Santosh Sharma: Combating Climate Change with Better Agricultural Practices

> *"After watching the Digital Green videos, I came to know about new practices for sowing wheat, which have made my work easier, increased its yield, and have protected my crops from pests and disease as well."*

Santosh Sharma explains how the changing weather has been effecting his crops

In January, the wheat fields sown all over Rajgarh district in the Indian state of Madhya Pradesh, in October or November last year are in full bloom. Their long stalks sway elegantly in the breeze and the ears of the grain are ripening into plump seeds. However, the picture is not as rosy as it appears to an untrained eye, and the changing weather has wreaked great damage to the crop. Everywhere, large patches in wheat fields have been flattened by the excessive rain and wind. The kernels of wheat are full of water from the dew and fog, and the seeds inside are rotting from the uncharacteristic lack of sunshine.

Despite the obvious problems caused due to the weather, Santosh Sharma, a veteran farmer from Biaorakala village (Khilchipur block, Rajgarh district) is upbeat about his own wheat fields. When prompted, he explains that this year, he has chosen to plant a different variety of wheat, a decision he made after watching a video. This newer strain of wheat, called Variety 322, is more resistant to climate change in addition to giving a higher yield of grain. Each seed produces a greater number of individual stalks of wheat - about 10 per seed, as opposed to about six per seed in the older varieties - and each stalk is thicker

Santosh demonstrates the sickness of the wheat stalks

than in earlier varieties. This means that this variety is better able to withstand the wind, rain and excessive moisture that the region is facing this season. Although Santosh anticipates a lower yield than if the weather was amenable, he is grateful that his crops have survived the harsh climatic challenge.

Santosh Sharma started working on the fields with his father when he was little. Now about 45 years old, he is the president of a 20-member farmers' group, the Bajarang Mishak Samuh. Elected to the position a year ago because of his forward thinking and entrepreneurial attitude, Santosh has been extremely active in introducing farmers to new practices and improved techniques that can improve their farm productivity. Eager to enhance his knowledge of good farming practices, Santosh has been attending video screenings since 2010 when Digital Green's community video-enabled behavior change communication approach was first introduced in his village. He urges the other members of his farmer's group to attend the screenings since, "the videos make it easy to understand a new practice because they show [it] in detail, demonstrated by farmers like us, which makes it easy to understand and gives us confidence to take it forward ourselves."

Videos are screened according to their seasonal relevance and applicability to farmers' needs, and most often relate to the primary cash crops of the area: wheat in the *Rabi* (winter) season, and soybean in the *Kharif* (rainy) season. Other important crops of the area, also featured in videos, include *chana* (chickpea), *masoor dal* (pulses), *dhania* (coriander), *methi* (fenugreek), *sarson* (mustard), onion and garlic. Santosh has adopted numerous practices relating to almost all these crops, and has also been featured in a few videos as a lead farmer. Expanding on why he considers this approach successful, he says, "not only do these videos allow farmers to see a visual demonstration of the entire process, they also feature practices that can easily be tested. For example, I planted Variety 322 on a small part of my land last year. When I saw that it gave me a bigger yield than the other variety, I decided to plant more of it this year. Luckily, it is also stronger and better at surviving this bad weather."

In addition to switching to a new variety of wheat, Santosh explains, he also adopted a few other practices featured in the videos that have contributed to a healthier crop, such as proper preparation of soil prior to sowing, by applying urea to the field at a particular depth for optimized nutrition. He also uses a mechanized method of sowing that plants seeds in rows at a depth of about three to four inches below the ground. In the past, he clarifies, "farmers used to simply throw the seeds on the field. They would use about 65-70 kilograms of seed, and much of this would either get eaten by animals or would simply not germinate and go to waste." With the new sowing method, seed wastage has been considerably reduced, and the amount of seed required is nearly halved - only about 30 kilograms. Moreover, planting the seed at a greater depth means that the plants are rooted more firmly, making them both stronger as well as better able to access water, therefore requiring less irrigation. Additionally, the line-sowing method has made it easier for farmers to walk between the plants and get rid of unwanted weeds.

Speaking more generally about the needs of farmers in his community, Santosh stressed the need for them to stay updated about new technologies and practices, especially given today's unpredictable climatic conditions. He feels that community-made videos are a convenient and accessible resource for conveying this information since they provide both technical know-how as well as detailed process-related knowledge. Speaking on the community's receptiveness to new practices, he says, "farmers are typically very progressive and open to learning, and they are always eager to know about any new method to improve their yield or ease their work. They aren't scared by technicalities and in fact want as many details as possible. Of course, we still face challenges of time, money and most prominently, climate change, but at least we now have easier access to the knowledge that helps us deal with these constraints."

Wheat fields all over Biaorakala have been flattened due to the uncharacteristically bad weather