



62

## Off the beaten track

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**H**ow did I end up writing for ‘Lilavati’s daughters’ when my entry into the field of science was through the back door, so to say? Wasn’t I the one who refused to walk on the beaten track and opted for the commerce stream rather than science even after getting a high score (third highest in Maharashtra) in the SSC exam in 1976? Yet I am now immersed in the science and practice of Animal Breeding and feel like I have found my calling in life. I can live on my farm near a village, a comparatively pollution free and more or less peaceful life, have a career in a challenging and exciting field and help to improve productivity of local sheep and goats and incomes of the people who rear them. It was the right thing to do to give up the prospect of a career as a chartered accountant, when I started to feel stifled going through account books all day, and to embark on a new path in farming although I did not know where the path would lead.

I am glad that the inability to know whether I wanted to do a career in arts, science or commerce at the young age of 16 did not put too severe a limit on my future choices. Now I do regret, however, that I do not have the basic training in science which a B.Sc. gives. If I could turn the clock back, I would enroll for a B.Sc. But it is too late for that! I am glad though that I took Advanced Statistics as my special subject in T.Y.B. Com. My field of

Animal Breeding is based on statistics, and that early background helped me a lot later although I didn't know it at the time. My knowledge of accountancy is also very useful to me now in my administrative duties which I have to carry out as the head of a division of our Institute. The one year Master's degree in Animal Breeding at Edinburgh University six years after my Bachelor's degree in Commerce was really tough but I found I enjoyed the rigour and discipline of 'quantitative' or 'statistical' genetics.

After the MSc, there was an offer of a PhD scholarship at Edinburgh University. Others might have found this tempting, but I refused it because I wanted to come back and work on farm animal breeding for a few years, and then select a relevant topic for my PhD. I wanted my PhD thesis to be practically useful; not just academically interesting. So I came back in 1990 and worked in the Animal Husbandry Division (established that year) of our Nimbkar Agricultural Research Institute. My father had established NARI in 1968 for research on improving the yield of irrigated crops such as sunflower, safflower and sweet sorghum. The work was novel and interesting; we were able to get some funding and worked with enthusiasm.

The opportunity for another PhD scholarship did not come along until 2002. But when it came, it was exactly what I had wanted; so I was glad I had waited. This was the John Allwright Fellowship offered by the Australian Centre for International Agricultural Research which was funding our project on developing 'Prolific worm-resistant meat sheep for Maharashtra'. I did a PhD at the University of New England in Armidale, Australia, which is one of the top universities in the world in the field of animal breeding. My thesis was based on the results of the introduction of a gene for twinning into Deccani sheep which are reared for meat production. The gene known as the Booroola fecundity gene originated in the Indian Garole sheep from Sundarban in West Bengal, was exported unknowingly (in the sheep) to Australia in the late 18<sup>th</sup> century and discovered there in a strain of Merino sheep in the early 1980s as the first known single gene influencing lamb production. The causative mutation and a DNA test to detect it were identified in New Zealand in 2001. Our Institute was the

pioneer in India in proving that Garole sheep possessed the same gene and introducing it into the Deccani breed to gain a minimum 40% increase in weight of lamb produced per ewe carrying the gene. Our work drew attention to the Garole breed and several Government of India Institutes and Universities started studies involving this breed and the gene it carried.

We have now developed the NARI Suwarna strain of Deccani sheep with the ability to give twin lambs and have disseminated it into the flocks of local shepherds as well as to far-flung states such as Andhra Pradesh and Jammu and Kashmir. About 30 smallholder shepherds around Phaltan have twinning sheep in their flocks and are reaping the benefit of having surplus lambs to sell. I really enjoy working with sheep and the shepherds who understand them so well. It is a joy to be able to take the results of research to the end-users. We have also started doing more training and extension among shepherds.

I could not have come such a long way without some important people in my life. I am grateful to my parents for having faith in me and letting me find my own way while providing lots of encouragement and support, financial and emotional. I am also grateful to my father because the Institute he established and built up over the years provided me a readymade place to work from. Having this strong institutional background has benefited me tremendously although finding sources of funding for our unusual long term projects of genetic improvement of sheep and goats is a challenge. My husband Gavan has been a pillar of strength and the knowledge of his unfailing love and loyalty, my anchor through the difficult years of learning a new science and charting a course of meaningful and useful work for myself and my Institute. I also learnt from him how to maintain the balance between 'work' and 'life'. It is still early in my career and I have a long way to go. We have to build up more credibility for our Institute to overcome the prevalent prejudice against NGOs – especially those involved in animal research. I am still growing personally and learning to find a balance between perfection, efficiency and what is possible. The future is full of challenges and the joys and excitements of conquering them such as our latest CSIR award for 'Science and Technology Innovations for Rural Development'.