Systems of land leveling

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Rice Fact Sheet

Introduction

Land can be leveled both wet and dry. Draft animals, such as buffalo and oxen and 2-wheel tractors operate better in water covered fields while 4-wheel tractors can operate in both wet and dry conditions. In India rice fields are still largely leveled by manual labor.

Draft animals and 2-wheel tractors using harrows and leveling boards

These leveling techniques require total water coverage of the field and require 7-8 hours/ha for a 2-wheeled tractor and 18-24 hours/ha (8 hours/day) using draft animals. Buffalo are considered to better adapt to wet conditions than oxen. Using either system it is difficult to shift more than 3-5 cm of soil at any one time

4-wheel tractor using rear mounted tractor blades or drag buckets

4-wheel tractors are very effective for leveling both wet and dry fields. Wet fields are best leveled with a rear-mounted tractor blade. Dry fields are best leveled using hydraulically operated drag buckets. Depending on the how much soil needs to be shifted, it takes approximately 3-4 h to level 1 ha with a rear mounted tractor blade. This reduces to about 4-6 h when using a drag bucket.

4-wheel tractor with a laser controlled bucket

The use of laser controlled equipment results in a much more level field – up to 50 % better than leveling using other techniques. This system is much more accurate, faster and requires less skill on the part of the operator. While leveling buckets can be fabricated locally, laser control systems need to be imported into most rice growing countries. Laser leveling is best provided by service providers.

Assam Agribusiness and Rural Transformation Project (APART)

The World Bank is the funding agency of APART
Department of Agriculture, Assam is the nodal department for implementation of APART
ARIAS Society is the State level coordinating and monitoring agency for APART
Assam Agricultural University is the leading Agricultural University of the State and implementing agency of APART, imparting research and scientific support.
International Rice Research Institute (IRRI) is the rice global leader providing technical and hand-holding support in the implementation of APART