



ISSN: 2347-4688, Vol. 5, No.(3) 2017, Pg. 325- 330

Current Agriculture Research Journal

An International Open Access, Peer Reviewed Journal

www.agriculturejournal.org

Seasonal Calendar and Gender Disaggregated Daily Activities of Indigenous Galo Farmers of Eastern Himalayan Region of India

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Abstract

Seasonal calendar and daily farming activities are vital in understanding the farming system of a community and identifying the period of intensive agriculture and lean period for better resources management and planning. The objective of the current study was to evaluate seasonal calendar and gender disaggregated daily activities of indigenous *Galo* farmers of Arunachal Pradesh. Phenomenological approach was used to understand the system as the native farmers perceive it. The result reveals the rice-based farming system of the tribe with seasonal calendar of major crops that is guided by the climate of the location. Also, it was found that farming is a family activity of the community with well defined task for each family member based on gender. Women play a major role in the farming and also have vital responsibility in preservation and conservation of indigenous local crop varieties and seeds for next season. Generally it was seen that the labor burden of tribal women exceed than that of their male counterpart. Though the farmers seem to remain in the field throughout the year, their involvement in agricultural activities is actually very low. Monocropping nature of farming, long duration crop varieties and excessive dependence on natural factor leads to poor production and productivity of crops. The seasonal calendar may help the researchers and policy makers to understand the specific need of farmers and device tailored measures for sustainable development of the farming sector and livelihood improvement of the specific community under study.



Article History

Received:

Accepted:

Keywords:

Season
Calendar,
agriculture,
gender,
indigenous
community,
climate change.

Introduction

Arunachal Pradesh is situated in the Eastern Himalayan region of India. It is the region where the pre-tertiary Tethys Sea first began to close, opening up a pathway for the Palaeoartic biota of

Tibet and Malayan elements from the South East, which resulted in enormous ecological and floristic diversity. Owing to its rich biological diversity, the state is regarded as the 'Paradise of the Botanists'¹. Humid tropical, sub-tropical, temperate and

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To Link to this Article: <http://dx.doi.org/10.12944/CARJ.5.3.10>

alpine zones influenced by high rainfall, varying temperature, humidity and wide ranging soil and physico-geographical situation have made this region as one of the “Mega-Biodiversity Hot-Spots” in the world and is the centre of origin of number of cultivated plants. The state comes under the Indo-Myanmar biodiversity zone. Arunachal Pradesh is the home of 26 major tribes and 110 sub-tribes that are indigenous to the state². The majority of the native tribes trace their origin from the Tibeto-Burman origin. Galo tribe is the major tribe in the East Central part of the state.

Agriculture is the mainstay of population of Arunachal Pradesh with above 80 per cent of the total population is directly or indirectly depending on agriculture for their livelihood³. Predominantly shifting cultivation (*jhum*) is practiced in more than 50 per cent of gross cropped area. The state is a rice treasurer of plant agro-biodiversity. Around 65 to 70 crop plants are grown in the state providing plenty of options and sources⁴. Each tribe of the state has their own seasonal calendar based on the climate of the location. Seasonal calendar is the calendar, which indicates month wise activities with regards to agriculture and animal husbandry. Also for majority of the tribes, farming is a family or group activity where each member has certain defined tasks mainly based on their respective genders. The objective of the current study was to understand the crop calendar of *Galo* tribes and their gender disaggregated daily activities. This was an initiative to understand the agricultural system of the location. The seasonal calendar may help to identify period of intensive agriculture and also lean period for better management of resources. The gender disaggregated daily activities reflects the level of involvement of each gender in farming and the socio-economic life of the community. However, the role of women is particularly significant as they are more focused towards livelihood improvement of their family and the society, and sustainability of the ecosystem. Also, they are more concerned with development of agricultural practices which were affordable, use local inputs, integrated to other facets of life, practical and result oriented⁵. In the current study role of women is mainly evaluated because in tribal communities the invisibility of contribution of tribal women farmer in socio-economic life is a very challenging issue. Hence the present study

was taken up to evaluate the seasonal calendar and gender disaggregated daily activities of indigenous Galo farmers of Arunachal Pradesh.

Materials and Methods

Location of Study

The study was taken up in the Basar and nearby villages in the West Siang district of Arunachal Pradesh around the geographical coordinates of N 27°59.27' and E 94°41.26'.

Methodology

To study the agricultural system of the *Galo* tribes, the phenomenological approach was used. The approach evaluates and analyses natural behavior and instinct, as the indigenous communities perceived it rather than imposing any sort of external value judgment⁶. The means and techniques through which the local people as “insider” come to know about some phenomenon can be investigated through this approach. The approach also helps to differentiate noumena (things as they are) from phenomena (things as we perceive them). So the first hand information was collected through interactions with farmers of different age groups and gender. The metaphors, folklore and proverbs that give better perspective were collected and studied to get better knowledge and inside on the behavior, practices and lifestyle of the community under study. Key informants from different villages were selected including village elders, youths, women and priests.

Result and Discussion

The Galo tribes have very well defined seasonal crop calendar distributed through out the year. Their seasonal calendar is guided by the climate of the location. They generally have rice-based farming system with major crop which includes *jhum*/upland rice, wetland rice, maize, mandarin oranges, banana, tuber crops, ginger & turmeric. The general seasonal calendar is shown in the Table 1. The *jhuming* mainly begins in the month of December-January with jungle clearing, branch cutting in February, cutting and stubble collection in April, burning in May, dibbling in June, weeding during July-August, panicle harvesting and drying during September and October, threshing and winnowing during November-December. The wetland rice cultivation generally starts in the month of April with clearing of field, nursery preparation in the month of May, land

preparation and transplanting in the months of June-July, weeding during August-September-October, panicle harvesting generally during November, threshing & winnowing in December. Maize is also a very important crop of the community and is sown twice a year during March-April and August-September with sowing of one crop preceded by harvesting of the previous crop. Mandarin orange which is most important horticultural crop is generally planted in month of March and transplanted during June with onset of rainfall. Harvesting of orange generally starts in the month of November and December. Land preparation and planting of banana is generally done in the month of June with onset of monsoon and harvested in the month of August. Tuber crops like colocasia, elephant foot yam, tapioca etc are important component of food of the indigenous *Galo* tribes. Generally the sowing of tuber crops are done in the months of March-April with pre-monsoon shower and harvested in the months of October-November. Ginger and turmeric are very important commercial crops of the location. Sowing of ginger and turmeric starts in the months of April-May and harvesting in the months of January-February. Among livestock, pig and mithun (*Bosfrontalis*) are most important and reared throughout the year. Diseases are the major constraints in success of livestock farming or rearing. Generally the swine fever in pig appears in the months of June-July and

November-December. The mithun (*Bosfrontalis*) is the main cattle of the *Galo* farmers. The foot and mouth disease of the cattle generally were seen in the months of January-February and June-July. The seasonal calendar normally deviates from its normal dates due to variation in the onset of rainfall and due to change in weather conditions. The indigenous communities change their seasonal activities as per the perceived weather conditions which they predict using different traditional methods by observing behavior of animals, insects, birds etc. Their sowing and harvesting dates also vary with lunar cycle⁷.

The daily activities of a *Galo* rural family is governed by the agricultural activities as shown in Table 2. For women, day generally starts at 3:30 AM with preparation of food for the family and they have their breakfast between 4:30 to 5:30 AM. The women remain in their field from 5:30 AM to 11:30 AM during morning hours with lunch generally between 11:30 AM and 12:30 PM. Again from 1:30 PM to 4.00 PM they work in their field. From 4:30 PM to 6:30 they collect fire wood and wild vegetables and look after their livestock. Their day ends with dinner at 7:30 PM and they go to bed at 8:00 PM. For men the day starts at 4:30 AM. After breakfast they work in their field from 5:30 AM onwards to 5:30 PM with lunch at 12:30 PM. From 5:30 PM to 6:30 PM the men engage in social activities including meetings, game

Table 1: Seasonal calendar of *Galo* tribes indicating the crop-wise activities in each month throughout the year. The rearing of pigs and cattle is done all through the year and certain specific disease generally appears in these particular months.

Months / Crops	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Jhum Rice	JC	BC	Br	CSC	Br / D		W		PH / Dry		T&Wi	JC
WRC				C	NP	LP & TR		W			PH	T&Wi
Maize			S & H					H & S				
Mandarin Orange			LP / P			P					H	
Banana						LP/P		H				
Tuber Crops			S							H		
Ginger/ Turmeric				S							H	
Piggery						SF					SF	
Cattle	FMD					FMD						

JC: Jungle Cutting, BC: Branch Cutting, Br: Burning, CSC: Cutting & Stubble Collection, D: Dibbling, W: Weeding, PH: Panicle Harvesting, T & Wi: Threshing and Winnowing, C: Cleaning, NP: Nursery Preparation, LP: Land Preparation, TR: Transplantation, W: Weeding, PH: Panicle Harvesting, S: Sowing, H: Harvesting, P: Planting, SF: Swine Fever, FMD: Foot & Mouth Disease

and other discussions. Day ends with dinner at 7:30 PM and bed at 8:00 PM.

The Crop Calendar is a tool that provides timely information about seeds to promote local crop production and contains information on planting, sowing and harvesting periods of locally adapted crops in specific agro-ecological zones⁸. Seasonal Crop Calendar supports farmers in taking appropriate decisions on crops and their sowing period keeping in view the agro-ecological dimension. It helps the researchers and policy makers to understand the farming system of the location and device need-based techniques and measures to improve the agriculture and livelihood of the targeted community. It also provides solid base for emergency planning of the rehabilitation of farming systems after disasters. In Australia seasonal calendars of the aboriginal *Ngadjuhelps* identify changes in the climate and in combating challenges⁹. Seasonal calendar was found to represent a wealth of indigenous ecological knowledge.

It is observed during the study that the involvement of the *Galo* farmers in the agricultural activity is actually very low, though the farmers seem to be busy throughout the year. It is evident from the cropping intensity which is 118 percent only compared to national average of 140 percent¹⁰. Nonetheless of possessing sufficiently large fertile lands, the farmers generally grew rice as mono-crop and in only one season. In *jhum* land they mostly start sowing the crop in the month of April and put much of hard labor to harvest very little yields. Majority of the traditional varieties of rice are long duration and generally get ready for harvest after 7 months. In horticultural fruit orchards, little attention were given

to the cultural practices and thus the yield is not as per the potential.

Regarding participation of men and women in farming, generally the activities like sowing, weeding, harvesting and grain separation have been done by the women. The women folks are also involved in forest cutting and firewood collection throughout the year in addition to other regular household activities. Mostly the women take care of the livestock and poultry. The women also look after the selling of the surplus harvest to the local market, and engage in trade and marketing. They are responsible for storing seeds for the next harvest. The women also collect wild edible foods and medicinal herbs from the nearby forest.

The activities that require hard labor like ploughing, jungle cutting, field preparation and mithun rearing have been carried out by the men. During cropping seasons the mithuns were kept in the temporary community confinement called *Lura*¹¹.

The participation of women in the farming activities is found to be very significant in the indigenous tribal communities of Arunachal Pradesh especially the *Galo* tribes. The labor burden of tribal women generally exceeds than that of their male counterpart as it also includes household responsibilities related to preparation of food and collection of firewood for fuel. They are also responsible for keeping the harvested grains and seed for next crop along with other farm activities. Similar roles of women in agricultural activities are also observed in the tribal society of Gujarat¹². Women in the indigenous tribal community were found to play significant role in the conservation of germplasm of various indigenous

Table 2: The daily gender disaggregated activities of the Galo tribes indicating estimated time for each activity.

Time/ Gender	3:30	4:30	5:30 to 11:30	12:30	1:30 to 3:30	4:30	5:30	6:30	7:30	8:30
Women	W/BP	BF	FW	L	FW	WC		LS	DP/D	B
Men		W/BF	FW	L	FW		SA		D	B

W: Wakeup, BP: Breakfast prep., BF: Breakfast, L: Lunch, WC: Wood Collection, LS: Livestock, DP: Dinner Preparation, D: Dinner, SA: Social Activities, B: Bed

crop varieties^{13,14}. As per the study conducted by Food and Agricultural Organization (FAO), rural women usually oversee small household livestock and sometime cattle throughout the world¹⁵. Women found to have better knowledge of the medicinal plant and different tree species¹⁶. Also, in Nepal it was found that role of women is especially prominent in hill regions where stronger crop-animal-tree integration requires greater involvement¹⁷. The rural women especially in the tribal community in the hill region have significant role in socio-economic life of the community and their daily activities and responsibilities exceed than that of their male counterpart. The role of women towards agriculture has never been static and it changes with the changing need, environment and context⁵.

Conclusion

Current study clearly shows how seasonal calendar reflects the agricultural system of indigenous *Galo* tribes of Arunachal Pradesh. It also reiterated the

fact that women plays crucial role in agricultural and other related activities especially in tribal communities. Thus the seasonal calendar and gender disaggregated activities is vital factor that governs the agricultural system of a community. It is the basis on which the agricultural research and policies can be devised for the target group or community. Change in the seasonal calendar indicates the change in the agro-climate of the location. In future work such changes should be studied. The gender disaggregated daily activities of a community helps us to understand the socio-economic structure of the community. In most of the tribal communities, women have distinct and significant contribution towards farming and also towards livelihood of the family. The women should be equipped with skill and know-how. Secondary agricultural practices like beekeeping, mushroom cultivation, backyard poultry etc should be promoted among the indigenous community to make income during the event of failure of major crop due to weather related extreme events.

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