

DRONING ON ABOUT **STEM AND BASEBALL IN INDONESIA**

by **Stuart Corner**

It's an unlikely combination: drones, STEM and baseball. However an Australian initiative has been teaching girls in Indonesia about baseball and simultaneously using drones to teach them about STEM.

It all took place in a project run by Australian organisations She Maps and Diamonds in the Rough with support from Baseball Australia and funding from the Australian Government's Department of Foreign Affairs and Trade (DFAT).

[She Maps](#) is an Australian company that offers several programs based on drones to get children interested in STEM and to make teachers more STEM aware. [Diamonds in the Rough](#) uses baseball, traditionally a male dominated sport, to connect emerging Australian Emerald baseball players with young Indonesian girls. It is led by Australian baseball champion, Narelle Gosstray and aims to provide equal access and encourage female participation in baseball in Indonesia, challenge gender norms and raise awareness of domestic violence. It does this through a combination of skills clinics, personal development programs and games against local men's club teams.

She Maps cofounder Paul Mead says She Maps' STEM education program, Partnering for Purpose, has three levels. It provides drone resources to schools and female demonstrators who provide role models to the students. It also has resources for teachers that align with the Australian curriculum and a number of online training options for teachers. "We have people using our program in 14 different countries. We license our program out and train people in local communities around the world to use the program," Mead says.

AUSTRALIA-WIDE STEM DRONE PROGRAM

"We've run the program in hundreds of schools. We've taught over 8000 people. This year, we have an Australian government funded national roadshow. We will be in every state and territory, in 14 different locations where we're doing teacher workshops. Over 1000 people have gone through our face-to-face program.

The main focus of She Maps programs is children in the last two years of primary school, particularly girls. “Kids’ perceptions about what they want to be in the world, and what society expects them to be, starts really early in primary school,” Mead says. “By the end of primary school that unconscious bias is quite set. What we see is that the transition from primary school to high school is where there is the biggest drop off in girls choosing STEM subjects and believing they are good at those STEM subjects.

“So the groups we target are in those final two years of primary school years to really challenge that unconscious bias. It’s also where students are able to operate a little bit more independently.”

She Maps also uses real world problems to make the programs more meaningful and get students thinking about how they can solve these. “We have people come in from industry, talk to students and teachers and show them what the pathways are, and the really cool stuff happening in industry, so teachers and students get excited,” says Mead.

“Those could be drones being used to capture data in emergency situations, whether that be flooding or fire, drones being used to map the Great Barrier Reef to look at the health of the reef, or surf lifesavers using them on the coast to keep swimmers safe, or people using them in construction and engineering.”

BASEBALL IN INDONESIA

The recent joint She Maps and Diamonds in the Rough program in Indonesia is the second run by Diamonds in the Rough and the drone component has its origins in the first program, run back in 2016 when She Maps cofounder Mead was working for the Department of Sport and Recreation and based in Darwin. Working with Gosstray and Baseball Australia he took young women from the Australian baseball team to Indonesia to act as role models for Indonesian girls under a program funded by the Australian Government.



“Indonesian girls over 14 were not able to play baseball,” Mead explains. “The rule was they had to play softball. So we set out to challenge that, to show that women can play baseball. We had some fantastic support over there, from the associations and from the mothers of the girls.”



After that Mead left the Department of Sport and, with his wife, Dr Karen Joyce, founded She Maps. Then government grants for promoting baseball in Indonesia became available again and they and Gosstray decided there was potential in combining drones and baseball.

“We said to Narelle let’s go for it again, but let’s try some drones, Mead says. “Let’s see what we can do with She Maps as well, because sport diplomacy is great, and baseball is great, but we’ve got a group of girls engaged in this program, and they are not all going to be sports people. What are some of those other skills that we can teach? Technology is coming to Indonesia. It’s one of the fastest growing economies, but the opportunities for girls in STEM are just not there. So we thought, we would try drones as well.”

The first program ran in February 2020. Then Covid hit and the program recently completed was the first since. It was held in Surabaya over two days with 75 girls and in Bali with 30 girls.

“The girls were doing baseball activities and activities with drones, but they were just tools to engage these girls to enable us to put strong female role models in front of them and to have conversations and activities around leadership and confidence building,” Mead explains.

TANGIBLE RESULTS

"A lot of the activities were designed to have those themes. You would see a big group of girls being split up into smaller groups by age or ability and then doing some baseball training with the baseball coaches who are all ex Australian Women's Team members. You would see them going off and doing some drone activities and learning about that technology, flying micro drones and coding the drones.

"But what you probably wouldn't see or hear is the conversations going on between the girls, and the confidence being built inside themselves, and them walking away going, 'Oh, wow, that was awesome. I know I can do this now.' Also the change within the associations over there giving the girls more opportunities."

Also, he says the baseball training has delivered very tangible results. "Girls over there can now reach the highest level of baseball. They recently took a national women's team to the Asian Cup and got their first ranking points. So we've gone from girls not being able to play baseball in Indonesia beyond the age of 14 in 2016 to taking a national woman's team to the Asian Cup in 2023 and getting their first ranking points."



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