Production of Agromet Advisories & Delivery of Agromet Service in Nepal

Joint Presentation by

Dr. Archana Shrestha & Shib Nandan Prasad Shah

Building Resilience to Climate related hazards Project
(Agriculture Management Information System)
Ministry of Agriculture and Livestock Development
Why Agromet Advisory Preparation is Significant?

• In 30 years of DHM’s History,
  
  • The **First Meteorological Service** delivered for the Farmers
  
  • The **First Activity** that brought Meteorology and Agriculture officials together at government institutional level.
  
  • The **First Opportunity** for Meteorologist to interact with Farmers
How It Started?

Government of Nepal formed SPCR (Strategic Program for Climate Resilience) and prepared PPCR (Pilot Program for Climate Resilience Program) in June, 2011

1. Building Resilience to Climate-related Hazards (BRCH) - WB

2. A. Institution & Capacity Strengthening
   B. Modernization
   C. Services
   D. Creation of Agriculture Management Information System (AMIS)

Preparation and Delivery of Agromet Advisory Bulletin (AAB)
Who Guides?

- **WOGRAM**: Working Group on Agricultural Meteorology

- Technical group to facilitate & coordinate DHM, MOALD and NARC

- The World Bank is an observer

- WOGRAM meeting
  - keeps the activities on track and
  - helps to make understanding between different institutions

- 21st Meeting held so far
What is the mechanism of the AAB service?

**Information Gathering**
- Weekly Weather Information (Every Thursday, DHM)
  - Rainfall
  - Max Temp, Min Temp
  - Relative Humidity
  - Wind
  - Significant Weather

**Weekly Weather Forecast** (Every Thursday, DHM)
- Rainfall
- Max Temp, Min Temp
- Cloud
- Significant Weather

**Weekly Crop Status** (Every Thursday, DADO/DLSO)
- Crop Stage,
- Pest & Diseases,
- Crop Cover Area,
- Livestock health, Diseases

**Preparation**
- (Every Friday)
  - Prepare Agro-Advisory Bulletin
    - At Nepal Agriculture Research Council (NARC)
    - At 25 districts

- By Expert Committee
  - NARC, AMIS/PMU & DHM

**Delivery**
- Ministry Agriculture & Livestock Development
- By Ministry Agriculture & Livestock Development & Its extension offices

- Pilot District Agriculture Offices and Farmers
Field Interactions for farmers/facilitators

• Two way learning process
• To educate farmers about weather forecasting process
• To educate farmers about challenges/limitations of weather forecasts
• Forecast reliability of various weather systems
• How to use forecast in decision making for their crops
• To get feedback from farmers
Benefits

1. **Institutional**
   - Brought Agro-experts and meteorologists closer
   - Improved forecast communication skill of meteorologist for agriculture sector
   - Two way learning process between Agro-experts and meteorologist
   - Learning about needs of farmers during field visits
   - Field visits along with Agro-experts bridge gap between Meteorologists and Farmers

2. **Users (Farmers/local managers level)**
   - Awareness about weather forecasting mechanism
   - Awareness about risk analysis using weather forecast
   - Some farmers benefited using weather information and demanded more specific forecasts and information

3. **High Demand of the Service**
   1. Added service to 4 districts in collaboration with FAO
   2. Recently added 1 district in PPCR-BRCH pilot districts
Challenges

1. In reaching out to Farmers
   • Problem in preparing district/local level bulletins
   • Farmers are not skillful to extract information from national bulletins for their districts
   • Weak feedback mechanism

2. Subjective forecast

3. Lack of enough staff to monitor weekly weather and meet the demand of AAB

4. Operational Challenge
Way forward...

1. Improved and customized weather forecast and weather information
2. Make farmers weather information responsive
   - Develop better communication skill among meteorologists about weather service for farmers
   - Provide Awareness/Training for Farmers/District coordinators on weather based agricultural decision
3. Extend in more districts
Agro-Advisory Bulletin dissemination
Development and dissemination flow of AAB

Crop and Livestock Status (DADO/DLSO & NARC) → Expert Committee (NARC, MoAD and DHM/MFD) → Weather Status (DHM)

Agromet Advisories (Crop/Livestock information, Weather outlook/forecast)

Website NARC/NAMIS → SMS Krishi_Info → Hamro Krishi App

News paper and Radio Programme → Kisan Call Centre/Farmer Knowledge Center

Feedback

Dissemination

Joint Production of Agromet Advisories & Delivery

Users

Farmers Community → Stakeholders
A. Information Product

- **Weekly Agromet Advisory Bulletin - 165th Issue of AAB on 14th September 2018**
- **Compiled issue of year-wise AAB**
- **Package of Cultivation Practices**
- **Frequently Asked Question and Answers**
- **District Profile**
- **Daily Rainfall and Temperature Record Booklet**
- **Video documentaries, Song, Jingle, PSA & Radio**
- **Climate Vulnerable Area Mapping**
- **Instructional & Operating Manual for Rain gauge & Thermometer**
- **Agricultural and spatial data digitizing and archiving**
B. Information Dissemination

- Linkage with WMO WAMIS
- Development of mobile applications based on data from AMIS
- Advertisements for mass media (FM radio, TV channels)
- Publications
- SMS
C. Communication devices

- AMIS equipment
- Automatic Weather Station (AWS) established
- Kisan Call Centre – Farmer Knowledge Center
- Rain gauge, Thermometer, Smart Mobile phone with Kisan SIM card – Farmer Level
D. Capacity Building

A. Institutional

❖ Short term training courses (summer course)
❖ Advanced degree courses
❖ Regional/District level training (GIS, Crop Modeling etc.)

B. Farming Community

▪ Roving seminar (PMU, DHM, NARC, Farmer groups)
▪ Training on handling & use agro climate tools (Thermometer & Rain gauge) for on-farm decision making
▪ Community level training on use of AMIS Information Products
• Summary (Highlights)
  • Weather Highlights
  • Crop Highlights
  • Livestock Highlights
• Past weeks Weather information
• Weekly Weather Outlook (Forecast)
• Advisory on Crop problems for respective districts
• Advisory on Livestock problems for respective districts
• Annexes (Details on Major problems)
• AAB Expert list in Last page
NEPAL - PPCR
Building Resilience to Climate Related Hazards Project (BRCH)
Agriculture Management Information System

**Information Delivery / Dissemination**

- Email to district focal person at DADO, DLSO and NARC station
- SMS to farmers and stakeholders
- Upload in [www.namis.gov.np](http://www.namis.gov.np) and HamroKrishi mobile app
- Also, available in NARC website
- Dissemination from District FM Radios
- Social Media like Youtube, facebook

Cont’d
• Agromet Advisory
• Crop Information
• Livestock Information
• Weather Information
• Market Information
• Insurance Information
• Agriculture Inputs
• Training and Extension
• Programs and Schemes
• Grievance Redressal
• Early Warnings
• Know your Farmer
• GIS
Mobile Application ‘Hamro Krishi’

- FAQs
- Weekly Agromet Advisory Bulletin
- Weather Information
- Agri-technology
- Success Stories
- Grievance Readdress
- Contact Numbers
- Market Information & Commodities Price
- Disease Management
- Fertilizer Management
Roving Seminar

On-spot Problem Sharing Mechanism

A way of Contacting farmers without their prior information

On-spot Delivering of Agro-Advisory

A way of collecting first hand crude information

Presence of government at farm land so as to build the trust between government and farmers
Mass Media

25 Radio stations covering all 25 pilot districts

Broadcasted normally in morning and evening; 15 to 30 minutes; weekly

The radio program focuses:

- Agro met advisory bulletin
- Project program/activities and progress updates
- Interviews/interactions with key personnel and farmers.
- AAB is disseminated through radio in Avadhi language also focusing the farmers of Mid and far western districts to support local farmers.

Video Documentary/Program are telecasted through national television channels under the AICC slot
Challenges in Agromet Services Delivery

- ICT literacy of Farmers
- Inadequate awareness on climate change
- Weather Forecast Mechanism – *quality, timeliness, usability* etc. (Weekly/Monthly)
- Advisory Dissemination, Outreach & Feedback – *quality*
- Historical Climate Data
- Technical Capacity
- Technology Transfer to the farming community/stakeholder
Continuity / Way Forward

• Planning to rollout AMIS throughout Nepal
• Dissemination throughout Nepal (SMS, Farmer’s Knowledge Center, etc.) – Government gave extra budget
• WOGRAM at Provincial level
• AAB at Provincial level, suitable for municipal level
• Research & Development of other weather/climate related bulletin for Agro Advisory Services (eg. Agro-Drought Monitoring Bulletin, optimum crop forecasting etc)
Thank You
For more: www.namis.gov.np