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Threatening nutritional security: State and market induced dietary change among the Konda Reddis, South India

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Abstract

The most important aspect of the Konda Reddis is their diversified livelihood. As argued elsewhere (Thanuja, 2006), shifting cultivation which is their mode of subsistence is a diversified strategy which allows management of time, space and labour in practicing cultivation, hunting, gathering, rearing livestock, maintaining kitchen gardens and making of bamboo ware. This diversified livelihood facilitates a dietary intake of multiple millets and pulses along with products of hunting and collection. However, increased participation in the state development programmes and the market has induced dietary changes in the Konda Reddis destroying the biodiversity in their consumption pattern. The paper sets out to further explore the causes of dietary changes and its threat to nutritional security among the Konda Reddis.

Keywords: Threatening, nutritional, market, induced, Konda Reddis

Introduction

The research on which this paper is based finds relevance in the context of the debates that took place in planning the National Food Security Act 2013. This Act has been criticized for many reasons. Firstly, it has proposed targeted distribution of food entitlements to the Below Poverty Line (BPL) households where discrepancies as to who falls below the "poverty line" or not, is significant. The second critic on the planned Act is its rigid equation between food security and food grains to the total divorce of nutrition. Given the high levels of malnutrition present among socially vulnerable groups as in the tribal groups, access to only food grains that to with a limited choice of either rice or wheat is not going to ensure nutritional security (coarse grains was included in the act later as a result of this debate). On this aspect, Sainath (2010) ^[3] takes our attention to the National Food Security bill where nutritional security is stated as a larger issue that should be delinked from food security which is limited to the specific issue of food grains. Sainath rightly questions why nutritional security should be delinked from food security when it is explicitly recognized as a larger issue. Nutritional security as the 'larger issue' looks beyond distribution of food grain, the present concern of the food security policy. It advocates for inclusion of different varieties of grain each with different nutrients and importantly includes more than just grains providing all the recommended nutrients to ensure good health, conscious that better health allows better livelihood. By delinking this larger issue, we do not know when and how the government will take this up. It is important to note here, that the Tenth Five Year Plan did mention nutritional security as one of its thrust areas.

The third significant critic on the National Food Security Bill is the reduction in the quantity of food grains distributed, from 35kg to 25kg based on recent correction in Recommended Dietary Allowances for Indians (GoI 2002). Qadeer and Priyadarshini (2005) argue that for the vulnerable groups' cereals provide 60-70% of their calories and nutrients. They state that, 'when cereals increase in diets of the poor, it not only leads to better utilization of proteins but also helps lessen micronutrient deficiencies' (2005: 362). This critic sheds light on the second critic where to ensure nutritional security, care needs to be taken to diversify both within the food grains without reducing its quantity and to diversify food supplements outside the required quantity of food grains.

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Most important here is to note that nutritional security derived from food consumed cannot be calculated with respect to age and gender difference alone. The above literature shows how nutritional absorption from food consumed differs with respect to vulnerable groups which brings out livelihood pattern as an important marker to this calculation.

This paper attempts to address these issues of nutritional security with specific focus to the Konda Reddis, a Particularly Vulnerable Tribal Group of Andhra Pradesh. The research will look at the changing dietary intake of the Konda Reddis with the regularization of 35kg rice at Rs. 3/kg each month through the Public Distribution System. This change brought in through one of the development interventions of the government is evaluated against the background of traditional diet of the Konda Reddis that includes mixed millets and pulses cultivated and other foods procured through hunting and collection.

The anthropological lens on nutrition

Anthropological studies on food started in the 1930s where it looked at the relationship between diet and culture which became useful in suggesting solutions to the nutritional problems of communities and having an impact, though limited, on food policy (Messer, 1984) ^[15]. In Messer's review on the 'Anthropological Perspectives of Diet' (1984) he traces the different approaches to diet in anthropological research. These approaches include social anthropological, psychological anthropology, and ecological and materialist approaches. Richards (1939) ^[21] study on the Bemba of Rhodesia is noted as the first study in nutritional anthropology where she examined social relations as they related to food exchange. Her study of food ethnography remains a model for nutritional anthropologists and others studying the social and nutritional impact of economic development. Dietary change induced vulnerability has been extensively documented in anthropological research right from the 1940's through Margaret Mead's pioneering work (see Mead, 1943a, 1943b, 1943c, 1943e) ^[13, 14]. Studies such as Robson and Elias (1978) ^[22], Etkin and Ross (1982) ^[7] and Keith and Armelagos (1983) ^[11] have highlighted the nutritional knowledge of traditional diets that were conscious of its advantages to health. Fleuret and Fleuret (1980) ^[8] have shown how as local groups move away from subsistence agriculture toward cash crop production and reliance on purchased foods, malnutrition increases. Benyshek (2003) ^[2] discusses how prevalence of obesity and type-2 diabetes is found among the Havasupai of northern Arizona after they were settled in reservation territories and the consequent diet changes.

Jensen (2008) states that attempts to introduce new foods and ingredients into a traditional food system are likely to fail unless there is an understanding of the rules of the culture, availability of the type food in the geographical area, traditional practices of food procurement and consumption, food preparation and storage, sacred and seasonal foods. She reiterates that understanding food pattern rules can help us to comprehend how change is likely to occur and maybe be useful in planning interventions. Techniques suggested by Jensen (2008) have been applied in this research.

Theoretically the research follows James Scott (1998) ^[24], where he argues on the strength of practical knowledge as large, complex and diverse, un-understandable to the state that promotes narrow focused knowledge validated by

science that is standardized, has clarity and provides uniformity and therefore easy to quantify and facilitates easy governance. Unfortunately, this conversion of indigenous complex knowledge systems to replicable scientific models does not provide the expected results leaving the initial objective unachieved. This research follows this line in arguing for the significance of food sovereignty. It advocates that people should have full control over what they eat in terms of production, through ownership of land, seed, and all other inputs needed for cultivation and other forms of food procurement. Along with freedom to sell and buy; to exercise free choice over what they consume and when and how much.

Methodology

This research is part of a long-term ethnographic study of the Konda Reddis that started in the year 2000. In addition, between 2012-14, the technique of participatory video is used to facilitate reflexive responses among the community with respect to the key question on impact of dietary change. A literature review on research methods for understanding food patterns and behaviors was carried out before drafting the different methods to be used. The work of Jensen (2008), Pelto *et al.* (1989) ^[17], and Macbeth and MacClancy (2004) ^[12] were used extensively. Jensen (2008) states that, 'Food is very vital and is heavily invested with symbolic meaning and elaborate rules for use. Food is a reflection of culture that often illustrates the relationships between material factors (production and sources) and cultural symbolism involving concepts of health, relationships with the supernatural and the social relationships between the sexes and within the family, the community and the external world'. Given this complexity in understanding what food means to people she suggests that ethnographic studies with open ended probing and extensive participant observation is needed to study the pattern and rules of a food system along with clear-cut methodological strategy. This was possible given the nature of ethnographic study of this research. Using the data already in place as a result of this previous study, the project drafted specific surveys to collect relevant material on food procurement and consumption pattern besides the symbolism of food.

The primary ethnographic research had identified and surveyed the Konda Reddi villages of the study area accounting to 273 households with a total population of 1322 individuals. Based on the details available in this ethnographic study (Thanuja, 2006) a nested sample (Pelto *et al.*, 1989) ^[17] of thirty-one households was selected from a total of 273 households. The different surveys for quantifying food procurement and consumption pattern were carried out among this sample. Other methods, as in video screening and group discussion was not limited to this sample.

The Konda Reddis and their Food

The Konda Reddis live in the scheduled V area (legal land transfer protection and electoral reservation regions for adivasis) of north-west Andhra Pradesh state. Their hill villages do not have motorable roads making accessibility possible only by foot. These hills spread across 65sqkms are part of the Eastern Ghats with a maximum altitude of 700m covering mainly semi-deciduous forests. The Konda Reddi settlements are dispersed all over these hills, sharing this space with no other community. Speaking a dialect of Telugu, they call their settlements *gumpu*, literally meaning

'group'. The *gumpus* are sparsely populated ranging from two to fifteen households. The Konda Reddis are classified by the Government of India as a 'Particularly Vulnerable Tribal Group' (PTG). The category of Particularly Vulnerable Tribal Groups was created in 1969 to include those groups who lived in relatively isolated geographical regions, showed stagnant or diminishing population, and whose subsistence depended mainly on the use of pre-agricultural technology, with low levels of literacy in comparison to the national average. The Konda Reddis are one among the seventy-five communities belonging to this category.

The most important aspect of the Konda Reddis is their diversified livelihood. As argued elsewhere (Thanuja, 2006), shifting cultivation, which is their mode of subsistence, is a diversified strategy which allows management of time, space and labour in practicing cultivation, hunting, collection of forest produce, rearing livestock, maintaining kitchen gardens and the making of bamboo ware. A livelihood made possible and adapted to the tropical hill forest where land is regarded as communal property, controlled or regulated by the lineage, but, with residence and marriage choices being inclusive allows access (to cultivatable land of a settlement) to members of different lineages across the whole hill territory. Their mode of subsistence based on shifting cultivation is in sync with the core principles of agroecology advocated by Altieri (1995) [1]. The resilience of this system of production that maximizes internal energy through recycling of nutrients and mixed cropping besides integrating time, space and human labour leads to optimal use of forest and land resources keeping external inputs away leading to

sustainable, self-sufficient, subsistence production of food for direct consumption and exchange.

I draw these conclusions based on a five-year (2000-2004) mapping of the shifting cultivation plots. My arguments justify the practice by looking at it as part of a larger system of food production (Conklin 1957, Dove 1983; 2015, Freeman 1955, Pratap 2000, Ramakrishnan 1992, Spencer 1966, Thrupp *et al.* 1997) [3, 4, 9, 18, 20, 25]. The findings show that the land utilised for cultivation is set to a minimal possible. This also implies that forest subjected to slash and burn is minimal. The fallow period is sufficient for regeneration of forest. The fact that cultivation is skipped in some years as a result of sufficient storage supports that *podu* can produce surplus for storage and later use. Land used for *podu* is minimal both with respect to size of plot cultivated and skipping cultivation and this substantiates the role of other forms of food production that the system is dependent on. This integrative food production system is the shield against which the Konda Reddis fight or resent resettlement to government-built colonies in the plains.

The Konda Reddis cultivate on the rain-fed rocky hill slopes, which is their main productive activity and which supplies their staple food of millets and beans. The deciduous and semi-deciduous forests in the Konda Reddi territory offer hunting and collecting opportunities on a seasonal basis. They organise the year into three seasons. These seasons are marked by specific production and consumption activities accompanied by rites and ceremonies. The resources available vary with the seasons, with some resources available in all seasons and others in only one as shown in the table 1. below.

Table 1: Seasonal availability of resources

S. No.	Season	Resources acquired through hunting and collection
1	<i>Yenda kaalam</i> (February-May)	Tamarind, lime, mangoes, honey and wax of honey-comb, <i>haena bodalu</i> (the larvae of honey bee), small game, bamboo, fire wood, resin, fibre for rope making, <i>jeeruga khallu</i> and grass for housing.
2	<i>Varsha kaalam</i> (June-early September)	Bamboo shoots, <i>kombodalu</i> and <i>eeka</i> (a kind of caterpillar and beetle found in bamboo), honey and wax of honey-comb, <i>thaena bodalu</i> and mushrooms
3	<i>Sita kaalam</i> (September- January)	Tubers, honey and wax of honey-comb, small game, bamboo, fire wood, resin, fibre for rope making, <i>jeeruga khallu</i> (wine of <i>Caryota urens</i>), broom sticks, <i>adda</i> leaf used for making leaf bowls

From Table 1. it can be seen that honey and small game are available almost throughout the year. Small game is both hunted and trapped and commonly includes monitor lizard, wild boar, porcupine, rabbit, wild goat, hen, field rats and two other species of rodent. The Konda Reddis also rear livestock such as chickens, pigs and goats. They maintain a kitchen garden where they grow lime, custard apple, papaya, chilly, and bottle gourd.

The hill slopes around the *gumpus* are used in *podu* cultivation. Members of a *gumpu* have collective rights over the *podu* fields. The size of the *podu* plot, varies with the number and size of the households cultivating it. After harvest the land is left fallow for a minimum period of six years. *Podu* cultivation begins in January-February with the cutting of trees. The cut trees are then allowed to dry and are burnt in May. With the onset of the rains in June the millet (four varieties, namely, *sama*, *jonna*, *gaenta* and *korra*) and beans (two varieties, *alsentha* and *anna pappulu*) are broadcast and dibbled respectively. The first harvest (*sama* and *alsentha*) is in October and the second (the remaining crop) is in January. The months before both harvests are spent in weeding and watching over the standing crop. Between February and April the harvest is dried, threshed,

measured and stored. The bamboo collected from the forest is used throughout the year to weave bamboo wares such as baskets, winnows, mats, boxes, fishing baskets, and honey baskets. However, the labour required for *podu* and bamboo weaving differs. While the entire process of bamboo weaving is based on individual labour, *podu* involves different levels of labour cooperation.

Podu at the very least requires the cooperation of one household, but it is also common to find a number of households often from the same *gumpu*, working together on a single plot. In addition, *podu* may require communal labour for weeding, harvesting, threshing the harvest and felling trees. The crops produced are stored and used for consumption through the year. In the case of bamboo ware, besides household use, the articles are bartered with the plain-dwelling Koya tribe for *thathi khallu* (palm wine) and *sara* (country liquor). In addition, Koya men also buy the bamboo ware from the Konda Reddis and sell them at the weekly shandies. These Koya men have evolved as cash providers, linking the Konda Reddis to the market.

The other resources that generate money (cash) for the Konda Reddis are honey and non-timber forest produce (NTFP), mainly resin, which are sold at the Girijan co-

operative stores run by the Integrated Tribal Development Agency (ITDA) in the shandy villages. Tamarind and lime are also sold here. Men, women and children, usually of the same household, collect the tubers. Tubers collected are not bartered or sold, but are consumed by the household. The collection of tamarind and mangoes is also done by men, women and children. The tamarind and mango trees, planted by the members of a *gumpu* when it was established, belong to the *gumpu*. Tamarind is collected collectively by the members of the *gumpu* and shared equally by the households. After keeping aside enough tamarind for household consumption the rest is bartered with the Koyas for *sara*. Here again the Koyas sometimes offer money for the tamarind and later sell it in the shandy. The seeds of tamarind are exchanged for salt at the Girijan store. With mangoes there is no combined collection. Each household collects the fallen mangoes separately in April-May. The mangoes are not bartered, but are consumed by the household members. The mangoes are also preserved by cooking its pulp.

Other resources collected that are included in the diet are bamboo shoots, mushrooms, *kombodalu* (bamboo beetle), *eeka* (beetle), *thaenabodalu* (honey bee larvae) and *goddu kura* (green leafy vegetables). These resources are collected individually by the members of the household and consumed by the household. The kitchen garden and livestock belong to the household. Lemons from the kitchen garden are bartered with the Koyas for *sara* and also sold to them at the rate of Re.1/- per lime. Livestock is used mainly in ritual sacrifices and for labour payment. As payment towards communal labour for *podu* an adult pig is killed and apportioned to the individuals who form the labour force. Most households' rear pigs. In case a household does not have an adult pig for payment on such occasions, then one of its members (usually the head of a household), negotiates with another household in the same *gumpu* or elsewhere to loan them an adult pig, promising to repay with another adult pig later. Usually, adult pigs are not bought with cash; instead, a piglet is procured for cash or kind and is reared for repayment when it is fully grown. Interest for the time lost in repayment is paid by allotting a portion or two of the meat to the original owner of the pig.

Development induced dietary changes

The diversified livelihood of the Konda Reddis facilitates a dietary intake of multiple millets and pulses along with products of hunting and collection. However, increased participation in the state development programmes and the market has induced dietary changes in the Konda Reddis destroying the biodiversity in their consumption pattern. The problem to note in this context is the development focus on food production and not on consumption. This is the correlation in policy that focuses on food security to the negation of nutritional security. In development planning for adivasis (indigenous people/scheduled tribes as per Indian constitutional category), the heterogeneity of adivasi is not paid attention to. The World Bank report (2011) states that the scheduled tribes in India rank lowest with reference to all Human Development Indicators. This puts all scheduled tribe groups under below poverty line. The issue of poverty is then assessed dominantly on income earned which in turn does not consider the dynamics of livelihood practices that are through transactions of kind and not only wages. Again, in this connection poverty is correlated to lack of buying

capacity and starvation. The policy focusses as stated earlier on food security in providing subsidized food through the Public Distribution System (PDS).

This is very much the case with the Konda Reddis who have been made beneficiaries of PDS. A significant aspect missed in development policy here is that the Konda Reddis have their own resources for food production and that to based on shifting cultivation which being a diversified food procurement system has a strong risk mitigation strategy factored into it. The development policy needs to recognize and compliment this food production system of the Konda Reddis. Again, as stated above, the Konda Reddis have access and do produce enough food to ensure their nutritional security. This is ensured through the cultivation of mixed millets, pulses and vegetables besides animal protein through rearing livestock and hunting and collection of tubers, green leafy vegetables and fruit trees. The PDS supply of white rice and white sugar defeats the logic of nutritional security. Nevertheless, given the inclusion in the PDS system and subsidized rate of the provisions, the procurement of these supplies is taken up by the Konda Reddis. The long-term changes this induces to their nutrition and health is a matter of concern.

Market induced dietary changes

From 2000 to 2015 the Konda Reddis have witnessed (like the rest in India) a steep rise in the price of commodities. Honey that they sold at Rs.30/650ml in 2000 is since 2015 sold at Rs.120/650ml. A bamboo winnow sold at Rs.5/- in 2000 is since 2015 sold at Rs.15/-. Though millets produced through shifting cultivation is primarily for self-consumption and secondarily used as a medium of exchange between households, the increase of price and demand for pearl millet in the market has also had an impact on production through shifting cultivation. Firstly, with the rising price of honey and bamboo ware, the cash at hand with the Konda Reddis has increased, together increasing cash transactions. Significantly here, the Public Distribution System of the government has not increased the price of commodities, especially rice that continues to be sold at Rs.2/kg. With each household allotted 35kgs of rice per month and the small household size of the majority of the households and cash at hand, the purchase and consumption of rice has regularised. Consequently, this has led to dietary changes with rice slowly displacing mixed millet intake. It seemed natural given this trend that the practice of shifting cultivation would fall, but interestingly as the market price for millets has increased (since 2008 sold for Rs.7/kg which in 2000 was Rs.2/kg) a new trend set in. For the Konda Reddis of the resettlement colony in the plains, it seemed profitable to cultivate for sale as they mainly consumed rice now.

Conclusion

Dietary changes induced by the state and market will eventually threaten the nutritional security of the Konda Reddis leading further to the appropriation of their bio-diverse cultivation making them vulnerable in many ways. This situation is further misunderstood in relation to food consumption patterns that are labelled as lacking nutrition and thus leading to poor health, finally equated to the all-in-all cause, poverty.

What has been gravely undermined is seasonal consumption of certain foods based on seasonal availabilities or possibilities of food production/gathering/hunting/collection.

The balance of a nutritious diet need not be correlated to every meal but as practiced through indigenous knowledge balanced through the seasonal calendar which is ecologically integrated and thus has food consumption thought through the sense of health. It this aspect that calls for attention in development policy.

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