CARE | SOUTH ASIA

RIMES

THE WORLD BANK
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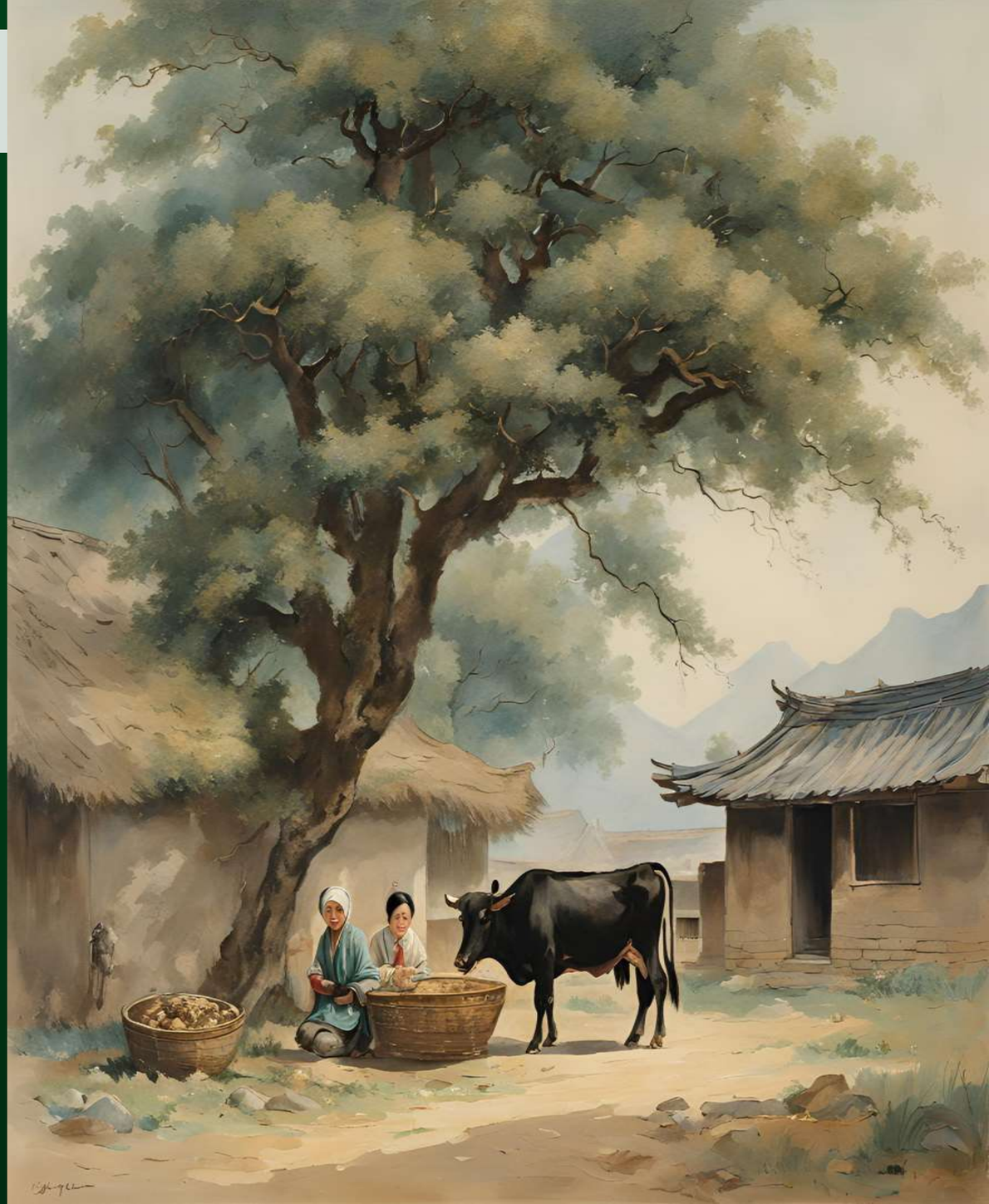
3rd Regional Workshop of CARE Component 1:
Regional Sectoral Focal Points Meeting

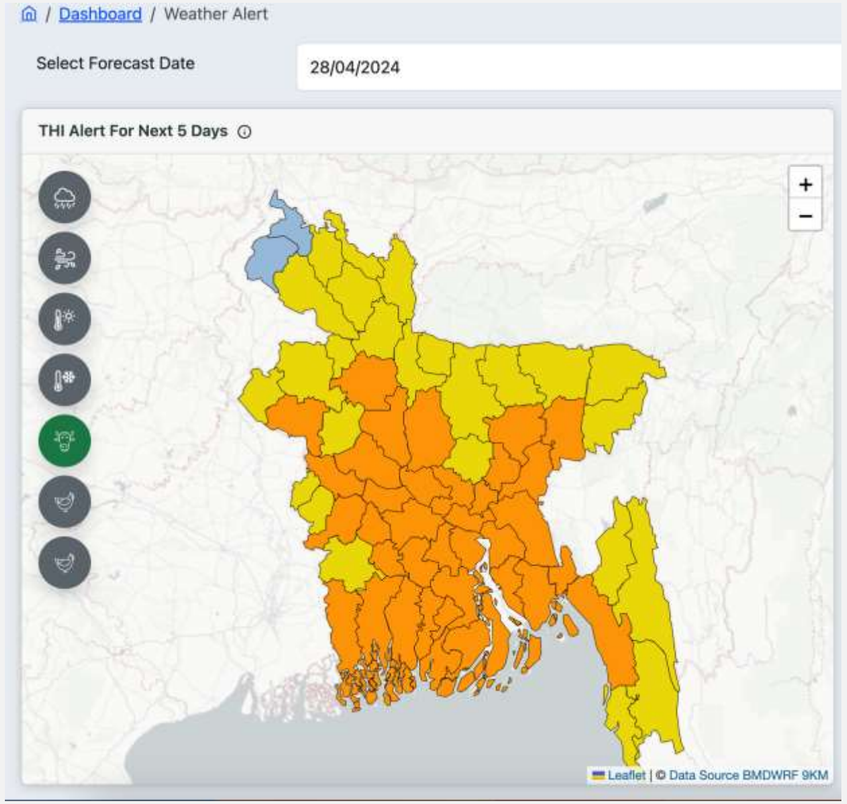
24 February 2025

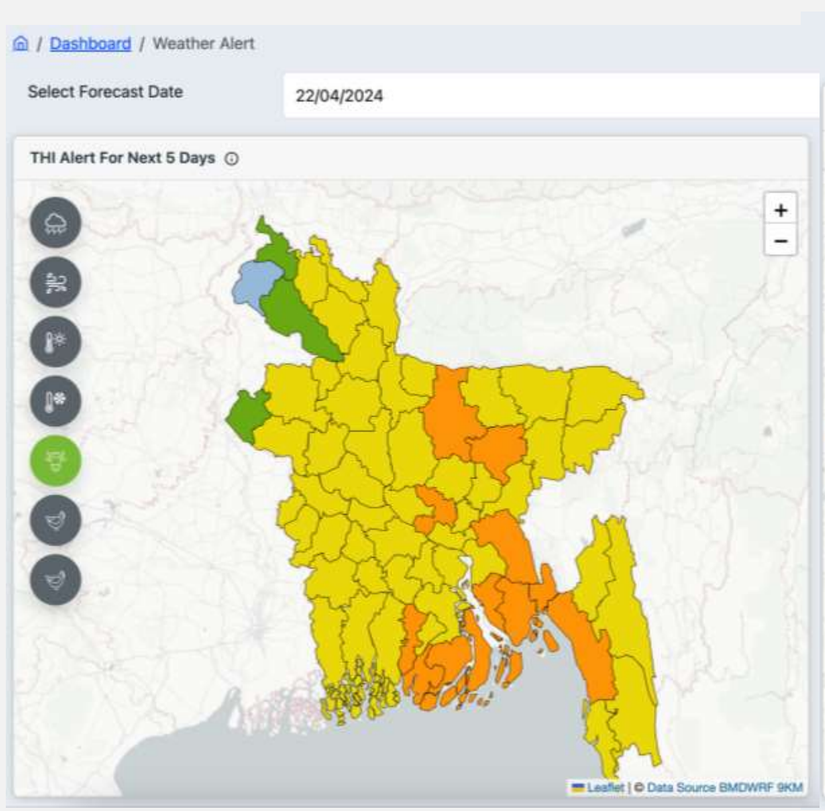
Application of Heat Stress Alerts by Farmers in Bangladesh

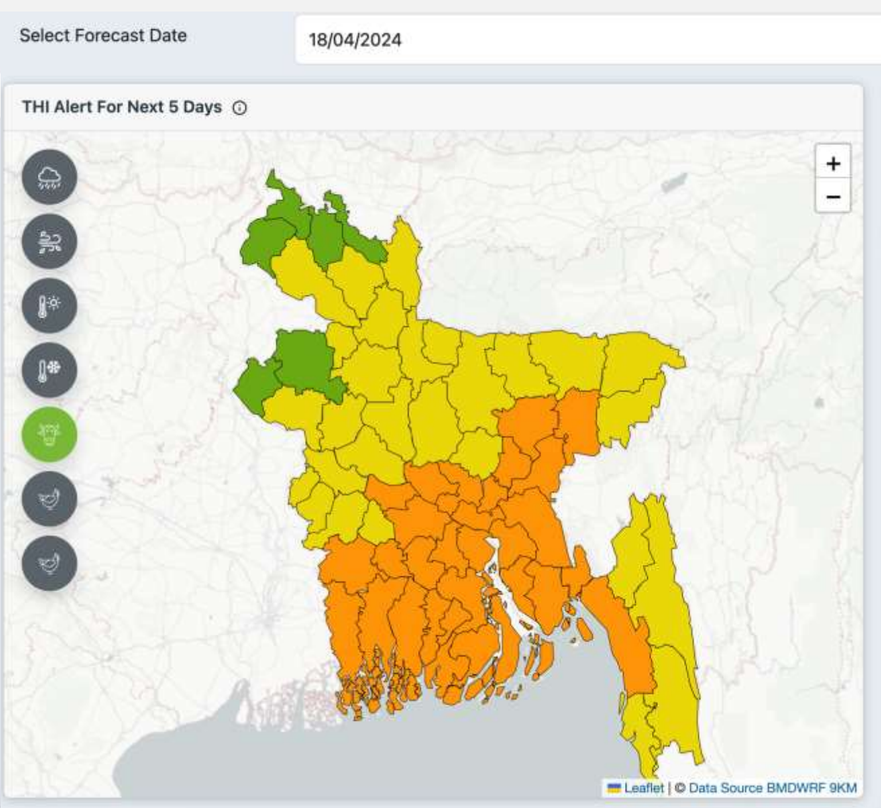


Presented by
Raihanul Haque Khan, Country Program Lead, RIMES

Heatwave Scenario: April 2024



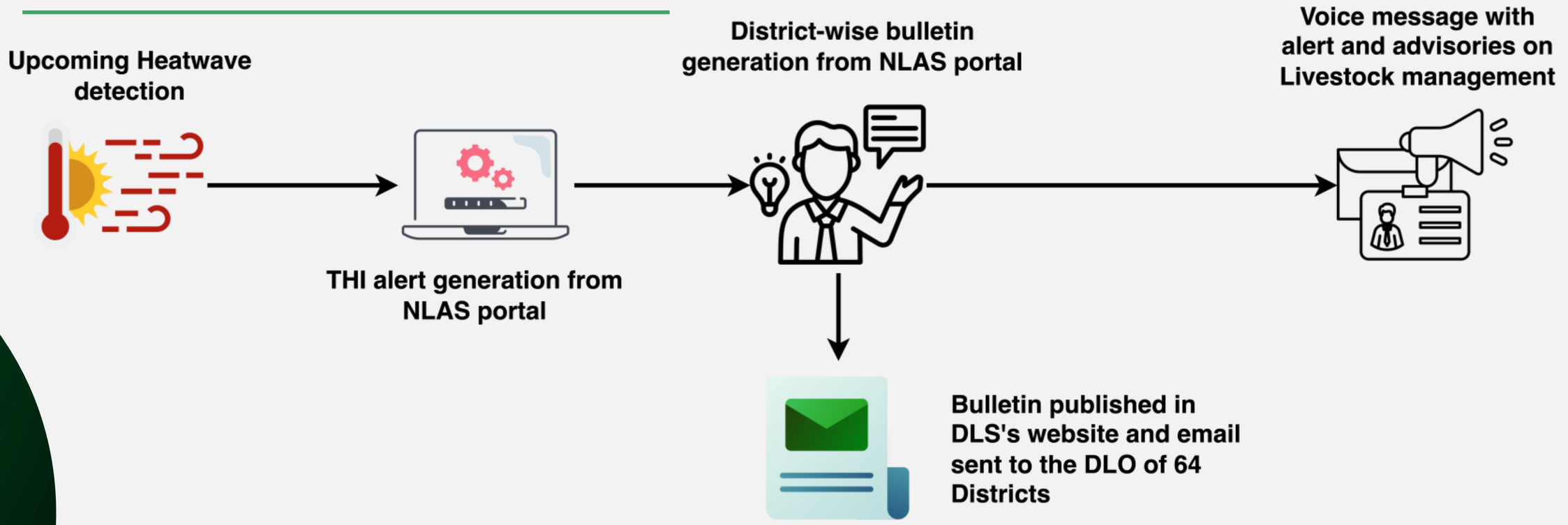




In Kurigram, a northern district of Bangladesh, a survey of 400 farmers reveaals

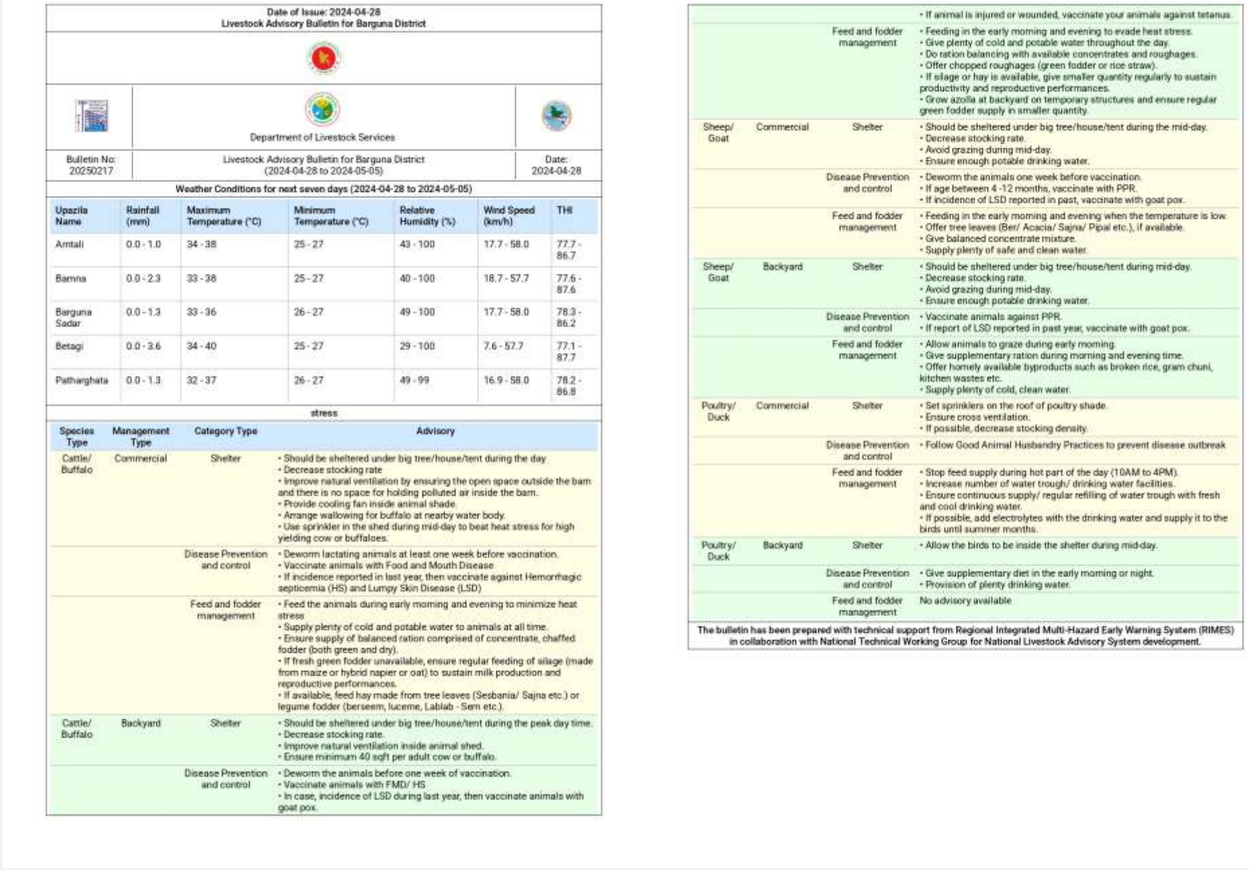
- Impact of water scarcity was felt by 84.5% of respondents for livestock
- Lower milk production of cattle was reported
- Higher mortality rate of poultry was reported

Application of Decision Support System



- During April 2024, **total 4 heatwaves** were monitored from NLAS portal.
- 60-64 districts were forecast with Mild to severe heat stress (according to THI Index).
- Special heatwave bulletin were disseminated to extension officials of all affected districts

Special bulletin and Voice Alerts



Date of Issue: 2024-04-28
Livestock Advisory Bulletin for Barguna District

Department of Livestock Services

Bulletin No: 20250217	Livestock Advisory Bulletin for Barguna District (2024-04-28 to 2024-05-05)	Date: 2024-04-28

Weather Conditions for next seven days (2024-04-28 to 2024-05-05)

Upazila Name	Rainfall (mm)	Maximum Temperature (°C)	Minimum Temperature (°C)	Relative Humidity (%)	Wind Speed (km/h)	THI
Amtali	0.0 - 1.0	34 - 38	25 - 27	43 - 100	17.7 - 58.0	77.7 - 86.7
Bamna	0.0 - 2.3	33 - 38	25 - 27	40 - 100	18.7 - 57.7	77.6 - 87.6
Barguna Sadar	0.0 - 1.3	33 - 36	26 - 27	49 - 100	17.7 - 58.0	78.3 - 86.2
Betagi	0.0 - 3.6	34 - 40	25 - 27	29 - 100	7.6 - 57.7	77.1 - 87.7
Patharghata	0.0 - 1.3	32 - 37	26 - 27	49 - 99	16.9 - 58.0	78.2 - 86.8

stress

Species Type	Management Type	Category Type	Advisory
Cattle/ Buffalo	Commercial	Shelter	• Should be sheltered under big tree/house/tent during the day. • Decrease stocking rate. • Improve natural ventilation by ensuring the open space outside the barn and there is no space for holding polluted air inside the barn. • Provide cooling fan inside animal shade. • Arrange wallowing for buffalo at nearby water body. • Use sprinkler in the shed during mid-day to beat heat stress for high yielding cow or buffaloes.
		Disease Prevention and control	• Deworm lactating animals at least one week before vaccination. • Vaccinate animals with Food and Mouth Disease. • If incidence reported in last year, then vaccinate against Hemorrhagic septicemia (HS) and Lumpy Skin Disease (LSD)
		Feed and fodder management	• Feed the animals during early morning and evening to minimize heat stress. • Supply plenty of cold and potable water to animals at all time. • Ensure supply of balanced ration comprised of concentrate, chaffed fodder (both green and dry). • If fresh green fodder unavailable, ensure regular feeding of silage (made from maize or hybrid napier or oat) to sustain milk production and reproductive performances. • If available, feed hay made from tree leaves (Sesbania/ Sajna etc.) or legume fodder (berseem, lucerne, Lablab - Sem etc.).
Cattle/ Buffalo	Backyard	Shelter	• Should be sheltered under big tree/house/tent during the peak day time. • Decrease stocking rate. • Improve natural ventilation inside animal shed. • Ensure minimum 40 sqft per adult cow or buffalo.
		Disease Prevention and control	• Deworm the animals before one week of vaccination. • Vaccinate animals with FMD/ HS • In case, incidence of LSD during last year, then vaccinate animals with goat pox.
			• If animal is injured or wounded, vaccinate your animals against tetanus.
		Feed and fodder management	• Feeding in the early morning and evening to evade heat stress. • Give plenty of cold and potable water throughout the day. • Do ration balancing with available concentrates and roughages. • Offer chopped roughages (green fodder or rice straw). • If silage or hay is available, give smaller quantity regularly to sustain productivity and reproductive performances. • Grow azolla at backyard on temporary structures and ensure regular green fodder supply in smaller quantity.
Sheep/ Goat	Commercial	Shelter	• Should be sheltered under big tree/house/tent during the mid-day. • Decrease stocking rate. • Avoid grazing during mid-day. • Ensure enough potable drinking water.
		Disease Prevention and control	• Deworm the animals one week before vaccination. • If age between 4 -12 months, vaccinate with PPR. • If incidence of LSD reported in past, vaccinate with goat pox.
		Feed and fodder management	• Feeding in the early morning and evening when the temperature is low. • Offer tree leaves (Ber/ Acacia/ Sajna/ Pipal etc.), if available. • Give balanced concentrate mixture. • Supply plenty of safe and clean water.
Sheep/ Goat	Backyard	Shelter	• Should be sheltered under big tree/house/tent during mid-day. • Decrease stocking rate. • Avoid grazing during mid-day. • Ensure enough potable drinking water.
		Disease Prevention and control	• Vaccinate animals against PPR. • If report of LSD reported in past year, vaccinate with goat pox.
		Feed and fodder management	• Allow animals to graze during early morning. • Give supplementary ration during morning and evening time. • Offer homely available byproducts such as broken rice, gram chuni, kitchen wastes etc. • Supply plenty of cold, clean water.
Poultry/ Duck	Commercial	Shelter	• Set sprinklers on the roof of poultry shade. • Ensure cross ventilation. • If possible, decrease stocking density.
		Disease Prevention and control	• Follow Good Animal Husbandry Practices to prevent disease outbreak
		Feed and fodder management	• Stop feed supply during hot part of the day (10AM to 4PM). • Increase number of water trough/ drinking water facilities. • Ensure continuous supply/ regular refilling of water trough with fresh and cool drinking water. • If possible, add electrolytes with the drinking water and supply it to the birds until summer months.
Poultry/ Duck	Backyard	Shelter	• Allow the birds to be inside the shelter during mid-day.
		Disease Prevention and control	• Give supplementary diet in the early morning or night. • Provision of plenty drinking water.
		Feed and fodder management	No advisory available

The bulletin has been prepared with technical support from Regional Integrated Multi-Hazard Early Warning System (RIMES) in collaboration with National Technical Working Group for National Livestock Advisory System development.

Heatwave Advisory

Department of Livestock Services

April 22, 2024

Welcome to the weather advisory service. Today is April 22, 2024. According to the Bangladesh Meteorological Department, there is a possibility of mild to moderate heatwaves in your area from today until April 26.

Recommendations:

- Give livestock plenty of water and bathe them multiple times if necessary.
- Keep livestock under large trees or shelters during the day.
- Ensure proper air circulation in cattle sheds and arrange fans if needed.
- Pay special attention to dairy cows and ensure a balanced distribution of grass and straw in their diet.
- For hybrid cows, buffalo, and poultry, sprinkle water on sheds or roofs at noon to reduce heat effects.
- Feed livestock in the early morning and late afternoon to minimize the impact of heat.

Courtesy: Department of Livestock Services
Technical Support: RIMES

Community Response to Advisories

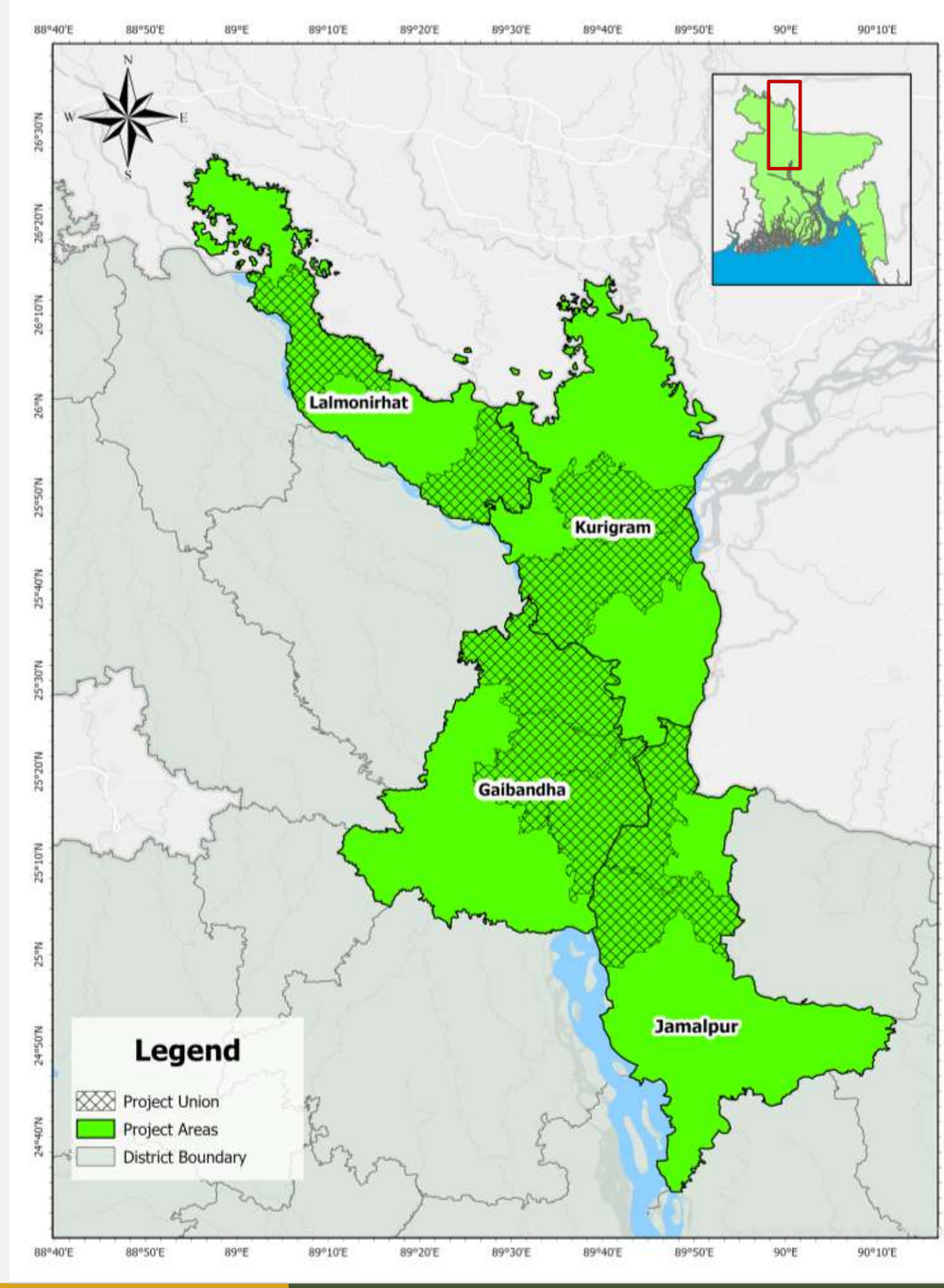
(Based on responses from about 600 farmers from 4 districts)

Following the advisory participants reported of saving between 82-826 USD/HH. Majority of them saved in the range 82-206 USD/HH.

Early actions by the farmers included keeping livestock in shades/cooler places, ensuring proper ventilation, bathing them regularly, increasing fluid intake, balanced diet intake etc.

Ensuring proper vaccination based on the advisories

Maintaining intensive care for poultry by keeping them in shed and well-ventilated area.



Impact on the ground

Mst. Beauty Begum, a resident of Thetrai union in Ulipur Upazila, Kurigram, received a heatwave advisory and subsequently constructed a shelter for her cattle to ensure shed and ventilation during daytime. It helped to keep her cattle healthy and minimize production loss.

An assessment by RIMES indicates such action may help a smallholder farmer save about 23 USD every week during a heatwave by avoiding loss of milk production.

Lesson learned and Recommendations

Increasing community confidence and familiarity with early warning information through training and awareness initiatives.

Enhancement of forecast interpretation capacity of both national and sub-national stakeholders related to livestock management

Involve sub-national level extension officials for customizing advisories at the local level

Forecast-based action mechanism for institutions to guide both strategic and tactical decisions (e.g., vaccine stockpiling, distribution of IEC materials, import decisions based on projected production, etc.)

THANK YOU

CARE for South Asia Project, Component 1

Contributing to an enabling environment for climate-resilient policies and investments for select sectors in South Asia

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