

Global warming and erratic weather have made forecasting an important business. In such a climate, private weather companies are making merry, sending out instant alerts to farmers through SMS and voice mail

The Sunshine industry

Aditya Ghosh

ANANDRAO NAIKWADI (45) hates automated SMSes, but there's one he desperately looks forward to — an automated forecast from a private weather station in the vicinity. One such message, warning him about a prolonged hot, dry spell saved 30 per cent of his potato crop last year. And that of his fellow farmers in Kher *tehsil* in Pune, with whom Naikwadi shared the information. A few hundred kilometres up north in Nashik, J.M. Khilare was not so lucky. His area did not have a weather station to send him an SMS alerting him about excess rains in the next few days, and he lost his entire grape crop. Since then he has been trying desperately to find a company to install a station to warn him of the vagaries of weather that have become the bane of rural India.

Needless to say, uncertain weather has played havoc with agriculture. A prolonged heat spell led to the rise of a new pest which destroyed 70 per cent of the potato crop in Maharashtra this year. Untimely rain destroyed coffee plantations in Karnataka in 2007 and 2008. Insurance companies, which had insured the coffee crops, made compensation payouts of Rs 12 crore in the two years — against premiums paid of Rs 5 crore. In 2007, the paddy crop in Haryana was wiped out after erratic weather led to the surfacing of the brown plant hopper pest after 24 years.

No wonder Khilare, president of the Maharashtra Grape Grower's Association, says, "I do not mind paying for it [a weather station], it is so vital for me. My entire business is falling apart without updated, accurate weather information." He is currently in talks with the Agricultural and Processed Food Products Export Development Authority (APEDA) to help set up weather stations in vineyards across Nashik district. Without these stations, insurance companies will not insure his crop from the erratic weather which now changes over as short a distance as 10 kilometres.

Filling the gap

WITH ONLY 650 or so stations, the Indian Meteorological Department (IMD), is ill equipped to predict or record such changes. "We need at least 6,000 automated weather stations, one for every block and perhaps more, along with 25,000 automated rain gauges to have any representative data about weather, develop our insurance schemes better and help farmers get compensation in case of extreme weather conditions," says M Parshad, chairman and managing director of the Agricultural Insurance Company of India (AIC), which was the first to insure farmers against weather risk.

The government-run AIC is one of only two insurance companies that offer weather insurance — ICICI Lombard in the private sector being the other. In the past two years, the two have covered 12.77 lakh farmers who have paid a premium of Rs 247 crore and received compensation payouts of around Rs 132.2 crore. The Central and state governments subsidise the sum insured, meeting the gap between premium paid and sum assured. This model was recently studied by a team from the International Fund for Agricultural Development, a UN body. "Commercialisation is inevitable and is not necessarily hurting the farmers, with the government subsidy for insurance premiums," says Jamie Anderson, one of the team members.

In 2007-08, the Centre sanctioned a modernisation plan of Rs 950 crore, under which 550 weather stations, 55 Doppler radars and 3,600 rain gauges will be installed across the country. But even that will not be enough, admit Met department top brass. "Regional changes are so palpable that every district needs at least four stations, which means a total of around 25,000 stations. One automated weather station costs Rs 1.5 lakh; then there's maintenance, which is substantial. It can only

be done in a phased manner. We also need to find a faster medium to communicate forecasts since newspapers are 12 to 16 hours late," says R.V. Sharma, deputy director, western region, IMD.

Private weather stations have successfully filled this gap. There are 1,200 private weather stations across the country today; 600 more are expected to come up by July this year, set up almost entirely on the insistence of insurance companies who pay a hefty fee to access the data recorded by them. For example, in Pune district alone, insurance companies have set up four weather stations in strategic locations so that the distance between each is no more than 20 km.

Despite all this, the IMD remains the primary authority in the area of weather forecast — all data from private weather stations need to be calibrated and certified by the IMD to be accepted. The IMD also boasts of historical data, although the utility of such data is diminishing. The IMD scores in one other regard — cost. For an insurance company, an annual contract with a private weather station would cost 10 to 15 times what the IMD charges.

Private privileges

PRIVATE PLAYERS, on the other hand, are far better where services are concerned. Farmers are no longer forced to crowd in front of television sets for weather bulletins or depend on newspaper forecasts issued for the entire region. Text messages are delivered to mobile phones within a radius of 20 sq km by an automated system connected to a computer network. This network is linked directly to a satellite, which in turn gets the data from the weather station. There is no human involvement anywhere.

Services are getting further customised, with companies evolving competitive strategies in the weather market. Recent plans include introducing automated voice calls and SMSes in local languages. "We have developed a web-based crop monitoring and forecasting module for specific crops. Also, we work with ground-level NGOs, cooperatives and extension service providers to disseminate information to farmers personally or through a newsboard at the block-centres," says Anuj Kumbhat, chief executive of Weather Risk Management Services which offers technical support to weather insurance companies.

Now you have advanced weather stations being imported which can record wind speed and direction, leaf wetness, soil moisture and sunshine hours as well. "These parameters have become increasingly important particularly for high-value crops," says Kumbhat. The weather business can only grow in the current climate of uncertainty, say experts and companies investing in private weather stations. "Apart from farmers, who are the first to be hit by climate change, tourism, transport and construction companies are showing interest in buying data. We have about 60 automated weather stations ready to be installed whenever an agency asks for it," says Srinivas Rao, vice-president, National Collateral Management Services Ltd, a private sector company with the largest network of 422 weather stations in the country.

The business and network of weather stations can only grow as the weather becomes more unpredictable. "We are looking at 600 million farmers in the country, 60 per cent of whom are rain-fed," says Kumbhat, adding, "The coverage of farmers has just started. And every small or marginal farmer can be included."

For Ramesh Shantaram Pawde, who owns just an acre of land in Pune district, the insurance has become essential; so has paying for weather forecasts through the insurance premium. "I can't afford to suffer due to such frantic climate changes. I can't predict yields any more as my forefathers could. I have to depend on the SMS that Anandrao gets. Because I do not have a mobile phone," he said.



Photos: SUDIPTA BANERJEE/HT

WEATHER WATCH

'Now we get an SMS every three days and plan accordingly,' says potato-farmer Anandrao Naikwadi (right), who shares alerts with farmers who don't have phones



SOOTHYSAYER A private weather station (left) which services farmers and weather risk insurance companies in the area. The weather stations are installed on top of *pucca* constructions in the area to avoid obstructions from tall trees and buildings



SEEKING A HELPING HAND Dharamraj Chaudury, who has been growing potatoes for 35 years now, says, 'I thought I had learnt the tricks of the trade well enough from my forefathers. But I can no longer interpret weather change, nor can I predict anything'

HOW THE FIGURES STACK UP

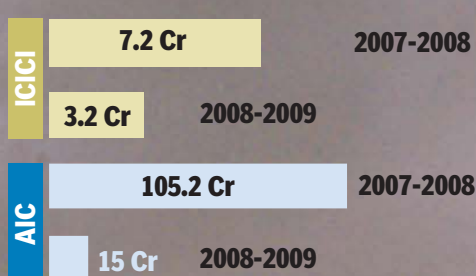
Number of farmers insured



Sum assured (in Rs)



Compensation payouts (in Rs)



Figures for 2008-09 are for the first three quarters only.
AIC: Agricultural Insurance Company of India, a public sector firm
ICICI: ICICI Lombard Agricultural Insurance



MACRO ISSUES, MICRO IMPACT Farmers, representatives of the International Fund for Agricultural Development, and weather station officials discuss various issues related to farming and climate change in Wakarwadi village in Kher *tehsil* of Pune district



EXPERT SPEAK 'India has taken a lead [in subsidising weather insurance premiums]. This model can be followed in other countries, particularly in Latin America,' feels Francesco Rispoli (left). She and Jamie Anderson (right) are part of an International Fund for Agricultural Development team which travelled across India in March

India is one of the first to experiment and intervene to secure the interest of farmers
JAMIE ANDERSON, TECHNICAL ADVISOR, INTERNATIONAL FUND FOR AGRICULTURAL DEVELOPMENT

THE ANATOMY OF METEOROLOGY

WEATHER STATIONS generally measure three basic parameters: rainfall, humidity and temperature, at intervals of 30 minutes to an hour. But now advanced stations are being imported which record wind speed and direction, leaf wetness, soil moisture and sunshine hours

PRICE OF WEATHER DATA:

Rs 60,000 to Rs 70,000 (Cost of an annual contract with one private station)

Rs 3,000 to Rs 4,000 (Cost of an annual contract with one station of the Indian Meteorological Department)
 Rs 1.5 lakh (Cost of installing one automated station)
MAJOR PRIVATE PLAYERS:
 National Collateral Management Services Ltd: 422 stations
 Indian Space Research Organisation: 650
 INGEN technologies: 150 [300 by June]



AMIT DAVE/REUTERS

PRAYING TO THE GODS an Indian farmer looking at the sky, waiting for the rains. Weather has in recent years played havoc with crop yields