



TRADITIONAL AGRICULTURE VS MODERN FARMINGSYSTEM-A CASE STUDY OF RANGIA AGRICULTURAL SUB-DIVISION, KAMRUP DISTRICT OF ASSAM

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ABSTRACT :

Agriculture is regarded as the bulwark of economy for a country because it has provided livelihood and provide high share in employment. In the world more than 2.6 billion people depend on agriculture for their livelihood. Farming has been the oldest and the chief occupation of mankind all over the world Agriculture, whether its practice may traditional or modern farming, is an important activity for mankind because without agriculture human being will have to remain empty stomach, so human life is not possible without agriculture. In fact agriculture is regarded as the primary activity of human being because it is directly related to the extraction and production of natural resources. Being the primary sector of economy it has not only provided food but also raw materials for industries. Unlike past where land was abundant, population was thin and scarce, in modern world the whole scenario has got changed. Population has been increasing in an alarming rate in almost all the countries of the globe. Under such juncture farmers have to adopt the practice of modern farming i.e, the use of scientific tools and techniques, use of chemical fertilizers, pesticides and so on. Such modern method of farming has raised a question mark on how such modern farming system protects the sustainability in agriculture, whether modern farming system affects the global commons and so on. In the context of climate change and global warming the study of traditional agriculture and modern farming system is of great relevance.

Keywords: Sustainability, Global Commons, Climate Change, Global Warming.

I. Introduction:

Human civilization has started with the invention of agriculture. In India all the places of ancient civilization like-Singh, Dravidian, and the civilization of ancient Kamrup etc all are identified with permanently settled agricultural system. Since then the people of this valley has taken agriculture as their not only the means of livelihood but also their culture. The fertile soil,



the availability of rain water, climate and the other ecological advantage, the agriculture has been the only fruitful economic activities of the people of this region (ancient kamrup and present Assam).

Roughly speaking in Assam until 19th century we have not seen any kind of modern agricultural activities of the people of this region. Under the British rule Assam has been introduced with modern agricultural farming system with the tea plantation under the control of colonial interest. It is however even today our agricultural sector is dominated by traditional or half traditional way of agricultural farming, Still today agriculture is regarded as the backbone of the economy of Assam. It contributes about 20% to the state's domestic product and provides 70% livelihood of the population. More than 85 %of farmers are either small or marginal with average land holding of just about 0.36 hectares that too scattered in small sizes leading to many inconveniences (Economic Survey, Assam-2020-21, p 771. In spite of that the inroads of modernizing agriculture has started to attract a section of farmers here.

II.Objectives of the Study:

The following are the objectives of this paper.

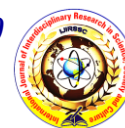
1. To find out the differences between traditional agriculture and modern farming system.
2. To know about how much traditional and modern farming system is eco-friendly,
3. To study about the importance of traditional agriculture in the age of 21" century.

III. Methodology:

Methodology is important to fulfill our research objectives and to obtain desired result to our research questions. The researcher is going to use the mixed method approach- the combination of both quantitative and qualitative method to obtain and analyze primary data along with data collects from public domain to gain an understanding about Traditional agriculture and Modern farming system, its uses and abuses.

As a means of quantitative method extensive field surveys are carried out with the help of structured interview schedule to collect primary data. For this purpose within the Rangia agricultural sub-Division out of 7 Agricultural Development Officer (ADO) Circles 2-Rangia and Nakul ADO Circles respectively are selected to study the said phenomenon. From Rangia ADO circle out of 40 villages following the Taro Yamane method 8 villages and from nakul ADO circle 8 villages-total a sum of 16 villages are selected for data collection through sampling. Then 10 households from each village randomly selected. As a result a sum of 160 households is selected for sampling to collect primary or firsthand data.

As a part of qualitative method we have adopted focus group discussion, in-depth face to face interview and observation method to collect primary data.



Secondary sources of data collection are books, journals, newspaper articles etc and even in order to acquire the current and recent happenings researcher has to take the help from internet sources.

Delimitation of the study For the convenience of the study and since most of farmer's main cultivation is Paddy farming therefore the researcher is going to confine the study around the paddy farming only while studying the said problem.

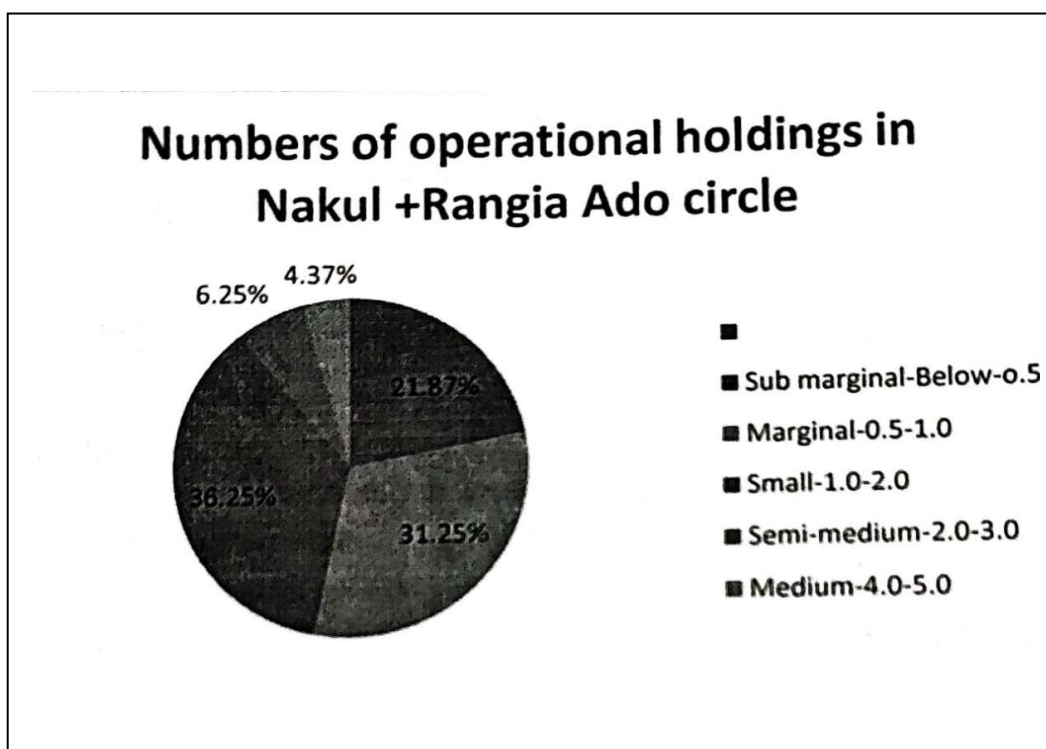
IV. Discussion:

Terminology Defined:

Traditional Agriculture:-Traditional Agriculture can be defined as such agricultural practices which is primitive one. Traditional Agriculture is the oldest production activity of the society which is labour intensive, based on the use of traditional tools, techniques and knowledge of the farmers. Even the old customs and cultural beliefs of the farmers are also associated in Traditional Agriculture.(<https://tractorgyan.com/tractor-industry-news-blogs>). According to Schultz, "Farming based wholly upon the kinds of factors of production that have been used by farmers for generations can be called traditional agriculture." Professor Mellor defined, "Traditional Agriculture is the first phase which implies a backward, primitive and a labour intensive agriculture."(Desai.pp23, 50) **Modern Farming:** Modern farming is that agricultural practices in which modern technologies, scientific tools and techniques are used in cultivating crops rearing animals etc. The industrial revolution in the western world gave birth to the modern farming system.

As stated above primary data are collected from 160 households,80 from Nakul Ado and 80 from Rangia Ado circles Regarding the possession of farming land and category of farmers based on it we have found different classes of farmers as per government norms-like sub marginal, marginal, small, semi-medium, medium farmers in both Nakul and Rangia Ado circles. The presence of large farmers is quiet absent. In this context we can stated the following chart-

Sl. No.	Size Class (Hct)	Numbers of operational holdings in Nakul Circle	Numbers of operational holdings in Ado	Numbers of Total holdings in Rangia Ado circle	Total Operational Holdings	Percentage of Operational Holdings
1	Sub marginal	20		15	35	21.87%
2	Marginal-0.5-	25		25	50	31.25%
3	Small-0.1-2.0	28		30	58	36.25%
4	Semi medium-	04		06	10	6.25%
5	Medium-4.0-	03		04	07	4.37%



While asking them about whether the possess agricultural land is their own, hired or on lease or contract, or on share cropping (Adhi system), It is found as following chart-

SL No	Ownership of Land	Nakul Ado	Rangia Ado	Total
1	Own Land	25 Nos	28 Nos	53 Nos
2	Hired, Lease, Contract	15 Nos	22 Nos	53 Nos
3	Share Cropping/ Adhi System	20 Nos	20 Nos	53 Nos
4	Own cum Adhi System	20 Nos	10 Nos	53 Nos
		Total: 80	Total: 80	Total: 160

Whether their agricultural plots are compact or scattered it is found that in Nakul Ado out of 80 households only 15 has possessed compact plot and in Rangia Ado out of 80 households only 20 has possessed compact plot. It indicates that as most of the farmers land is scattered therefore the tools of modern farming system like use of Tractor is something troublesome.

In a question whether they used farm land for one paddy crop in a year or two or three times it is found as the following chart-

	Types of Pady (Period of Harvesting)	Nakul	Rangia



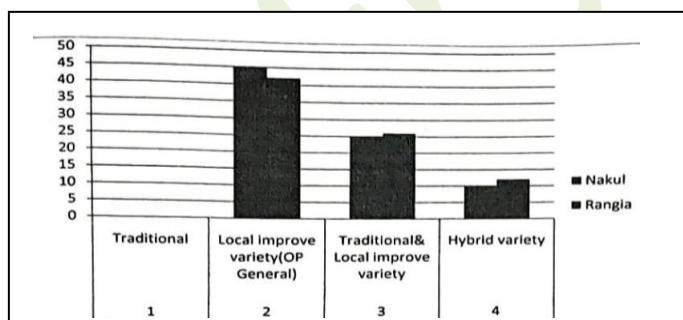
One time in a year	Winter	65 Nos	60 Nos
Two times in a year	Winter & Summer	15 Nos	15 Nos
Three times in a year	Autumn, Summer & Winter	00	05 Nos

From the above chart it is clear that most of the farmer are now abandoned the two or three times of paddy cropping Because it is costly affair and it required more water, Since our farmers depend upon rain fed agriculture, modern irrigation system yet to reach them it is not possible to run the paddy cultivation for twice or thrice. Therefore in place of paddy most of them engaged themselves in vegetable, oilseed like mustard cultivation etc.

In a question whether they used traditional seeds of paddy or modern they responded as below:

SL No	Seeds	Nakul	Rangia
1	Traditional	00	00
2	Local improve Variety (OP General)	45	42
3	Traditional & Local improve Variety	25	26
4	Hybrid Variety	10	12

It can be shown as following graphic form-



When they are asked about whether they plough by using bullocks' ore by using tractors it is seen that in Nakul ado only 5 households and in Rangia Ado circle only 8 households used bullocks as a means of ploughing Remaining 75 and 72 Households used tractors respectively. Whether the farmers of the concern Ado circle depend on rain or modern irrigation system the farmers respond were like as below-

SL No	Nature of Watering	Nakul	Rangia
1	Rain Fed	55 Nos	50
2	Natural (cutting canal from river)	00	20
3	Modern-Lifting water from river through power pump	2 0	00
4	Modern- through Chalho Tube well	05	10



How to control pest and insects, farmers response are in Nakul Ado still 45 households and under Rangia Ado 40 households used traditional methods to control pest and remaining 35 and 40 households used modern pesticide and insecticide. In the context of control weeds only 8 to 10 farmers have used modern weedicide.

Whether farmers used fertilizer and in what types the responses are given in the following chart-

SL No	Type of fertilizer	Nakul	Rangia
1	Chemical (Urea,potash,Super Phosphate, Zink etc.	45	48
2	Use decompost, cow dung compost	15	22
3	Not used	2 0	10

In case of productivity how much traditional and modern farming is beneficial one, farmers' opinion are -Traditional method having traditional seeds are less productive, per bigha a farmer can produce only 10 to 12 maunds-responded by both the farmers of Nakul and Rangia Ado circle. Modern method having local improve variety a farmer can produce 20 to 22 maunds per bigha. On the contrary Hybrid variety by applying modern way of farming a farmer can produce 38 to 40 maunds per bigha.

Whether the Agricultural extension worker regularly makes the visit to the farmer or not to guide the in farming most of the farmer give negative response.

Apart from this Quantitative data from focus group discussion it is come to know that though modern farming is productive one it is very harmful one from ecological point of view. Because due to the application of modern tools like tractors, chemical fertilizer and modern pesticides our traditional habitats aquatic animals, insects those were considered as friends to farmers and cultivation are lost. The chemicals not only pollute our agricultural land but also caused harmful effect in human body also. In an face to face interview a person responded, "Sometimes it is seen that a man having purely vegetarian, having no alcohol, no tobacco, not drug addicted but his Kidney damaged. It is why; it is because we eat chemicals through our foods, that is the handiwork of our farmers."

V. Findings :

From the above analysis of data we can derived the following findings.

1. In comparison to the traditional farming modern farming is less labour intensive but it required more investment.
2. Most of the farmers are belonging to marginal class as their size of agricultural plot is very limited.



3. Apart from own land a large number of farmers belong to sharecropping category and some cultivate by hier land from land owners.
4. Most of the farmers cultivate one paddy crop in a year; mainly they have to depend on rain for agriculture.
5. Traditional paddy are abandoned by the farmers because they are less productive .It is however some of them still have continued this in the name culture and tradition.
6. Having lot of efforts is done to modernized irrigation on the part of the government these are not reach to the doorstep of the farmers. It should be improved so that farmers will not to be depended on rain to carry on their cultivation 7. Judicious use of pesticides weedicides, chemical fertilizers should be done so that it may not harm to our environment, soil health as well as human body. Agriculture becomes eco-friendly
7. In this context agricultural extension officer have to take an important part. He must and should be Farmers oriented. Contrary to setting in the office he should go to the field, advised them how to use chemicals and in what amounts and so on.
8. Modern farming having modern seeds is more productive though it requires more investment than traditional one. Hence it will help in bringing economic upliftment of the farmers.

VI. Conclusion:

By the discussion it is clear that both the traditional and farming system has been operating in our society. In the light of rapid population expansion in the globe in general and India in particular we have no way out but to accept the modern way of Agriculture. Modern agriculture should not be taken as the anti thesis of traditional agriculture. In order to suit the needs of the time it should be regarded as the extension of traditional agriculture. At the same time Modern agriculture system should follow some good practices of traditional farming system to reduce its side effects.

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