢ Further Empowering Farmers and relevant stakeholders to understand and make use of climate information.
➢ Improvement of Cross-sectoral awareness of climate services.
➢ Further improvement of coordination among climate service providers.
➢ Establishment of Multi-Channel Dissemination System.

Expectation from Collaboration Organizations

Develop sufficient network to draw weather data to use sufficient location specific research data into Agromet system.
Thanks for patient hearing

ধন্যবাদ