

# A Study on Value Chain Analysis in Paddy Sector: Special Reference to Kilinochchi District, Srilanka

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## Abstract

Value chain analysis is essential to an understanding of markets, their relationships, the Participation of different actors, and the critical constraints that limit the growth of livestock production and consequently the competitiveness of smallholder farmers. These farmers currently receive only a small fraction of the ultimate value of their output, even if, in theory, risk and rewards should be shared down the chain. Objective : Main objective of the study is to evaluate the effectiveness of the paddy field's value chain in the karachchi division, Kilinochchi district. And environs with a view to achieving the following broad output, to identify the key value chain actors in the paddy sector; to find out key factors influencing on value chain analysis for paddy sector; to discover the strengths and weakness of each value chain actors; to discover the opportunities and threats of each value chain actors; finally to suggest the value chain actors to strengthening the paddy sector in accordance with benefits of socio and economic point of view.

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*Index terms*— Paddy sector,

## 1 Introduction

gricultural sector in Sri Lanka contributes nearly 12 percent to the country's GDP and employs 33 percent of its labor force. Since the independence, there have been several attempts by successive governments and non government organizations to improve the productivity of the small farm paddy sector. These include the promotion of the use of high yielding varieties, subsidization of farm input supply, provision of credit facilities, and liberalization of both producer and consumer prices (Thayaparan, 2010). Further, Northern Province consists of five districts. Natural endowments of the province are the strength for development of agriculture sector in the region. Major sector for economic development of the northern region is agriculture which includes crop, livestock and inland fisheries. In developed countries, agriculture was a platform for industrial development. The pace of economic growth of the sector until the emergence of conflict in 1983 was satisfactory. The conflict over two decades had tremendous impact on agricultural growth in the country. Societies in the conflict areas which were badly affected both physically and financially are just emerging out of the impact of the war. Revival of economic assets, development of infrastructures and effective resource utilization are major considerations in the planning process while thinking of quick rehabilitation to meet the present day development requirement of the country. Rehabilitation provides a good opportunity for modernizing economic infrastructures ?? Sivayoganathan, 2009).

In this way, this study focuses on the value chain analysis in the paddy sector in the Karachchi Division, Kilinochchi District, Northern Province of Sri Lanka. After the successive resettlement in the Karachchi Division, people move to agricultural, dairy and poultry sector activities. The nongovernment organizations as World Vision -Sri Lanka, United Nation Development Program -Sri Lanka and International Organization for Migration-Sri Lanka have focused on the livelihood program. Especially World Vision-Sri Lanka has already approached the livelihood program successfully. Further they also focused the theme on the value chain training program in the paddy sector, karachchi division.

Therefore, this study has the valuable purpose as strengthening the value chain actors (individual farmers, input suppliers, and processing & marketing) in the paddy sector, Karachchi Division.

## II.

### 3 Study objectives

environs with a view to achieving the following broad output.

- To identify the key value chain actors in the paddy sector.

- To find out key factors influencing on value chain analysis for paddy sector.

- To discover the strengths and weakness of each value chain actors.

- To discover the opportunities and threats of each value chain actors.

- To suggest the value chain actors to strengthening the paddy sector in accordance with benefits of socio and economic point of view.

## III.

### 5 Review of literature

Over the past decade, Sri Lanka's traditionally agriculture-based economy has become increasingly dependent on the manufacturing sector, especially the garment industry. Although the relative significance of the agricultural sector has steadily declined in recent decade, it is still an important determinant of the country's gross domestic product (GDP) (Stads, Gunasena and Herath, 2005).

According to the Prasada, Kodithuwakku, Weerasooriya and Amerasekara 2010, they approached an evaluation of development interventions from a beneficiary Perspective in northern srilanka, Findings revealed that, while the number of interventions has a positive relationship with beneficiaries' perceptions of the priorities by service providers in agriculture and infrastructure, the number of interventions in relation to basic needs have a negative relationship with similar perceptions. Community perception of priorities varied across the three sectors studied (agriculture, basic needs and infrastructure). The perception of a particular sector as a priority by the recipient coincided with the number of interventions only in the case of agriculture. Respondents perceived that service providers did not consider accessibility to infrastructure and resources as priorities.

Based on the study of Baddawalage and Karunagoda, 2010. The study finding revealed that a substantial variation in input use among farmers and their response to the expected price of rice to be significant. Substantial variations in the use of fertilizer and seeds were also found, while the labor usage pattern was consistent within the region. The productivity of small scale farming was higher than that of large scale farming. The results further indicated that farmers do not possess adequate knowledge about optimum management practices and most of them being part time farmers do not allocate sufficient time to follow management practices. The results also revealed that food security is the major concern to engage in paddy farming. This is followed by the quality attribution. Also, most of the farmers are of the view that paddy farming is viewed as an inferior occupation by the society. Further, Value chain perspective has become recent international agriculture development strategy which includes all the activities that are undertaken in transforming raw material into a product that is sold and consumed. This includes the direct functions of primary production collection, processing, wholesale and retailing as well as support functions such as input supply financial service, transport, packaging and advertising. In this way, kilinochchi district is considered as feasible place to Agricultural development, and also it is considered as an agricultural district. Therefore this study has an influence on the value chain analysis in the paddy sector. And also the governmental and nongovernmental organizations may get the valuable information from this study to frame the better strategies among paddy sector in the northern part of the srilanka.

## IV.

### 7 Methodology of the Study a) Study Design

Qualitative study, especially field interview method has been utilized to get the valuable information from value chain actors as input suppliers, individual farmers, processing & marketing actors in the paddy sector. Further judgmental sampling method was used to select the respondents in the key value chain actors. b) Respondents in the Input suppliers Firstly, Owners of three retail shops providing weedicide, fertilizer, and agriculture equipments to the paddy sector located in the Karachchi division were selected and interviewed.

Secondly, managing directors in the CIC agri (pvt) ltd and Dave tractors (pvt) ltd in the karachchi division providing agricultural related products as harvester machines and tractors to the paddy sectors were selected and interviewed.

Thirdly, in the category of input suppliers, especially in the financial services, managing in charge of Bank of Ceylon, Kilinochchi district and credit officer in commercial bank, Kilinochchi district were interviewed.

Finally, Responsible persons in the Government organizations as Department of Agriculture, govt. seed production farm, Regional Agricultural Research and Department centre, Kilinochchi and Agrarian Service Center in the Karachchi division were selected and interviewed.

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## 8 c) Respondents in individual farmers

Twenty individual farmers who have involved in the paddy farming activities, Karachchi division were selected and also interviewed by the research team. Under this category, two rice mill owners (Balamurugan grinding mill, and Sivanarulselvan grinding mill) who conduct the business in the large scale in the karachchi division were selected and interviewed.

V. Province (2009), land of the region is relatively flat and of low elevation towards the coast. Six major soil groups have been identified in the region. The dominant group of soil in the region is Reddish Brown Earth (RBE). The association of Low Humic Gley (LHG) with RBE soil (92%) is well suited for paddy cultivation. Red Yellow Latesol, Non-Calcic Brown soil and Grumusol exist in Kilinochchi, Jaffna and Mannar areas respectively. The RBE has low organic matter content and the nitrogen and phosphorus status is usually low while potassium status varies from medium to low. These soils are very well supplied in calcium and magnesium, and they have a very good cat-ion exchange capacity. By tropical standards, these soils could be considered as having a very good chemical quality. The other soil types are alluvial of variable drainage and texture (4%), Rock Knob Plain (2%), Erosion remnants (1%) and Solodized Solonets & Solonchaks (1%).

## 9 Descriptions of the Study Area

### 10 Soil condition of the Kilinochchi district c) Land Development

Land is a scarce resource in the region. Efficient and effective eco-friendly land use management, land conservation and preservation and appropriate/ scientific land based resource management are imperative as the land expansion for agriculture is limited. Land use in relation to agriculture is given in Table 1.

### 11 d) Rainfall

According to the Comprehensive Master Plan for agriculture crop sector development, Northern Province (2009), The region falls under the low country dry zone. The total mean annual rainfall ranges from 1250 mm to 1720 mm out of which 65% -75% is received during October -March period (Maha season) and the rest during April -September period (Yala season). The total rainfall in the region when compared with arid regions is high in aggregate terms but highly seasonal. The North-East monsoon is the main source of rain for the dry zone and lasts from October or early November to late December or early January. During these 2-3 months, most dry zone stations received 45% -55% of the total annual rainfall. The rainfall during the pre North -East monsoon period, i.e., late September

### 12 Year

A Study on Value Chain Analysis in Paddy Sector: Special Reference to Kilinochchi District, Sri Lanka or early October is caused largely by cyclonic activity and provides another 20% -25% of the rainfall. Thus, about 65%-75% of the rainfall is concentrated into a period less than 4 months (October to January). Though occasional heavy rains occur in late March and early April, the seasonality of the rainfall is so marked that three to four months of drought is common in normal years. In lean years, there has been six months of absolute drought. These rainy periods determine the cropping seasons and cropping extent.

### 13 e) Irrigation schemes

According to the Comprehensive Master Plan for agriculture crop sector development, Northern Province (2009), there are 65 major and medium irrigation schemes and 698 functional minor irrigation schemes out of 2038 minor tanks. Iranamadu and Giant Tank are the largest and the oldest irrigation schemes in the region. The Irrigation schemes mainly depend on rainfall run off and river basins for capacity filling. As there are no perennial rivers, seasonal rivers drain off the rainfall water into the tank. Nevertheless, Surface runoff water is stored in the irrigation tanks. More than thousand minor irrigation schemes are available but only some of them are functional with irrigation system for crop cultivation. -Labor cost is also the problematic one to the individual farmers; reasons behind the high labor cost are rocket speed inflation, high demand for labor in karachchi division.

## 14 VI.

### 15 Value chain analysis

-Lack of financial support in individual farmers, farmer organizations and co-op societies to cultivate the paddy sector in large scale.

-Planning and implementation of the Irrigation scheme as major and minor in karachchi division is in the question mark, because redevelopment of the particular scheme has not been done in the proper way.

-Ineffective waste management systems in the karachchi division, due to that both degradable and non degradable wastage generally block the water line for paddy cultivation.

-War period, Srilankan army have made the security boundaries with the help of large scale sand in karachchi division, due to that , water line for paddy cultivation through the channel system has been damaged in the dramatic way.

-Lack of support from governmental organizations as Department of Agriculture, govt. seed production farm, Regional Agricultural Research and Department centre and Agrarian Service Center in the Karachchi division. Only fertilizer is provided to the farmers with the minimum price.

-Lack of training and development programs related to the paddy field in karachchi division. The government organizations should concentrate on the training program in the continuous way.

-Lack of professional staffs in the Regional Agricultural Research and Department centre and Agrarian Service Center in the Karachchi division.

-People in the karachchi division are not ready to take the loans to cultivate the paddy in the large scale, because of the risks as marketing problems, risks in the weather condition, high cost of fertilizer, weedicide etc.

-Lack of knowledge in the paddy sector development, available financial service activities, agriculture services and other administrative activities related to the paddy sectors among people in the karachchi division.

-Ineffective transport facilities, road development is in the weakest level in the villages in the karachchi division, due to that, transporting of paddy seeds, fertilizer, paddy product in the large scale with the help of heavy vehicles is in the problematic one.

-Lack of marketing opportunities for paddy cultivation, business people from other districts as baticalo, Jaffna generally purchase the paddy product with large scale and ready cash, but -Life time of the paddy product is lowest level especially now days, because harvesting activities are done by machines, in the machinery work, humidity is the damaging factor to the paddy product. Due to that, drying facilities should be an important one to preserve the paddy product systematically.

-Price for paddy products is far low in the karachchi division. -Government organizations as Department of Agriculture, govt. seed production farm, Regional Agricultural Research and Department centre and Agrarian Service Center have focused the agricultural activities after the resettlement of the people in karachchi division in the step by step procedures.

## 16 paddy variety

-Food security of the people in the karachchi division is in better position, almost 90 percentages of people involve in the agricultural activities. c) Input suppliers' perspective towards Paddy sector i.

Retail shops providing weedicide, fertilizer, and agriculture equipments to the paddy sector located in the Karachchi division Owners of three retail shops providing weedicide, fertilizer, and agriculture equipments to the paddy sector located in the Karachchi division were selected and interviewed (varaki retail shop, ambika retail shop, and green world retail shop). In Kilinochchi district, weedicides as CG rider ( chlorpyrifos 400 g/l EC), Countup, Sprit -65, Granite 240 sc ( Penoxsulam 240 g/l sc), B.P.M.C ( fenobucarb 500 g/l EC) and Fertilizer as Hayleys brand, Agstar brand, Asia commercial brand and CIC brand fertilizers are demanded by the people in the karachchi division.

They all pointed that marketing opportunities, especially in the maha and yala season are in the peak level. And also any loss from weedicide and fertilizer using for paddy cultivation has not been recorded yet now. Further in future the marketing opportunities of the weedicide and fertilizer will be increased. And also, the business can be expanded with help of the financial assistances from financial institutions as commercial banks, development banks, financial companies etc. further they all suggest the agro medicines to the farmers when they ask the solutions to the problems. Further, if the retail owners provide the credit facilities, the turnover will be increased dramatically. That will be the great signal to the development of the agricultural activities in the karachchi division. Because most of individual farmers are in the poverty level. At the same time owners of retail shops perceived that, the credit system is the most risky one. Because the earning possibilities of the paddy sector is in the question mark.

ii.

Managing director in the CIC agri (pvt) ltd According to the URL of the CIC Agri (pvt) ltd, it is the leading agricultural company that manages over 10,000 Acres of its own Farm land, works directly with over 20,000 rural farmers and produces a variety of Agriculture & Livestock products like Seed Paddy, Rice, Fruits, Vegetables, Eggs, Yoghurt, Curd etc under its own Brand name for the local and export market, CIC Agri Businesses works with a strong commitment of enhancing farmer incomes, improving the Rural Economy and contributing towards the Development of Agriculture in Sri Lanka with a view of transforming the island Towards Nutritious & healthy Nation.

According to the statement of the Managing director in the CIC agri (pvt) ltd, Kilinochchi, Company generally provides the agricultural related products as weedicide, fertilizer, paddy seeds, harvester machines and tractors to the paddy sectors in the Karachchi division. Further, CIC agri ( pvt) provides the agricultural services to the people in the kilinochch district through opening the branch. Generally weedicide, fertilizer, and seeds are manufactured by the company. And harvester machines and tractor machines are sold by the company through the marketing strategy as the distribution strategy. And also the marketing He also pointed that 40 percentage of the people have failed to settle the installments on lease, therefore, they all have lost the machines and initial

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payment on lease, due to that, the responsible authority from government and non government organizations should focus on the particular problems. iv.

Managing in charge of Bank of Ceylon, Kilinochchi district and credit officer in commercial bank.

## **17 Managing in Charge of Bank of Ceylon**

In Karachchi division, twenty-five loans especially to the paddy and dairy sector have been provided to the people who have involved in the agricultural sector successfully. The resettlements of these loans are in the 90 percentage level. Further, the banks are ready to provide the loans with minimum procedures as two government employees' grantees, and required insurance. But most of the people involving in the agricultural activities have the lack of awareness towards loans, and also perceive in the negative way. Therefore, non government and government authority should conduct the training and development program on the financial availability and its procedures.

## **18 Credit officer in commercial bank**

Private commercial banks in the kilinochchi district have the rigid procedures of loaning system compare with government oriented commercial banks, in the private sector, the commercial bank has the better loaning system to the self employment, in the island wide, even though in the karachchi division, the activities of the loaning system in the dairy and paddy sector is in the lowest level. Least percentage of loans has been provided to the paddy sector. It is the far lowest level compare with other districts in the Northern Province. Resettlement of the loans is in the question mark especially in the self employment purpose, because, people generally get the loans for the self employment purpose, but they use the loans for building constructions (housing) and other personal purpose. Due to that the credit unit and manager in charge of commercial bank in the kilinochchi district have the risks to provide the loans to the people. v.

Government organizations as Department of Agriculture, Agrarian Service Center in the Karachchi division According to the URL of the Department of Agriculture (DOA), its functions are under the Ministry of Agriculture and the DOA is one of the largest government departments with a high profile community of agricultural scientists and a network of institutions covering different agro ecological regions island wide. The objectives of the DOA are focused on maintaining Global Journal of Management and Business Research Volume XII Issue XVIII Version I 2 2012 ear and increasing productivity and production of the food crop sector for the purpose of enhancing the income and living condition of the farmer and making food available at affordable prices to the consumer. The major functions of the DOA include research, extension, production of seed and planting material, regulatory services related to plant quarantine, soil conservation and pesticides.

In the kilinochchi district, the services of the department of agriculture and Agrarian service center are being improved in the dramatic manner. But the services of the particular government bodies are not enough one to the farmers.

## **19 Services of department of agriculture and Agrarian service center in Kilinochchi district**

-Agriculture field officers from the government bodies give the awareness to the farmers in the continuous way through the field visits. And also give the solutions to the problems like diseases, paddy sector maintenance etc.

-Government bodies generally conduct the training and development program related to the paddy cultivation in kilinochchi district.

-They give the agro medicines to the farmers when the uncontrolled diseases are spread in the region.

-They also gives the fertilizer , weedicide with the minimum price as controlled price -Minor irrigation schemes (within the 200 acres) are maintained by those government bodies, Major schemes (beyond the 200 acres) are maintained by the separate irrigation schemes.

Further, approximately 400 minor tanks are under the control of the Agrarian Service Center in the Karachchi division.

-Channeling system and transportation system also are controlled by those government bodies in karachchi division. NOTE : Not enough professional staffs and labors in the department of agriculture and Agrarian service center in kilinochchi district, at the same time, kilinochchi district is considered as agro based district in the north part of the srilanka. Therefore, governmental authority should consider the problem and give the proper solution to the problem like lack of human resources. vi.

## **20 Regional Agricultural**

## **21 Govt. seed production farm, Kilinochchi**

It provides the services as production of basic seed and planting material, production and distribution certified seed with contract growers, management of government seed farm, maintenance of buffer seed stock, and coordination of seed paddy supply program. In kilinochchi district, seed production farm has 100 acres owned land, in which 72 acres have been utilized for the paddy cultivation. Three office workers and forty labors are

functioning under the govt. seed production farm, kilinochchi. Further, the farm has the drying and storing facilities with large scale.

### 22 d) Respondents in the processing & marketing activities in paddy sector

Two rice mill owners (Balamurugan grinding mill, and Sivanarulselvan grinding mill) who conduct the business in the large scale in the karachchi division were selected and interviewed. i.

### 23 Mill owners' perspective towards paddy sector

Six large scale grinding mills are functioning in the karachchi division, and also some small scale grinding mills also are functioning in the region. Balamurugan and sivanarulselvam are the leading grinding mills.

### 24 Year

A Study on Value Chain Analysis in Paddy Sector: Special Reference to Kilinochchi District, Sri Lanka Challenges of the value chain actors as grinding mills -Lack of financial support, and also interest payment for loans is in the problematic one. Because, the earning capacity is not fulfilled the interest and installments timely.

-Lack of labor force, owners is ready to pay the attractive pay, but most of the labor force are functioning in the road development and building construction.

-Lacks of awareness in the marketing strategies in the promotional perspectives, mills are utilized in the -Lacks of awareness in the marketing strategies in the promotional perspectives, mills are utilized in the large scale, but, they don't know how to market the paddy related products in the island wide.

-Lack of communication between individual farmers and mill owners, most of the individual farmers have the business dealing with other province whole sellers, because of the ready cash, unfortunately, most of the farmers are cheated by the whole sellers (fraud in the weigh system of paddy product). Even though, local mill owners are ready to pay the fair value to the paddy products with the two weeks' time. But most of the farmers have the interest to deal with the whole sellers with ready cash from other province.

-High electricity payment, because machinery work, large amount of electricity power is required to conduct the processing. And also oil price is also in the highest level.

-Lack of educational background to expand the business in the island wide and export oriented, at the same time, the opportunities as great amount of supply of paddy product in the maha and yala seasons. NOTE : Opportunities of value actors as mill owners in the paddy sector as all the process can be done by the machinery work. Due to that efficient and effective work are the competitive advantages in the machinery work rather than the manual work. who have the grinding mills in the large scale to expand the business in the island wide and export oriented, at the same time, the opportunities as great amount of supply of paddy product in the maha and yala seasons are in karachchi division. Due to that, training program on the international marketing can be conducted by the marketing experts with the help of the nongovernmental organizations.

VIII.

### 25 Conclusion

According to the Comprehensive Master Plan for agriculture crop sector development, Northern Province, Value chain perspective has become recent international agriculture development strategy which includes all the activities that are undertaken in transforming raw material into a product that is sold and consumed. This includes the direct functions of primary production collection, processing, wholesale and retailing as well as support functions such as input supply financial service, transport, packaging and advertising. In this way, kilinochchi district is considered as feasible place to paddy cultivation, and also it is considered as a agricultural district. Therefore, the value chain analysis in the paddy field, in karachchi division helps to government, non government organizations, policy makers and educators to enhance and update the information in the paddy field in karachchi division. <sup>1</sup>

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Figure 1: Global

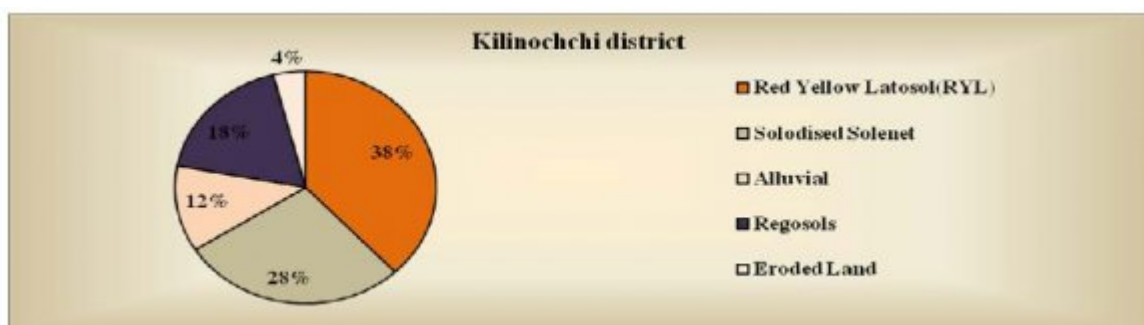


Figure 2:

Division: Karachi Date: 12/07/2009

GN Division: D-2 Pannan kandi

Programme: Value Chain Program for Agriculture

No	Name of Beneficiary	Male	Female	Signature
1	Albong Jeyarasa.	✓		
2	Kanni Balasinkam.	✓		
3	Sellaththurai Rames.	✓		
4	Marimuthu Ramesang	✓		
5	Kallaththurai Kallaththurai	✓		
6	Rajendran - Sudarshan	✓		
7	Marimuthu - Visvanathan	✓		
8	Sinnaiy. Annanabji.	✓		
9	Karubbaiva. Ramesang	✓		
10	Velubbiilai Rajenthiran	✓		
11	R. Alakusantharam.	✓		
12	R. Raththiran.	✓		
13	A. Varadar	✓		
14	B. Paramaswamy		✓	
15	J. Jayanthi malar.		✓	
16				
17				

Figure 3:

1

Total Land area (ha)	123711 ha
Agriculture land	59782 ha
Paddy irrigated land	12487 ha
Paddy rain fed land	12555 ha
Forest Land	35110 ha

[Note: Source: Comprehensive Master Plan for agriculture crop sector development. Northern Province, 2009.]

Figure 4: Table 1 :



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NOTE : Cost of the harvester and tractor

Cost of the Harvesters = 17.95 laks, 24.25 laks,  
and 42.95 laks (Three varieties are available)

Cost of Tractors = 14.74 laks, 15.60 laks, 19.50  
laks and 24.25 laks (Four varieties are available)

Technical Data for the Standard combine harvester

Steering

Power

Cutter bar width

3657 mm

Cutter bar height

80mm -

800mm

Threshers drum width

1257mm

Threshers drum rpm

680-900 rmp

Concave width

1285mm

Grain tank capacity

1050 kg

Cutting capacity

1.5 -2 acres  
per hour

Fuel consumption

4 liters per  
hour

Figure 5:

	Bala murugan grinding mill	Sivanarulselvam grind- ing mill
	Processing capacity as 8,000 kg per day	Processing ca- pac- ity as 25,000 kg per day
	Storing capacity as 36,0000 kg	Storing ca- pac- ity as 108,0000 kg
	8 ork w ers	15 work- ers
VII.	Recommendation for value actors in paddy sector in karachchi division	-
-Government	sectors and non government organizations should focus on the marketing facilities of the paddy related products, because Paddy marketing has been one of the major constraints for paddy producers resulting in the realization that paddy cultivation is not a profitable venture. Paddy farmers are unable to market with optimum price and compelled for distress sale.	
-Government	oriented financial institutions as bank of Ceylon, people's bank and national development banks should focus the special scheme as loans and insurance for paddy sector to support the individual farmers, farmer organizations and co-op societies to cultivate the paddy sector in large scale.	
-Planning and	implementation of the Irrigation scheme should be done in the proper way to get the maximum yield from paddy cultivation.	
-Waste management	systems in the karachchi division should be planned and implemented in the effective way, responsible government authority should focus on the problem. Therefore both degradable and non degradable wastage can be processed systematically.	
-Training and	development programs related to the paddy field in karachchi division. Both government organizations and nongovernmental organizations should concentrate on the training program in the continuous way to give the awareness on available financial service activities, agriculture services and other administrative activities related to the paddy sectors.	

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