

IMPORTANCE OF AGRO CLIMATE- SINDH AND THE SOUTHERN PUNJAB A CASE STUDY

By
M.H. Panhwar

In March 1954, I was asked by the Government that as the teacher responsible for agriculture engineering has resigned and left King Edward College of Agriculture Sakrand, I should conduct classes in addition to my duties as Agriculture Engineer in Sindh.

My work of levelling of land with bulldozers in whole Sindh as Agriculture Engineer was very heavy, but I agreed to conduct classes on Saturdays from 8 am to 12.00 noon. I was to teach meteorology and Farm Power and Agricultural Machinery. The latter was easy for me, but on meteorology, the college library had no books. I bought some 3-4 books on general meteorology, but they had very little about agriculture, I borrowed books on various field and horticulture crops like vegetables, fruits and flowers from the college library and other sources and studied climatic requirements of each crop, along with climate of Sindh. Luckily at that time copies of the Daily “Sindh Observer” were available for a few years and they gave data of daily climate of Manora, Karachi Sadar, Karachi airport, Hyderabad, Badin, Chore, Nawabshah, Pad Idan, Rohri and Jacobabad. I deputed two clerks to Meteorological Department as well as Sindh Government offices, which had copies of the Sindh Observer, to work out monthly average maximum and minimum temperatures and rainfall. This was done in about a month. Climatic data were recorded at various Government agriculture farms and fortnightly averages were also compiled by officers at Dokri, Sakrand and Mirpurkhas. Director Agriculture in Sindh was compiling data telegraphed each day of year from small meteorological equipment installed in the offices of Taluka Mukhtiarkars and all government

farms each year and averages from 1904 onwards upto 1945 were published in Sindh Government Gazette and the last one was published in 1946.

To teach the subject to the students, these data had to be applied to agriculture crops and the climatic requirements of each crop had to be studied. Luckily books published by McGraw Hill, John Willeys, McMillan and other publishers on various crops were available in the college library. I studied climatic requirements of cotton, wheat, rice, sorghum, millet, sugarcane, vegetables, ground nuts, castor, mango, grape fruit, guava, zizhphus, date etc. and started lectures. Since there was no book available on agro-climate of Sindh, my notes gave me a new insight and incentive to work on new crops, which can be raised in Sindh.

I followed up collecting data from government farms, which maintained records upto 1965. From then on I collected data from Meteorological Department and upto 1984 and built climatic maps of Sindh covering:

- (i) Climatic map of Sindh; annual rainfall.
- (ii) Climatic map of Sindh; annual evaporation.
- (iii) Climatic map of Sindh; probability of 5" rainfall in one day.
- (iv) Climatic map of Sindh; probability of 5" rainfall in 5 days.
- (v) Climatic map of Sindh; probability of 5" rainfall in 30 days.
- (vi) Micro-climatic zone of Sindh (heat and chill units).

In 1980 I decided to introduce new crops in Sindh. I simply had to find out, where these crops grew and climatic conditions in those areas. Climatic data of many major cities of World were collected by American Society for Heating Ventilation, Air-conditioning and Refrigeration and data showed that Sindh and Southern Punjab south of Multan can grow crops which were growing South California below Riverside, North Western Mexico, Western Australia and South Africa at extreme high summer temperatures like those of Sindh and even less warmer

summers of Florida, Queensland, New South Wales, Central and South Mexico, Egypt, Israel, Peru, Chile and Brazil.

Each fruit crop was individually examined for climatic requirements, a list made and only those having high economic potential and easy market acceptance, were considered top priority and others as second, third and fourth priorities. An interesting part of investigation was that many crops considered as unsuitable for Sindh, were found to be more suitable for Sindh. Such examples are; mango, lychee, longan, grape fruit, tangelos, lemons, limes, guava, date palm, jujube species, pomegranate etc.

Besides this it was revealed that Sindh can grow many new crops suitable for whole Sindh or Southern Sindh only. These are acerola, a number of annona species (which can easily flourish in Karachi, Thatta and Badin districts), babaco, canistel and carambola, (coastal Sindh) carissa, cashew and macadamia (coastal area near Shah Bandar, Ghorabari, Sakro, jati etc), coconut and feijoa (coastal area) jaboticaba (southern Sindh), jack fruit, kei apple, marula, papaya, pecan, prickly pear, sapodilla (southern Sindh), Surinam cherry, sapotes (namely white sapote, mammey sapote and mammey American) and tree tomato which can be grown in Southern Sindh. All these can grow in Sindh as commercial crops as they are in many other countries.

The second third and fourth categories of fruits, though commercial elsewhere will need market promotion in Pakistan, but they are known in international market. With the world trade open to us, we can introduce these crops in Sindh and the Southern Punjab and compete in the international market due to cheap labour, cheap water, low taxes as compared to those in countries producing the same crops.

Awareness to climate is very important. Our high school education under Bombay Presidency and Sindh was five years primary and ten years high school to Matriculation. In these twelve years, geography was taught for ten years starting from Taluka (Tehsil), district, Sindh, India,

Asia and World, both physical and political. Three years of physics gave us insight into importance of temperatures, humidity, evaporation, heat and chill calculations, insulation, sun burn etc. By eliminating geography primary and high school levels we have done a great damage to the country, economically, culturally and intellectually.