

Emerging Trends Of Cultivation Of Makhana And Its Marketing Potential In Bihar

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Abstract-Makhana or gorgon nut is an interesting product as it is almost exclusively commercialized in Bihar and branding and packing for this crop was not started until recently. It is thus a unique case on the development of brands in poor settings and its impact on the value chain. In a five year period, branded products for this Product increased from 25% to 50% of the total market. These branded products are sold at significantly higher prices than loose products. Makhana or gorgon nut is an aquatic crop that is largely grown in Northern India. Though Machala is also found in wild form in China, Japan and Russia, India is the only country where Makhana is cultivated as a crop, mainly in the states of Bihar and some parts of Assam. It is estimated that Bihar accounts for more than 80 percent of total makhana production in the country and that makhana production takes place in 20 out of its 38 districts.

Keyword:- Makhana, Cultivation, Marketing, Product.

Introduction-Makhana or gorgon nut is an interesting product as it is almost exclusively commercialized in Bihar and branding and packing for this crop was not started until recently. It is thus a unique case on the development of brands in poor settings and its impact on the value chain. In a five year period, branded products for this Product increased from 25% to 50% of the total market. These branded products are sold at significantly higher prices than loose products. Makhana or gorgon nut is an aquatic crop that is largely grown in Northern India. Though Machala is also found in wild form in China, Japan and Russia, India is the only country where Makhana is cultivated as a crop, mainly in the states of Bihar and some parts of Assam. It is estimated that Bihar accounts for more than 80 percent of total makhana production in the country and that makhana production takes place in 20 out of its 38 districts. Makhana as a crop can be cultivated in any pond that is shallow and stagnant. However, localized expertise of makhana cultivation has

cast doubts on its propagation beyond its traditional territory, Northern Bihar and lower Assam. Makhana has shown important production increases in the last decades and makhana cultivation has, endogenously without public research or extension intervention, spread to rice fields that in the flooded off-season can be used in some districts in Bihar for makhana cultivation. Makhana cultivation is characterized by a strong seasonality. To avoid decline in quantities harvested, clay should regularly be removed from the ponds. This is usually done during the months of October and November. Sowing of the new crop then takes place in the months of January or February and germination happens after 30 to 40 days. In The case of commercialized makhana cultivation, young seedlings are transplanted from nurseries to the ponds or rice fields. Such transplanting, as in the case of rice, usually leads to higher yields. Makhana harvesting usually starts at the end of July and can go up until the end of September or the beginning of October. Harvests are often done in different intervals (up to three harvests) with the first harvest being the biggest one. The processing of the harvested makhana seeds into makhana pop might then go on until December. A pre-condition for the processing to start is that seeds need to first dry for about 10 days or so. Makhana pop has several uses. It is estimated that while makhana cultivation done in ponds accounted for 90% of total production 10 years ago, 65% and 35% of current production comes from ponds and rice fields respectively. In those areas where makhana cultivation is done, it is estimated that about 10 or 15 villages' ponds are in use. The majority of these ponds are owned by the government and leases for short term use are auctioned by the fishermen's cooperative society. However, a number of ponds are in private hands. Most of the cultivation is done by the mall caste. Average production levels are estimated to be around 1.5 tons per acre but the highest yields can go up to 2.5 tons per acre. No improved varieties for makhana are currently available and higher Makhana yields can only be achieved by improved pond management, especially the application of organic matter in the pond as well as irrigation. It is a highly relished food taken as Namkeen, kheer, curry etc. Makhana further holds special importance in cultural and social life of Bihar. It is considered obligatory for brides' parents to send makhana to the house of the groom to serve the latter's family before the marriage. It is usually eaten with betel and betel nut. It is also used as a part of final rituals in case of death.

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Packing Strategy of Makhana-The bags contain in general 250 mgs of popped makhana (97% of the brands). The type of makhana found in the bag is usually a mix of qualities and in only a few cases, it is indicated that only the best quality ('lava') is in the bag (9% of the bags). Quality assurance is often done at the level of the wholesaler himself (35%). There is not clear homogeneity in the quality per bag. While 48% of the same brands are reported to show no difference in quality, 38% and 13% show 'a bit' and 'a lot' of difference in quality respectively. Further information was asked on the information given on the bag. In 80% of the brands, the exact weights were printed on the bags. However, most other information that typically goes with branding was not available. Only 16% of the bags provided an expiry date. In none of the cases, the exact address of the manufacturer or the maximum retail price was printed. In 5% of the cases, the telephone number of the manufacturer was given. In case a customer was thus not satisfied with the product, it would be hard for him to trace back the company where the product was made. In traditional makhana markets, four quality types of pop are distinguished, i.e. Lava, murha, turi, and mix. The differences in quality are almost exclusively linked with the size of the pop. Branded products now account for almost half of their total sales. This compares to only 23% five years ago. The rather recent takeoff of branded products is further illustrated by the year that these wholesalers started selling branded produce. While almost all wholesalers are selling branded products now; only 27% was doing so before 2004. A large number of wholesalers (45%) started selling branded products in the years 2004-2005, the apparent year of major take-off. There is thus a fast emergence of these branded products in this sector and this begs the question on how this branding process works in practice. Wholesalers were asked on the importance of branded products in their sales as well as in their procurement.

Marketing of Makhana-Makhana products sold in kirana shops are on average, controlling for confounding factors, not cheaper than those sold by street hawkers. Most of the sales of makhana happen in a short-time period and it seems that few farmers store makhana as to benefit from the (potentially) higher prices that might be offered in the off-season. 56% of all transactions happened in the months of August and September and only 3% of the transactions were reported to have happened during the off-season of January until April. More than half

of the transactions (51%) are done with collectors in the village and 20% with wholesalers from the district itself while in 13% of the cases, products are sold to processors, indicating their importance as an important marketing outlet for some farmers.

Makhana transactions in these traditional markets are done in gunny bags. These gunny bags are standardized in size and the weight of such a gunny bag is indicative of the quality of makhana. If makhana is processed well, makhana pops are larger and weigh less and a low weight of a bag is thus an indication of good quality. The general rule of thumb is that a bag of 8 kg is an indication of high-quality lava makhana and a bag that weighs more than 10 kg contains mostly lower quality makhana. The previous section has shown how the branded products done by wholesalers themselves have taken off in recent years. We will call this the low-cost branding from here onwards. Different activities are needed to do the packing and branding process. They involve the purchase of designed bags and bagging. Half of the wholesalers buy empty branded bags. While some of these bags are made in the production area Darbhanga itself, the majority however are ordered from specialized manufacturers in the cities of Kanpur or Delhi. In 18% of the cases, the design of the bag was done by the wholesaler himself. If not, the costs of the (outsourced) design amount to a one-off investment of 22,000 Rs. The average cost per empty bag is 2.1 Rs. Almost Half of the wholesalers (47%) report to own a packaging machine. The investment costs of such a Machine are minimal as the reported price is 1,862 Rs (or 41 USD). The labor costs involved in Filling up and the sealing of the bags amounts to 0.4 Rs. The overall variable costs for packing Are thus 2.5 Rs per bag or 10 Rs per kg (as bags are mostly 0.25 kg). Wholesalers were asked at their level to evaluate the benefits from the packing and branding process. They estimated that if the products that were in the bags were sold loose, they would be able to obtain a price that is on average 15 Rs lower than when bagged and branded. However, some wholesalers indicated that these products were not comparable as the quality of products that go in the branded bags is low and could not be sold loose. In the opinion of the wholesalers, branded bags do not contain quality that is better than those products that are sold loose. 19% of the wholesalers indicate that the quality of makhana in the branded bags is better, 38% evaluates the quality to be the same and 38% thinks It is worse. Most of the wholesalers also indicate that the quality o f the

makhana that is used for Inclusion in the bags can come from all types of suppliers (58%) and inclusion in the bag does Not depend on specific characteristics of suppliers. There is thus seemingly little exclusion Effects from branding, as those that have sometimes been found in other modernizing markets. None of the wholesalers that produce the branded bags employ salesmen to sell their brand and none pay for ads on television, on the radio or in the newspaper. Wholesalers were further asked questions on why they do not sell more branded products.

The major reason is seemingly that a large number of customers like to check the quality of the product and they cannot do this with the packed product. The lack of demand for branded product does not seem related to the higher prices that are asked for branded products (5% of wholesalers), the longer time required to sell branded products (11% of wholesalers), and the lack of availability of sufficient quality to be included in branded bags (6% of wholesalers). A different packing and branding system has been put in place by Sudha Shakti Industries which has received significant positive reports. We will call this the high-cost brand hence forward. This firm which started in 2004 implemented a new business model opening up new market opportunities for the makhana product. While the best quality of makhana (lava) is branded and Sold in export markets or in big cities, the lower qualities are processed into new products, such As roasted snack foods, flakes or powder for pudding. These products did not exist in the market Place before. To sell the branded products, they employ 24 sales persons in the country and them Spend on average 1 million Rs (22,000 USD) for ads on TV, on the radio and in newspapers. The exported quantities of popped makhana sold by the company have increased from 124 tons in 2005 to 3,000 tons in 2009. Of the 3,000 tons in 2009, 40% was sold in export markets (mostly To Pakistan, Nepal, Bangladesh, and the Middle East; no processed products were exported) While the rest was being sold in local markets all over India (30% sold as processed products and 70% in natural form). Little is sold to local markets in Bihar as they feel there is no quality Demand and quality rewards in these local markets.

Conclusion-Present study concluded that Makhana has shown important production increases in the last decades and makhana cultivation has, endogenously without public research or extension intervention, spread to rice fields that in the flooded off-season can be used in some districts in Bihar for makhana cultivation. However, farmers might benefit

indirectly Because of the expanding product demand. Significant changes are happening in food and agricultural markets in developing countries.

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