

Iraq Paddy Mechanization

Iraq

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Background information

During the summer, Iraq experiences a constant northwesterly wind (shamal), while in the winter, a strong southeasterly air current (sharqi) develops. The intensely hot and dry summers last from May to October, and during the hottest time of the day - often reaching 49°C (120°F) in the shade - people take refuge in underground shelters. Winters, lasting from December to March, are damp and comparatively cold, with temperatures averaging about 10°C (50°F). Spring and autumn are brief transition periods. Normally, no rain falls from the end of May to the end of September. With annual rainfall of less than 38 cm (15 in), agriculture is dependent almost completely on irrigation.

Dr. Khidir A. Hameed, a rice scientist from Al-Mishkab Rice Research center, was the first person to bring SRI (System of Rice Intensification) to Iraq. He first learned of the method at an international forum on hybrid rice in China in 2004. Developed in 1983 by the French Jesuit Father Henri de Laulanie in Madagascar, SRI is a method of increasing the yield of rice produced in farming. With SRI, singles seedlings are used instead

Quick facts

Zone	National Territory
Time Frame	2005 - ongoing
Topic	Agriculture, Resource efficiency
Website	http://sri.ciifad.cornell.edu



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of multiple seedlings in a clump, the paddy fields are not flooded during the rice plants' vegetative growth stage and the seedlings are planted using a square formation. In 2005, using ¼ hectares of land and the "parachute method," Dr. Hameed attempted the technique using early transplanting (12-day-old seedlings) and wide spacing (25x25 cm); only 30 kg of seeds were used per hectare. The results of using the method were positive: the yield was 18%, 81% fewer seedlings were used and water consumption was significantly diminished. Trials carried out in three provinces (Basrah, Messan and Thi-Qar) were impressive enough that the Minister of Agriculture, when visiting them, promised to support the extension of the new methods.

Labor:

Because labor scarcity has made transplanting rice difficult in Iraq, a "parachute planting" method was devised, which involves throwing young seedlings onto a shallow-puddle field, where they establish themselves without being pushed into the soil. During subsequent years, a paddy mechanization project carried out cooperatively by MRRS with the State Board of Agriculture Extension and Cooperation (SBAEC) and the State Bureau of Agricultural Research (SBAR) has shown greater promise for dealing with labor constraints.

Water:

Water saving is of much interest in the Iraqi context. A field study on water use efficiency (WUE) conducted in 2009 at MRRS compared traditional irrigation methods to SRI methods. The study concluded that using SRI methods resulted in more vigorous growth of roots (42% increase in grain yield) and a WUE of 0.291 kg/m², which is a three-fold difference compared to 0.108 kg/m² for conventional rice crops. Finally, SRI reduced the need for irrigation water by about 38.5%.

Organic matter:

A recent report has detailed research comparing the use of organic matter to chemical fertilizers using SRI methodology. Trials conducted in 2009 showed that the SRI treatment using 5 tons/ha of OM combined with half the usual amount of chemical fertilizer gave the highest average grain yield (7,360 ton/ha). In order to increase the availability of organic matter, over 100 farmers in three provinces (Najaf, Diwaniya, and Al-Muthanna) have cultivated clover crops in order to restore the fertility of their rice-growing lands.

Project Sustainability:

Implementation of intermittent irrigation will save farmers substantial expenditure for water pumping by reducing the hours of operation when using SRI practices. This study showed that with SRI, the days of applying water could be 25% less, 95 rather than 126 days, with 40% higher yield. The authors believe that if SRI methods are used with rice varieties having short growth duration, the saving could reach 50%. Reducing water requirements for rice could be a major contribution to agriculture in Iraq to help counter the severe shortages in water that are facing Iraq now and in the years to come.

Reference

<http://sri.ciifad.cornell.edu/countries/iraq/index.html#overview>

