

# How BRRI bringing CHT lands under rice cultivation



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**T**he Chittagong Hill Tracts (CHT) are one-tenth of the country. Therefore, the balanced development of the country is impossible by leaving behind this part out of development. Realizing the issue, Bangladesh Rice Research Institute (BRRI) has taken number of effective research initiatives to increase the productivity of the hills. Around 12 percent of the total area of our country is hilly, of which 10 percent is mostly in Rangamati, Khagrachari and Bandarban. The land area located across these three hilly areas is about 13,295 square kilometers. The small ethnic groups living in this region have been earning their living by cultivating rice in the jhum on the hills since ancient times.

The weather and soil characteristics of the CHT region are suitable for rice cultivation. About 40,000 families here are directly involved in rice cultivation and the indigenous people of this region have been cultivating rice for generations to maintain their ancient tradition. This is an area where both men and women are engaged in various agricultural activities unlike other part of the country throughout the year. Small holes are made on the slope of the hill with a sharp pick and seeds of many types of crops are mixed and sown in them. The forest of the hilly land is cut down, dried in the sun and set on fire, and the selected land is brought under agricultural production. This method of primitive agriculture has been termed by many as slash-and-burn agriculture. Since jhum cultivation is not done continuously on the same land for years, it is also called a shifting cultivation method and those who cultivate jhum are called jhumia (tribal people).

Despite the low profit from jhum, most jhum farmers are partially or completely dependent on jhum for their livelihood. The tribal cultivate about 30-35 crops at a time in jhum. Many jhum farmers also grow only 17-18 crops in their jhum. Their production season in jhum usually starts from December-January and lasts until October-November. It is noteworthy that till now, the tribal have been dependent on jhum for most of the year for paddy, vegetables, cash crops, fruits, spices, etc. That is why the local people of the hilly areas have adopted jhum farming as their only source of food and livelihood. Currently, they are cultivating ginger, turmeric, chilli and different spices in the fallow land of jhum.

Once upon a time, the tribal were able to get their food requirements for the whole year from jhum. They even used to sell the food surplus after feeding the family to meet other needs of the family. But according to the Jumas, nowadays jhum farming is not what it used to be, the yield is not that good. After one year of jhum farming, it is necessary to keep the land fallow for 8-10 years. This restores the fertility of the jhum farming land. But due to the increasing population pressure, the amount of jhum farming is gradually shrinking and the land cannot be kept fallow for as long as before. Needless to say, the tribal are all marginal farmers and generally very poor. Most tribal suffer from food shortages and malnutrition. They are the most neglected section of the rural society, victims of adverse conditions caused by economic inequality. They have no other way to survive except by cultivating jhum. Despite the scientific fact that jhum cultivation is harmful to soil erosion and the environment, the hill people still maintain their tradition of jhum cultivation due to the lack of alternative employment.

In the three districts of the CHT, 15 ethnic groups including Chakma, Marma, Tripura, Tanchangya, Lusai, Pankho, Bam, Mro, Kiang, Khumi, Chak, live in the three districts of the Chittagong Hill Tracts, whose main occupation is agriculture. The jhum farmers in these regions cultivate jhum in the traditional way. In addition, they do not get the desired yield due to the lack of

appropriate high-yielding varieties and production inputs. A study has shown that the rice produced by jhum farmers lasts only five to seven months of the year. To secure food for the remaining seven to five months, they have to endure great hardship by working in various jobs, such as weaving, handicrafts, day labor, masonry, driving, nursery work, etc. In order to ensure year-round food supply for the hilly population like the favorable environment area and to increase productivity through the development of jhum cultivation system, Bangladesh Rice Research Institute (BRRI) has conducted research activities on a limited scale under the funding of the program "Determining the acceptability and profitability of other improved rice varieties including Nerika in hilly areas" in various upazilas of the three hilly districts in the last three years (July 2017-June 2020) on the slopes of the hills, namely in jhum and on the plains at the foot of the hills and is currently continuing with revenue funding.

In order to make the vast hilly area a proper partner in food production, in jhum, along with their local varieties, high-yielding modern rice varieties developed by BRRI are being cultivated, such as BR26, BRRI dhan48, BRRI dhan82, BRRI dhan83 and BRRI dhan85 during Aus season and the farmers have adopted the varieties for their comparatively high productivity. The average yield of the modern high-yielding varieties developed by BRRI is three and a half tons per hectare, while the average yield of their cultivated local varieties is two tons per hectare. In the Aus season, the recently developed BRRI dhan98, BRRI dhan106 and BRRI Hybrid Dhan7 have been included in the jhum. Generally, the jhum farmers do not use any fertilizer in jhum cultivation. Although some progressive farmers use urea fertilizer, they do not do it effectively and scientifically. In that context, research is being conducted on fertilizer management to provide nutrients to the cultivated rice and proper fertilizer application methods have also been invented.

The hill people generally do not use oil for cooking. As a result, they suffer from deficiency of oil-soluble vitamins such as vitamins A, D, E, K. Research is being conducted to develop a suitable rice-

based cropping system to eliminate the problem of vitamin deficiency and also to increase the productivity of the production process. In continuation of this, research activities are being carried out to increase the total productivity by replacing the recently developed high-yielding improved rice varieties in the Aman-Boro cropping system planted in the plains at the foot of the hills with the mustard in the interim period. In the CHT, a single crop, Aman, is mainly cultivated on 17,610 hectares of flat land at the foot of the hills, which is completely rain-fed. Recently, in some areas, farmers in the hill areas have been cultivating local varieties of Aus using rainwater before planting Aman, which has a relatively low yield. In these areas, work is being done to increase the total production of the crop by including high-yielding Aus through feasibility studies. Black rice introduced by the BRRI has been accepted by farmers in the Jhum and plains. According to them, this variety has a sticky and light aroma like their local Binni variety. In addition, it is more productive than Binni and can be grown in three seasons. Due to demand, trials have been set up for cultivation in the last Boro season as well. In addition, BRRI is working to verify the suitability of the recently developed high-yielding varieties of different seasons through trials suitable for the hill environment.

In order to protect the health of the land in the hills and make the ethnic group self-sufficient in food by following the eco-friendly production process, that is, the ancient farming method of Jhum, in the interest of biodiversity conservation, BRRI is planning to cultivate high-value potential fruit crops such as dragon fruit, dates, avocado, coffee, cashew nuts, etc. in addition to Jhum cultivation through Farming Systems Research, so that it is possible to bring about real development in the rural life and livelihood of the Jhumis living in remote and inaccessible areas. It is very important to take coordinated actions by all government and non-government organizations, including BRRI, in the Chittagong Hill Tracts for balanced development for all.

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