

# Traditional Methods of Weather Forecasting

*in*  
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## Prologue



The following report is an attempt to document and classify the traditional techniques of predicting arrival or failure of monsoons in the district of Jaisalmer. Our ancestors developed techniques of forecasting local weather conditions from miscellaneous observations of their immediate natural environment. Over the years they astutely kept track of growth, reproduction and other behavioural patterns of animals and plants in their area; sun, moon and star phenomena; cloud formations and wind directions, etc. These observations, etched in their memory, were put to test every seasonal cycle until a set of validated results were obtained. This collective knowledge was passed on from one generation to another as an oral tradition and became part of folk parlance of the communities dependent on agriculture and pastoralism as their mainstay.

Preference to western education in post independent India relegated traditional knowledge as unscientific and renounced them as superstition. They were categorically blamed for the backwardness of the rural society. Progress in agro sciences - introduction of hybrid seeds, fertilizers and pesticides, and new irrigation techniques - and mechanization of farming activities promised greater economic returns to farmers and brighter prospects for rural development. Agro-pastoralists soon lost faith in farming methods of their grandfathers. These methods were now seen as inefficient and uneconomical.



People in Jaisalmer are semi nomads. When all the signs, that they learnt to see from their elders, fail to indicate the onset of rains, they migrate to other areas with their sheep, goats, cows and camels. Some would travel 200 -500 km by foot stopping only under a tree at night, acquiring first hand information about their surrounding environment. The rural architecture is reflective of this impermanency. Jhumpas or huts are constructed from indigenous resources mud, grass, bamboo, gobar (cow-dung), local plants, fibres, and scrub. Availability of these resources also depends on specific local conditions of the weather, soil, and rainfall.

A basic housing complex consists of a circular room called jhumpa dominating a large open courtyard where men may gather for discussions or gossips. The rooms on the either side of the jhumpa are primarily used to keep clothes, blankets, utensils and valuables. Courtyard and roof top (if there is one) is where the beds are laid at nights to sleep.



The night sky spreads overhead, hung with stars and moon. They are the farmer's calendar. Every night before he sleeps he calculates in details the stages of agricultural cycle. The night slumber is interrupted by the morning clamour of the birds. Everyday chores are dependent on the availability of natural light. So the day is divided according to the position of sun in the sky.

The fields and pastures are normally much further away from the villages. A farmer sets off with his animals and tools at an early hour. He has walked that distance ever since he was a child tagging along as an extra hand with his father. Under the apprenticeship of his father he learnt the tricks of the trade. The tricks that will help him tune himself to his surrounding environment in order to understand and deal with the vagaries of nature. For example, when he sees the birds leaving their nests in a hurry, he knows that it is a sign of an approaching storm. He will know from the flowers on a particular shrub (*launa*) in the jungle, which he crosses everyday, that in a month or so the skies will keep their promise of rain. He will then busy himself with arranging seeds, sharpening his tools and preparing the fields.

Farming and herding is not everybody's forte. But experience breeds expertise. Villagers gather every evening to discuss, swap notes and debate technicalities wherein most of the time they rely on an experienced elderly to intervene, deliberate and adjudicate any arguments. With the introduction of new seeds, fertilizers, pesticides and irrigation techniques like sprinklers, the wisdom of the elders is replaced by instruction manuals accompanying these products.



Inauguration of the Indira Gandhi Canal in Rajasthan, including northern parts of Jaisalmer, was seen as another milestone of development. People were no longer intimidated by the vagaries of monsoon. The region locally classified as Marwar (which includes Jaisalmer) was earlier dominated by bajra culture; but with the new found confidence different varieties of crops were introduced. Wheat, amongst them, became associated with modernity<sup>1</sup>. Modernity entailed a change in lifestyle.



This prologue will read different to an introduction written by JS Gahlot in 1926 in his book ‘The Meteorological Wisdom of Rajputana’. He wrote, “Untouched, and of course unapproachable, by the blast of the fast moving civilisation, people (of Rajputana) have remained unaffected in the sandy cradle of Dame Nature”<sup>2</sup>. Elsewhere he writes “Although in the age of scientific researches, a number of instruments have been invented and the weather forecast is a definite aid to the agriculturists yet the poor farmer has no means to get them, perhaps due to his poverty and ignorance”<sup>3</sup>

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<sup>1</sup>Rustom Barucha, *Rajasthan: an Oral History*, p 46

<sup>2</sup> JS Gahlot, *The Meteorological Wisdom of Rajputana*, p7

<sup>3</sup> Ibid, p11

With the course of country's development and needs to reinforce national borders, roads and railways have connected even the most isolated areas of Jaisalmer to cities like Jodhpur, Jaipur, Bhopal, Ahmedabad and Delhi. Connectivity to urban centres opened up opportunities for modern education and new vocations for the youth. Those living in the city of Jaisalmer found lucrative avenues in tourism and other sectors. Reliance on agriculture for sustenance slowly and gradually decreased.



Economic security encouraged consumer culture that was imported from metropolitan cities. Basic luxuries became possible even in the remotest hutments of the desert. Brick houses replete with furniture, cooking range, refrigerator, electricity, desert coolers and fans ensured comforts unknown to the jhompas made mud, wood and grass. New modes of entertainment-cable television, video games, etc- became far more engrossing than the company of the elders. Introduction of new products like soaps, detergents, bathing accessories, synthetic clothes, steel utensils, packaged food, water taps and filters, mobile phones, scooters, cars, etc, encouraged people to endorse a new way of life.

Comforts of new life incurred a disdain for traditional dependence on nature's vernacular setting. Infrastructural provisions mocked adaptive strategies for survival. Drought and famine no longer intimidate the residents of *Maroobhoomi* (desert). In villages authorities fund construction of water storage tanks and small reservoirs. Every alternate week in summers a water tanker refills them. The drought relief programs find ever increasing participation of villagers to build and repair roads and railway tracks, dig *nadis*, and other infrastructural functions. The labourers are remunerated with money and sacks of wheat in a 60-40 ratio.

As if offended by this disregard, the climate has switched on to a whimsical mode. In Jaisalmer it is said that in the month of *Sawan* the winds of north bring rain and in *Bhadon* the winds from east. But since the last decade or so the rains only arrive from the South east or east. The rains from north have almost vanished. Many a times clouds will form overhead without shedding a single drop. The rains are either too early, in the month of *Jeth* (in June; like this year) or too late in *Asoj* (September end; as last year). Global changes in the climate are observed more relevantly in context of the changes in local weather patterns. These changes challenge the mettle of the older observations.



The traditional science of agro meteorology is, thus, losing its practitioners. The presumed irrelevance of this knowledge can be blamed on the people's disinterest in continuing the practice of processes of observation, validation and reasoning; and finally arriving at an updated version more relevant to the present times. Accurate prediction is qualitative and depends on the observational and analytical skills of an individual. This endows fragility to entire gamut of this knowledge system. Proverbs and sayings one may hear many, but interpreting this information requires instinctive talent, acquired through years of awareness and observations. Such instincts are slowly but steadily dying.

Within our own possible reach we can only, at the least, think about reviving the traditional knowledge of Weather Forecasting, by stirring academic interest for it. It is hoped that this indigenous technology will attract scientific curiosity and inspire serious efforts towards discovering new meteorological parameters at local level.

Agricultural development processes are riddled with climatic concerns. Answers to these riddles should be sought in collective use of technological advancements and area specific indigenous knowledge. Such an exercise can prove to be strategic in dealing with the increased vulnerabilities caused due to climatic variability, besides ensuring a cognitive insight into our vast agro-cultural heritage. Now labeled as ‘intangible heritage’, this traditional knowledge and skill is now under threat of being forgotten, more than ever before. Persistence of colonial mentality into post-independence developmental efforts has more than often shrouded indigenous knowledge under thick sheets of superstitions blaming them to be cause for backwardness. A conscious auxiliary effort to clear such misconceptions vis-à-vis analytical devices is intended throughout this report.

