

Summary

When we won the grant, we had set out to install drip irrigation systems into two farms in rural Maharashtra, in a region called Palghar. The money from the grant covered the upfront costs of the drip irrigation equipment, such as a tank and pvc pipes. To widen the scope of the project, we also set up a crowdfunding page, and the money raised from this allowed us to expand to another farm. When we arrived, we knew that our priority was providing assistance specific to each farmer, something which required constant communication. Each of the farms had different needs, be it a reliable water source or a means to irrigate crops after the Monsoon season, and we did our best to adapt to these needs within our budget. In the first farm, we arranged for a borewell to be dug to provide a groundwater source, and then had this connected to an extensive drip irrigation system that meant that the farmer could utilise his land better, creating more revenue and food security for himself and his family. With the second family, we had a similar task, and collaborated with the family to provide drip irrigation throughout their plot of land, which would reduce their water use. We were happy that we were able to do this, as the specified watering of a drip irrigation system - rather than flood irrigation - is much more suited to the long dry season in India and ensures that no strain is put on either the water source or the crops. Additionally, less dependency on the monsoon season creates a more reliable way of farming, especially with increased weather unpredictability due to climate change. Working with the third farm, it quickly became apparent that it was not an irrigation system they needed, but just a constant water source. To help with this, we arranged for a borewell to be dug and had it fitted with an electric pump and tank system, which provided both drinking water and also a means (with an attached hosepipe) to water crops and grow in the dry season. At the end of the project, we organised a fieldtrip to pass on the knowledge we'd learnt and also to create a larger, educational impact, bringing 20 farmers from the area to learn more about drip irrigation and organic farming techniques from esteemed farmer Ravi Pereira, and then in the afternoon to visit an architect who used indigenous building techniques to create homes from locally-sourced materials. The field trip was an attempt to bring farmers from the region together to learn useful and applicable knowledge that they could apply to their own lifestyles. Overall, we are very grateful that we were awarded the GoMAD grant and trusted with the responsibility of using it to create a lasting impact.

Overview and Detail

When we first arrived in Palghar it was on the cusp of the monsoon season, which is not only the hottest time of year in India but also the most strained for the land, having been without rainfall for the past 8 months. The severity of this time increases year on year with increased drought, heat and weather unpredictability thanks to climate change. It was obvious that until the monsoon came, the land would be impossible to farm. Drip irrigation can help combat this, minimising water use and thus conserving it, making sure that water sources do not run dry while at the same time providing water for crops all year round and well past the end of the monsoon season. The families we worked with only had the capacity to grow paddy rice during the wet season, which led to increased reliance on the monsoon and thus less food and economic security. With the money from the GoMAD grant, we were able to give these farmers access to the equipment required for drip irrigation, as well as help in installing it. This system is durable, lasting many decades, and puts very little strain on water sources, meaning that the groundwater supply is never exhausted. For two of the farmers we worked with, the problem exceeded that of just irrigation. A lack of a water source meant that we set about trying to supply one, which we managed through digging two borewells and fitting electric pumps to these, providing water both for drinking and for irrigation use. Owing to this year-round water supply, it is now possible for the farmers to grow crops during the dry season, increasing revenue and creating more security and prosperity.

The duration of the project was beset with problems however. Our original plan had been to provide and install drip irrigation, but when we arrived at the first farm, we immediately encountered a problem: there was no suitable nearby water source. The drip irrigation system has to be connected to a stable and reliable water source, and we knew that the only option would be to try to dig a borehole to tap into the groundwater supply. The first rains were already beginning, and it was a race against the lengthy drilling procedure and the onset of the monsoon which would have made drilling impossible. Luckily, the rain held off for long enough and we were able to have boreholes dug for two families. Despite the logistical difficulty of this, we are proud that we were able to persevere and adapt to the individual needs of the farmers to ensure that we could be of the most help. Constant communication throughout made sure that all decisions were made collaboratively, with the farmer's needs being the most important factor, despite the fact that it often meant that we had to start plans again from scratch and find roundabout ways to provide irrigation. Another example of this occurred in the second farm, where an obvious problem arose regarding the electrical pump: there was no electricity supply. Paying for electricity is no small feat and we knew that if our project was to have a lasting effect we would have to ensure that electricity would always be paid for. Working with the nuns, who were offering us accommodation throughout the project, we managed to secure the farmer an additional job tending the nunnery's garden, giving him a stable salary that would easily cover future electricity bills. Overall, our biggest costs went towards the digging of the boreholes and installation of the electric pumps; however, without these, the drip irrigation system wouldn't have provided its purpose of creating less weather dependency.

As a team, this project had a lasting impact on all of us. Aside from the increased organisational skills that came with the necessity of tight budgeting and time management, our problem solving skills improved massively, as well as our perseverance towards issues which didn't seem to have a straightforward answer. We learnt an invaluable amount from the people we were lucky enough to collaborate with - the farmers, their families, and the nuns provided fresh perspectives and insight that we are very grateful for.

In hindsight, if we were to run the project again, we would pay more consideration for the timing of the project; the looming monsoon meant that the preparatory work had to be done

quickly and also its arrival created several 'lost' days since the rains were too torrential to work in. However, these days also had their value, as we assisted the nuns in the running of their community college and kept up contact with the farmers. All in all, we are very grateful to have had this opportunity to make a difference, thanks to the generous funding and vision of Jill and Colin. It felt incredible to be able to put our UWC education into practice and make the theory a reality; this project has taught us that this is possible.