Mak students' projects aid communities

Education

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Alex Birungi poses with his hybrid fruit dryer machine

When Davis Tukamushaba met with a seasoned crafts maker and dealer, his creativity went into overdrive.

He couldn't believe that she would flatten her straws using a knife in order to make her crafts. Tukamushaba, a fourth-year Mechanical Engineering student at Makerere University, thought he could develop a flattening machine to ease the crafts maker's work.

"Through a consultative meeting organized by the Innovation System and Clusters Programme, I met women from the Kinawataka Women Basket cluster and realised that I needed to develop a workable machine," Tukamushaba recalls.

The electrical driven machine uses rollers with heating elements to flatten the straws, about 3,600 of them per hour. Tukamushaba pays tribute to Innovations and Clusters Programme (ISCP-U) based at Makerere University which funds and markets innovative projects.

"This programme linked me to the local community and in order for me to be able to address their need, I developed this machine," Tukamushaba says.

ISCP-U is coordinated by the university's Directorate of Research and Graduate Training (DRGT). Dr Yasin Ziraba, a senior lecturer of civil engineering at the Makerere University College of Engineering, Design, Art and Technology (CEDAT) directs it now. Joan Twizere, the programme spokesperson, describes it as one of the various initiatives that focus on competitiveness of small and medium enterprises (SMEs) through innovation and cluster approach.

"Under the cluster system, ISCP-U brings together groups of independent firms in one area linked by special technologies and skills," Twizere explains.

Since 2005, Twizere says, 31 clusters have been launched countrywide including a management consultancy in Kampala, Kakira bio fuel, Lake Katwe salt mining, basketry in Luweero and Lira bee farmers, among others. To strengthen the academia-private sector linkages, the programme attaches students and researchers to cluster firms thereby facilitating a transfer of knowledge and innovations.

For instance, ISCP-U is partnering with the Centre for Technology Design and Development whereby seven final-year students of mechanical engineering will produce prototype machinery and conduct research in eight cluster initiatives.

"So far, students have produced a leather design imprinting machine, juice extractor, slicing machine and solar/biomass mushroom drier," Twizere

says.

Alex Barungi, a fourth-year student of mechanical engineering at CEDAT is one of the seven beneficiaries. He says his interaction with the Fruit and Vegetable cluster in Luwero district enabled him to design and develop a hybrid fruit drier.

"I was compelled to develop this drier after the head of the fruit and vegetable cluster informed me that they had a machine using solar that took three to four days to dry fruits; I developed one that has both a solar and biomass system," Barungi boasts.

The biomass system of the drier is considered as a backup of the solar system and Barungi says it also helps in waste management. This system has an inbuilt heat exchanger that transfers heat to the fresh air entering the drier and exhumes exhaust fumes through a chimney.

The hybrid drier can dry 50kg of peeled fruit every 18 hours. Barungi is proud of the programme; it has provided him with funding and linked him to potential buyers of his product, which to him, is the first of its kind. In future, he hopes to design more systems relevant to the economic growth of small-scale businesses.

ISCP-U also offers internship placements to Mass Communication, Fine Art and Agriculture students.

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