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## **A proven model for achieving localized food security and farmers benefit protection**

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### **The Context of the Proposition-Problem Scenario**

Tough decreased to 18.87% of the GDP, agriculture still plays a very important and strategic role in accelerating economic growth and alleviating poverty in Bangladesh. When forward and backward linkages are taken into account, the agriculture and agribusiness contribution to GDP is estimated at about 35%. In a country, where 60% of the workforce is absorbed by agriculture, farmers' needs should come as a priority when envisioning the country's future.

Yet, irrespective of several successful interventions in the last couple of decades under the shadows of almost self-sustainability in grain production, farmers' fate; particularly the medium, small, and marginal didn't change much. They remained within the poverty cycle and may be more than others engaged in other professions. Many factors like lack of effective market mechanisms and marketing infrastructure, absence of adequate policy supports etc. can be identified as the reasons behind this aggrieved situation of the farmers, yet to find out an effective solution we need to understand the true nature of the problem. This write up intends to explore one of the basic reasons behind this and a probable way out.

It's natural and follows behavioral economics or even if we want to state it as the normal diction of market economy that the non perishable agricultural commodities during harvest time has low level of command price in the market. It is truer for the non-perishable items that generally have to be stored and easier for not all the produces can be consumed at a single moment of time. Yet for the perishables of the agricultural produces a spike of high price is more logical for the newest of the seasonal tastes that though decrease sharply later at farm gate or growers level most of the times when significant portion of total acreage is harvested (and if production is normally good). While the reality is farmers and even marketing operators in Bangladesh and similar developing countries lack particularly affordable storage facilities that are much required to help the farmers on deciding the sales timing of their produces as well as to ensure minimum post-harvest loss and balanced produce flow in the markets.

Yet on the other hand, it is not enough to provide storage facilities alone as farmers ironically requires quick return from their produces as they will have to continue their production cycle let alone meeting their daily living expense. Take along the cost of storage and we would find middle men meddling with the supply chain lowering their asking price further.

To explain the mentioned phenomena, it is for the practice of short harvesting time of the non perishable items particularly; grains that are all harvested at the same time (plot by plot). Consequently, during the harvesting season market is over flooded by volumes of supply and market assemblage becomes more than demand at that particular period of

time. This becomes more severe for the perishable items that are harvested like grains within a short span of time. Naturally, following economic behavior of market the command price gets generally down to its lowest level.

Perishable items like vegetables are harvested according to the maturity level of the produces and normally the whole lot is not harvested at a single point of time thus not necessarily is over supplied during the harvesting period. Or to put it another way, vegetables can be planted gradually to make the maturing or ripening process stepwise so that harvesting can also be done in steps. Yet again, for the perishable items, people are always rather ready to give a premium price for the new seasonal vegetables of the year when particular harvesting season starts. There prices get reduced later after a number of harvest is done and the season is almost in its pre-middle when the market assemblage becomes significantly higher than the market demand, at least for a confined geographic region around the harvesting areas. Again, they usually command higher price at the off seasons for the additional cost loading from storage for obvious addition of time value and also as off season varieties are not grown in abundance.

With the above context now consider that most of the farmers of our country are small and marginal farmers with average land ownership of not more than 0.5 acres and they all generally depends on borrowing, loan or family savings. They also require quick return on their production for continuing their next production cycle with expected cropping pattern and maintaining their livelihood. On the other hand, a significant portion of the farmers heavily depends on the staple crops like paddy, potato and wheat. As pointed earlier that oversupply situation of nonperishable items; particularly the grains, and potato (as their nature of harvesting is quite similar to that of grains like paddy and wheat and there are many storages for this particular perishable item) etc. is natural and a low priced situation prevails in the market. But though they can be stored easily our subjected farmers generally don't have adequate storage space neither it is possible for them to maintain the technology required. The market operators particularly the aratdars or stockers and rice millers procure the oversupplied quantity and do the storage. So during the harvest period of particularly the non-perishable items, farmers get bound to sell their produces at low price as they require quick cash inflow for meeting their livelihood needs and continuing production for the next crop cycle. This situation is one of the common scenarios of our farmers' fate result of which is the continuous poverty cycle or never moving out of the poverty trap.

It has been revealed by many studies, researches, and expert opinions that one of the basic lacking in development of the agricultural sector is the limited number of affordable storage facilities at the farmers or production level. This lacking has other direct consequences like high rate of post harvest loss of agricultural produces in Bangladesh which is alarming for the vegetables, fruits and grains too.

Yet, simply enough storage facilities at affordable price will not suffice because it will solve one part of the problem chain. For the farmers would also require some affordable mechanism ensuring immediate cash receipts for meeting their livelihood and operating capital requirement for the next crop cycle. So, there should be an integration of

development components for linking production-storage-finance that could be extended further to include other value adding cycles like transporting to High Value Markets (HVM) or processing and/or in bound flow of agricultural inputs.

### **On Storage of Agricultural Produces**

Storage plays an important role in agricultural marketing, as the production of agricultural produces are naturally seasonal but consumption is in most cases continuous or at least the demand is always there. So, optimum storage facilities can help in better supply chain management, value addition from time value, reducing post harvest losses thus directly helping more value addition as well as lowering input requirements. Storage facility can also play a very important social role too like localized food security solution.

Now, adequacy in number and in terms of storage capacity in comparison to volume of availability from production and import (if any) and their spatial location can follow general market forces yet with inadequacy in socially required positioning. Again, the varying degree of perishability of most of the agricultural produces also calls for storages with different types of technical facilities to maintain quality of the produces. Because, private bodies will mainly be motivated by economic benefit and even for the question of feasibility, purely commercial storage facilities and public development interventions will seek for the volume production areas naturally ignoring or excluding the low volume producing areas. Thus need for public storage with quite a different attitude arises because private storage seeks feasibility in terms of economic value that may be different from their social values consequently private sector might not supply the socially optimal storage<sup>1</sup>. Now, let's take another angle of observation.

Most of all, closely available storage facilities affordable to the farmers give them a bargaining capacity against the traders (particularly the faria, bepari, aratdar and even the rice mill owners as for the staple crop of Bangladesh). This is very important as to make the market efficient in term of conducts.

### **Grain Stock & Food Security**

Over a long period, the government of Bangladesh used to retain on hand the equivalent of four months aggregate foodgrain "requirement" as security stocks. According to a study, the operational targets of security stocks used to be about 700 to 800 thousand metric tons in the early 1990s (Dorosh and Farid, 2001). In the late 1990s, government policy in Bangladesh shifted in favor of increased public foodgrain stocks, setting official minimum stock targets of 1.0 to 1.2 million tons. The above change in stock policy was due to natural shocks but in recent times it has been reviewed again when the sudden 'food crisis' of 2008, with its unprecedented spiking in the international rice prices and a momentary complete collapse of the global rice markets has forced precaution into every available food-policy synapses within the government of Bangladesh; and the target for 2009 was set to 3.2 MMT according to the reporting of FPMU.

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<sup>1</sup> Price Stabilization, Market Integration and Consumer Welfare in Bangladesh, Final Report PR # 6/07, Dr. Naeem Chowdhury, Principal Investigator, Bangladesh Rice Foundation

Yet, if we compare the public procurement target to the potential production volume we find it also inadequate to cover significant number of farmers; particularly the marginal, small, and medium farmers.

On the other hand, when direct govt. procurement is cost effective for natural course of timing of procurement activity and is easier to implement centralized public distribution and OMS operations but has the weakness of target fulfillment, effectiveness in implementation, and ultimately cannot ensure fair return to the farmers as it is not always linked with market command price. It is obvious for the reasons already explained in the proposition and it also requires significant budgetary dependency too.

It is then obvious that adequate storage facilities and with participation of FIs an effective model can be perceived that can play not only an important role in better management of food security issue for the whole country but also can help in meeting localized severe food security issues beside solving the system constraint of ensuring fare and better return for the farmers in a sustainable manner. A localized system of storage with freedom of operational rights on the farmers' part can help in timely infusion of the stored grain in the local or nearly terminal markets depending on the market condition. Some other augmentation like food security assistance systems can be developed; like government can introduce some financial support mechanism for keeping some portion of the stored grain as safety stock for future and not selling the stock even in high priced condition minimizing load on government procurement. The financial support volume can be determined depending on the differences in market price of two periods; actual selling price during the shortage and a reference high priced period of the locality. That is the actual selling price, normally at any period of food shortage and the highest possible price as a reference price at any reference period. The reference price can be of a reference time period in past or a predictive future period.

Besides, the linking of FIs to the storage systems can help in assuring a fare return to the farmers with an assurance of short term financing as working capital for continuation of next production cycle and to maintaining their normal livelihood during the harvesting period.

Now, would you be surprised to know that in Bangladesh there is a successful public intervention of same nature still in operation; for quite a long time?

### **A localized system of storage linked credit-The Experience**

During the 1974, particularly to mitigate the distressed and severe food in-secured situation of the small and marginal farmers from natural calamity and disasters particularly at the northern region of the country government had started working on developing some model interventions. From the experiences of crop bank in India and Thailand our government has also started pre feasibility works for similar models and the Swiss government also showed interest. After independence, specifically in 1978 with assistance from Switzerland government a project named BASWAP (Bangladesh Swiss Agriculture Project) started its operation and developed some small storage facilities targeting the small, medium, and marginal farmers of the northern region of the country.

From 1979 till 1990, the project was run by a joint committee comprised of Ministry of Agriculture (MoA), Ministry of Commerce (MoC), Ministry of Food (MoF), Bangladesh Academy for Rural Development (BARD), and Department of Agricultural Marketing (DAM) with financial and administrative assistance from MoA and SDC (Switzerland Development Co-operation).

From 1992 following the fifth year plan from the latest bilateral agreement between the governments the project was renamed as SHOGORIP that stood for Shoshsho Gudaam Rin Prokolpo though it was initially proposed as Crop Bank. But in 1995 the SDC withdrew itself from the project and Bangladesh government took decision to continue it with her own resources and the overall responsibility of program implementation was handed over to DAM. Later, the program period was extended up to June 2002 and by this time process of transferring the title under revenue had been started too.

From 2009 the program activities have been being run by DAM from revenue budget and presently, there are a total of 126 storage facilities spread over 88 upazila in 35 districts of the country. Among the 126 storage 14 was developed from own fund of the program and the rest 114 are un-used storage of LEGD.

The target districts are particularly in the northern and western regions of the country where the major monga areas lie. The project started with target of giving farmers a means of storing their produces during the harvest season when the price is commonly low and providing them with loan or credit on the stored volume. Banks were tagged in with the project to provide loans to the farmers based on their stored crops that they can repay later after selling their crops when the market price is high. Presently, the storage facilities are being managed by transferred project human resources in the Department of Agricultural Marketing (DAM) and a local advisory body constituted of local chairman, UNO, and representative farmers of the target area. A Gudam (storage) Management Committee comprised of representative farmers from target beneficiary which after 18 months of close nurturing by the program support, took over management of the total activities relating to the management of storage. The advisory committee chaired by local UNO (Upazila Nirbahi Officer) and comprised of Bank Manager, Field Office, Head of DAM and representative members from the farmers' group supervise and monitor the operations. The stores utilize indigenous methods for preservation and storage of the crops and the storages handle only grains like rice, wheat, and few spices like dried (Red) chili, ginger, etc.

From the start up to the year 2010 a total of around 0.1 million farmer household were benefited from the project that later turned into a program and presently brought under regular activities of DAM. Roughly around 30-50% price premium over general price trend is normal for the participating farmers. The facilities charge very little amount to the farmers on their stored produces yet from efficient performance and management of the program an amount of around (Bangladeshi Taka) BDT 10.1 million has been accumulated in its revolving fund that reflects its success and popularity among farmers. So far, BDT 875 million has been provided as loan to the participating farmers. The initiative presently spreads over 35 district, 88 upazila and 117 unions of the country.

Yet the big challenge was to ensure participation of small and marginal farmers in reality. The discussed intervention included an awareness building and promotional component which is not being done properly under the revenue model of operation at present and its impact is easily seen from decreasing number of participation of target farmers and inability to open successful operation in new areas. So, an effective and efficient system of management and operational framework is also important for successful scaling up of such an initiative.

Though there is no formal impact study done recently, from one evaluation study conducted by BIDS in 2007 it was found that the program benefitted substantially in securing higher prices for the stored crops as well loan recovery rate was also satisfactory. Yet it was highlighted that small and marginal farmers' participation decreased though they were the target beneficiaries. From limited level field exposure visits and conversation with the beneficiary farmer ample good experience and satisfaction was found among them. It can also be said firmly that the model has high potentiality of being accepted by the farmers' community in other regions of the country and can be easily replicated not only nationwide but also as a proven model in other developing countries with similar condition of marketing infrastructure, farming and farmer's profile.

#### **Expansion and Enhancement of the Model:**

This type of localized storage facilities linked with banks or financial institutions can be accommodated within broader interventions relating food security and its localized management. Besides, this model can also help in developing group marketing, voluntary grading, standardizing, and certification systems on different parameters. The storage systems can be given transport facilities to tap in the HVM or even export markets, and also can be linked to the processors. But, for the mechanized storage systems dearth of power can be a probable impediment in Bangladesh and similar countries particularly for perishable items. Yet there are many technological improvements and innovations now a day that can show some paths for utilizing solar and other renewable energy sources for developing low cost storage facilities.

As a by-product, this successful system can also act as a strong backbone in building an Agricultural Commodity Exchange (ACE) that can give another boost in the marketing system of selected agricultural produces. In the present context of the country's agricultural sector and the openness of global economy along with the experiences from other developed and developing countries like US, UK, Japan, India, Kenya, and many more we should also start developing of commodity exchange for selected crops suitable and feasible in Bangladeshi context; like Rice, Jute, Tobacco, Cotton, etc. Of course any such intervention should start with very comprehensive feasibility study.

To conclude, we should keep in our mind that most of the time development interventions fail to meet their expected result simply for the incompatible and conflicting nature of process requirement of the public systems and the actual procedures required for meeting the objectives of the interventions. So a hybrid nature of organizational

process framework might be found more suitable for the system to ensure smooth operation, transparency, as well as accountability.