

UGM SCS-CEL: Gergunung Klaten Team Designs Water Purification System for Hand Washing Equipment


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The UGM SCS-CEL students team who conducted community service in Gergunung Village, Klaten Regency, Central Java, are designing solar-powered handwashing tools with a water purification system. During the Covid-19 pandemic, this innovation of appropriate tools is instrumental in preventing the transmission of Covid-19 in dry areas where electricity is not available.

The handover of equipment was at the Gergunung Urban Village Office on Tuesday (11/8). The solar hand washing equipment was handed over by dr. Tri Baskoro Tunggul Satoto, M.Sc., Ph. D, as the Field Supervisor, followed by the person in charge of the UGM SCS-CEL work program, Ivan Fabriano Syahputra, and it was symbolically received by the Head of Gergunung Village, Sugeng Slameta.

Tri Baskoro said that this solar-powered handwashing device supports the government's efforts to encourage people to always wash their hands with soap to prevent Covid-19 transmission during the current pandemic. The innovation made by the UGM SCS-CEL students team in Gergunung, Klaten Regency motivated by the condition that several regions in Indonesia that mostly have insufficient supplies of clean water.



Besides, some areas have limited electrical resources, causing problems in the distribution of groundwater for water pumps. Therefore, this manufacture of solar-powered handwashing equipment with a clean water purification system aims to be a means for the community to keep washing their hands in areas where clean water is difficult and with limited electricity resources.

"The main function of this tool is to provide a mechanism of washing hands for the community to support the government's handwashing recommendation," said Tri Baskoro, Thursday (13/8) at UGM.

He explained that the tap system used is operated by foot to diminish direct contact between the hand and the tap handle. This tool intended to minimize the risk of spreading the virus through hand and tool touch.

Furthermore, a clean water purification system from palm fibers and gravel filters is also applied to this tool so that the use of dirty water from washing hands can be filtered again. With this water purification system, it can save the use of clean water to help use it in areas that lack clean water.


He explained that the water purification system is distributed using a water pump that uses solar power in this tool. Their parties used solar energy because solar resources are a renewable resource and are very abundant in Indonesia.

"Not only environmentally friendly but also more flexible to be placed in difficult areas or have limited electrical resources," he explained.

The person in charge of the KKN-PPM UGM work program, Ivan Fabriano Syahputra, added that making the tool took 35 days, July 7 to August 10, 2020. UGM KKN-PPM in Gergunung Village, Klaten, involved 25 students from various departments.

According to Ivan, with this cleaning system, water can be more efficient because it can be circulated repeatedly. Meanwhile, the solar power system utilized the water pump, where this pump carried out the purification circulation.

"Why do we use solar power because there are still limited sources of electricity in some places or areas, so solar power is an option," he explained.



In addition to making hand washing equipment for water purification systems, Ivan explained that the UGM SCS-CEL work program in Gergunung Village is about efforts to create a village prepared for dengue and Covid-19 viruses. Meanwhile, individual plans are more focused on community independence to prevent and overcome these two issues.

"You can see the results of our lectures implementation on the UGM SCS-CEL Gergunung youtube," he added.

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