

Agricultural Supply chain Management in the Chittagong Hill tracts: A research paper on the areas that need development

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Abstract

The main problem here lies in the transportation of crops from the hilly areas to other cities or villages. Khagrachari, Rangamati, Bandarban have been a great place for tourists, the climate out there is perfect for growing crops like banana, pears, lychees and several spices. A few of the most uncommon crops are also found here, for example “roktogolla” which, if transported to Dhaka can be a great source of income for a lot of villagers as well as the sellers in this city. A lot of spices are grown here naturally. These places are a goldmine for crop production but unfortunately due to underdeveloped roads, improper transportation and preservation methods, these haven't been adding much value to the economy of the country. I have lived in Chittagong Cantonment and went to the hill tracts several times in my life. In my last visit, I have found out that nothing significant has changed and the risky hilly roads along with improper transportation are playing a major negative role in the overall supply chain management of crops in these areas. To overcome these barriers, roads need to be improved at first. Hilly roads are risky, even for visitors and not that many steps have been taken by the government.

Again Chittagong Hill Tracts connect Bangladesh with Myanmar, in turn connecting us to South-East Asia. Exporting these crops would be beneficial for the farmers as well, considering the regions proximity to Chittagong port. Moreover these crops can be sold to several resorts in large amounts as well primarily for the tourists. While transporting the crops from Chittagong to other Cities, trains can be used as well instead of trucks since the train is more economy friendly and it reaches the destination in a fixed time since it runs at a constant speed. Moreover in places where necessary we'll use waterway transport forms such as boats and ferries if required.

While transporting, better preservation methods should be used so that the crops don't get harmed. And to conclude, specific routes should be set up for the vehicles so that risk of accidents gets minimized. Of course our primary focus would be on Chittagong and Cox's bazar as these are major markets. The primary goal is to firstly help wean off the dependency on imported fruits, followed by targeting the export market. Already crops such as Cashew Nuts being prepared for large scale export in the region, that too in the premium export segment.

Introduction

Recently Bangladesh has made great leaps in Agro-tech and our crops aren't limited to just rice, jute and seasonal vegetables on a mass scale anymore. The hill tracts have been largely neglected in the purview of Bangladesh's history in terms of agriculture due to poor infrastructure, socio economic factors and general political instability of the region. However, in recent years new roads are being constructed, allowing the inflow and outflow of goods and relatively long term investment crops, that is fruits and spices have gained traction in the region. Previously agriculture was limited to rice and vegetables in the region via jhum cultivation. But as Bangladesh develops, there's a higher scope of injecting more capital into profitable crops that grow on trees and take a few years to yield fruits. Already crops with longer shelf life such as cashew nuts are being grown for the export market in spite of the existing challenges. We wanted to explore the hurdles and solutions of this relatively underdeveloped supply chain.

The general practice has been the strong grasp on the sector by middlemen, unsustainable jhum cultivation practices that exist because of a lack of logistics in regards to both the inflow and outflow of goods, making the market relatively isolated and the sector relatively underdeveloped.

Prior research on the topic was made in regards to just growing the crops without accounting for existing problems in the supply chain by AD bank. More importantly the research was conducted pre 2010s using data that is largely redundant today considering how far we've come in terms of infrastructure and agricultural development.

Currently however the situation is very different. As the country moves towards a more diversified approach to agriculture, there's a more long-term investment friendliness that may exist. What makes the region of the hill tracts unique is this apparent former basket case may currently be viewed as a goldmine for new varieties of crops. Crops such as lychees, bananas, oranges, tangerines, coffee, pears and even spices such as allspice are now being grown in a few well connected areas of the region. However the region still remains largely economically unproductive in an agricultural perspective considering its lack of connectivity.

This research paper will be dealing with the newly emerging and developing supply chain in the region. It'll demonstrate the opportunities of produce being transported to the two major markets of Chittagong city and tourist hotspot Cox's bazar, two of the biggest consumers of such products even if one disregards the capital Dhaka. Considering the proximity to the port, a well developed supply chain's importance may also lead to the region being a net exporter instead of an importer of produce that imports most of the premium fruits and spices.

We've found that there's still a lack of a proper supply chain, especially for high value fruits with a shorter shelf life that are in need of a cold chain to successfully make it to major markets.

Literature review

Negi & Anand(2013) have made a comprehensive study on the inbound and outbound logistics of Agriculture and its issues with the community as a whole that's pertinent to our case. Moreover things

such as the rudimentary nature of extant agricultural methods such as jhum cultivation remain largely unprofitable and inherently dangerous as they cause soil erosion(gandhi david,unknown). Alternatives such as SALT need strong inbound logistics

Moreover fixing these issues have enormous requirements that can be dealt with by effective supply chain management techniques.

Theoretical framework

Firstly,let us look at the problems in the status quo.

1. Transport: Generally transport can be a big difficulty,not just in terms of transporting crops from the main field to the markets but it is also very difficult to carry things like seedlings,fertilizer and pesticides in large amounts to hills due to the inherent difficulty of climbing on an inclined angle. Even skilled laborers will take a lot of time to carry materials uphill using the primitive forms of transport still used in the area (which is still mostly just walking). More importantly, most conventional tractors are unusable in the area.
2. Transport related infrastructure: The Roads are very bad and non-existent in many places. Pitch roads are primarily only existent in the main roads . This leads to transportation of goods in large amounts,both inbound and outbound almost impossible during times like monsoon
3. Lack of cold chain infrastructure: Different crops have different shelf lives so most crops can't be transported out the area

The solutions that we have proposed were

- Usage of trains when it can be developed,trains having a very low freight cost
- Using waterways where possible
- Making carriers such as “chander gari” suitable for transportation

Existent research and theories tell us that this can generally be dealt with by proper supply chain management and building roads. This is something that even larger corporations use and governments

have been doing . AD bank(2000s) had previously built roads there trying to improve the situation of both the inbound and outbound logistics of the area. Moreover the solutions are already in use in many hilly areas.

Methodology

This research paper explains the problems in supply chain management and possible solutions of it in case of the transportation of crops from Chittagong hill tracts. The program involved extended and individualized support for the farmers, letting them know how to improve it and what the potential benefits will be if it is improved. Our team talked with some people living in the Chittagong hill tracts and some farmers as well as businessmen involved in selling and exporting crops in the Chittagong hill tracts. Out of the 38 farmers and 20 established businessmen we were able to contact there, a lot of them had complained about the problems that they face in case of transporting the crops. As a result of this, they can't benefit that much and some of the farmers are in immense loss.

We found through our research that instead of trying to find out the root cause of their losses, the farmers as well as the businessmen out there are more concerned with how to profit fast. We suggested that they change the transports and seek for help for better roads, besides, changing the preservation method might do a lot good to them as well.

These results led my research team and I to conclude that there are problems regarding the overall supply chain management in Chittagong hill tracts, the roads are not that good, the preservation method is not good and transports are not utilized, if these are done so then the farmers can benefit a lot and the businessmen can also benefit a lot.

Again, the primary methods of Data collection was empirical observation considering the lack of a large pool of respondents and sufficient information on the internet, both qualitatively and quantitatively

Results

Unfortunately the amount of respondents in our survey was negligible and there is an immense lack of data in this sphere

So we had to rely on empirical observations. Over the course of a few years after main roads were developed in places like khagrachari, development immediately ensued with minimum to no further government assistance. Most of these hilly roads, if owned privately, have become a hotspot for pineapple farming. This is further assisted if the local transport is good and there are fleets of minivans, designed to carry small loads of such crops.

Similar results can also be seen in sajek although there is a substantial lack of quantitative data, but the area did develop thanks to the aforementioned solutions.

Discussions

Our interaction with the businessmen and the farmers indicate a clear flaw in the supply chain management in Chittagong Hill Tracts. Firstly the roads are not developed. Secondly the transport system is not good there, it might be a very well place for the tourists to visit but it's not a suitable place if we consider industrialization. On the other hand, the farmers don't have a proper preservation method. As a result of all these, loss is seen and the crops are being sold at a very cheap rate. Again, several crops that are very rare are found here which can be sold and imported in Dhaka as well as other countries or cities.

The results here are beneficial for everyone because if we can implement the plan of improving the overall supply chain management starting from the preservation to the transportation of crops to other cities or countries, or even if we can help to export the crops, it will do a lot good to our farmers, the local businessmen as well as the economy of the country. The hill tracts can become the root of crop production as well.

We had to go through several limitations, like we couldn't gather proper information on the routes where crop is produced as our survey was conducted online and we had to talk to the farmers as well as the businessmen over phone.

Proper preservation method, proper transport services and proper roads are possible solutions to the problems in supply chain management in the Chittagong hill tracts. On the other hand we conducted a survey on people trying out new varieties of fruits and 98% of the people had given positive feedback whereas the others had given a feedback from neutral point of view. So it is evident that the crops that are cultivated there can be sold in other cities with huge profit and as a result, customer, seller and producer happiness can be ensured.

Limitations, Future Research Direction, and Conclusion

Unfortunately, while trying to do a research paper on such a niche yet interesting topic my team unfortunately couldn't find much information on the internet or gather much information from google forms since tribal people can't read bangla or english very well. This is backed up with the lack of quantitative data required to make a proper inference of the scale of the problem via inferential stats. The most relevant articles were also just from Asian Development Bank, and all of those articles were made before 2010, making most of the data redundant considering the changing agricultural practices and newer roads creation, coupled with tourism. Apart from that existing articles were either inaccessible or unaffordable.

The literal primary tool used was word of mouth from that of locals, general observation by our team and a few nitty gritty details on modern agriculture from various sources on the internet.

Practically speaking, other solutions used in logistics such as IoT aren't even mainstream in the well developed areas of Bangladesh. So such solutions are definitely unfeasible for remote areas.

However the clear intent of this research paper was to be different in terms of the fact that it'd swoon in further research in this field and bring light to the issue especially considering the fact that places like sajek valley became tourist hotspots due to new roads, we believe that CHT would be the new agricultural heartland in terms of producing high value goods that can even be intended for export as well as depleting

our reliance on imports. We hope that this can bring in investors, academics and political representatives to look into the issue for further development and research.

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