

A study on
Operation of eNAM at Nabarangpur District

A Thesis submitted to the
Orissa University of Agriculture and Technology
in Partial fulfilment of the Requirement of the degree of
Mater of Business Administration
(Agribusiness Management)

By
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CERTIFICATE-I

This is certify that the thesis entitled ‘A study Operation of e-NAM at Nabarangpur District’ Submitted in partial fulfilment of the requirements for the award of the degree of Master of Business Administration in Agribusiness Management to the Orissa University of Agriculture and Technology is a faithful record of bonfire and original research work carried out by Ranjeet Kumar Biswal under my guidance and supervision. No part of this thesis has been submitted for any other degree or diploma.

It is further certified that the assistance and help received by him/her from various sources during the course of investigation has been duly acknowledged.

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CENTRE FOR POST GRADUATE STUDIES (CPGS)

CERTIFICATE-II

This is certified that the thesis entitled 'A study on Operation of e-NAM at Nabarangpur District' submitted by Ranjeet Kumar Biswal to the Orissa University of Agriculture and Technology, Bhubaneswar in partial fulfilment of the requirements for the degree of Master of Business Administration in Agribusiness Management has been approved by the students' advisory committee and the external examiner.

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DECLARATION

I do hereby declare that the thesis entitled “A study on Operation of e-NAM at Nabarnpur District”, with special reference to Nabarangpur district of Odisha is being submitted to the department of Agribusiness Management, Centre for Post Graduate studies, Orissa University of Agriculture and Technology, Bhubaneswar is my own work to the best of my knowledge and belief. The entire work is done by me and this report has not been submitted previously. It is an original piece of research work.

Ranjeet Kumar Biswal

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Ranjeet Kumar Biswal

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ABBREVIATION

APMC- Agricultural produce marketing committee

RMC- Regulated marketing Committee

LAMPS- Large area multipurpose cooperative societies

OSAM- Odisha State Agriculture Marketing Board

FPO- Farmer producer organisation

OMFED-Odisha state cooperative milk producers' federation

CPGS - Centre for Post Graduate Studies

ABM-Agribusiness management

FIG-Farmer interest group

OAPM- Odisha Agriculture Produce Market Act

AMFFRI- AGRICULTURAL MARKETING AND FARMER FRIENDLY REFORMS

INDEX

GP- Gram Panchayat

PACS-Primary agriculture cooperative society

NITI AAYOG-National Institute for Transforming India

ABSTRACT

In view of the emerging problems of Agricultural Marketing, and with the opening up of 585 no.s of e-NAMs nationwide including 10 no's of such markets in Odisha, a study was conducted in one operational e-NAM in Nabarangpur District of Odisha with the following objectives. (1)To identify the operational mechanism of study area. (2)To find out the transactional status of agricultural products through e-NAM of Nabarangpur. (3)To study the marketing of agricultural products through traditional market and e-NAM.(4)To find out the response as well as feedback of both farmers and traders about their benefits by selling through eNAM.(5)To know about the problems and prospects of eNAM of Nabarangpur District. With respect to methodology, 30 each farmers (both participants in e-NAM trading and non-participants) were selected for the study from five Blocks of the District. Further 15 traders were selected for the purpose. Based on the aforesaid objectives, it was found that Nabarangpur District has suitable agro climatic condition for the production of maize and with the use of high yielding varieties farmers are also able to produce more. Operation mechanism of e-NAM comprises of six major steps like gate entry, assaying, auction,sale agreement, payment(online/offline) and gate exit.In the year 2014-15 2,68,350 MT of maize had produced in the Nabarangpur district.8907 number of farmers and 107 number of traders are already enrolled under e-NAM ,Nabarangpur . In the year 2016-17, 3826 quintal of maize is transacted through RMC, but in the year 2017-18 it is drastically grows to 16929 quintal. People are now acquainting with the e-NAM Platform. Major arrival pockets are from umerkote, Raighar, jharigaon block. The maize transported to other states i.e West bengal, Chhattisgarh, Andhra Pradesh and neighbouring district of Odisha like Jagatpur (cuttack).Farmers producer organisation and different FIG(Farmer Interest Group) has also trading through RMC and giving it to different maize processing units or to other companies like OMFED. With the discussion with farmers we get to know different reasons about the problems, the main cause is the transportation cost and the pricing system. Traders are giving credit facilities to the farmers before the cultivation started, because of that farmers are bound to sell their produce to the traders with a low price. Farmers can be benefited through e-NAM platform, if there is a fixed rate for the maize and Government should establish different maize processing sectors. Some of the traders are suggest that farmer should properly dry his goods in order to maintain acceptable moisture range. Pledge loan facility should be introduced by the local banks which could be a positive factor for farmer to sell his produce through RMC.

Sometimes farmer take good samples for checking moisture level, but the rest whole quantity is not properly dried, so sometimes it is the major problem for some traders. Following suggestions has been given, viz (1) there should be general awareness programmes for e-NAM. (2)Government should fix price for the goods I.e maize so that farmers may interested to sell through e-NAM and get better price. (3)There should be price deficit scheme by Government so that farmers can get higher price. (4)Government should promote for the development of maize processing sectors. (5)Government should take care of the transportation cost which farmer spend to take their produce to the e-NAM centre.

INTRODUCTION

INTRODUCTION

1.1 Agriculture in Odisha:

Odisha is a major agricultural state of India. The agriculture sector contributes only about 30% of the Gross State Domestic Product (GSDP), with more than 60% population dependence resulting in low per capita income in the farm sector. The cropped area is about 87.46 lakh hectares out of which 18.79 lakh hectares are irrigated. Climate and soil play a vital role in Odisha's agriculture economy. Thus a major portion of the farm land depends on rain for water feeding the crop. The rivers of Odisha are mostly rain fed, many times it happens that the farmers have to be dependent on the irrigation and as a result of it major parts of the overall cultivated land are being irrigated. Also the area under agriculture is comparatively more in the coastal districts of Odisha i.e. Balasore, Bhadrak, Cuttack, Ganjam, Jajpur, Jagatasinghpur, Kendrapara, Khurda, Nayagarh, Puri etc.

Agriculture is a vital sector and a major indicator of the state's economic status, agriculture remains the mainstay of Odisha's economy and sustenance of the life of the people. The common crops cultivated in the state are rice, pulses, oil seeds, jute, roselle, sugarcane, coconut and turmeric are important crops. The state contributes one-tenth of the rice production in India. Apart from food grains various cash crops like jute, mesta, sugarcane, tobacco, rubber, tea, coffee and turmeric are also cultivated in the state. Odisha stands fourth in the production of jute in the country after West Bengal, Bihar and Assam.

1.2 Major agricultural crops in Odisha:

1.2.1 Rice: The crop is largely grown in the districts of Balasore, Cuttack, Mayurbhanj, Puri and Bhadrak.

1.2.2 Pulses: The most important pulses grown in Odisha are gram, tuar, arhar etc.. Pulses are cultivated in the districts like Balasore, Bhadrak, Ganjam and Mayurbhanj in large excess.

1.2.3 Oil Seeds: The crops like, groundnut, mustard, castor and linseed are the main oil seeds grown in Odisha. These are best produced in the districts of Balasore, Kalahandi, Sambalpur, and Dhenkanal.

1.2.4 Cash Crops: Among cash crops, fibre crops are especially important. Jute accounts for the maximum areas. A considerable amount of Roselle is also cultivated in Odisha. Cultivation of jute is primarily confined to the coastal plains of Cuttack, Balasore and Puri districts. It dominates in the districts of Cuttack, Ganjam, Bolangir and Koraput districts. Sugarcane is the second most important cash crop in Odisha in area as well as production. It is grown in irrigated areas. Odisha stands eight in sugarcane production in India. A considerable amount of sugarcane is cultivated in Cuttack, Sambalpur, Bolangir, Kalahandi and Puri districts. Odisha also produces a small quantity of tobacco. The new cash crops, the most important is cashew, which has been planted extensively in the low level latiritic plateaus at the foothills of the Cashew Plantation Board is responsible for the development of cashew cultivation in the state. Cashew is also being planted on the sand-dunes on the entire coastal belt. This is because of the suitable edaphic and climatic conditions in these areas.

1.2.5 Rubber Plantations: To protect the degraded hill slopes of Eastern Ghats, rubber plantation have been taken up by Rubber Board. Bright prospect for the growth and development of natural Rubber exists in the northern Odisha Mayurbhanj, Keonjhar and Balasore due to favourable agro-climatic conditions. Odisha is a non traditional area for rubber plantations. Inland hill areas of Cuttack, Puri, Ganjam and Dhenkanal districts have agro-climatic conditions suitable for rubber cultivation.

1.2.6 Cotton: Cotton cultivation has been taken up extensively in Koraput, Bolangir and Kalahandi districts where suitable soil and climate conditions are found. Sea Island cotton can be grown in the Ballipal region of Balasore district.

1.2.7 Fruits: Mango, Guava, Citrus, Banana, Litchi, Pineapple and Papaya are the major fruits grown in the state. Mango, Guava, Banana, Papaya are grown all over the state where

as Orange and Litchi in certain areas. There has been substantial increase in production of major fruit crops like mango, citrus, litchi, banana, papaya & coconut. Many of the plantations are old, senile and un-productive due to lack of proper care and maintenance, which resulted in reduction in fruit production.

1.2.8 Vegetables: The soil and climatic conditions of Odisha is favourable for growing a variety of vegetables throughout the year. Major vegetables cultivated in the state are brinjal, tomato, onion, cole crops, okra and gourds.

1.2.9 Irrigation:

The state is blessed with abundant water resources & extensive network of rivers & streams. For effective utilization & management of water resources, river basin plans for all the eleven river basins of the state have been prepared and steps are being taken to set up River Basin Organization.

Irrigation is the main input of Agriculture without which Agriculture can't sustain its full growth. Irrigation Development not only correlates to Agriculture but also to other Socio-Economic aspects like industry, navigation, hydropower, pisciculture, water supply etc. With this objective, top priority has all along been given in Five-Year Plans for irrigation development. Attempts have been made to achieve irrigation development in planned manner by implementing different schemes such as AIBP, RIDE, BKVY, RR&R, Bharat Nirman & RLTAAP etc.

1.3 National Agricultural Market:

National Agriculture Market (NAM) is a pan-India electronic trading platform which connects the existing APMC mandis to create a unified national market for agricultural commodities.

The NAM Portal provides a single window service for all APMC related information and services. This includes commodity arrivals & prices, buy & sell trade offers, provision to respond to trade offers, among other services. While material flow (agriculture produce) continues to happen through mandis, an online trading reduces transaction costs.

Agriculture marketing mandi is administered by the States as per their agri-marketing regulations, under which, the State is divided into several market areas, each of which is administered by a separate Agricultural Produce Marketing Committee (APMC) which imposes its own marketing regulation (including fees). This fragmentation of markets, even within the State, hinders free flow of agri commodities from one market area to another and multiple handling of agri-produce and multiple levels of mandi charges ends up escalating the prices for the consumers without commensurate benefit to the farmer.

NAM addresses these challenges by creating a unified market through online trading platform, both, at State and National level and promotes uniformity, streamlining of procedures across the integrated markets, removes information asymmetry between buyers and sellers and promotes real time price discovery, based on actual demand and supply, promotes transparency in auction process, and access to a nationwide market for the farmer, with prices commensurate with quality of his produce and online payment and availability of better quality produce and at more reasonable prices to the consumer.

1.4 Objective of the NAM:

- A national e-market platform for transparent sale transactions and price discovery initially in regulated markets. Willing States to accordingly enact suitable provisions in their APMC Act for promotion of e-trading by their State Agricultural Marketing Board/APMC.
- Liberal licensing of traders / buyers and commission agents by State authorities without any pre-condition of physical presence or possession of shop /premises in the market yard.
- One license for a trader valid across all markets in the State.
- Harmonisation of quality standards of agricultural produce and provision for assaying (quality testing) infrastructure in every market to enable informed bidding by buyers. Common tradable parameters have so far been developed for 69 commodities.

- Single point levy of market fees, i.e on the first wholesale purchase from the farmer.
- Provision of Soil Testing Laboratories in/ or near the selected mandi to facilitate visiting farmers to access this facility in the mandi itself. M/s. Nagarjuna Fertilizers and Chemicals Ltd. is the Strategic Partner (SP) who is responsible for development, operation and maintenance of the platform. The broad role of the Strategic Partner is comprehensive and includes writing of the software, customizing it to meet the specific requirements of the mandis in the States willing to integrate with NAM and running the platform.

1.5 OSAM BOARD:

The present agricultural marketing system of the state is governed by the Odisha State Agricultural Produce Marketing Act, which came into force back in the year 1956. Under the present dispensation there are 66 Regulated Market Committees (RMCs) functioning under the supervision and control of the OSAM Board and the Directorate. A Regulated Market committee (RMC) is a democratically elected body consisting of elected members from different constituencies such as farmers, traders, farmer's cooperatives, local urban bodies etc. Generally the concerned sub-collector or collector, under whose jurisdiction an RMC falls, is nominated as the chairman of the RMC. A Regulated Market aims at realisation of three major objectives, such as:

Ensuring correct weighment for the produces of the farmers, so that he is not cheated by the middlemen/wholesalers/semi-wholesalers etc.

Ensuring prompt payment to the farmers for his produce immediately his produces are sold.

Avoidance of exploitation in the hands of middlemen.

1.5.1 Objectives:

- Improving farmers/ producers access and linkage to the agricultural markets.
- Integrated plan for agricultural marketing by way of convergence approach with related departments and agencies for development of agricultural marketing.
- Preparation and implementation of district agricultural marketing plan in collaboration with line deptts and support of district administration.
- Fictionalization of agricultural markets for better utilization of available market infrastructures and marketing services.
- Strengthening of existing markets.
- Marketing extension services to ensure buyer-seller linkages, innovative marketing practices and strengthening agricultural supply chains in the State.
- Use & application of information technology for dissemination of marketing information to market players.
- Agricultural market survey, feasibility study of agricultural market, preparation of project reports and its implementation.
- Promotion & publicity of agricultural marketing activities. Training & development of market functionaries.

Table 1.1 RMCs Integrated with National Agriculture Market (eNAM)

Sr. No.	RMC	Buyer	Seller
1	Bahadajhola	56	1362
2	Kantabanji	96	6976
3	Kendupatna	7	1336

4	Koraput	70	3217
5	Kuchinda	112	2899
6	Nabarangpur	107	8907
7	Parlakhemundi	82	2461
8	Rayagada	94	2543
9	Sakhigopal	49	2018
10	Tikabali	25	5225

Source: OSAM BOARD

1.6 Importance of MAIZE:

1.6.1 Maize, scientific name *Zea Mays*, also known as **corn** or **mielie/mealie**, is one of the most extensively cultivated cereal crops on Earth. More maize is produced, by weight, than any other grain, and almost every country on Earth cultivates maize commercially for a variety of uses. The abundant cultivation of maize globally has led to concerns about monocropping and biodiversity, especially since genetic evidence suggests that maize is radically less diverse than it was originally. In addition, maize is heavily genetically modified, and the crop has been used as a rallying point by the anti-Genetically Modified Organisms (GMOs) community.

1.6.2 Nutritional value per 100 grams of maize:

Maize, being popular as a food item, is enjoyed by people in various forms, like, whole corn, corn flour, cornstarch, corn gluten, corn syrup, cornmeal, corn oil, popcorn, cornflakes, etc. Apart from satisfying the taste buds of its users, maize is also a good source of vitamins, minerals and dietary fiber.

The nutritional value of cornflakes is almost similar to that of cooked maize. One large ear of cooked yellow maize contains almost 4 grams of protein, 3.5 grams of dietary fiber, around 30 grams of carbohydrates, 1.5 grams of fat, 3.6 grams of sugar, around 100 grams of water, no cholesterol and amounts to 126 calories. Below is more maize nutrition facts and information about the vitamin and mineral content in one large ear of yellow maize, which is cooked without salt.

Table 1.2 vitamins per 100 gms of maize

Vitamin	Amount per 100 grams
Vitamin A	310 IU
Vitamin B1 (thiamine)	0.254 mg
Vitamin B2 (riboflavin)	0.085 mg
Vitamin B6	0.071 mg
Vitamin C	7.3 mg
Vitamin E	0.11 mg
Vitamin K	0.5 mcg
Vitamin E	0.11 mg
Niacin	1.9 mg
Folate	54 mcg
Pantothenic Acid	1.036 mg

Table 1.3 Maize Nutritional Value – Minerals

Mineral	Amount per 100 grams
Potassium	250 mg
Phosphorus	90 mg
Magnesium	37 mg
Calcium	4 mg
Zinc	0.72 mg
Iron	0.52 mg
Selenium	0.2 mg

Source: National science foundation

1.7 Block wise production of Nabarangpur:

Nabarangpur district has produced 2,68,350 MT of maize during the year 2014-15. The Blockwise production during the said year is as follows.

01.Nabarangpur	8,565.30
02.Nandahandi	5,654.40
03.Tentulikhunti	17,584.11
04.Papadahandi	20,806.90
05.Kosagumuda	24,589.44
06.Dabugam	17,400.24
07.Umerkote	46,096.60
08.Raighar	80,327.78
09.Jharigam	37,910.40
10.chandahandi	9,415.48

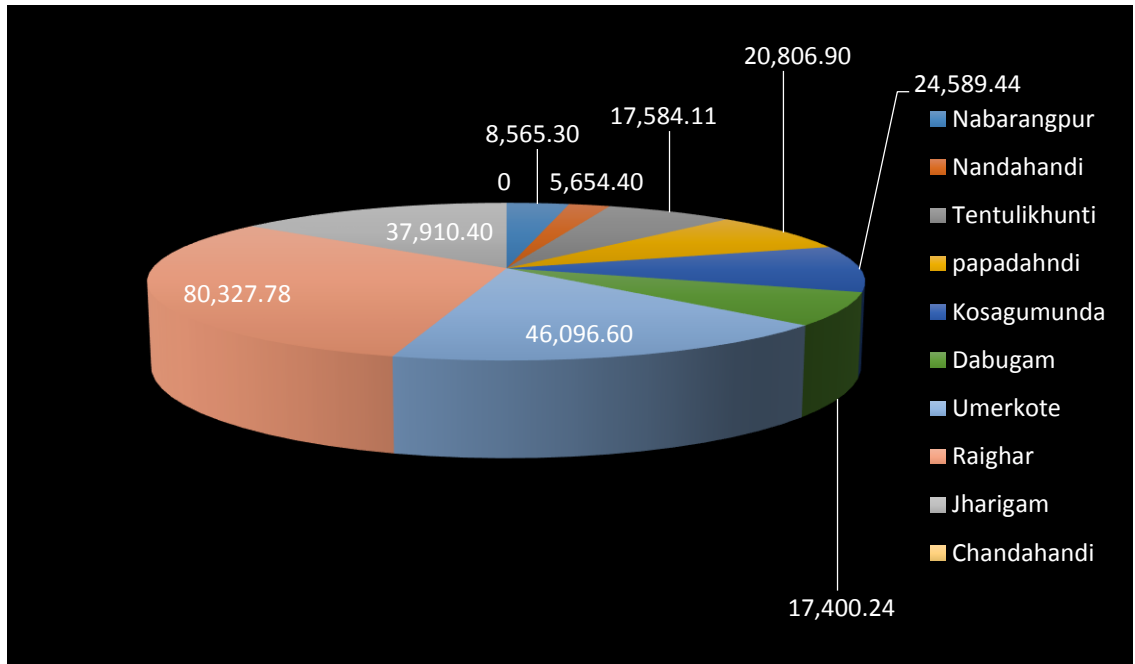


Fig 1.1 Block wise production of Nabarangpur

1.8 NATIONAL AGRICULTURE MARKET (e-NAM), NABARANGPUR



During the month of **January 2017** the e-NAM pilot Project has been launched in Nabarangpur District for procurement of Maize from the small & marginal farmers through online platform. One of the existing room has been arranged for functioning of e-NAM Office, as per instructions of Member Secretary, OSAM Board, Bhubaneswar one laboratory for testing of Maize grains has been setup and required laboratory materials have been procured and in addition to this the OSAM Board has supplied required Computer

hardware & software materials, UPS 10 KV etc., In the meanwhile One Mandi Analyst has been outsourced under e-NAM project scheme and the RMC has engaged One Chemist through outsource basis for testing of maize grains and also the RMC has engaged 2 nos. of data entry operators out of existing staff in order to assigning duties for enrolment of farmers & traders master data. From *April 2017*, e-NAM project has come in actual trading platform under RMC, Nabarangpur district.

National Agriculture Market (NAM) is a pan-India electronic trading portal which networks the existing APMC mandis to create a unified national market for agricultural commodities.

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Agriculture marketing is administered by the States as per their agri-marketing regulations, under which, the State is divided into several market areas, each of which is administered by a separate Agricultural Produce Marketing Committee (APMC) which imposes its own marketing regulation (including fees). This fragmentation of markets, even within the State, hinders free flow of agri commodities from one market area to another and multiple handling of agri-produce and multiple levels of mandi charges ends up escalating the prices for the consumers without commensurate benefit to the farmer.

NAM addresses these challenges by creating a unified market through online trading platform, both, at State and National level and promotes uniformity, streamlining of procedures across the integrated markets, removes information asymmetry between buyers and sellers and promotes real time price discovery, based on actual demand and supply, promotes transparency in auction process, and access to a nationwide market for the farmer, with prices commensurate with quality of his produce and online payment and availability of better quality produce and at more reasonable prices to the consumer.

Out of notified agriculture commodities, the Govt. of Odisha has given top priority for trading of *Maize* through e-NAM under RMC, Nabarangpur.

1.9 Facilities under e-NAM, Nabarangpur

1.9.1 Infrastructure facilities for e-NAM:

Below mentioned infrastructure has been setup prior to the starting of eNAM project at RMC Nabarangpur.

- Laboratory Testing Room has been setup specially for eNAM project at RMC, Nabarangpur
- Digital Auction hall.
- Computer section.
- All Computer systems are installed with high speed internet with 4-8 mbps speed.
- RMC Nabarangpur has inaugurated its office building for e-NAM purpose on 23.03.2017 at Main Market yard, Nabarangpur, in presence of Mr. Venkat R Paila (Marketing Officer, Group-1, Dept. Of Marketing and Insp., Govt. Of India)
- As regards, weighment facilities, the RMC is planning to integrate Weigh Bridge (60MT Capacity) with eNAM which is at present under commissioning and installation at Main Market yard, Nabarangpur and Jharigaon, as per the instructions of OSAMBoard, Bhubaneswar. At present weighing facilities has been incorporated with Manual Weigh Bridge (25 MT).
- The RMC Nabarangpur has proposed to construct an e-NAM new Office Building at Umerkote, Sub Market Yard. It is worthwhile to mentioned here that a more nos. of infrastructural facilities have already been provided with funding support of Biju KBK, RKVY & Own funds of RMC at Umerkote and Raigarh maize mandi project respectively with 50MT Electronic Weigh bridge, FIC, Go downs, Open Drying platforms, Auction Halls, Watchmen Shade, Water Arrangement, Fire Fighting system.

1.9.2 Use of Skilled man power to undertake e-Trading activity:

- As per the guidelines of OSAMBoard, Bhubaneswar, RMC has appointed 02 nos. of Data Entry Operators and 01 no of Chemist for eNAM purpose. Apart from that one Mandi Analyst has been deputed by Strategic Partner (NFCL) for eNAM pilot project since implementation.
- Mandi Analyst is dealing with all kinds of transaction and mode of trading in online platform. Apart from that, Mandi Analyst also dealing with Market strategy for commodities arrival, procurement and dispatch.
- Chemical Analyst has been working with all kind of testing and chemical analysis.
- All data for registration and e-NAM work has been carried out by Data entry operators.

1.9.3 Grading and assaying facilities:

Laboratory Testing Room has been setup especially for e-NAM project at RMC, Nabarangpur and the Instruments are listed as mentioned below:-

Table 1.4 Grading and assaying facilities.

1. Desiccators.	10. Forceps.
2. Petri disc.	11. Analytical Balance.
3. Watch Glass.	12. Hot Air Oven.
4. Analytical Weight Box.	13. Calcium Chloride (Chemicals)
5. Sample Spoon.	14. Test Sieves.
6. Spatula.	15. Electronics Balance.
7. Lab Tray.	16. Digital Grain Moisture meter.
8. Utility Tray.	17. Hand Magnifier.
9. Carrier Tray.	18. Measuring Cylinder.

Assaying carried out under e-NAM, Nabarangpur as mentioned below:-

1. Farmer's commodity sample collected from mandi arrival stock.
2. Sample collected from door step of farmers.

As per the sample record, online bid creation started and approached the same to Maize traders for online bidding.

1.9.4 Electronic Auction and Display:

e-NAM has launched Mobile application, which can be downloaded from play stores for easy convenience for online trading. RMC, Nabarangpur has integrated with a 32" Led display for farmers and traders to aware about the National market price. Farmers and traders can do online trading through their convenient or else they can use RMC office infrastructures for online works.

1.9.5 Godowns and storage facilities:

The RMC has provided storage facilities of Maize at different Market yards under RMC, Nabarangpur. The details of the **Godown position** are mentioned below :-

Table 1.5 Godowns and storage facilities.

SI No	Block	Municipality / G.P	Location (Village)	Total Capacity (Figs. in MTs) 2015-2016	Total Capacity (Figs. in MTs) 2016-2017	Total Capacity (Figs. in MTs) 2017-2018	Rented out by RMC (Figs.in MTs)	Vacant position (Figs.in MTs)
01	Nabarangpur	Municipality	Nabarangpur RMC, Main Market Yard	6720	6720	6720	2720	4000
02	Dabugam	Dabugam	Dabugam Market Yard	400	400	400	-	400
03	Kosagumuda	Kodinga	Kodinga Market Yard	500	500	500	-	500
		Kosagumuda	Kosagumuda Market Yard	500	500	500	500	-
		Badaamada	Badaamada Market Yard	1000	3000	3000	-	3000
04	Umerkote	Municipality	Umerkote Market Yard	1500	1500	1500	500	1000
05	Raighar	Raighar	Raighar Market Yard	1000	2000	2000	-	2000
06	Jhorigam	Jhorigam	Jhorigam Market Yard	1500	1500	1500	-	1500
			TOTAL	16120			3720	12400

1.10 Enrolment of Farmers and Traders in e-NAM web portal:

Total **8907** nos. of farmers and **107** nos. of traders of Nabarangpur District have enrolled in e-NAM web portal as on 25th May 2018. Further the RMC has taken steps to increase more numbers of cashless transactions against maize procurement through e-NAM platform during the year 2017-18.

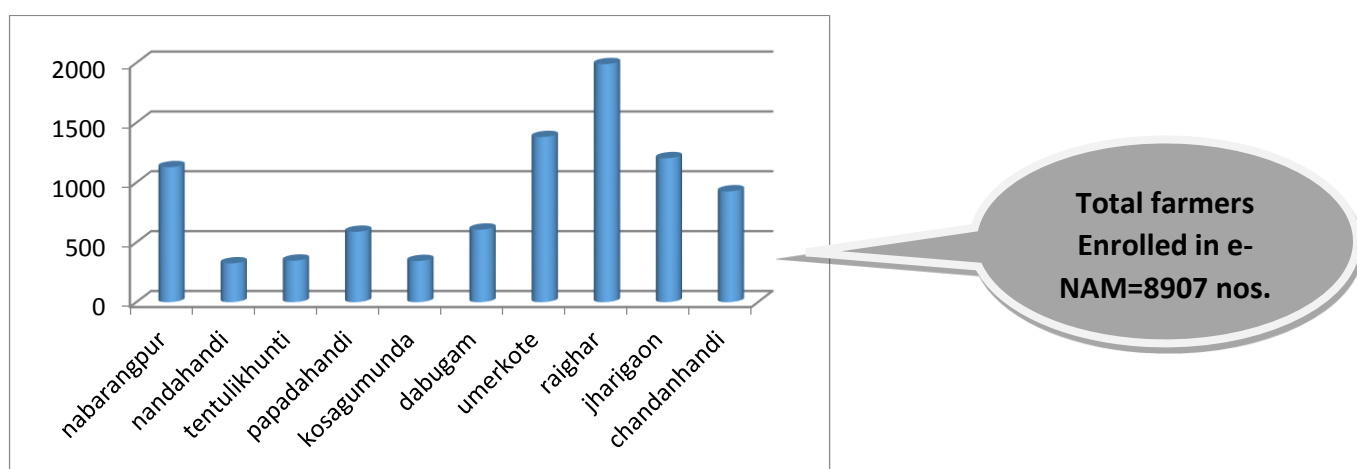


Fig 1.2 Total farmers enrolled under e-NAM

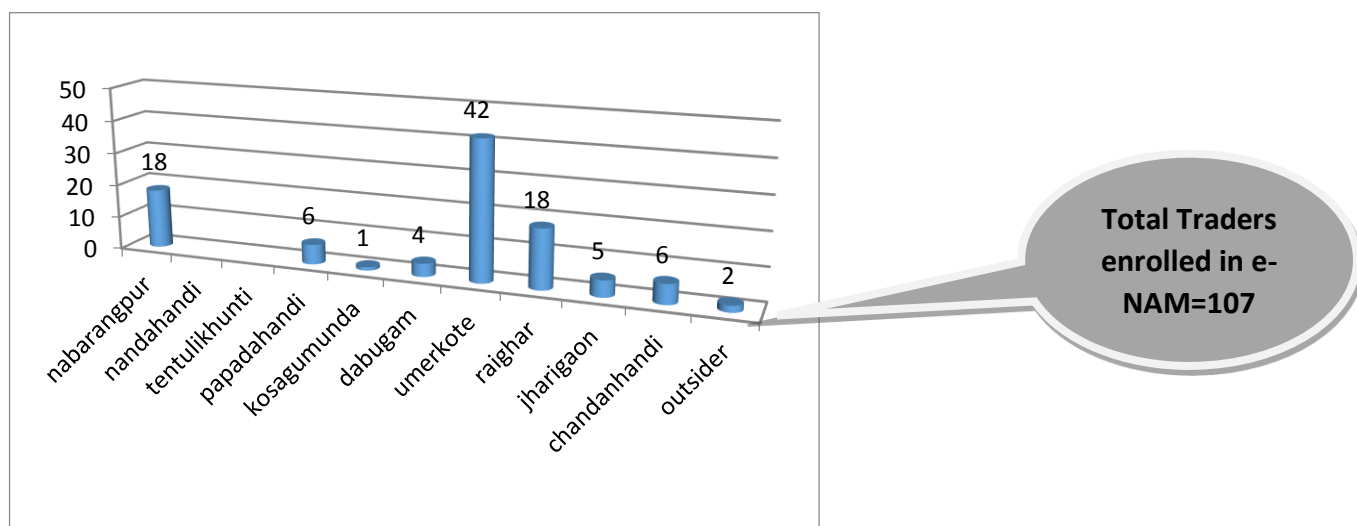


Fig 1.3 Total traders enrolled in e-NAM

1.11 Objective of the study:

1. To identify the operational mechanism of study area.
2. To find out the transactional status of agricultural products through e-NAM of Nabarangpur.
3. To study the marketing of agricultural products through traditional market and e-NAM.
4. To find out the response as well as feedback of both farmers and traders about their benefits by selling through eNAM.
5. To know about the problems and prospects of eNAM of Nabarangpur District

1.12 Focus Area:

- Block wise quantity produce of Nabarangpur District.
- Trading system.
- Export quantity.
- Available of processing units.
- Procurement through FPOs(Farmer producer Organization)
- Loan facilities by traders and its effect on price fixation of the produce (maize) after production by the farmers.

1.13 Scope of the study:

- This study can help to know about the maize production rate in Nabarangpur district.
- After the research work we are able to know about the main problem of farmers regarding e-NAM platform.
- We can know about the operational mechanism of e-NAM at Nabarangpur District.
- We can also able to know about the prevailing supply chain of Maize and paddy at Nabarangpur District.

CHAPTER-2
REVIEW OF LITERATURE

REVIEW OF LITERATURE

For any investigation, the findings of earlier studies may possibly give insights of the problem and sets direction for the research problem. An extensive review of literature must therefore be undertaken in order to have a perfect knowledge of the various concepts related to the study and to understand key areas already covered and known the areas to be focused further. A review of the past research helps in identifying the conceptual and methodological issues relevant to the study. In this chapter, an attempt has been made to put together some of the closely related research findings.

Keeping in view the objectives of the study, the literature reviewed are presented under the following headings

- To identify the operational mechanism of study area.
- To find out the transactional status of agricultural products through e-NAM of Nabarangpur.
- To study on marketing of agricultural products through traditional market and e-NAM
- To find out the response as well as feedback of both farmers and traders on about their benefits by selling through e-NAM.
- To know about the problems and prospects of e-NAM of Nabarangpur District.

Subrahmanyam (1986) studied economic aspects of production and marketing of Chrysanthemum, a commercial crop based on the data collected from Kolar district in Karnataka during 1985. The cost of cultivation includes marketing costs besides cost of inputs and fixed costs for growing this crop. The labour cost has accounted for major portion of the input cost showing the labour intensive nature of the crop. The higher proportion of marketing costs (44 per cent) in total cost of cultivation and the huge differences in returns realised between Channel-I (sale through commission agent) and Channel-II (sale to pre-harvest contractors) shows the need for encouraging self marketing by cultivators instead of selling to pre-harvest contractors. The researcher

elicited the need to regulate the trade in flowers to control the commission charges and to prevent cheating at the market.

Baba *et al.* (2010) reported the growth of vegetable sector in relation with technology mission, extent and determinants of marketed surplus and price spread of vegetables in the Kashmir valley. A substantial increase in the area and production of vegetables has been observed under Mini-Mission-II scheme of Technology Mission. At the farm level, vegetables have been observed to occupy an important place in the cropping pattern. The intensity of cropping in the study area has become more than 250 per cent due to multiple cropping of vegetable crops. On an average, producers' marketed surplus has been found more than 92 per cent of the total production of selected vegetables. The estimates of regression function have revealed that the production, area under improved varieties, net price received by producers and education level are the significant and positive determinants of marketed surplus, while spoilage at farm level and consumption have shown a negative contribution. The price spread of vegetables with respect to various marketing channels has indicated that the producers' share has an inverse relationship with the number of intermediaries. The net price received by the producers is relatively higher in the channels in which the produce is directly sold to the consumers or retailers. The study suggested that the coverage of technology mission should be expanded to other niche areas of vegetable cultivation, strengthening of institutions and establishment of processing units and development of market infrastructure in the area.

Aparna and Hanumanthaiah (2012) conducted study on marketing of agricultural produce through traditional marketing methods and marketing channels for Bhendi and Brinjal in Rangareddy district of Andhra Pradesh. The paper explained different marketing channels for marketing agricultural produce and constraints in the process. The paper also explained government intervention to create a policy environment that may ensure a mutually beneficial relationship between farmers and organized sector.

Chand (2012) described that agricultural marketing in India suffers from inefficiency, a disconnection between the prices received by producers and the prices paid by consumers, fragmented marketing channels, poor infrastructure and policy distortions. Urgent reforms are needed to address these inadequacies and check the excesses of middlemen. While encouraging new models that improve the bargaining power of producers and scaling up successful experiments, producers' companies and

cooperative marketing societies could be promoted to provide alternative avenues for sale of produce. Though the private sector is vital to improving efficiency, the public sector is equally essential to serve the larger social goal of maintaining price stability through market operations.

Chahalet *al.* (2013) studied in the conventional method of marketing. They revealed that the share of the producer in the consumer's rupee was lower due to the involvement of large number of middlemen in the marketing channel. With the introduction of e-marketing in farm sector, exploitation of both sellers and consumers is curtailed and farmer's income enhanced and prices of commodities got stabilized. It also helped in providing market information, good farming practices and also helped in quick disposal of farm produce.

Vadivelu and Kiran (2013) elicited that agriculture is different from industry and plays a significant role in the economic development of a nation. Market information is a means of increasing the efficiency of marketing system and promoting improved price formation. It is crucial to the farmers to make informed decisions about what to grow, when to harvest, to which market produce should be sent and whether or not to store it. Awareness of farmers on different components of market information and its utility was very poor (11 to 37 %) as compared to that of traders (75%). Out of the expectations of farmers on grades, quality, prices in potential markets, price projections; only real time arrivals and prices were documented and disseminated with traditional approach. Hence there is a need to create awareness among the farmers through the agricultural extension agencies like the State Department of Agriculture, Krishi Vigyan Kendras so that the marketing information on agriculture commodities are incorporated in the extension services along with production aspects to the farmers.

Hassan and Ebrahimi (2014) reported that internet is a key for globalization and a tool for communication around the world. E-commerce has been introduced as a global phenomenon in the twenty-first century by internet development. The main goal of this research is to investigate the challenges and solutions of e-commerce in Iran's agriculture. The paper is based on a descriptive – analytical type of field research collected using questionnaire. The population of the research was a panel of agriculture faculty members in Iran. The overall results showed that the use of e-commerce in Iran's agriculture has many obstacles ahead in infrastructural, cultural, social and educational fields. The research findings showed that e-commerce can provide many advantages like profitability, elimination of intermediaries, agricultural production market

development, farmers' awareness of market prices, and access to national and international markets, increasing competition and improving the quality of agricultural products. According to the results it seems that infrastructure development, culture and security and confidence production, and internet training to all classes of people are the most important strategies for e-business development in agriculture.

Rao and Rao (2014) studied feasibility of chilli cultivation in Karnataka and Andhra Pradesh. They revealed that Indian chilli exports are mainly influenced by domestic demand and uneven production which is interrupted by erratic monsoon, drought, and yield factor. In spite of sustainable growth in chilli production, the lives of small and marginal chilli farmers are at stake. Two of every three farm suicides happening in the country are from states like Andhra Pradesh (A.P.), Maharashtra, Karnataka and Punjab due to high levels of indebtedness and helplessness at the situation where cash crops like chilli and cotton are cultivated. There is a dearth of analysis on various vital aspects of the chilli production and marketing such as latest prices and trends at major national and international markets, seasonal price fluctuations, demand and supply pattern, overall production in the country, stocks available in cold storages, scientific forecasting, crop and weather information, its impact on agriculture and allied sectors, and hedging among the various varieties of chillies.

Velayutham and Damodaran (2015) examined the economics of chilli production in Andhra Pradesh. The study revealed that the use of organic manure would increase the yield of agriculture. Organic farming alone can assure the sustainable yield and it must not be delayed under any cause. Thus, the government has to come forward to provide some price assurance to the organic crops and credit to the farmer's thereby organic farming can be encouraged in the country.

Arayesh (2015) conducted a study to investigate financial and legal - security infrastructures affecting the electronic marketing of agricultural products from the point of view of Jihad Agricultural Organization experts of Ilam Province through a survey descriptive framework. The results of the study showed that there was a significant relationship between the financial and legal – security variables with the variable of electronic marketing of agricultural products in Ilam Province so that the three

independent variables were able to explain 48 per cent of the variance related to the electronic marketing of the agricultural products in Ilam Province.

Jayasubramanian, and Sasikumar (2015) elicited the problems and prospects of turmeric products perceived by the small farmers in Erode district. They reported the problems related to various factors cost, return, advantages, net return and prospects for their turmeric products. They revealed that maintenance of labour by the small farmers had a level of impact in their business and they may have to meet un-necessary and unexpected losses. According to their results, it seems to be important to encourage the small farmers and help them to achieve greater heights in the years to come.

Rao VV (2016) outlined the status of turmeric markets in Guntur region of Andhra Pradesh, India. A statistical analysis of the data on price discovery in a sample of four major markets revealed that the turmeric market in those areas are not efficient in the sense that the futures prices are not an unbiased predictor of the future ready rates. The difference between the market to market, season to season prices is an indication of inefficiency arising from the underdeveloped nature of the market. The study reveals that there is a close relationship between the freight charges and the level of satisfaction.

Saxena *et al.* (2016) compared the status of market infrastructure across the selected regulated markets of Uttarakhand by market infrastructure development index computed for three categories viz., trade infrastructure, storage infrastructure and support infrastructure. Haldwani emerged as the best-equipped market as per the combined index and outscored highest among the trade, storage and support infrastructural categories. Kashipur stands next in the category due to its better positioning in trade infrastructure while Dehradun scores low in the combined index due to poor trade and storage infrastructure despite standing second in the infrastructure support category. A positive and significant association was noticed between the commodity arrivals (potato and tomato) and market infrastructure categories. A panel regression analysis between potato arrivals, price, and market Dummies revealed that price has no time varying effect on the arrival of potato, but showed a significant and positive relationship between the markets and arrival reflecting the dependence of arrivals on market attributes.

Alaviona *et al.* (2016) conducted study using the theory of planned behaviour (TPB) as a base model to determine how attitudes, subjective norms, and perceived behavioural control predict the intention of agricultural services professionals to adopt e-marketing of agricultural commodities. The TPB model explained 94 per cent and 71 per cent of the variation in behavioural intent for public professionals and private professionals, respectively, with the remaining 6 per cent and 29 per cent relating to the other factors. Results for the public professionals showed that subjective norm and perceived behavioural control have a more important effect on adoption and that the effect of attitude was very small among professionals in private sector. Both groups selected the information services model as an appropriate in agricultural electronic marketing for local farmers so that agricultural services firms can offer only information services of farmers' products without a direct role in buying and selling. It was recommended to accelerate the adoption of e-marketing, its user-friendliness and advantages should be demonstrated to users via different platforms such as video presentations and workshops.

Shalendra and Jairath (2016) conducted the study on status, challenges faced and way forward in national agricultural markets. It reveals that NAM has potential to bring transparency, competitiveness, efficiency and better participation of farmers by integrating wide range of functions and functionaries like farmers, commission agents, traders, electronic auction, clearing and settlement, payment gateway, logistics, warehousing, banking with facilities for grading and assaying.

Aggarwal *et al.* (2016) conducted a study on transformations in agricultural markets in Karnataka district with twin goals of assessing the state and challenges of implementation and to glean lessons from Karnataka's experience for India's e-National Agricultural Market (e-NAM). They have explained the process of electronic trading i.e., operational mechanism of e-NAM. Through a field study of ten mandis across the state, it was found that while Karnataka has been consistently pushing through with reforms, in the context of deeply entrenched relationships between farmers, traders and agents. Karnataka's experience states that agricultural market reforms in India based on

three pillars- institutions that establish the rules of the game, incentives for agents to participate actively in the market and infrastructure to support the modernized trading platform.

Chand (2016) in his study about e-platform for national agricultural market elicited four important areas for reforms, which are not part of e-NAM, are as follows: (i) direct sale by farmers to buyers, processors, or, contract marketing without bringing produce to mandi; (ii) establishment of private markets with treatment at par with APMC. Even under e-NAM, market committee will continue to hold its monopoly power in terms of offering a platform for sale/ purchase; (iii) removal of legal barriers to entry of organised and modern capital and investments into agricultural marketing. This will require tweaking Essential Commodities Act to draw distinction between genuine service providers and black marketers/hoarders; and (iv) rationalisation of market fee, commission charges, cess and taxes and development charges. Full benefit is obtained from linking agricultural markets in the country and putting them on a single electronic platform under a single trading licence valid across the country and a farmer gets an option to sell her/his produce in any market throughout the country.

Reuben and Mshelia (2017) analysed the structure of yam markets in southern part of Taraba state and identified the degree of product differentiation, market information dissemination and determined the concentration of yam sellers in the markets. Simple descriptive statistics, Gini coefficient and Lorenz Curve were the analytical tools used. The common features used in yam differentiation were yam varieties and size or length and market information were disseminated by means of personal contact (verbal message) and telephone (GSM). The Gini coefficient of 0.56 and 0.52 were obtained for wholesaling and retailing respectively. The sellers' concentration was high with high income inequality in yam wholesaling than retailing in the area. The markets, therefore, exhibited features of imperfect markets of monopolistic competition. To reduce high concentration and income inequality among sellers especially in wholesale business, funds, security and physical market facilities should be provided to the yam marketers in the area.

Acharya (2017) conducted a study that highlighted some doable action points in the realm of implementation of agricultural prices and marketing policies that need emphasis by policy makers and development agencies in the country. It discussed issues

related to effective implementation of minimum support price (MSP) and also under-use of market intervention scheme. He suggested that speeding up of third phase of agricultural marketing reforms and outlines the progress on move towards National Agricultural Market (e-NAM).

Yadav and Sharma(2017) conducted a study about e-NAM in India to study several mandis interconnected by a single online market aimed at marshalling the much needed agriculture marketing reforms to enable farmers to get better price of their produce. The government's decision to create this e-platform for farmers removed inter-state barriers in moving farm produce and it can be a game changer provided the requirements are fulfilled by the states. These two important requirements include amendment of the state agricultural produce marketing committee act (APMC Act) and physical logistic support to farmers which would enable them to move their crops. The e-NAM has the potential to transform Indian agriculture from traditional to an entrepreneurial and a profit making venture.

Lamba (2017) conducted a study on rural augmentation framework in India and revealed that, to make the expansion framework completely market driven the centre needs to lay horticultural promoting expansion framework and it establishes its substance. The researcher aimed at introducing the concept of agricultural marketing in India and thus explained the various costs associated with it.

Sambath and Ravindran (2018) studied agricultural marketing in India as a complex system with a mix of organized and unorganized sector practices. Removal of intermediaries, managing post-harvest wastage, democratization of agriculture produce marketing committees (APMC), transparency in commissions of agents, use of market development fund, emphasis on digitization and emphasis on spot markets to free farmers for opting buyers are few efforts by GOI. An important reason for this dichotomy between agriculture and non agricultural sectors is that the former is a state subject under the Indian Constitution placing the burden of implementation of reform agenda on the states

Sally (2018) conducted a study on the new features of e-NAM. The agriculture ministry has added six new features in the National Agriculture Market (e-NAM)

platform to make it more user friendly including MIS dashboard for better analysis, BHIM payment facility and mobile payment facility by traders, enhanced features on mobile app such as gate entry and mobile payments, integration of farmer's database and e-Learning module in e-NAM website. Its main objective was to provide competitive and remunerative price to farmers for their produce through online competent bidding process. Facilitation of Unified Payment Interface (UPI) through BHIM is another milestone in easing out payment to farmers. e-NAM website is now available in eight different languages (Hindi, English, Gujarati, Marathi, Tamil, Telugu, Bengali and Odia) while the live trading facility is available in six different languages (Hindi, English, Bengali, Gujarati, Marathi and Telugu).

CHAPTER-3
MATERIALS AND METHODS

MATERIALS AND METHODS

The project report is based on the operation of e-NAM and to conduct this study the district of Nabarangpur was taken into consideration. The project is based on practical research work. The research includes meeting with traders, farmers and retailers. These people helped me with the field work where I also included questionnaire and survey answered by each of them separately.

3.1 Description of the study area

3.2 Sample design

3.3 Nature and source of data

3.4 Sampling technique

3.5 Concepts used in the study

3.1 Description of the study area:

Nabarangpur District is a district of Odisha, India. The city of Nabarangpur is the district headquarters. Most of its population is tribal, and most of the land is forested. Situated in the southwest corner of Odisha, it borders Koraput District. Nabarangpur district is situated at 19.14° latitude and 82.32° longitude at an average elevation of 1,876 feet (572 m).

3.1.1 Agro-climate of Odisha is suitable for corn production:

Suitable agro climatic conditions, availability of high yielding varieties and increasing price realisation at farm level has a potential of shifting cultivation from other crops towards maize.

Table 3.1 Agro-climate of Odisha

Agro-climate of factor	Requirements
Soil type	Fertile well drained alluvial or red loams free from coarse materials and rich in nitrogen.

Soup pH	7 to 8.5
Rainfall	Annual rainfall 50-75 cm
Temperature	21°C to 30°C
Photoperiod	11.5 to 12.5 hour per day

Source: FICCI report-Empowering India-Redesigning G2B relations, Directorate of Agriculture and food production, Odisha

3.1.2 Geography

The area of the district is 5294.5 km². Its boundary stretches in the north to Kalahandi District, west to Jagdalpur District in Chhattisgarh, east to Kalahandi and Rayagada District and south to Koraput District. The river Indravati forms the border between Nabarangpur and Koraput districts. The district capital Nabarangpur is located on the plateau about 2,000 ft (610 m) above sea level. In the north, the Panabeda area, recently renamed as Chandahandi is only 500 ft (150 m) above sea level and experiences similar climate and social life to that of the adjacent Kalahandi District. The rest of Nabarangpur district is mainly flat with a few pockets of low hills. The highest peak Podagarh, which has historical significance, reaches 3,050 ft (930 m). There are patches of thick forest mostly containing sal seeds and those provide sustenance to dependent villages.

3.1.3 Climate

Nabarangpur District (like neighbouring Koraput) experiences the first arrival of monsoon about ten days before the rest of Odisha. Unlike the rest of the state, where the monsoon arrives from the Bay of Bengal, Nabarangpur district receives the monsoon from the southwest, off the Arabian Sea. Nabarangpur District enjoys generous rainfall and droughts are extremely rare. The plateaus in particular remain cool throughout the year.

3.1.4 Rivers

The Telen River which rises in the north of Nabarangpur District forms its geographical boundary with Kalahandi District and finally unites with a bigger Mahanadi

River in Sonepur town. It is not perennial and dries up during the summer. The important river Indravati flows through Nabarangpur District and beyond until it merges with the mighty Godavari in Telangana. It runs through a total distance of about 530 km of which the Nabarangpur and Koraput district sections make up about 130 km. At Nabarangpur town the old girder bridge has been replaced by a new span. Before reaching Jagadpur town in Chhattisgarh state, it is joined by another river Bhaskal that drains the north of Nabarangpur. During its flood the Indravati swells up to 450 ft (140 m) wide and 24 ft (7.3 m) deep. However, a dam near Mukhiguda is built for hydroelectric power has considerably reduced its flow.

3.1.5 Minerals

Nabarangpur District contains many ores including iron, chlorite, mica, quartz and so on. The Heeraput village near Umerkote contains a fair deposit of haematite and limonite, each of which is composed of about 60% iron. Similarly the Tentulikhunti area has a fairly large deposit of granites. The north of the district up to the border with Kalahandi District has rock beds covering layers of coarse white quartz.

3.1.6 Economy:

In 2006 the Ministry of Panchayati Raj named Nabarangpur one of the country's 250 most backward districts (out of a total of 640). It is one of the 19 districts in Odisha currently receiving funds from the Backward Regions Grant Fund Programme (BRGF). RTC deposits - 02

3.1.7 Demographic:

According to the 2011 census Nabarangpur district has a population of 1,218,762, roughly equal to the nation of Bahrain or the US state of New Hampshire. This gives it a ranking of 390th in India (out of a total of 640). The district has a population density of 230 inhabitants per square kilometre (600/sq mi). Its population growth rate over the decade 2001-2011 was 18.81%. Nabarangpur has a sex ratio of 1018 females for every 1000 males, and a literacy rate of 48.2%.

Table 3.2 Demographic profile of Nabarangpur

Sl.No.	Particulars	Nabarangpur District
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1.	Geographical area	5294.00 sq km
2	Number of blocks	10
3	Municipalities	2
4	Subdivision	1
5	Population	1220946
6	Villages	885
7	Actual rainfall	469.97
8	Literacy rate	38.53

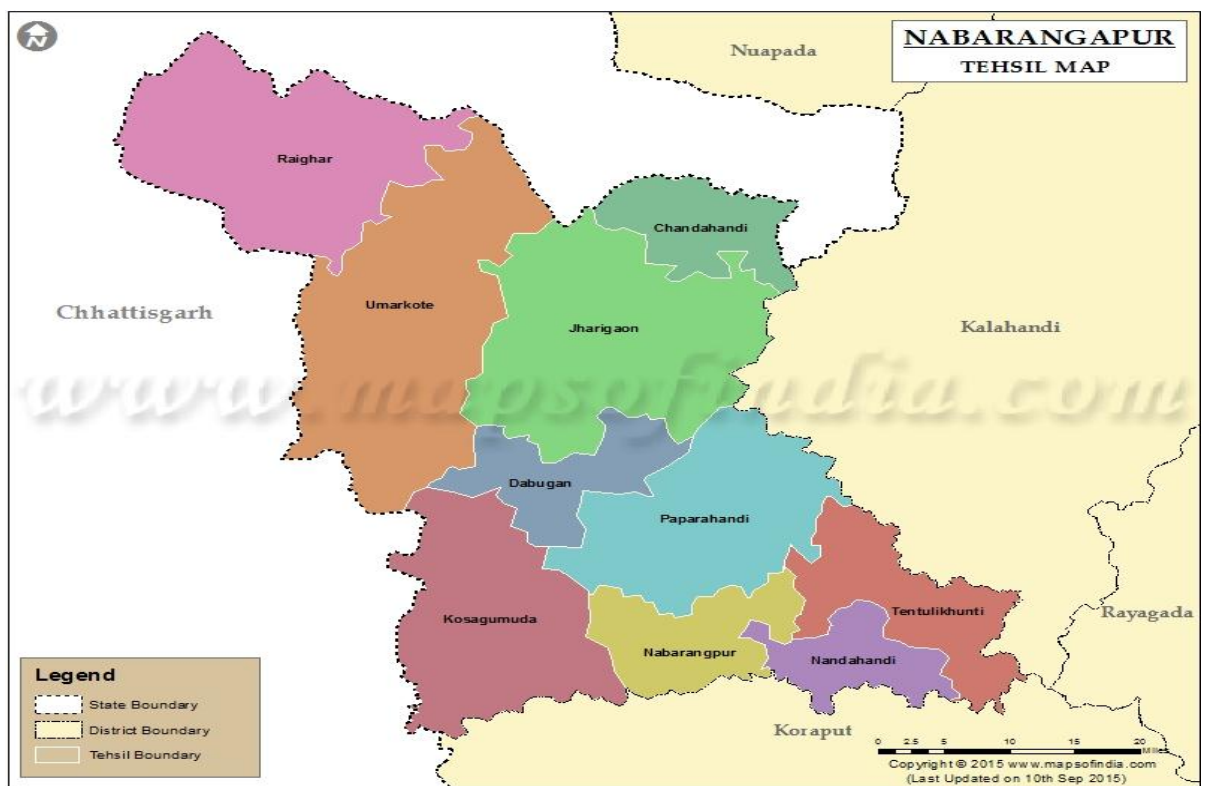


Fig 3.1 map of Nabarangpur

3.1.8 The State Is Well Connected To These Centres Through Road And Rail:

Table 3.3 neighbouring states distance from Jeypore

Neighbouring state	Maize production centre	Distance from Jeypore (Nabarangpur Dist.)

Telengana& AP	Karimnagar	533
	Warangal	457
	Nizamabad	670
	Vijayawada	463
Chhatisgarh	Ambikapur	660
Jharkhand	West singhbhum	765
	Palamu	828
Bihar	Begusarai	1056
	bhagalpur	1140
	Purnea	1232
WB	Dinajoor	1251

3.2 Sampling design:

Multi stage sampling procedure was followed for the selection of In order to proceed with the investigation as per the stated objectives, it was necessary to adopt an appropriate sampling design which is presented below.

3.2.1 Selection of district

Nabarangpur district was selected for the study as the district has biggest maize market yard in the Odisha.

3.2.2 Selection of the market yard

Nabarangpur district has biggest market for maize and large volume of maize is traded in the yard, so it is purposively selected for the study.

3.2.3 Selection of farmers

For this study , five major maize producing blocks(Viz. Nabarangpur, Umerkote, Raigarh ,jharigaon & Papadahandi) are selected in the Nabarangpur district .From these blocks, 30 maize producing farmers each(both participants in e-NAM trading and non participants farmers) are selected for the sample .

3.2.4. Selection of traders

Fifteen traders were selected randomly from the maize market yard for gathering the data for the study.

3.3 Nature and source of data:

3.3.1 Primary data-the data was collected through structured questionnaire with personal interviews with farmers and traders.

3.3.2 Secondary data-the data was collected from the internet.

3.3.3 Lacunae:

- The entire study of the project work for 3 months which was a stipulated period of time .Hence time constraint was a major issue.
- The study was also limited to a specific area.

3.4 Sampling technique:

The study was carried out in the districts of Nabarangpur which is situated in the greeneries of south-western Orissa. The study was carried out in 5 blocks of Nabarangpur District namely umerkote,raigarh,papadahandi,nabrangpur and jharigam.

For assessing the objectives of the present study, following techniques were employed

- 3.4.1 Percentage method
- 3.4.2 Tabular presentation method
- 3.4.3 Descriptive analysis

3.5 Concepts Used in the Study:

3.5.1 APMC: Agriculture produce market committee is a marketing board established by a state government in India to ensure that farmers are not exploited by intermediaries who compel farmers to sell their produce at the farm gate for an extremely low price. All food produce should first be brought to a market yard and then sold through auction.

3.5.2 Commission agents: These are the important functionaries of market yard who take nominal amount as commission from the farmers in order to help them to trade the produce in the market yard.

3.5.3 Traders: These are the people who purchase the produce from the farmers in the market yard and later sell it in the outside market or export it to other countries to get higher margins.

3.5.4 Market participants: It includes all the people like chilli commission agents, chilli exporters and all the other participants who are directly or indirectly involved in trading activities of chilli market yard.

3.5.5 Agricultural Marketing and Farmer Friendly Reforms Index:

The state of Maharashtra achieved first rank in implementation of various reforms. The state has implemented most of the marketing reforms and it offers best environment for doing agribusiness among all the states and UTs. Gujarat ranks second with a score of 71.5 out of 100, closely followed by Rajasthan and Madhya Pradesh. Almost two third states could not reach even halfway mark of reforms score. Major states like U.P., Punjab, West Bengal, Assam, Jharkhand, Tamil Nadu and J&K are in this group.

Table 3.4 States’ score in terms of Agri Marketing and Farmer Friendly Reforms:

Agri Market and Farm Friendly Index Score out of 100		
State	Score	Rank
Maharashtra	81.7	1
Gujarat	71.5	2

Rajasthan	70.0	3
Madhya Pradesh	69.5	4
Haryana	63.3	5
Himachal Pradesh	59.5	6
Andhra Pradesh	56.2	7
Karnataka	55.5	8
Telangana	54.3	9
Goa	52.8	10
Chhattisgarh	51.4	11
Jharkhand	49.4	12
Uttar Pradesh	47.8	13
Punjab	43.9	14
Assam	37.1	15
Mizoram	37.0	16
Nagaland	33.3	17
Sikkim	32.6	18
West Bengal	32.5	19
Tripura	29.1	20
Odisha	27.9	21
Uttarakhand	25.2	22
Arunachal Pradesh	21.1	23
Chandigarh	20.1	24
Tamil Nadu	17.7	25
Meghalaya	14.3	26
Jammu & Kashmir	7.4	27
Lakshadweep	7.4	28
Delhi UT	7.3	29
Puducherry	4.8	30

Source:Niti aayog

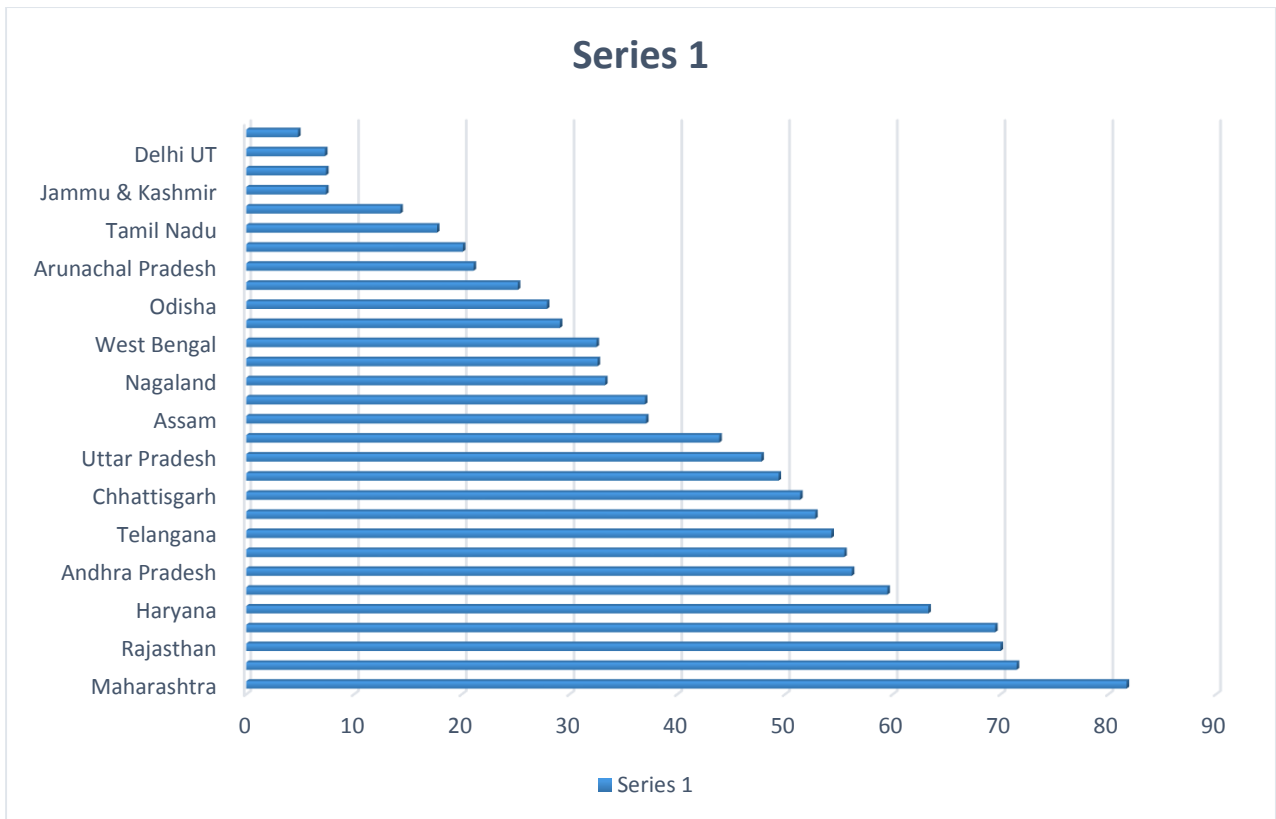


Fig 3.2 State score in terms of AMFFRI , Source: Niti aayog

CHAPTER-4
RESULT AND DISCUSSION

RESULT AND DISCUSSION

4.1 SWOT ANALYSIS OF RMC, NABARANGPUR:

4.1.1 STRENGTH:

- Good quality maize plentifully available for e-trading.
- Better pricing system.
- Better godown facilities available in the RMC.
- Skilled manpower

4.1.2 WEAKNESS:

- No other schemes to support e-NAM for the successful operation like price differentiation scheme which is already implemented in other states.
- There should be state unified licence which is to be valid across the state.
- Provision for electronic auction as a mode for price discovery .

4.1.3 OPPORTUNITIES:

- Bulk buyers, processors and exporters benefit from being able to participate directly in trading at the local mandi or market level through E-NAM platform, thereby reducing their intermediation cost.
- For the farmers, e-NAM platform gives more option for sale.

4.1.4 THREATS:

- Farmers are worried about the transportation cost as most of the farmers are selling in their doorstep to local traders.
- Credit facilities by traders, bound the farmers to sell their produce to the local traders.

The study was designed to find out the operational mechanism of e-NAM, traditional marketing measures of farmers, problems faced by the farmers and suggestions received by the farmers to overcome the problems. Keeping the objectives of the study in view, the data were collected and processed. The results with reference to the objectives are presented under the following headings.

4.2. Objectives

1. To identify the operational mechanism of study area.
2. To find out the transactional status of agricultural products through e-NAM of Nabarangpur.
3. To study the marketing of agricultural products through traditional market and e-NAM.
4. To find out the response as well as feedback of both farmers and traders about their benefits by selling through eNAM.
5. To know about the problems and prospects of eNAM of Nabarangpur District.

4.2 Operational mechanism:

Operational mechanism of e-NAM consisting of following six stages after farmer takes his produce to the e-NAM centre .

1. GATE ENTRY

- Vehicle Registration

- Farmers details
- CSV File Upload
- Registration Notification
- Reports
- Lot Operations
- Lot Management
- Sample Creation

2. Assaying

- Reports about product range
- Approval for trade

3. Auction

- Bid Creation
- Bid Declaration
- Bid Rejection

4. Sale Agreement / Sale Bill Cancellation







- Sale bill
- Sale Agreement for Master Update
- Sale Agreement

5. Payment

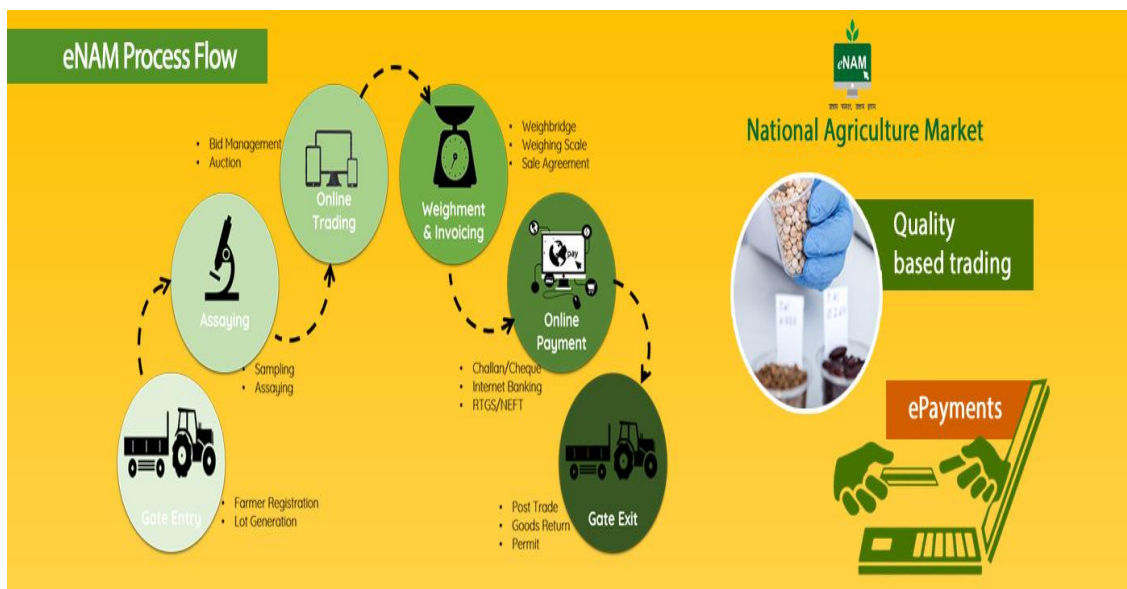
- Online-challan/Debit card/Internet banking/BHIM App
- Offline

6. Gate Exit

- Vehicle details
- Trader details
- Goods return

		
Quality and Quantity checkups	Primary weighthment	Loading
		
Final weighthment	Aggrement	Settlement

The process flow of e-NAM



4.3 To find out the transactional status of agricultural products through e-NAM of Nabarangpur

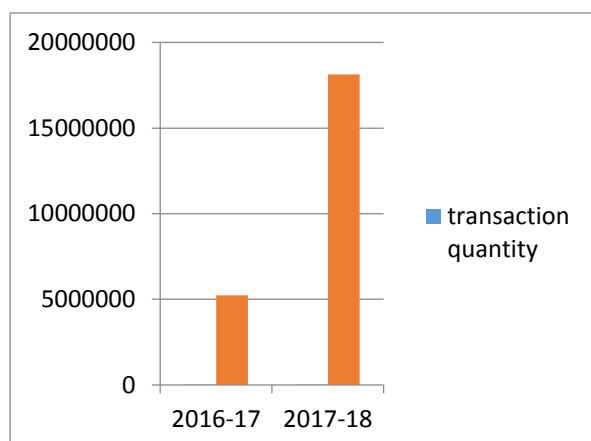
The maize is one of the major arrival growing area under Nabarangapur District and it is expected **35 Lakhs** Qtls. of quantity every year. During the year 2016-17 and 2017-18 the RMC, Nabarangapur has taken necessary steps to convert the afore mentioned quantity through online platform under e-NAM pilot project.

The online trading in e-NAM under RMC, Nabarangapur is as below, upto end of 25.05.2018:-



Table 4.1 Transactional status

Year	Transaction Quantity (In Quintals)	Trading Amount (INR)	Prevailing Market Price (INR)
2016-17	3826.1520	Rs. 52,22,698.56	Rs.1010/- to Rs.1365/-
2017-18	16929.6500	Rs. 1,81,26,312.00	Rs.1020/- to Rs.1425/-



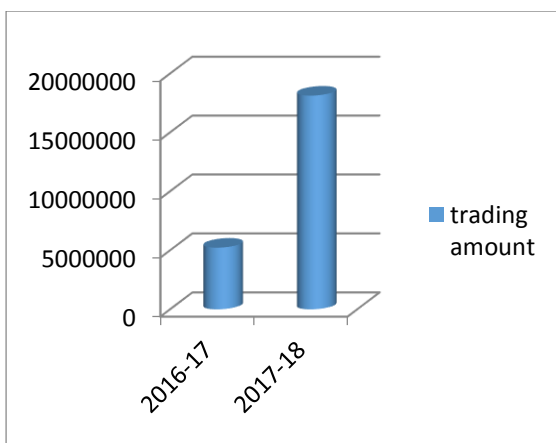


Fig 4.1 transactional status

4.4 To study the marketing of agricultural products through traditional market and e-NAM:

The marketing channels through which paddy are commonly marketed in India are:

Channel I: - Producer -Village Merchant -Middle Men -Commission agent -Whole seller- Retailer- Consumer.

Channel II: -Producer- Retailer -Consumer

Channel III:-Producer- Pre harvest contractor- Wholesaler- Retailer- Consumer

Channel IV:-Producer- Commission agent/ Wholesaler- Retailer -Consumer

Channel V: - Producer- PACS/LAMPS -Consumer

Even though the price received by the farmer for their produce was lesser than the amount spent in production, most of the farmers were following traditional methods of marketing. An electronic platform helps in eliminating the middlemen which gives benefit in the price level to the farmers .

4.4.1 Marketing of Paddy at Nabarangpur District:

As rice is the basic grain of daily consumption at Nabarangpur, it always has the significant demand which shows a seasonal growing trend especially at the time of festivals and during the seasons of cultural events. To identify the appropriate demand and meet them properly in a profitable way is primary concern of rice supply chain. A proper supply chain management framework is very essential for efficient sourcing, processing, distribution, and retailing and hence meeting customer demands without facing a situation of lost sales. Production and business of rice has been one of the most

traditional and major concerns of Indian Economy. Farmers take seeds from the District distribution Centre, but now a day most of the farmers are interested in doing hybrid varieties as it has higher productivity capacity. Hybrid seeds are available at their near distributor and retailer Centre. After the production district administration declares a mandi by LAMPS(Large scale agriculture Multipurpose Societies). Before that farmers get their token to sell their produce (paddy). A date was fixed by the district administration, on that day farmers take their produce. 95% of total paddy production is sealed through LAMPS and the rest 5% is sealed to local traders. As government procure at a price of Rs. 1550/qtl everyone is interested to seal through LAMPS.

4.4.2 Marketing of Maize at Nabarangpur District:

Nabarangpur district has now become one of the leading production areas of hybrid maize in the country. However, this credit was achieved neither due to any indigenous practice nor due to any indigenous population. Both hybrid maize and its promoter community were introduced to the district just few decades ago. Soon they took over the local agricultural pattern, practice, and economy to such an extent that even the tribal communities preferred to spare their essential millets for maize.

Farmers are taking loans from the local traders in the beginning of Maize cultivation in installment basis like in the time of seed buying and in the time of fertiliser and chemical applying and traders also give seeds to them with credit facilities. After the cultivation, traders are coming to the doorstep of farmers and buy their produce. Farmers are also bound to give their produce to the traders as they taken loans in the beginning. Farmers are also willing to give their maize to the traders at a lower price than the government fixed price, as if they are taking their produce to the RMC then they have to bear the transportation cost. Traders are exported to the outside of Nabarangpur, places like Andhra Pradesh, Chattisgarh and to other private companies. Some of the FPOs are also procure maize from the farmers and giving to companies like OMFED.

4.4.3 Present Marketing Practices :-

Though the market yards situated at Nabarangpur, Umerkote, Jharigaon and Raigarh have sound infrastructure the arrival in the market yard is negligible. Local traders shops and Door

steps of the farmer are the actual point of sale. Maize is aggregated at block levels and shown to District level wholesalers from where it is transported to the processing units, both inside and outside the state.

Major destinations within the state include processing units at Jagatpur (Cuttack), Khurdha and Sambalpur. Maize is also despatched from Nabarangpur to outside states like West Bengal, Andhra Pradesh and Chhattisgarh. During last year, approx. 1.60 lakh MT of maize has been despatched to the above states.

Market intervention through Farmers Facilitation Centres (FFC)-In order to ensure competitive prices to the maize farmers by linking them to processors and bulk buyers inside and outside the state, Government has approved a proposal for establishment of Farmers' Facilitation Centres (FFC) in Nabarangpur and Gajapati districts for marketing of maize through e-auction with Technical and Market Access Support Services by NCDEX e markets Ltd (NeML). As per the proposal, RMCs have provided physical facilities and manpower for farmers registration, receiving, grading, receipt/storage/release of maize, security etc at FFCs while NeML had conducted online e-Marketing including clearing and settlement function for the farmer deposits and sale of maize through the online e-Auction platform. Accordingly, the transaction has been conducted in the 2015-16. This is a stepping stone to progress. This has injected some competition in the field.

4.5 To estimate the quantity of produce sold through eNAM centre and to assess the volume of products exported from Nabarangpur RMC:

- Surplus corn is transported from Odisha to Chhattisgarh, West Bengal, Andhra Pradesh and Karnataka for value addition and processing.
- Chhattisgarh and Andhra Pradesh have major share in import from Odisha.

From the date of implementation of the e-NAM project, RMC Nabarangpur has taken all-round success of the scheme for the benefit of Maize farmers. In this regard Awareness campaign in Block, GP, Municipality and even farmers door point programme have organised by RMC, Nabarangpur under Nabarangpur district.

RMC, Nabarangpur has approached outside Maize Traders, Processors and Aggregators for trading directly through e-NAM platform. In this concern 01(One) no. of Poultry firm (**Odisha Poultry Pvt. Ltd., Cuttack**) has purchased 653.44 qtls. Maize at Rs.1150 to Rs.1200 per quintal and 01(One) no. of Farmers Producers Organisation (**Danteswari Women Producers Company Ltd., Kosagumuda, Nabarangpur**) has purchased 726.49 qtls. Maize at Rs. 1200 per quintal.

Maize Traders are playing a crucial role in the online trading platform. RMC, Nabarangpur has taken individual awareness among the maize Traders, Processors and farmers Produce Organisations. Till date **97 nos. farmers** and **29 nos. of traders** have traded through e-NAM platform.

Moreover it has been noticed that enrolment of farmers and Traders is increasing day by day due to awareness and the trading quantity this year is more compared to last year. RMC, Nabarangpur has always in this motto to convert the traditional Barter system to e-NAM online platform for the benefit of maize farmers and traders.

4.6 To find out the response as well as feedback of both farmers and traders about their experience by selling through eNAM:

With the discussion with farmers and traders we get the following feedbacks for further improvement in the e-trading process -

4.6.1 Transportation Facility:-

- From the traditional period of trading of maize at Nabarangpur district, purchasers are transported the produce of farmer from their door point which may lead to dominating market.
- Hence as transportation is a main desirable barrier for farmers to take their produce to Market yard/ Mandis. Hence if, transportation benefit will somehow take care by Government, then farmers may interested to take their produce to mandis / market yards.

4.6.2 Gunny bag:-

Farmers are getting gunny bag from market at a very high rate for packing their

produce during selling. This reduces their profit on overall farming expenditure. Hence this provision of supplying Gunny bag from Government side at reasonable condition will may benefit the farmers to take their produce to Mandi points/ market yards.

4.6.3 Pledge Loan:-

E-Nam is a platform, where trading is real-time, i.e. farmers can get their aucted price within seven days of bidding. But if due to current transits if farmers will not agreed upon the aucted price in market then it will take more time periods for them to survive. So advance Bank loan like Pledge loan was providing in Paddy, may benefit for farmers to regularise their needs and agricultural needs.

4.6.4 Bonus:-

As per the National market source **Price Deficit Finance Scheme** has been implemented in different states for benefit of farmers. This benefit may promote the farmers to invest more in agriculture. In Nabarangpur district, market of Maize is belongs to this strategy, i.e. farmers are getting very less selling price for their produce. Hence if this benefit may lunch for maize, then it will be more convenient for farmers as well as traders and other stake holders of Maize trading.

4.6.5 Maize Processing Unit:-

Nabarangpur is a 85% contributor of maize in the state as well as a good source of maize producer and retains a second position in global market. But still not any kind of supporting Processing Unit has been established in the district. Thus it must desirable to set up a Maize Processing Unit by Govt. Platform or any statutory body to establish a processing unit in Nabarangpur district. This may lead to stable market demand and supply strategy and benefit for all stake holder.

4.6.6 Direct Procurement of Outside Traders, Processors and Aggregators:-

Nabarangpur maize market has been dominated by local traders. Hence the prevailing price may dominated by the local purchaser decision and monopoly market price. Hence it may overcome the monopoly market if the trading in e-NAM platform may wide across the country, i.e. all the traders, processors and aggregators can participate in the auction process and give a national demand price.

4.6 To know about the problems and prospects of eNAM of Nabarangpur District:

The major constraints faced by the farmers are identified by the discussion with the farmers in the study area. The study revealed that the major problems faced by the farmers are problem during registration of produce in APMC mandis, lower rate of electronic education, changes in market price, untimely payment to the farmers, insufficient availability of computers and mainly lack of awareness.

Traders are also faced problem with the e-trading like transportation charges ,quality variations ,risk of damage and about the proper time and date for trading. There is no fixed date announced by the RMC on which date trading will be take place because of that both farmers and traders are wait for the trading.

CHAPTER-5
SUMMARY AND CONCLUSION

SUMMARY & CONCLUSION

In view of the emerging problems of Agricultural Marketing, and with the opening up of 585 no.s of e-NAMs nation wide including 10 no.s of such markets in Odisha, a study was conducted in one operational e-NAM in Nabarangpur District of Odisha with the following objectives.

1. To identify the operational mechanism of study area.
2. To find out the transactional status of agricultural products through e-NAM of Nabarangpur.
3. To study the marketing of agricultural products through traditional market and e-NAM.
4. To find out the response as well as feedback of both farmers and traders about their benefits by selling through eNAM.
5. To know about the problems and prospects of eNAM of Nabarangpur District

Methodology: 30 each farmers(both both participants in e-NAM trading and non participants) were selected for the study from five Blocks of the District. Further 15 traders were selected for the purpose.

Result & Discussion

Nabarangpur District has suitable agro climatic condition for the production of maize and with the use of high yielding varieties farmers are also able to produce more. Operation mechanism of e-NAM comprises of six major steps like gate entry, assaying, auction,sale agreement, payment(online/offline) and gate exit.

In the year 2014-15 2,68,350 MT of maize had produced in the Nabarangpur district.8907 number of farmers and 107 number of traders are already enrolled under e-NAM ,Nabarangpur . In the year 2016-17, 3826 quintal of maize is transacted through RMC, but in the year 2017-18 it is drastically grows to 16929 quintal. People are now acquainting with the e-NAM Platform.

Farmers are generally trading through traditional method. In case of paddy farmers are selling through LAMPS on the date declared by the district administrator.The main

purpose is that how can the farmers can get higher price for their quantity produce. For that Government has implemented a scheme named e-NAM i.e a platform for facilitate selling and to create a better relationship in between farmers and traders. Nabarangpur RMC has created different cluster points for the procurement of Maize at different village location. Major arrival pockets are from umerkote, Raighar, jharigaon block. The maize transported to other states i.e West bengal, Chatisgarh, andhrapradesh and neighbouring district of Odisha like Jagatpur (cuttack).

Farmers producer organisation and different FIG(Farmer Interest Group) has also trading through RMC and giving it to different maize processing units or to other companies like OMFED. With the discussion with farmers we get to know different reasons about the problems, the main cause is the transportation cost and the pricing system. Traders are giving credit facilities to the farmers before the cultivation started, because of that farmers are bound to sell their produce to the traders with a low price. Farmers can be benefited through e-NAM platform, if there is a fixed rate for the maize and Government should establish different maize processing sectors.

Some of the traders are suggest that farmer should properly dry his goods in order to maintain acceptable moisture range. Pledge loan facility should be introduced by the local banks which could be a positive factor for farmer to sell his produce through RMC. Sometimes farmer take good samples for checking moisture level, but the rest whole quantity is not properly dried ,so sometimes it is the major problem for some traders.

During traditional marketing farmers were faced different problem like non availability of market information ,fluctuation in the market price, commission to intermediaries ,untimely payments, prevalence of malpractices, unrevised and old polices of government and lack of grading and packaging.

In the present time farmers faced problem with e-trading like in the stage of registration, lack of awareness, lower rate of e-literacy of farmers ,no fixed price by the Government and no fixed date or time for selling.

Suggestions :

- There should be general awareness programmes for e-NAM.
- Government should fix price for the goods I.e maize so that farmers may

interested to sell through e-NAM and get better price.

- There should be price deficit scheme by Government so that farmers can get higher price.
- Government should promote for the development of maize processing sectors.
- Government should take care of the transportation cost to which the farmer spend to take their produce to the e-NAM centre.
- Government should give assistance to Farmers' producer organisation (FPO) so that they can help the farmer for selling the goods to other companies with a better price.
- Government banks should provide pledge loan to the farmer which may catch attention of the farmer to sell their produce in the RMC.
- RMC should arrange farmers meeting to give knowledge about proper post harvest management like proper drying of the maize must be required.
- In Odisha Government should introduce state unified license i.e. through one license one trader can trade without any extra charges.

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REFERENCE

REFERENCE

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Sambath and Ravindran (2018) studied agricultural marketing in India as a complex system with a mix of organized and unorganized sector practices.

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Yadav and Sharma(2017) conducted a study about e-NAM in India to study several mandis interconnected by a single online market aimed at marshalling the much needed agriculture marketing reforms to enable farmers to get better price of their produce.

ANNEXURES

ANNEXURE-I

Tradable parameters :

Maize shall be the dried mature grains of zea mays.

Sl. No	Tradable parameters	Reference range		
		Range-1	Range-2	Range-3
1	Moisture(% by wt)	12.0-12.5	12.6-13.5	13.6-14.0
2	Foreign matter(% by wt)	0.10-0.35	0.36-0.75	0.76-1.0
3	Other edible grains(% by wt)	0.50-1.0	1.1-2.0	2.1-3.0
4	Damaged grains(% by wt)	5.0-10.0	10.1-14.0	14.1-15.0
5	Weeviledgrains(% by grains)	2.0-4.0	4.1-6.0	6.1-8.0
6	Immature and shrivelled(% by wt)	2.0-4.0	4.1-5.0	5.1-6.0
7	Uniformity	More uniform	Slightly less	Less uniform
8	Luster	Normal	Medium	Poor

- a) Foreign matter :-it includes husk, straws, weed seeds, other inedible grains ,metallic pieces ,sand, gravel ,dirt ,pebbles, stones, lumps of earth, clay, mud and animal filth etc.
- b) “Other edible grains” means any edible grains (including oil seeds) other than the one which is under consideration.
- c) ”Damaged grains’ means grains that are sprouted or internally damaged as a result of heat,microbe,moisture or weather viz ., ergot affected grains and karnal bunt grains;
- d) “Immature and shrivelled grains “ means grains that are not properly developed.
- e) ”Weevilled grains” means grains that are partially or wholly bored by insects injurious ton grains but does not include germ eaten grains and egg spotted grains.
- f) Uniformity means having similar characteristics mainly regarding the size or weight, and colour.
- g) “Luster” means the state or quality of shining by reflecting light, glitter, sparkle, sheen or gloss.

Sampling plan (Bags):

5% of the bags or minimum one bag shall be randomly selected for sampling from the lot. The sample collected from each bag should be 5 nos. and will be called as primary sample . All primary samples shall be mixed and will be called as Laboratory/Representative sample. The size of the Laboratory sample should be least 5 nos.

No.of Bags in the lot	No.of bags in the sample
Upto 100	20
101-300	32
301-500	50
501-1000	80
1001 and above	125

Sampling plan(bulk):

Quantity	No. of spots from which samples to be drawn
Upto 300 tonnes	30 spots
301 to 1000 tonnes	50 spots
1001 tonnes and above	100 spots

ANNEXTURE-II

Questionnaire for Traders

- 1.Name of the Trader- Age-
Address-
- 2.Mobile No-
3. From which areas are you buying maize?
- 4.what qualities are you checking before buying?
5. Are you giving credit to farmers before maize cultivation? Yes/No

6. Are you buying from farmers doorstep?
- 7.previous year trading quantity?
8. To which states are you exporting maize?
9. What is the difference in price level between buying from farmers and the export price ?
10. Do you have ever trading through e-NAM? If yes. How was your experience.
11. Any suggestions for better transactions through e-NAM?
12. Are you faced problem while transacting through e-NAM
13. Your experience between trading through traditional and e-NAM platform.
14. Are you supplying to any local maize processors?
15. Any other goods are you trading buying from e-NAM platform?

ANNEXURE-III

QUESTIONNAIR for Farmers

- 1.Name- Village- Age-
- 2.Mobile No-

3. Available lands (in acres) for Maize production:-

Own- contract farming- Total-

Variety	How many acres you cultivated for green gram (in acres)	Quantity produced (in quintal)	How many quantities do you sell through RMC	How many quantities do you sell through near market	Rate per quintal (in Rs.) RMC	Rate per quintal (in Rs.) outside market

4. How the rate was decided?

Had you bargained?

5. Do you had taken loans from traders? In which condition?

6. From where you take the seed - Home Market Agri sector

7. How many acres are you cultivating this year& which variety

8. Are you listening/watching agriculture news?

(listening/watching, don't listening/don't watching) (Radio/Tv-yes / no)

9. Are you using compost?

10. List of fertilisers using –

- a)
- b)
- c)
- d)

11. Using of medicines and their time of apply –

a)

b)

c)

12.How are you preserving ?

13.Do you have own preserved house ?Ifyes,capacity of storing(1/2/3/5/25 ton)

14. Do you get Govt. permission for warehouse?

15.Are you in any member of groups / samiti ?

16.Do you have Kishan credit card ?(yes/No)

17.Do you taken loan for maize production ? If yes, rs.

18.Do you know about eNAMcentre ?

Are you ever transacted through eNAM ?

19.What are the advantages of selling through eNAM ?

20.what are the problems facing during selling through eNAM ?

21.Do you get better price by selling through Enam?

22.Are you selling paddy through RMCs

e-NAM Photo Gallery :



Awareness meeting on e-NAM at Nabarangpur



Meeting on e-Procurement of maize through e-NAM platform



Review Meeting on e-NAM



Umerkote RMC



Maize field at Raighar



Trader visit



**Discussion with
Danteswari FPO**



Farmers visit



Trader visit



**Maize godown of a
Farmer**



Trader visit



Trader visit



Grading machine



Maize processing unit



M/s Oneness cattle & poultry feed



Maize milling at Umerkote