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Traditional Rice Varieties and their Future in Bongaigaon Area of Bongaigaon District, Assam, India

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Abstract: With rapid population growth as well as increased demand of food, the farmers have to adopt new agricultural technology for greater production of crop including rice. A number of improved rice varieties with high productivity are now available in the market. These make the farmers much interested in cultivating the improved rice varieties rather than those of indigenous or traditional rice varieties with less productivity. High Yielding Variety (HYV)s has become more popular among the farmers. As a result cultivation of some traditional varieties has decreased in such a way that if care is not taken or conservation is not done timely, there is every possibilities for being lost of these varieties at any moment. With an aim to study the future of such traditional rice varieties and to know the popularities of HYVs a field study was done for seven consecutive years from 2010-2017 in different localities of Bongaigaon area of Bongaigaon district. Farmers of Bongaigaon area also prefer growing the HYVs, throwing off the traditional variety out of the market as well as existence. As a result a number of traditional varieties of this region are going to be extinct. For conservation of these varieties along with establishment of seed bank everything should be done to encourage the farmers to carry on cultivation of these traditional varieties too along with different HYVs.

Key Words: Bongaigaon, farmer, High Yielding Variety (HYV), traditional variety.

INTRODUCTION

Rice is the staple food of nearly three-fourths of the population in India. As this crop plays a vital role in our National Food Security and is a means of livelihood for millions of households, the slogan

“Rice for life” is most appropriate “as discussed by Panda (3)”. Rice is the principal crop of northeastern region of India, where a considerable range of diversity exists. The germplasm collection has also unfolded the occurrence of large number of rice

landraces in the region “as discussed by Hore (2)”. The Eastern Himalayan Region of North East India is the home to a large number of indigenous rice varieties “as discussed by Choudhury (1)”. This North East India, including Assam, is recognized as a centre of origin of rice and is endowed with exceptionally rich rice diversity. Variation in ecological condition, ethnic diversity, diverse cultural practices and different quality preferences contribute to the diversity present in different types of rice. But due to rapid population growth as well as increased demand of food, the farmers have to adopt new agricultural technology for greater production. As a result the demands of these traditional varieties have become less “as discussed by Roy (4)”. With the advancement of knowledge and better understanding of plant and environment, agricultural practices are modified and new practices developed for high productivity. The farmers often adopt modern improved varieties and no longer grow the traditional varieties they had been using for generations. As a result cultivation of some varieties has decreased in such a way that if care is not taken or conservation is not done timely, there is every possibility for being lost of these varieties. Eventually many of these genetic varieties are lost forever. Rich diversity of crop serves as a valuable genetic resource for future crop improvement to meet the ever increasing demand for more production, as these varieties form the initial material for selecting suitable parents for hybridization for economic and genetic studies.

Bongaigaon (26°28' N and 89°06' E) area of Bongaigaon district is rich in rice diversity. Farmers of this region cultivate different rice varieties but there is every possibility for genetic erosion of these rice varieties due to the introduction of new agricultural technology and swift economy as well as availability of a number of HYVs in the market. With an aim to study the future of these different traditional rice varieties and the popularities of HYVs, a field study was made for seven consecutive years from 2010-2017. All the different traditional rice varieties cultivated in

different localities of Bongaigaon area of Bongaigaon district were collected along with some common HYVs. The percentage of farmer practicing these different rice varieties were calculated to find out the popularity rate of these different rice varieties among farmers of this region.

MATERIALS AND METHODS

Ten localities from Bongaigaon area were selected randomly. A field study was made during the rice harvesting period (December to January) of 2010-11 to 2016-17. The survey was done among 344 farmers of these localities. All the different traditional rice varieties cultivated by the farmers in different localities of this region were recorded along with some common HYVs. To find out the demands or popularity rate of different rice varieties the year wise percentage of farmers practicing these varieties was calculated.

RESULTS AND DISCUSSION

Table 1 shows year wise percentage of farmers practicing different HYVs of rice in different localities of Bongaigaon area. The most common HYVs are *Ranjit*, *Aijong* and *Masuri*. But the popularity rate of *Ranjit* was found to be highest. The percentage of farmers practicing this variety was found to increase upto 100% within 7 years. It was followed by *Aijong* and then *Masuri* where the percentage of farmers increased upto 79% and 42% respectively by the end of 2016-17. Cultivation of other three HYVs viz., *IR36*, *Bahadur*, *Monohar Sali* was found to be limited among few farmers only. In case of *IR36*, *Bahadur* and *Monohar Sali* the percentage of farmers practicing these varieties were found to be limited to 5.0-10.2% only. This might be due to unsuitability of the field condition for these varieties in this region. The taste, possibilities and their rate of productivity may also be some factors for different popularity rate for different HYVs. Fig- 2, Fig- 3, Fig- 4, Fig- 5, Fig- 6 and Fig- 7 show the

year wise percentage of farmers practicing different traditional rice varieties cultivated in different localities of Bongaigaon area. Out of 22 different traditional rice varieties except *Parimal* all were found to lose their popularity because the curve of percentage of farmers practicing these varieties have decreased slowly. In 2010-11, *Gulapi* was found to be the most popular rice variety with 46.8% farmers practicing it. It was followed by *Parimal* practicing by 34% farmers. But there was a drastic decrease in popularity rate of *Gulapi* by the year 2011-12, 2012-13 and 2013-14. By the end of 2016-17 it was found to be limited among 20% farmers only. But *Parimal* could somehow continue its popularity rate as it was in previous years (Fig- 2). The percentage of farmers practicing Sonajul was 26.7% in the year 2010-11, which became 1.9% by the end of 2016-17. Same results were observed in case of *Gujuri*, *Lurki* and *Dhamua*. The popularity rate has also decreased in case of *Rangjuli*, *Malsira*, *Gendubaji*, *Moinagiri* and *Goyasuri*. One traditional variety *Moinagiri* was found to lose its popularity drastically and became insignificant by the year 2015-16 and 2016-17 (Fig- 3). Similar type of results was observed in case of

Aghonsali and *Katiansali*. Both were observed to be insignificant by the year 2015-16 and 2016-17. Other four traditional varieties, *Hatisali*, *Phulpakhiri*, *Rangpuria* and *Malsongra* were observed to be limited to a small group of farmers only (Fig-3). Similar types of results were observed in case of Joha rice (Fig-5). Though seven different varieties of Joha rice (*Bhog dhan*) were observed to be cultivated in this region but the percentage of farmers practicing these varieties were very poor. The best known Joha rice i.e., *Kala bhog* now find to be limited among 5% farmers only instead of 53.4% in the year 2010-11. Two other varieties viz., *Kewya bhog* and *Siyal bhog* were observed to be insignificant by the year 2014-15 and 2012-13 respectively. Similar type of results were observed in case of different varieties of Bora rice i.e. *Bonni dhan* (Fig-6). The most common Bora rice i.e., *Nalbonni* was observed to be limited to 8% farmers only by the end of 2016-17 instead of 52.3% in the year 2010-11 (Fig.6). Three varieties of Boa rice were found to be cultivated by the farmers of this region. Except *Dhepaboa* other two varieties viz., *Kholsaboa* and *Kakoaboa* were found to be limited to 0-0.5% farmers only by the year 2016-17 (Fig.7).

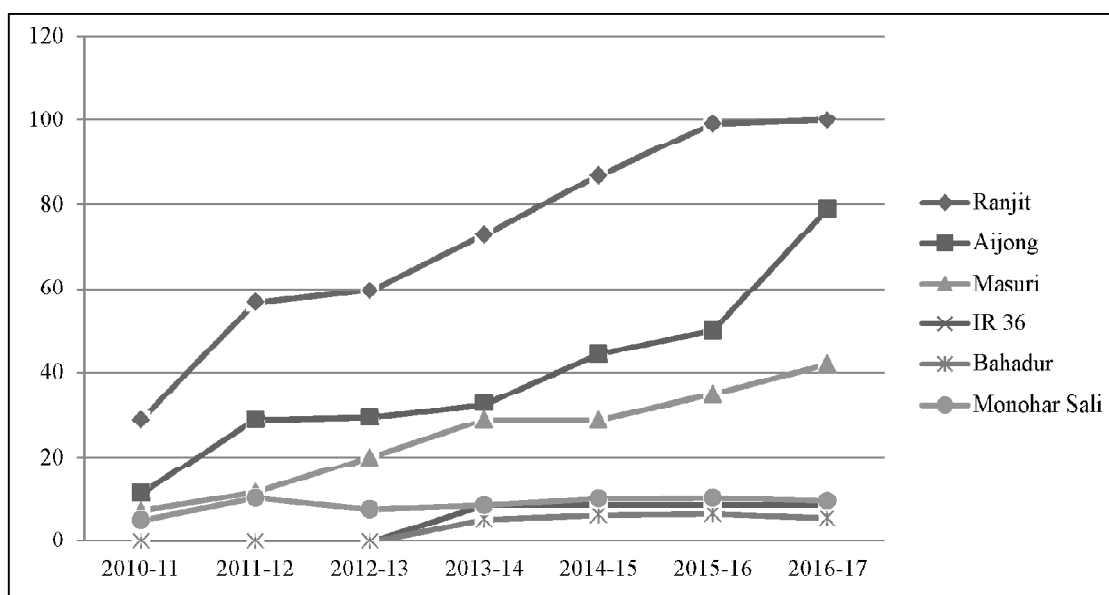


Figure 1: Year wise percentage of farmers practicing different HYVs of rice in Bongaigaon area of Bongaigaon District from 2010 to 2017

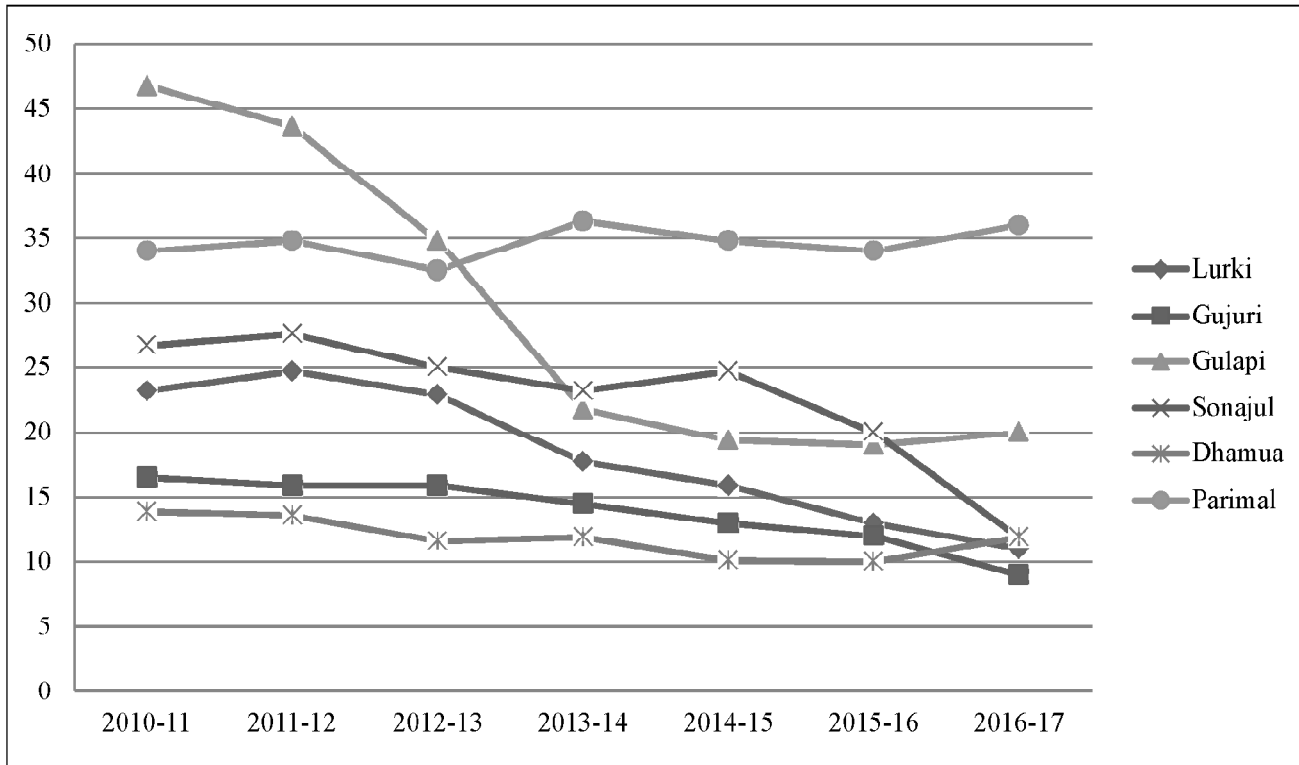


Figure 2: Year wise percentage of farmers practicing some traditional rice in Bongaigaon area of Bongaigaon District from 2010 to 2017

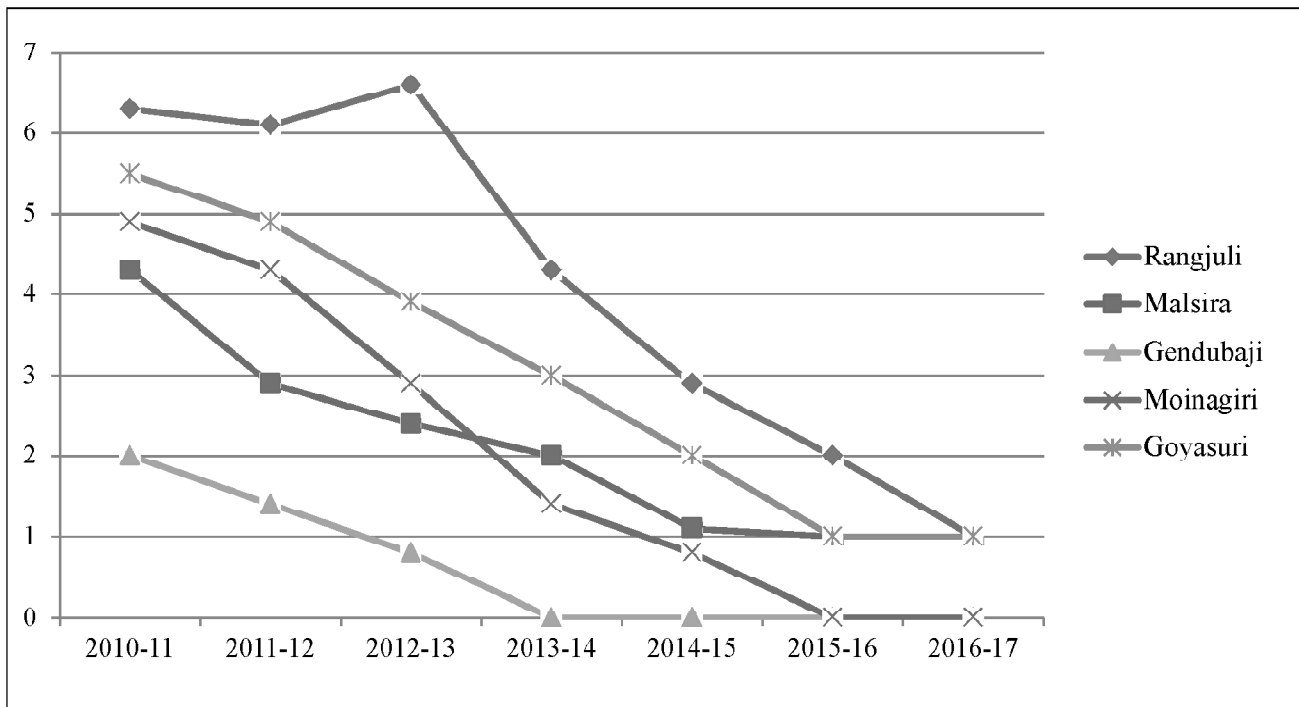


Figure 3: Year wise percentage of farmers practicing some traditional rice in Bongaigaon area of Bongaigaon District from 2010 to 2017

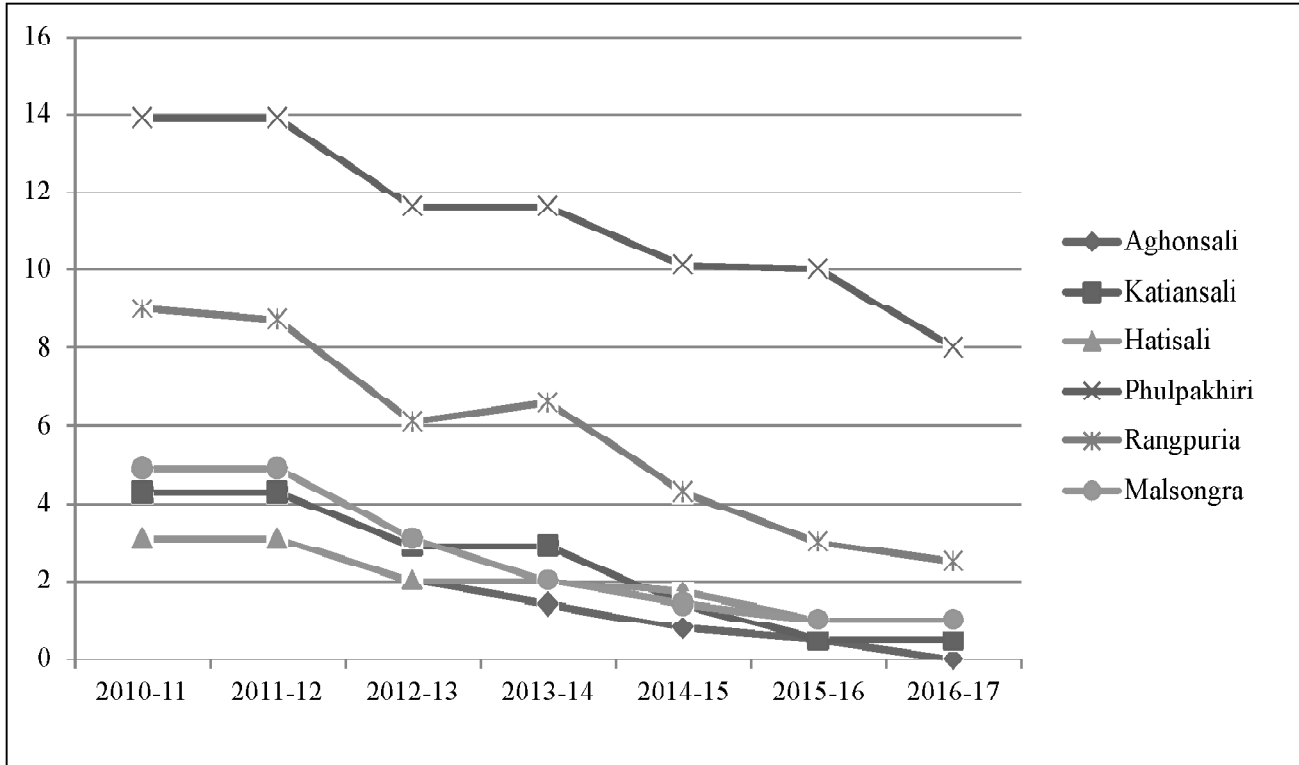


Figure 4: Year wise percentage of farmers practicing some traditional rice in Bongaigaon area of Bongaigaon District from 2010 to 2017

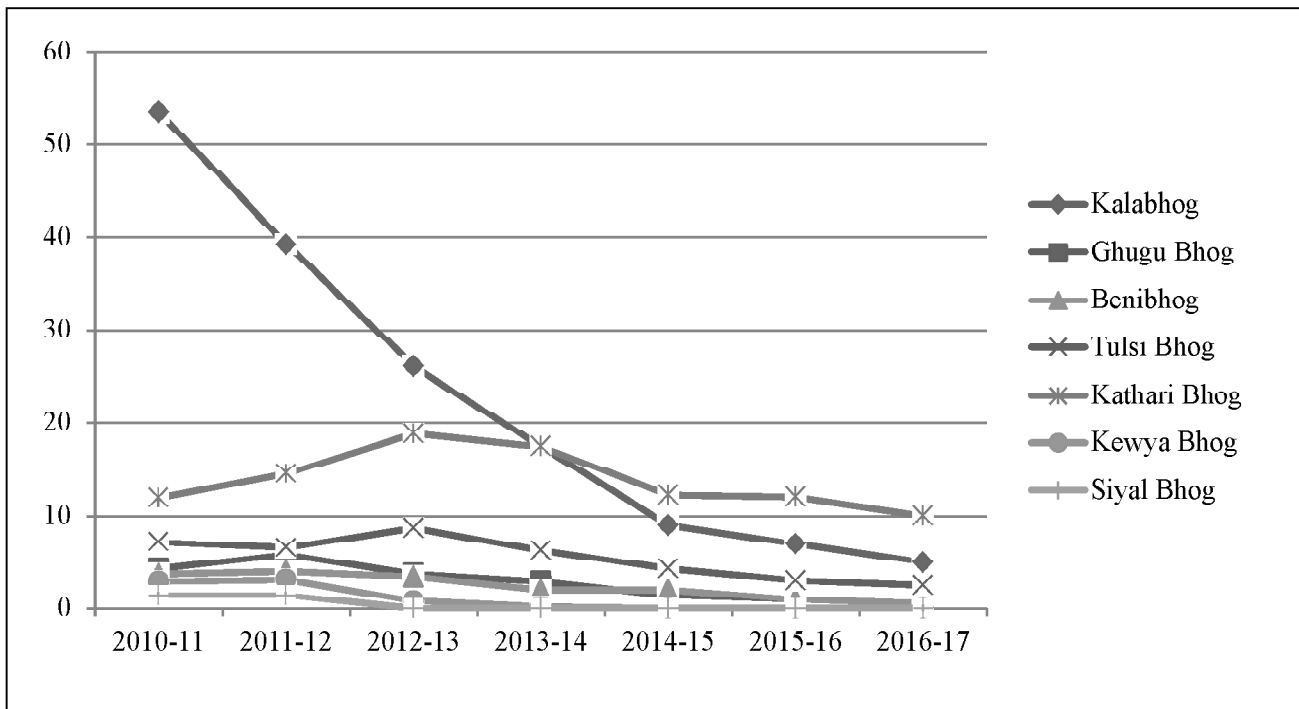


Figure 5: Year wise percentage of farmers practicing some traditional Joha rice in Bongaigaon area of Bongaigaon District from 2010 to 2017

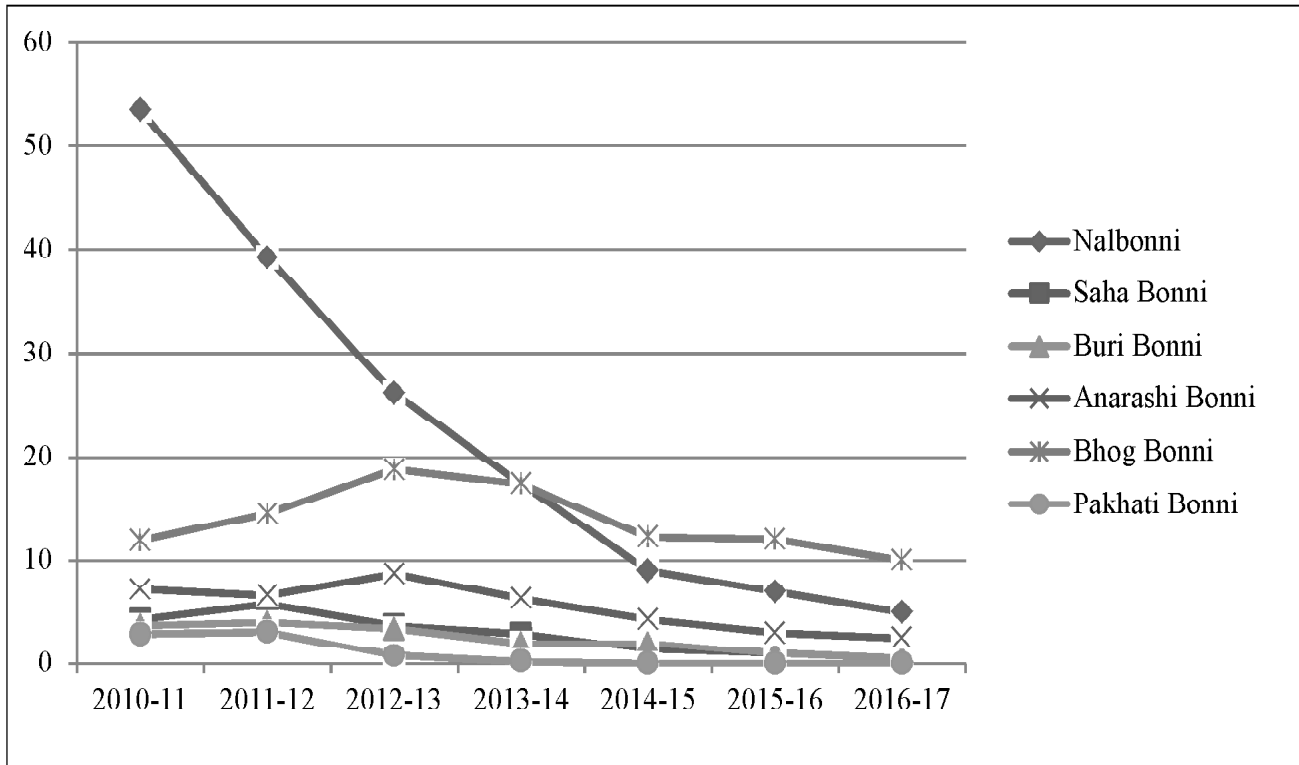


Figure 6: Year wise percentage of farmers practicing some traditional Bora rice in Bongaigaon area of Bongaigaon District from 2010 to 2017

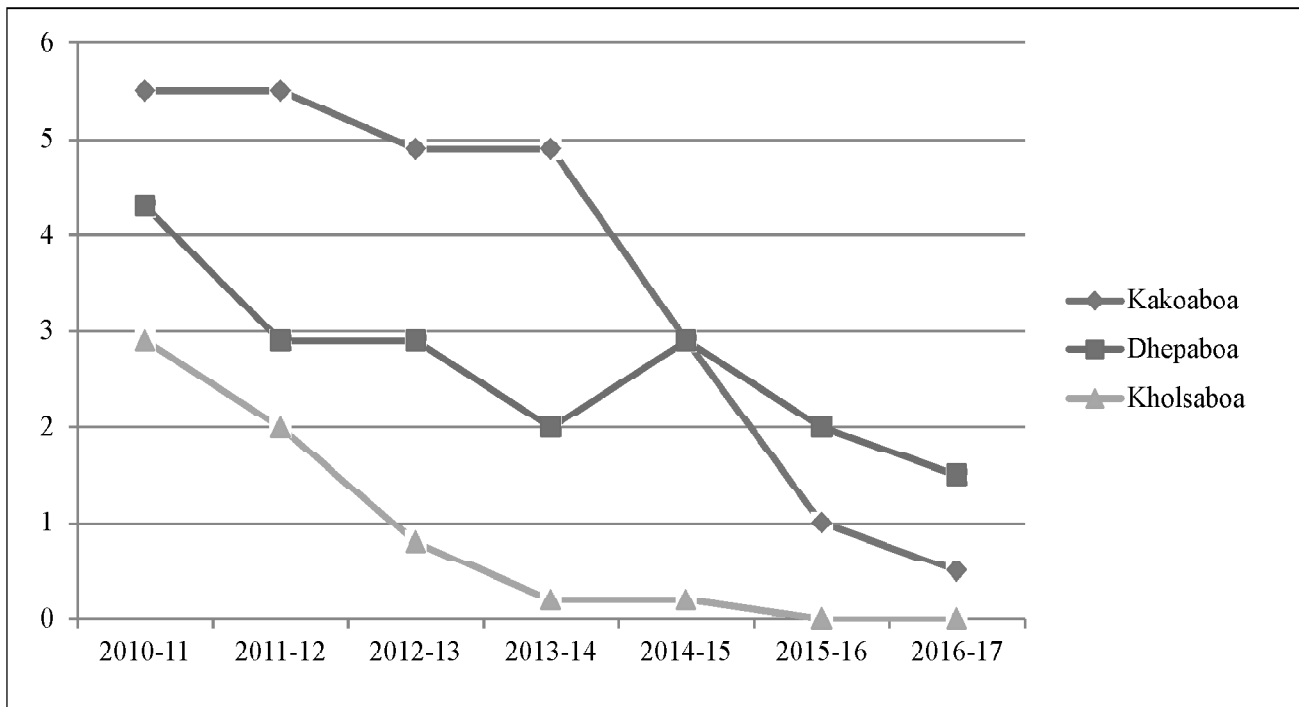


Figure 7: Year wise percentage of farmers practicing some traditional Boa rice in Bongaigaon area of Bongaigaon District from 2010 to 2017

CONCLUSION

Increased demand of food as well as decrease of agricultural land forced the farmers of Bongaigaon area to go with the new technology and shortcuts to grow crops efficiently. Farmers have given up on the traditional methods of cultivation and have taken the modern ways as their primary choice. Farmers now prefer growing the HYVs, throwing off the traditional variety out of the market as well as existence. As a result some traditional rice varieties already has extinct while a number of traditional rice varieties are going to be extinct due to less interest of the farmers. No doubt HYVs are required but without the existence of traditional varieties further improvement of rice varieties is not possible. The different varieties traditional rice form the initial materials for selecting suitable parents for hybridization for economic and genetic studies. Again we should keep it in our mind that once one gene is lost it is lost forever. So for getting more and more improved varieties to meet up the necessities of increased population, conservation of these traditional varieties has become most important. It will be possible when the mass will be aware about

the importance of each of these varieties. Again for sake of conservation along with establishment of seed bank we should do everything to encourage the farmers to carry on cultivation of these traditional varieties too along with different HYVs.

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