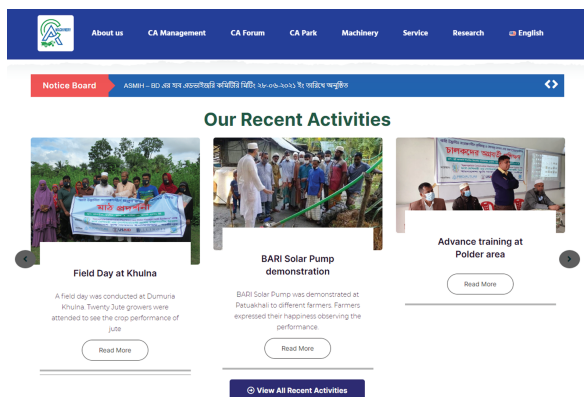


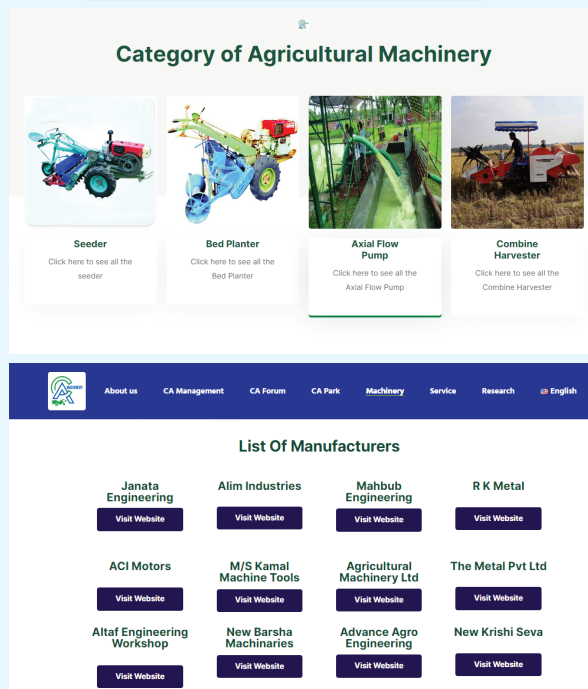


Fig. 2. Pictorial view of strip tillage by four-wheel operated seeder

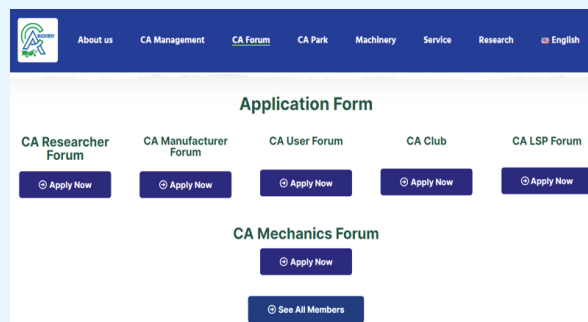
A conservation agriculture machinery website (www.camachinery.org) is launched to disseminate the activities of the CA Park along with available farm machinery and related services available in Bangladesh. CA website was prepared to execute CA virtual platform.



Related person can apply for the membership of the different CA forum. An individual entrepreneur can search CA machinery information of different manufacturers.



Machine owner could search LSP/operator and mechanic along with spare parts for their machine through the web-based platform. User could be able to search LSP to get the machine service through the web-based platform. Interested person can join in CA machinery facebook group or like CA machinery page to get update on CA research.



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Conservation Agriculture Park at BARI: A Unique Demonstration Place



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Conservation Agriculture (CA) is a farming system that promotes minimum soil disturbance (i.e. no tillage), maintenance of a permanent soil cover, and diversification of plant species. It enhances biodiversity and natural biological processes above and below the ground surface, which contribute to increase water and nutrient use efficiency and to improve and sustain crop production. CA is a magical weapon to increase soil organic carbon which is declining due to extensive tillage, intensive cropping pattern and use of high yielding varieties. Benefit of CA could be visible in a field where CA is being practiced in whole cropping pattern over the years. Though CA is working world-wide but very limited work is being done in Bangladesh. Bangladesh Agricultural Research Institute (BARI) has been working on CA since nineties, however, could not get popularity among the farmers due to season based partial application of CA practices. CA is mainly practiced in Rabi (Dry winter) season for upland crops and rice crop is cultivated in the following season using conventional tillage especially puddling of soil. So, effect of CA is mismatched and not visualized. Therefore, little chance of observing benefits of CA activities and enhance knowledge by the farmers, students, researchers and policy makers. BARI has established a conservation agriculture park (CA Park) at BARI premise in Gazipur during 2020-21 with the cooperation of Appropriate Scale Mechanization Innovation Hub, Bangladesh Agricultural University, Mymensingh with the financial support

of the Feed the Future of USAID funded Appropriate Scale Mechanization Innovation Hub (ASMIH)-Bangladesh project under the umbrella of Appropriate Scale Mechanization Consortium (ASMC) at the University of Illinois at Urbana-Champaign and Sustainable Intensification Innovation Lab (SIIL) at the Kansas State University, USA to evaluate/observe the long-term effects of CA on crop yield and soil properties for different cropping systems.

CA park is situated at BARI research field in Gazipur (23°59'05.0"N 90°24'50.9"E) covering one hectare of land area (Fig 1). In Bangladesh three main land types exist for crop production such as high, medium and low land. Moreover, rice, especially Aman rice (Rainfed monsoon rice) is the main crop in most of the cropping patterns. Therefore, all three land elevations are developed in the CA park. The southern part of the park is high land and considered for conducting tillage and residue effect studies on crop productivity, soil health and profitability in maize-cover crop-rice cropping pattern. The middle part is medium land and considered for conducting tillage and residue effect studies on crop productivity, soil health and profitability in mungbean-cover crop-rice cropping pattern and the northern part is low land and considered for conducting unpuddled rice planting for improve soil health and profitability studies in long term rice-rice-rice cropping pattern (with rice residue management).

A submersible solar pump with 4020 Wp solar panel has been installed for green energy irrigation in the CA Park. A field lab cum pump house has also been built along with the solar pump systems. The buried pipe irrigation systems with eight risers have been established for efficient water management in the CA experiments. The solar pump and its risers are now operated automatically using a mobile apps. This Park is working as a crop museum where different pattern-based experiments have been conducted along with a field lab. Both zero and strip tillage are being practiced by BARI developed four-wheel operated seeders as shown in Fig. 2.

Within 4 to 5 years, the park will be creating a scope to observe the CA impacts for farmers, students, policy makers, interested learners to acquire knowledge on how crop production along with improvement of soil fertility with low inputs, time and energy compared to traditional crop production systems. There are reasons to believe that the CA park will play an important role in dissemination of knowledge to stakeholders for sustainable crop production and ensure food and nutrition security of the country.



Fig. 1. Field lab installed at CA Park